idc·output

Industrial Design Centre, I. I. T. Bombay

इन्डस्ट्रियल डिज़ाईन सेन्टर, आय. आय. टी. बम्बई

3

Shoe-shine stand

'Shoe-polishing' is a bread-earner for quite a few people in our country. The people who take up this work range from young boys to old men.

Young boys go around with their portable units in trains. Others operate on a railway platform or a footpath. The earnings of these people are meagre from this profession. It is a challenging problem to design for people who can afford very little.

Study of shoe-shine stand led to two solutions. First was a portable unit consisting of two wooden frames hinged at the centre. A catch at the bottom holds the two frames when it is carried. The unit turns into a stable stand for polishing when the frames are tilted around the hinge. Each frame contains a canvas bag for storing polish tins, brushes etc. The unit costs Rs. 8/– with a profit margin of 15 per cent.

The second solution consists of a stand where the person getting his shoes polished can rest on his fore-arms. Shoe polishing man is provided with a back rest. The whole unit can act as an advertising stand. The cost of the unit can be borne by any public or private organisation which can use the stands for publicity purposes.

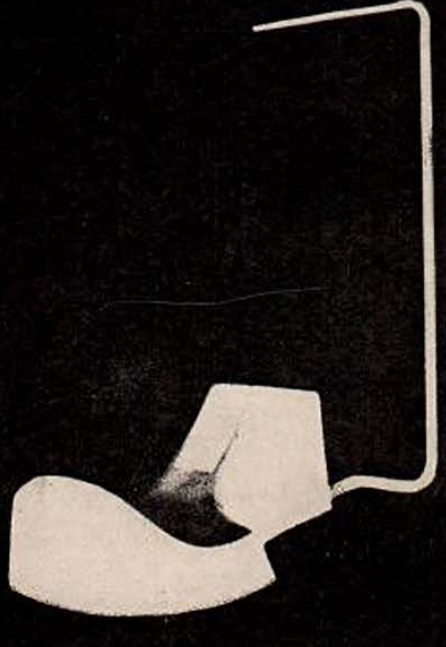
जूता पालिश स्टैन्ड

अपने देश में जूता पालिश करके कई लोग पेट भरते हैं। इस काम में बच्चे से बूढ़े तक सभी जुटे हुए हैं। जवान बच्चे अपना पिटारा ले कर रेलगाड़ियों में घूमते हैं। कुछ लोग रेल के प्लैटफार्म तथा फूटपाथों पर काम करते हैं। इस धंधे से उन्हें बहुत कम मात्रा में आमदनी होती है।

इन लोगों की लागत–क्षमता कम होने से उनके लिए कोई साधन बनाना जटिल समस्या है।

जूता पालिश पिटारों का अभ्यास कर समस्या का हल सोचा गया। पहले आविष्कार में लकडी की दो चौखटें केन्द्र बिन्दु पर से जुडी हुयी हैं। ढोने के समय तह की एक कुन्डी इन चौखटों को पकड़ रखती है और पालिश करते समय इन चौखटों को फिर से घुमा कर अचल स्टैन्ड में परिवर्तित किया जाता है। प्रत्येक चौखट में लगे हुए कनवास की थैली में पालिश की डिबिया, ब्रश आदि रखने का प्रबंध है। १५ प्रतिशत मुनाफे की गुन्जाइश रख कर भी इस यूनिट की कीमत सिर्फ रु० ८ है।

दूसरे आविष्कार में जिसके जूते पालिश किए जाते हैं वह आदमी अपने हाथ का अगला हिस्सा स्टैन्ड पर रख सकता है। पालिश करने वाला अपनी पीठ पीछे की ओर झुकाकर आराम से पालिश कर सकता है। यह पूरा एक उत्तम विज्ञापन स्टैन्ड के रूप में प्रयोग किया जा सकता है। इस स्टैन्ड की लागत का भुगतान इसे प्रयोग करने वाली किसी सार्वजनिक या संस्थागत संस्था के द्वारा किया जा सकता है।



Contents

Gui Bonsiepe, in his paper 'Design thro' Development" (recently prepared for UNIDO on behalf of ICSID) states. "Design solution for developing countries can only be found and worked out within the developing country and cannot be imported from outside".

The statement looks obvious enough and applies to any solution- be it technological, economic or political, because of the distinct economic, political, social and cultural background of any developing country. It would be pertinent to examine what happened to the scientific and technological solutions worked out in India during the last 25 years, before we think of design solutions.

A leading scientist, A. K. N. Reddy* points out, "The pattern of industrialisation adopted thus far has been based entirely on the technology of the developed world i. e. Western technology. This is a capital-intensive technology designed primarily to reduce labour, to supply vast markets and to produce goods for individual consumption. Its prolific development has invariably led to increase in the degree of automatisation, in the scale of production, and in the sophistication of luxury goods".

Indian large-scale industry based upon this foreign, but domiciled technology, finds markets for its luxury products almost solely among the top 10 per cent of population. This throws some light on the pattern of growth in science and technology in our country. The social, economic and cultural needs of the people have been ignored most of the time in working out scientific and technological solutions and this has resulted in increased disparities and unemployment while the proclaimed policy of the Government is committed to socialism and removal of poverty.

Industrial design, as an extension of science and technology, faces a dilemma in this situation of conflicts. The industrialists tend to classify industrial design as a luxury activity because it deals with the comfort and aesthetic aspects. The more important aspect of industrial design, as an innovative problem-solving process, is often ignored.

The potentiality of the discipline in finding solutions to the socio-economic and cultural needs of the majority is yet to be realised. The task of utilising the inputs of industrial design in the overall scientific and technological planning of the country is still to be tackled by the planners. Till then the services of industrial designers, to a large extent, will be utilised by the private sector producing mostly luxury goods.

In this situation research projects seem to be the only answer to demonstrate the potentialities of industrial design in solving the pertinent problems of the majority.

It would be worthwhile to examine the working of Industrial Design Centre from this perspective as we project our thoughts into the future. The Centre will be shortly completing its initial experimental period of 5 years. The 15-month course offered at the Centre enables the candidates to deal with the immediate design problems of the industry, but the duration is insufficient if the designers have to take the role of coordinators in industry or if they have to extend their discipline into new areas in future. Further, the short term course deters experimentation in academic programmes. The development of educational programmes is essential in case of a nascent discipline like industrial design since we cannot import it time and again as we do in case of science and technology.

Until recently, industrial designers were not available in this country, and as a result all aspects of industrial design were taken care of in a haphazard manner by other technical experts. From the industrial point of view, the ratio of employment of industrial designers to basic designers would vary from 1:5 for consumer products industry to 1:10 for heavy industries, which means that if the country today has a need, on an average, of 8000 design engineers in the consumer field and about 5000 to 6000 in the heavy engineering field, there is already a need of about 2000 industrial designers in the country.

The development of industrial design cannot be thought of in isolation from the related disciplines like visual communication and environmental design. It is an unfortunate paradox that in India today there is no institution devoted to the study of environmental design on a wide scale and in the necessary interdisciplinary perspective. Presently industrial designers work in relative isolation from these disciplines. It is envisaged in the development programme that the future design institute should have a total environmental design approach. The Centre, so far, has created the necessary infrastructure and motivation among the specialists in these fields to embark on such a programme.
The human environment can be broadly split into two areas, behavioural and physical. The specific fields that the designers would be dealing with in these areas are

. Behavioural
- Communication environment

. Physical
- City, urban and rural environments
- Building and built environment
- Product environment

Studies in each of the above areas would be the ultimate goal of the future institute. Spontaneous transition between these areas both at faculty and student levels is foreseen.

It would be worthwhile to repeat that the problems we face are very much different from those faced by our counterparts in the West. Even if we use the same techniques and media of communication like print, film and television, the social and cultural background of the people would make it an altogether different challenge. The information we possess on the social and cultural profiles of people in various regions is inadequate. One of the primary tasks of the future institute, therefore, would be data collection and this can be done only by competent social scientists including psychologists, sociologists, anthropologists and political scientists. The presence of these people on the faculty would be essential not only to create a data bank but also to verify the validity of each design project.

The communication environment is largely influenced by visual communication. The conception of the branch of visual communication is that it should devote itself to the study of the impact of mass communication through the visual media. There are two aspects of mass communication considered to be of the utmost importance. One is the persuasive and motivative use of the mass media through print, film and television, and the other is the educative use of these media. The two are obviously inter-related since, in the contemporary world, educative communication takes place in equal proportion within and outside the educational institutions. To start with, the visual communication section could undertake some major projects to study the potentialities of the visual media for education at all levels beginning from primary education, and also for mass education in areas, such as, family

---

* Choice of Alternative Technologies.
Amulya Kumar N. Reddy
"Economic & Political weekly"
Vol. VIII No. 25, June 23, 1973

planning, modern methods of management, agriculture, relevance of science and technology, communal harmony, new concepts of utilising and optimising resources, etc. All these are problems directly relevant to human welfare in India.

The approach of traditional architecture to city, urban, and rural planning, and in creating the living environments has been highly utopian. The solutions are most of the time personal dreams not anchored in reality. On the other hand, planners of current generation have a tradition of minute attention to the detailed limited facts and extrapolation from these facts. Their sole concern being economic optimisation the planners refuse to see planning as a process of creating culture. The wide gap between these approaches needs to be bridged. The scientific studies in behavioural sciences have to be applied in physical planning if we have to create environments for living.

The housing problem in the country has been enormous. A conservative estimate indicated the requirement of 84 million houses in 1971. Yet very little attention is paid to the problems of mass housing. Most of the schools of architecture in our country continue to impart victorian type of education. Architecture is still centred around building individual houses. Import of Western concepts of industrialised pre-fabricated buildings should be thought of with utmost caution. Extensive studies in rural housing would be necessary before any meaningful strategy is evolved. Pilot projects in mass housing are envisaged which can lead to educational programmes in environmental design.
With the established course in industrial design, the four main functions of the future institute of design would be

1. Education
2. Research & Development
3. Cosultancy services at a professional level.
4. Propagation

1. Education

Industrial design academically is very near to architecture and stands in between art and engineering. It would be wrong to treat it as a mere extension of either art or technology. Such attempts in other countries have only led to the deterioration of design activities.

To train designers to face the multi-level problems of our country, it is necessary to offer a 2-year course at postgraduate level with the required design environment. It would be also necessary to offer courses in visual communication to give the necessary intellectual rapport to the design discipline. The present educational programme mainly concentrates on training, suitable to satisfy the needs of the urban areas. Almost 70 per cent of the population live in rural areas. The problems of these areas are quite different from those of urban areas. There is a basic need to develop appropriate educational programme in industrial design to answer the rural problems.

2. Research and Development

The research and development projects will have a vital role in creating the standards for a new discipline. In view of the present socio-economic conditions in the country, the research projects in industrial design will have to cover a wide range, starting from the problems related to the craft-oriented village industries to those of sophisticated mass production industries. The value of applied research projects need not be over-emphasised. There is a basic need and vast scope for design research projects in educational aids, agricultural tools, rural housing components, school furniture, products for rural based industries, etc. There was no specific provision for such activities in the initial period of five years. The Centre has created the requisite infrastructure for such future programmes and has already made the beginning for a project ' identification of design problems of rural India''.

3. Consultancy services at professional level

Consolidation of design profession through creation of professional standards would be another basic function of the future Institute of design. One way of establishing standards would be by offering design consultancy to industries at professional level. A virtual vacuum prevails at present in this respect as there are no private agencies offering design consultancies at professional level in spite of large scale demand.

The Centre has been offering consultancy services to various industries. Priority has been given to projects for export markets, projects from Government and service agencies, and projects with high educational value. The educational values of these consultancy projects are too many. The projects are helpful in modelling the educational programmes on a realistic basis to meet the needs of industry. The Centre's development programme envisages the setting up of a separate cell with competent development engineers and designers for the consultancy services. It is planned to offer design services upto the level of making and testing prototypes through this cell. Priority would be given to small scale industries which normally cannot afford to have their own design departments.

4. Propagation

The ultimate objective of any design activity is to enhance the social and cultural values of life. Today we are facing a real problem of values because of the loss of traditional values which we had, and of the sudden introduction to modern science and technology.

One of the major functions of the future institute of design would be to propagate the various aspects of design to the public. It would also be necessary to inform the Indian industries, both in the private and public sectors, about the discipline of industrial design so that they may reap the full benefits of the profession. This vital task of propagation will have to be done through special programmes like conferences, seminars, exhibitions, films and publications. Exclusive staff and facilities for such work will thus be necessary.

A national seminar on industrial design in collaboration with NITIE, Bombay and NID, Ahmedabad was planned but it could not take place due to certain difficulties. It is significant to note that the ICSID (International Council of Societies of Industrial Design) has agreed to hold an international seminar in India in 1975; under a UNESCO programme, the ICSID has also expressed a desire to make a film on Industrial Design Centre as one of the model schools of industrial design. The Japanese organisers of the '73 ICSID Congress, held in October, had invited few of the faculty members and the Adviser to participate in the panel discussions. The Centre plans to hold a series of seminars and design appreciation programmes with the help of the ICSID for the management of private and Government agencies in the near future. The Centre has been bringing out 'IDC-OUTPUT', its yearly journal reflecting the work of the Centre. Considerable portion of the 'OUTPUT' also appears in Hindi this year. With this, we hope, we are making a move in the right direction in communicating to the larger section of the public.

S. Nadkarni

Environment, the Decision–Maker and Design Policy

V. N. Adarkar

Industrial and post-industrial societies have today become acutely aware of the erosion of environmental values. This does not, however, mean that transitional societies like our own do not have the same problems. In fact, a predominantly rural but steadily industrialising society like ours needs conscious planning of the environment with equal regard to the needs of rural man and urban man.

The designer today has a vital role to play both in preserving and in enhancing the quality of the environment. Assuming that we are moving towards a more modern and complex form of society, with increasing interdependencies among people of diverse cultures, economic backgrounds, occupations and regions, we have to anticipate a number of problems for which new types of design solutions have to be found.

Within the next three decades, our population is going to double. Several new small and middle scale industries are likely to emerge. Not only will India's urban landscape change but also its rural scene will witness a transformation within the coming decades. Due to these impending changes, there would be new imbalances there would be further regional disparities to some extent in respect of both rural and urban development, there would be greater inter-cultural friction, there would be new political developments, there would be rapid changes in our social, inter-personal and individual lives. These are inevitable aspects of social dynamics. Each one of them has profound implications for our total environment since environment is something which all people share.

The sense of environmental values is integral to every culture and designing is a cultural response to specific problems related to man-made objects ranging from a pin to a city, or a match box to a river dam. Everything man makes for his own utility or pleasure is designed by himself. Thus the designer's activity occurs at every level of social life. Each designed object contributes either a positive or a negative value to the existing environment of man and, therefore, all of us should be profoundly concerned with the problem of acquainting the decision-makers with the vital importance of design activity. All of us have a private right and a public responsibility to our own environment. In the designer's case, this implies the necessity of a conscience. In the case of the decision-maker, it implies the necessity of a consciousness of environmental values and a respect for the designer's role in shaping the environment.

Unfortunately, we in India do not have a highly developed environment consciousness. Nor do we have any significant appreciation of the designer's role.' we do not place the designer among technocrats and planners as their equal. We tend to treat him as if he were the modern counterpart of a village craftsman although none of us today live an in an idyllic village republic. Also, it it is perhaps needless to say, we in India have a well-known apathy for human values. All these factors combine to create some anxieties about the quality of our life and our environment.

The field of designing is obviously very vast today since the industrial and technological revolutions have diversified and radically altered man-made objects. Mass production techniques which are utilised to produce a variety of objects for the use of mass society are unique to contemporary life in industrial societies. There is thus an inevitable standardisation of design in respect of various machine-made objects. Of course, even the most sophisticated machinery is a tool used by man. Design concepts themselves are a product or human reason, imagination and aesthetic sense. In the machine age, while man devoted much of his imagination and intelligence to invent machines, he was a little slower in refining the design of his machines in terms of the users' convenience and aesthetic needs. Similarly when he mass produced objects for pleasure and utility he took a longer time to recognise the importance of the human discipline which is design. In other words, developments in the earlier part of the industrial age were so rapid in their mechanical and technical aspects that their relationship with man was relegated to a secondary position. When man tried to dominate once again the machines of his own creation he re-asserted the vital importance of designing in relation to his own biology, psychology and social and cultural life. In a balanced civilisation, design values are not separated from technological values and human and aesthetic considerations are an integral part of the process by which technical and scientific innovations are brought into individual and social use. This means that in a balanced civilisation, where every innovation is a product of team work amongst technologists, designers, social scientists and researchers and the users themselves, the designer is always an integral part of the total team. Each one of the above members of a team of innovators contributes his expert insights to the creation of a collaboratively produced man-made object.

Collaboration is, in short, the key feature of human creative activity in the modern period. If this is recognised, it is not difficult to accept the designer's role as a crucial element in any collaborative effort to produce objects. Since the designer has to collaborate with so many different types of experts, there has to be perfect communication between the others and himself. This means that those with whom the designer collaborates must understand the designer's role: it is also true that the designer must be sophisticated enough to understand the various roles played by his other collaborators. Designing thus becomes a very complex inter-disciplinary activity from the very outset. Only when designing is seen in this perspective can we hope to produce better objects and a better environment.

In a predominantly rural and agricultural society like ours, designing acquires a unique role. For example, a designer has to design objects and environments for millons of people who live in a society which is not urban and industrial and which has a life-style quite different from the life-style of urban people in industrialised societies. Also, he has to recognise that the sense of traditional values is much stronger among the rural millions than among the urban population which is already uprooted from its rural origins and is making a transition to an authentic urban life. He must also recognise that there are very dynamic folk traditions in the rural regions. Folk art and craft are created by indigenous designers and artists who are not less creative than the modern urban designer. When the modern urban designer tries to bring to them the benefits of his better-informed and more analytical mind, he will have to equally concede to them their aesthetic imagination and skill. Thus the designer in India may have to approach traditional and rural India with a view to synthesising tradition and modernity.

The decision-maker's attitude to design activity will obviously play a crucial role in determining designer's contribution to planned change for a better overall life. In all planning concerning economic development, public welfare and enhancing the scope and quality of social services, the designer can contribute a great deal. if only his role and the importance of a conscious design policy is accepted by the decision-maker, the designer can do this. At present, the designer's potential contribution is not adequately recognised and this seems to be the chief hurdle in evolving a design policy which every enlightened and forward-looking society must possess.

Cultivating Creativity

A. G. Rao

The paper was first presented in a seminar on "Creative Engineering Design" held I. I. T. Madras.

Until recently it used to be believed that creativity is a mystic individual trait gifted to few. The idea, fortunately, has faded out and to-day we have enough proof that it can be cultivated. Creativity seems to be an effective level of thinking above the usual level, which is below this effective level. It would be convenient to agree with Dr. Edward de Bono's definition of creativity as "unpredictable effectiveness". Effectiveness in thinking is sufficiently general to be applicable to aesthetics, engineering or economics. Unpredictability refers to the unsystematic and irrational aspects of the process of creativity. Creativity is an irrational process to reach rational results.

The creative ability is observed to be high in children. Then why is the creativity of 'grown-ups' low? Four reasons could be cited which normally curb the creativity of persons.

Inhibitions in free thinking :

A child comes to his father, takes his pen, says, "Papa' this is an aeroplane" and starts playing with it. Immediately the father laughs at it and says. "Stupid! It is a pen. An aeroplane should have two wings and a tail". This sets up the process of inhibition. The child will not risk being laughed at next time. He will rather ask his father's opinion about everything and accept the answer without questioning. The same process goes on all through education. Students dare not express their unusual ideas for the fear of ridicule from their colleagues and teachers. Save a few, majority fall into this safe thinking pattern. Those few who retain their imagination may not express their unusual crazy thoughts to others; certainly not in the fields of science and technology. Normally they turn their imagination to some other field where such unusual thoughts are rather easily accepted.

Conformity in thinking :

Conformity in a person develops because of sheer habit and the security it offers. When we are solving a problem we think in familiar terms; we try to solve new problems on the basis of our experience and methods used in the past. We depend on the habit of thinking. Habitual thinking is quite necessary for routine life to save the mind from the burden of taking decisions from the numerous possible alternatives. Suppose one is walking on a desolate road and hears a sound. The mind makes the decision in a split second that it is a motor car and one is off the road. If the mind were to consider all the possible alternatives like that the sound might be, of a child playing with a toy, or of a hen with a sore throat, or made by someone with a new musical instrument, it would not be possible to reach a decision in time. So the mind would't consider these possibilities. It is taken for granted that it would be the horn of an automobile by sheer habitual thinking. But our habits transfer from one situation to another and we try to use them even when they do not apply. This conformism is reinforced by our perception, culture and emotions.

Development of 'Vertical thinking' :

We tend to be very efficient when we proceed straight from what we have. There is a force of continuity in developing, carrying further. It is rather like moving from the first aeroplane in 1903, taking 84 days to cross America in 1911, and taking couple of hours to-day. On the other hand, something like the hovercraft, which was technologically easier than the aeroplane, was invented only a few years ago. Spoon feeding of problems in the educational system can also lead to the development of vertical thinking. In our present educational system students are always asked to solve the given problems. They are rarely encouraged to start from the scratch where the field is open for many possibilities to frame a problem. Today we observe numerous graduates finding themselves out of place in their jobs because they are not given tailor-made problems, but are in a situation full of problems.

Vertical thinking is further strengthened by narrow specialisations. Many a time, specialists refuse to look into other fields. Vertical thinking sets up 'mental blocks' to new ways and approaches. We often come across manufacturers and development engineers who want to go on adding new features or improvements to their products. The moment we suggest a different way they just do not consider it.

Non-development of Intuitive faculty :

Intuition seems to be the mysterious faculty by which one predicts solutions without logical backgrounds. The logical background or proof is worked out later. Intuition is related to the emotional involvement of a person in the problem he is solving. We observe intuitive qualities more in artists who are usually highly emotional. We often come across phrases like 'he loves his painting', 'he is giving birth to a new product'. This emotional attachment is very important for harnessing intuition. Children have high potentialities of developing intuitive capabilities because of their ready emotional response. With in an education which is chosen and forced by the parents, which is a common feature in our country, and with the values of professions in society which are solely based on money-returns, students have very little emotional attachment to their professions or the problems they are solving to day.

Demand for immediate logical explanations in science and engineering has developed inhibitions in cultivating intuition in these areas. Ideas without proofs are normally laughed at. With this background, we come across a situation where lack of creativity prevails. This could be tackled at two levels.

- Change the basic educational and social environments for developing creativity.
- Introduce techniques to help in overcoming the conformities and inhibitions already developed and to enhance the creative capacity with a scientific approach.

The first change is the most vital for all fields of activities. School education in particular will have to be changed to a great extent to achieve this objective. The task of change at this level is herculean and will be a long process.

As we are facing the problem of education of creative engineering design in particular, the second level would be significant to us. The literature on creativity on this subject is wide and several methods have been suggested. Many of the techniques seem to be of same nature though the terminology used is different. Four basic methods are discussed here.

- Removing mental blocks
- Alternative solutions
- Brainstorming
- Synectics

Removing mental blocks :

Creativity is a process of achieving new relationships. New relationships are achieved because of the mind looking at the problem in different ways. Creativity depends more on subconscious thinking than on conscious thinking. A problem or a situation perceived by the mind in precise elements with definite relationships tends to form a mental block. It is necessary to blur this precise image in the mind to get out of the mental block. Certain amount of free play of these elements or 'a confusion in the mind' is necessary to generate new relationships among these

elements. Several ways have been suggested to get over mental blocks. But the basic process is one of blurring the precise image of the problem, to feed the problem with free relationships to the mind to provide more possibilities of organisation or combination in the mind. In all the cases the problem is first brought down to simple statement on which the various transformations can be applied.

Osborne (1963) suggests the following nine transformations.

put to other use?

adopt?

modify?

magnify?

minify?

substitute?

re-arrange?

reverse?

combine?

Suppose the problem is to evaporate a liquid; for the word 'evaporate' one can put down the words

vanish, fade, sink, fly away, die away, melt away, dissolve, disappear, etc.

These words could immediately suggest different ways of solving the particular problem. The variations can be applied according to the problem in context.

Alternative solutions :

Another hurdle for creativity is the self-imposed constraints on the problem. The very openness of a problem can create mental block. This is evident when we consider a small mathematical puzzle. The problem is to create four equal and equilateral triangles with six match sticks. We normally try to solve the problem by trying to imagine the match sticks in a plane. We ourselves impose a constraint that it should be in a two-dimensional plane, though the problem is just open. It normally takes a long time to realise the tetrahedral shape, which gives four triangles. But once we realise the answer the solution seems so obvious. There are six match sticks and we want twelve sides for four triangles. Each match stick should serve as the side of two triangles. This should have suggested a tetrahedron. Dr. Edward de Bono once experimented with two groups of children.

The first group were given two boards (with a hole in the end) and a piece of string; the object was to cross the floor of the room as if it were a river. They didn't take much time to hit the idea of standing on the boards, putting one board in front of them, moving the first one around, and using these as movable stepping stones. They got across the room quite well. The second group was given one of the boards and a piece of string. It took them a little longer time, but they hit upon a different way of using them. The idea was to stand on one board, tie the string to the front of the board, and holding the board against their feet, hop across the room at a much faster rate than any one of the first group.

Here again we see that the first group adopted a self-imposed constraint of using both the boards because they are with them. The first group could have come to the solution of the second by just ignoring one board. But it does not happen normally. If there is an adequate solution, it is very difficult to get a better solution. To overcome this problem

- one should be conscious about self-imposed constraints, and
- one should insist on getting pre-fixed number of alternative solutions.

Suppose it is decided to obtain three alternative solutions for a particular problem, one should get three different approaches before getting further into any one solution.

Brain storming :

Brain storming, first suggested by Osborne, is a technique adopted with a group of people. The problem is posed to the group and everybody in the group is invited to give ideas. Quantity in ideas is encouraged. All are asked not to criticise any of the other's ideas. They can combine or add upon the ideas given by others. All the ideas are recorded. Discussions of the ideas take place later. Brain storming seems to be successful in overcoming inhibitions which come into play if one starts thinktng for a long time. Here the time allowed is normally short, to get the spontaneous reaction of the mind to the problem. Brain storming is usually done with a group of four or more. Including people with experience in the fields concerned seem to produce better results.

Brain storming could be applied at any stage of the problem provided the sub-problems could be put in simple form. The brain storming technique could be used by individuals as well. Putting down ideas at random without thinking about the end result or feasibility generates number of ideas which can be examined later for further development.

Synectics

Synectics is a theory developed by William J. J. Gordon for conscious use of the pre-conscious psychological mechanisms present in man's creative activity. Synectics has been basically a group activity. The group consists of necessarily people from different fields. All the group members are oriented. A group leader controls the activities of the group. The mechanisms suggested for the group could also be used by an individual.

The four mechanisms identified in synectics are

1. Personal analogy
2. Direct analogy
3. Symbolic analogy
4. Fantasy analogy

Personal analogy :

Personal identification with the elements of a problem releases the individual from viewing the problem in terms of its previously analysed elements. The method involves in stating the problem in simple terms and imagining the parts as one self, or imagining one self to travel into that particular situation.

Suppose one is designing a chair. He identifies himself with the chair. Then he would feel how he holds a body, whether he feels like having four legs or no legs, how he feels about supporting the arms... so on. This leads to concepts, details of which are worked out later.

Direct analogy :

This mechanism describes the actual comparison of parallel facts, knowledge or technology. Sir Brunel solved the problem of underwater construction by watching a shipworm tunnelling into a timber. The worm constructed a tube for itself as it moved forward, and the classical motion of caissons came to Brunel by direct analogy.

The process here is basically one of taking a direct comparison from different fields. Examples from nature have many a time produced original concepts in other fields. Using people from highly divergent fields has produced interesting results in synectic groups. For individual application, knowledge and interest in

diversified fields and drawing analogies from these fields could help in producing creative concepts.

Symbolic analogy :

This mechanism differs from the identification aspect of personal analogy in that symbolic analogy uses objective impersonal images to describe the problem. The individual effectively uses this analogy in terms of poetic response. He summons up an image which, though technologically inaccurate, is aesthetically satisfying. It is a compressed description of the function or elements of the problem as he views it. A synectic group was posed with the problem of inventing a jacking mechanism to fit into a box not bigger than four by four inches yet extending out and going up three feet and supporting four tons. The group came out with a symbolic analogy of Indian rope-trick where the rope stands in the air. They developed the idea of using a steel tape or something like bicycle chain which gets linked when it comes out of the box. This would be stiff because each chain can bend only in one direction. In the box they separate out and can be stored in a folded form.

Fantasy analogy :

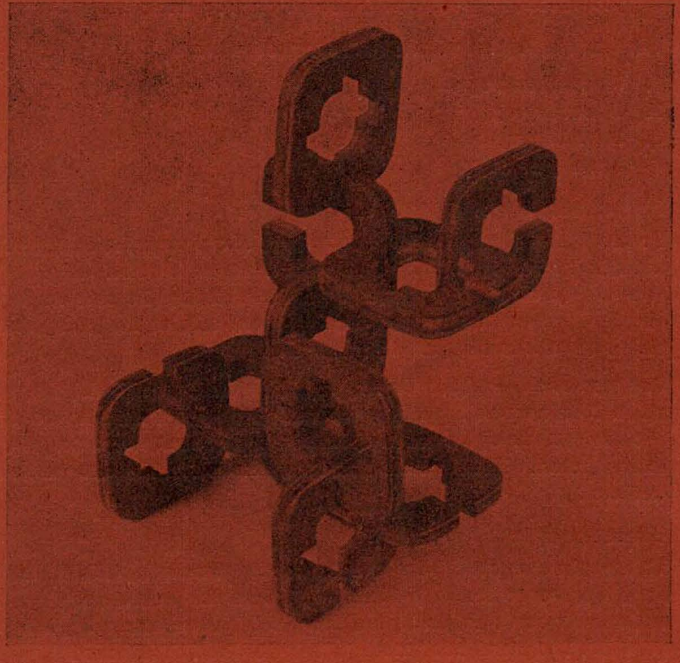
Sigmund Freud's wish fulfilment theory is adopted as fantasy analogy in synectics. For Freud, creativity in general and art in particular, is the fulfilment of a wish. A particular problem is tackled by fantasy analogy by imagining the things to happen as in a fairy tale. One could imagine invisible insects operating mechanisms or a world where gravity is absent or a world where trees walk. Commonsense outlaws such fabrications which go 'blindly' against the established laws. These inconsistencies are irrational. The irrational fantasy analogy operates at a subconscious level because the rational character of man denies himself and the world the vision of that part of himself which is other than proudly coherent.

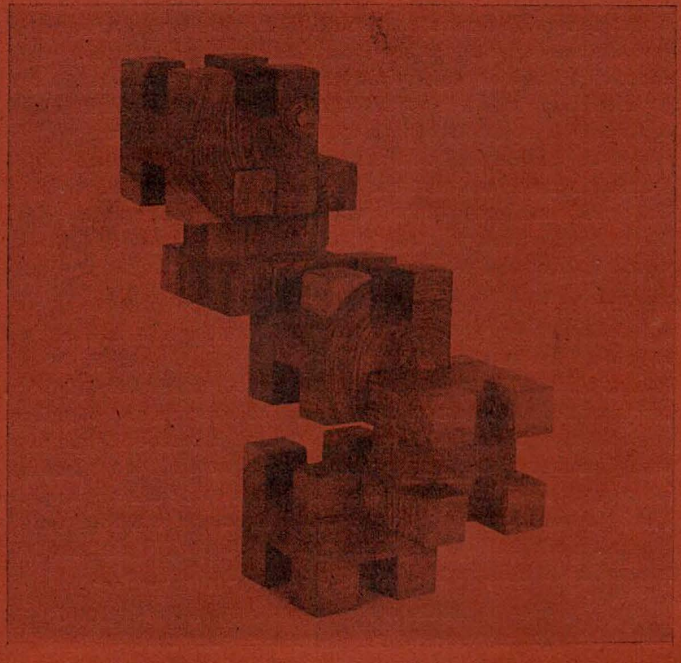
These mechanisms need not be applied separately. The group working may start with one analogy and can drift into other analogies.

Discussed above are the general methods that can be used for any problem. Developing creativity is a slow process and trying several methods could only confuse instead of producing results. It would be worthwhile to examine how these methods can be practised in design education. Most of the design schools start with what is termed as basic course. Basic course happens to be orientation course, in which the students learn about design elements and skills. Here abstract exercises are framed to develop creativity. The general environment of the design schools is normally very informal which helps in developing creative talents. Some of the abstract and product design exercises tackled at the Industrial Design Centre are discussed here.

Abstract exercises in combinatorics:

Here the student is asked to design an element in wood, metal, plastic or ceramic. It should be possible to join the elements with each other to result in a stable structure.
Here the end result is open. They could achieve any number of possibilities by changing the combination.
The exercise mainly tries to avoid the play of inhibition which sets in as soon as a realistic problem is given. The students are encouraged especially to bring in the direct analogy from nature.



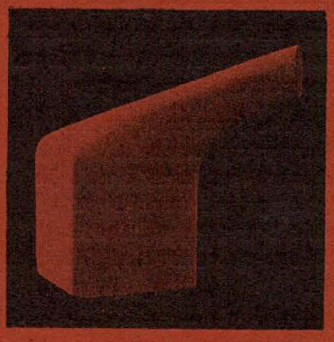


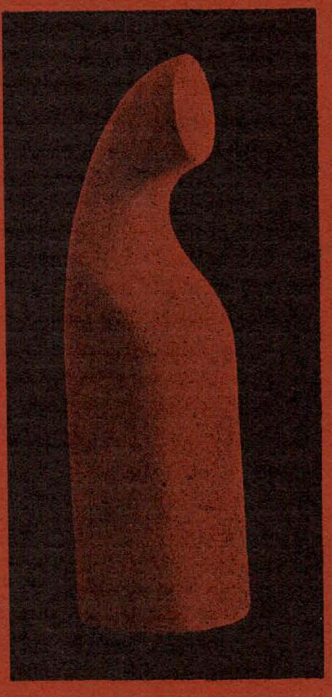
Abstract exercises in formal transition :

When a student is asked to design a handle or a grip it becomes very difficult to originate new ideas because of the previous association with the handles and grips of various products. To get rid of this mental block the problem is fed as an abstract problem. Three students were posed with these problems:

1. A cube to be lifted from top
2. A cylinder standing on the side to be lifted from side
3. A cylinder to be lifted from top.

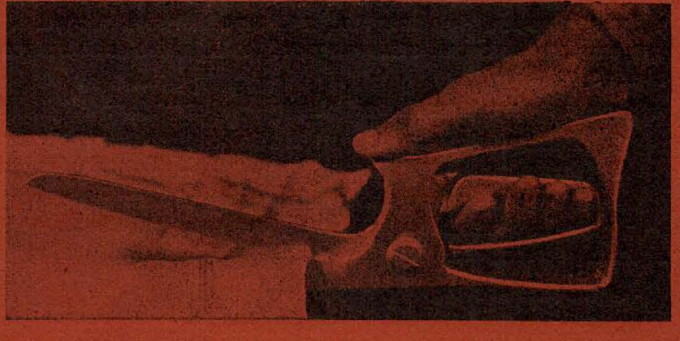
Dimensions of the cube and cylinder were given. The students were asked to find a suitable form to perform the above function. The results show the forms which could not have been generated had the students been asked right away to design a grip for pressure cooker, a round box or a water bottle.





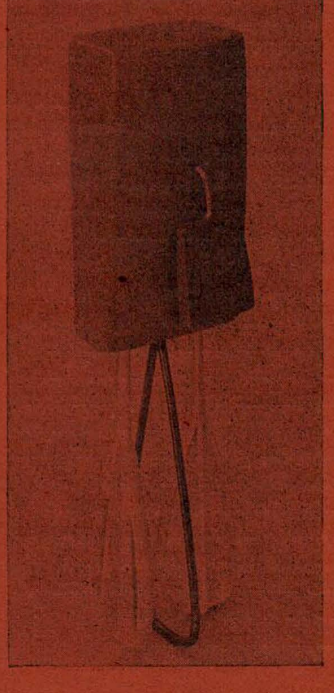
Product design problems :

Product design problems are stated in very general terms. There is wide scope for the student to find out the real problem, make his own statement of the problem and then to find out the solutions. The brainstorming techniques are adopted at several stages with the help of guides. Students are required to produce several alternative solutions. Usually the first idea struck by the student is adhered to strongly. This itself will start to work as a mental block if the alternative solutions are not insisted upon. Usually the concerned guide is in complete touch with all the stages of design. Students are encouraged to put all the crazy ideas that come into their minds. Importance is given to redefining of the problems to gain a different approach. Products shown at the end have a marked variation from the conventional products.



A pair of scissors :

The problem boiled down to designing a pair of scissors to be used by a tailor for 8 hours a day. Scissors used by the tailors are normally heavy and are rested on the table. In conventional scissors both the blades move which makes it difficult to rest on a table. It is brainstorming about this conventional scissors that produced a solution where both the blades need not move. One arm is stationary and can rest on a table whereas the other moves.



Egg beater :

The conventional egg beater operates with a pinion and a worm gear. In the new egg beater the blades are rotated by pulling a nylon string attached to a spring-loaded shaft. Here the problem of designing egg beater was simplified to find a solution as to how else the blades can be rotated? Several alternatives led to the present design which makes the product cheaper, simpler and convenient to operate.

Bibliography :

Edward de Bono	'Creativity and lateral thinking', 'Creativity in Communications' (London, Studio Vista 1971)
Gordon, W. J. J.	'Synectics' : The development of creative capacity. (New York, Harper & Row, 1961)
Jones, J. C.	Design Methods - Seeds of human future (London. John Wiley & Sons, 1970)
Osborne, A. F.	Applied Imagination (New York, Scribener's Sons, 1973)
Buhl, H. R.	Creative Engineering Design (IDWA : Iowa State University Press, 1960).

Ergonomics and its Role in Industrial Design

D. V. Gulati
NITIE, Bombay

The role of industrial designer is becoming more and more complex. He is one of the decisive links between the producer and the user of a product, and as such he has the responsibility of satisfying all the requirements of users through his design.

Ergonomics is the study of human related function in product design. It takes into account the human requirements, capabilities and limitations; it emphasises that "man" should be the focal point right from the design stage and everything else should revolve round. However, this is mostly determined by the "situational" requirements. The age-old concept of "fitting the worker to the job" is no longer valid.

Man may be required to work in a variety of situations, to act as :

1. Source of power and energy 2. Information processor
3. In-charge of vigilance and inspection tasks
4. Decision maker 5. Controller, etc.

In all such tasks, man experiences certain limitations; mental, physical, perceptual, etc. These limitations can very broadly be enumerated in terms of the following important factors :

1. Compatibility 2. Human expectation 3. Knowledge of results 4. Short term human memory 5. Perception 6. Posture and reach 7. Design and man-machine integration 8. Anatomical and physiological factors 9. Environmental and physical factors 10. Personal factors.

In all situations in a system, where the man works as an "integral part", these factors should be in a proper mix". If the mix is not proper the result will be translated in terms of failure or success of man towards the overall achievement of the objective or objectives of the system.

All the above factors can logically be grouped as under :

1. Man–machine factors 2. Work place layout factors
3. Environmental and physical factors 4. Personal factors.

Man–machine is a term used to consider man and his machine as a unit; the word machine is used in a general sense to denote a tool, equipment, etc.

Man-machine factors

Man-machine factors refer to where man and machine interact to achieve some objectives. It is not enough to design a machine which will merely do the job but it is also necessary to make sure that it will enable the interaction between the man and machine within the system to take place in a reasonable way. It is, therefore, of the utmost importance that man should be considered as an integral part of the system. It is this integrated man-machine approach which helps in producing intrinsically safe and highly productivity-oriented machines. This objective can be achieved conveniently if considerations are given to it at the design stage– it will then be building into the machine the "avoidance of accidents" and "productivity" factors.

The essential characteristic of a man-machine system is that it forms a closed loop servo system. Man receives information from machines through his sense organs which is passed on to central mechanism where this information gets processed. The information is then utilised in taking actions; necessary messages are despatched through motor nerves to the muscles of the limbs which operate the various controls of machines. The effectiveness of a machine in terms of efficiency and reliability depends upon how accurately and easily the human operator can operate and control it. It also depends, to quite a great extent, upon type and way in which the initial information is presented to the sense organs as a final action through muscles and limbs will be mainly dependent upon the input information. Ambiguous input information can lead to wrong actions through controls.

Placing of controls in odd positions can prove to be quite fatiguing. Besides, in the event of an emergency such positioning can delay actions and also lead to grave mistakes and errors. Items of equipment, placement of controls, work situations, etc. could be designed with human dimensions in man. This will contribute not only to human comfort and convenience but also to the effectiveness of the human performance. It is also helpful if man is able to see the result of his actions; blind actions can often lead to disaster!

The controls should be so designed that they agree with the stereotyped expected direction of movement; also the controls for the similar machines should be standardised.

Work place layout factors

In the design of equipment and process the position of switches, knobs, cranks, pedals, gear levers, items of assembly need to be considered in relation to the working position of the operator, his capacities, and his reach. This necessitates measuring the dimension of the various parts of the body, such as, height, trunk, length, taking into account the range of variations of individuals around the average. It also calls for the study of the operations of various muscular levers and investigation of the forces which can be applied in various positions by different groups of muscles. Designing work situations, work areas, tables, chairs and other equipments with consideration of human dimensions can contribute to human comfort, convenience and better overall performance. Broadly, the problems of work place layout can be listed as under :

1. Work place dimensions 2. Locating controls and displays
3. Display layout 4. Control layout 5. Seats and panel design 6. Location of shared controls and displays.

Environmental and physical factors

In ergonomics these factors broadly refer to thermal stress, lighting and colour, noise, vibrations, etc. and their effects on human performance. In actual practice it becomes very difficult to establish cause–effect relationship in specific cases, but certainly their adverse conditions affect either human comfort or result in fatigue or incapacitate man, depending upon the relative intensity. These factors should be given proper consideration at the time of designing of the work situations.

Personal factors

These factors refer to ageing, rest pauses, physiological rythms, shift work, etc. Such factors, if not considered in proper perspective, are responsible to quite a great extent for causing fatigue and thus retard human efficiency. Knowledge of these factors contribute in their own way to overall design effectiveness.

Conclusion

The factors discussed above are best taken care of and the consideration is given at the design stage itself. The advantages of such an approach are manifold :

1. More production and higher productivity 2. Less fatigue, more human comfort and convenience 3. Better decisions
4. Increased safety 5. Better integration.

It has not been the intention here to portray that industrial designers forget the users while designing their products; rather they contribute to the knowledge about men, in their own way, to meet the changing demands of society and the total environment.

In industrially advanced countries considerable importance is being given to this awareness and the industrial designers themselves undergo courses in Ergonomics, and if need be, associate the professionals in this area in designing work. In India, concerted efforts have yet to be made to give a fillip to the movement which at the moment is very disorganised.

Students' projects स्टूडेण्ट प्रोजेक्ट

Faculty projects फेकल्टी प्रोजेक्ट

The students' projects given in the following pages deal with the practical problems of daily life. An effort has been made in choosing relevant problems and in finding out innovative solutions. However, all the projects had to be within the limitations of 15-month training programme. Further, an industrial designer, in practice, seldom works in isolation, and works closely with the mould designers, tool designers and production engineers to bring out a product. In this respect the products presented here need further detailing and development before they go into production. We believe that many of these solutions are worth developing further and look forward to co-operation from any source in this direction.

निम्नलिखित स्टूडेण्ट प्रोजेक्ट दैनिक जीवन की व्यवहारिक जरूरतों से सम्बन्धित है। योग्य विषयों के चुनाव एवं नवीन सुझावों की खोज में प्रयास किया गया है। फिर भी १५ महिनों के शिक्षा – कार्यक्रम में ही हरेक प्रोजेक्ट सीमित थे। कार्यक्षेत्र में एक इन्डस्ट्रीलय डिजाइनर शायद ही अकेले काम करता है और एक प्रोडक्ट को सही रूप देने के लिए मोल्ड डीजाईनरों, टूल–डीजाइनरों और प्रोडक्शन इंजनियरों के साथ काम करना निहायत जरूरी होता है। इस तरह यहाँ दिये–गये प्रोडक्ट, प्रोडक्शन में जाने के पूर्व, कुछ और विवरण और विस्तार चाहते है। हम मानते हैं कि इनमे से कई सझाव अभी विस्तार के लायक है और इस दिशा में किसी भी तरफ के सहयोग की आशा रखते हैं।

Faculty projects which follow the students' projects comprise of consultation projects as well as study-research projects. The time-bound consultation projects taken from the industry acts as a testing ground for the creative concepts generated at the Centre.

All the projects are worked out in close consultation with the engineers and technicians of the industries concerned. The Centre, so far, has tackled wide ranging projects in different fields, starting from the redesign of a 16 mm projector to the design of an exhibition for the Education Ministry. However, details of many projects could not be presented as the organisations concerned have yet to introduce these products in the market.

स्टूडेण्ट प्रोजेक्ट के बाद आनेवाले फेकल्टी प्रोजेक्ट, परामर्श प्रोजेक्टो और अध्यपन-अनुसन्धान प्रोजोक्टों को सम्मिलित करते हैं। विभिन्न उद्योग-संस्थाओ से लिये गये समय सीमीत परामर्श प्रोजेक्ट, सेन्टर में उभरे काल्पनिक विचारों को कसौटी पर उतारतें हैं। सम्बधित उद्योग-संस्थाओ के अभियन्ताओं एवं तकनीकों के परामर्श से हरेक प्रोजेक्ट पर कार्य किया जाता है। सेन्टर ने, १६ मी. मी. प्रोजेक्टर की पुर्नडीजाइन से लेकर शिक्षा–मन्त्रणालय की प्रदर्शनी तक के विभिन्न क्षेत्रों के विविध प्रोजेक्टों पर कार्य किया है। फिर भी, कई प्रोजेक्टों की डीटेल यहाँ नहीं दी जा सकी है क्योंकि कई सम्बन्धित संस्थाओं के प्रोडक्ट अभी बाजार में प्रवेश करनेवाले हैं।

Enlarger

छाया चित्र अवर्धक

Design : K. K. Trivedi
Guide : M. Chattopadhyay

Import substitution of scientific and photographic equipment is taking place at a slow pace. Most of the products manufactured are copies of old designs. Consequently, the import of new models of these products are stopped altogether. The manufacture of these old designs continues leading to consumer dissatisfaction. In fact, many of these manufacturers are hardly aware of the latest developments in these products and they generally do not have any plans for improvement of such products. Developing these products further within the constraints of available materials and manufacturing processes is an important aspect of industrial design today. Redesign of photographic enlarger was undertaken as a diploma project with these considerations.
The solution is based on the requirements of commercial photographers who form the bulk of the users. Salient features of the new design are

1. use of inexpensive, easily available 'opal-lamp' in the place of imported enlarger lamp.
2. swivelling arrangement for enlarger head into horizontal position for bigger enlargements or projection of transparencies.
3. easy movement of lamp house, up and down with one hand.
4. screw-type focussing knob for precise focussing.
5. scale on the enlarger column for easy record in case of repeat orders.
6. white, PVC covered base for direct focussing.
7. use of simple, clean forms which create an image of precision.

वैज्ञानिक और छाया चित्रण सामग्री की आयात अतिपूर्ति सामग्री बहुत धीरे–धीरे हो रही है । उत्पादित सामग्री ज्यादातर पुराने ढाँचो की अतिकृतियाँ हैं । फलस्वरूप इन सामग्रियों के नये नमूनों की आयात पूर्णतया बन्द हो गई है । पुराने किस्म के ढांचों का उत्पादन अभी भी जारी है और ग्राहक असन्तुष्ट हैं । बहुत से निर्माता इन सामग्रियों के नये–नये आविष्कारों से अनभिज्ञ हैं और इनके पास इन सामग्रियों के लिए कोई विकास योजना भी नहीं है । इन सामग्रियों का प्राप्त साधनों तथा निर्माण क्रियाओं को ध्यान में रख कर विकास करना औद्योगिक आविष्कार का एक महत्वपूर्ण अंग है । इस दृष्टि से छायाचित्र अवर्धक की नव–रचना डिप्लोमा योजना के अंतर्गत शुरू की गयी । यह सुझाव सामग्री के बड़े ग्राहकों की, जो कि अधिकतर व्यापारी फोटोग्राफर हैं, जरूरतें पूरी करने की दृष्टि से किया गया है । नयी रचना के प्रधान अंग निम्न हैं ।

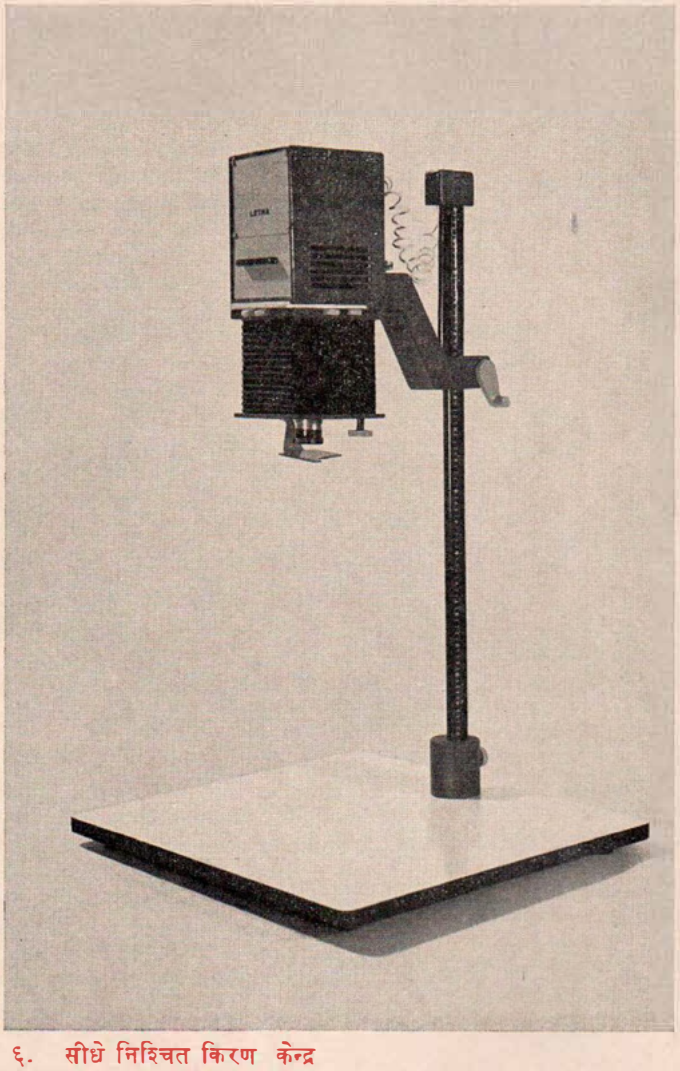
१. आयात किए जाने वाले वर्धक लैम्प के बदले आसानी से मिलने वाला और सस्ता 'पोलकी लैम्प' ।

२. छायाचित्रों की और पारदर्शकों की बड़ी आकृतियाँ निकालने हेतु अलंबक हेड को समतल स्थिति में घुमाने की व्यवस्था ।

३. दियाधर को एक हाथ से आसानी से ऊपर–नीचे करने की व्यवस्था ।

४. निश्चित किरण केन्द्र साधने–हेतु पेंचनुमा नॉब की व्यवस्था ।

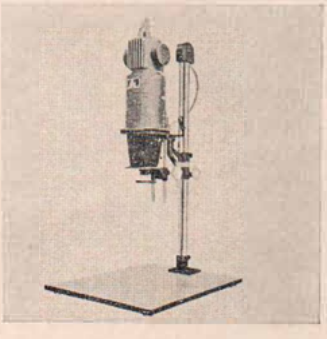
५. अतिकृति पुर्ननिर्माण हेतु आलंबक पर परिमाण व्यवस्था ।



६. सीधे निश्चित किरण केन्द्र के लिए पी० वी० सी० से ढका हुआ सफेद आधार ।

७. सूक्ष्मता के आभास के लिए सादे और स्वच्छ नमूनों का निर्माण ।

Enlarger used at present.



Sewing machine

शिलाई की मशीन

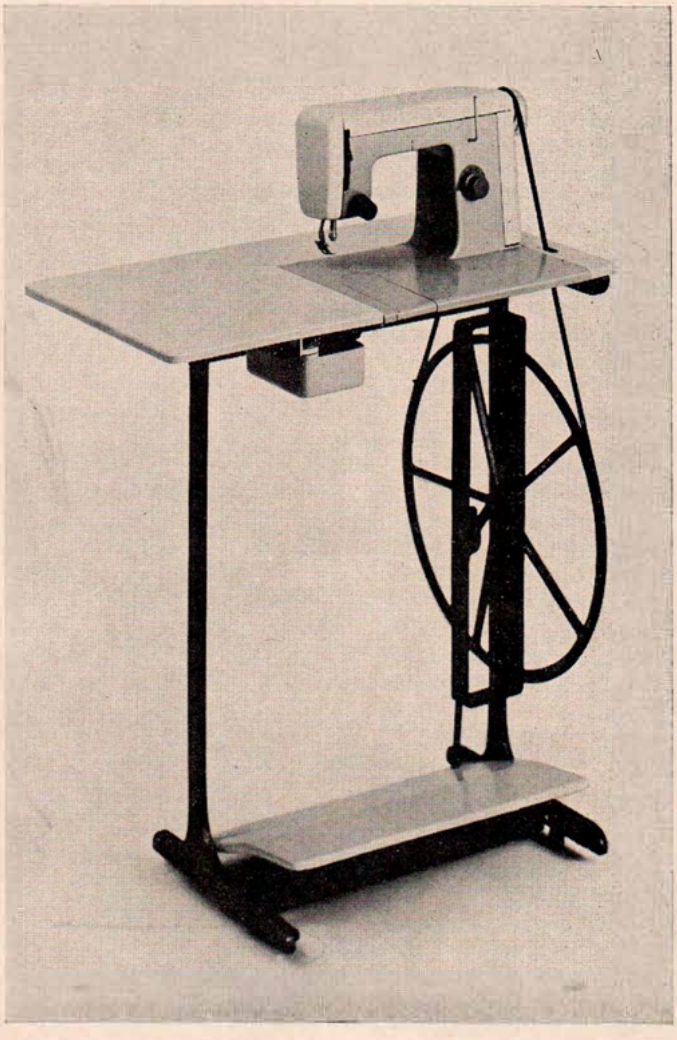
Design : S. A. Mahindrakar
Guide : A. G. Rao

In 1947, around six thousand sewing machines were being made in India. The use was restricted to mostly professional tailors. Now over seven lakhs sewing machines are produced and sold annually. A large part of it has reached villages and small towns mainly through Government loan-schemes. Many housewives use these machines for extra earnings. It has become popular in cities as well, due to the high charges of the professional tailors. In spite of these developments the sewing machine still looks more like a machine in the workshop than a household equipment. Study of this product in detail led to the redesign of the present unit. In the new design the basic structure of the machine is simplified to give more leg-room. The foot pedal is pivoted at the front end for increased leverage and comfortable operation. The machine can be folded as shown to get a plain surface at the top. The redesigned controls ensure safety and ease of operation. The unit fits into the household environment.

१९४० में भारत में करीबन ६,००० सिलाई मशीनों का उत्पादन होता था । इन यंत्रों का इस्तेमाल ज्यादातर धंधेवाले दर्जी ही करते थे । अब सालाना करीबन ७ लाख मशीनों का उत्पादन और बिक्री होती है । इनमें से बहुतसारी मशीने सरकारी कर्ज योजना के अनुसार देहातों तथा कसबोंतक पहुँच जाती है । कई गृहणीयोंने परिवार की अतिरिक्त आमदनी बढाने हेतु इनको अपनाया है । धंधेवाले दर्जियों के बढ़े चढ़े दामों की वजहसे शहरों में भी अब इनकी खपत बढ गई है । तिस पर भी यह मशीन एक घरेलू सामान जैसी दिखने के बजाय कारखानों की एक मशीन जैसीही दिखती है।

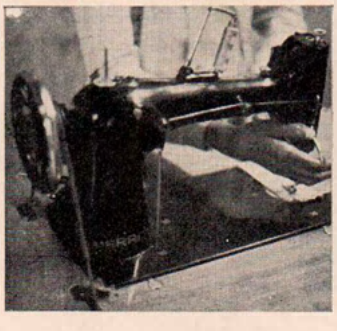
इस मशीन का गहरा अभ्यास कर वर्तमान युनिट का अविष्कार किया गया । पैरों की हलचल सुलभ हो इस ख्यालसे नयी मशीन के ढांचे में परिवर्तन किया । पैरों की बैठक सामने लगाकर मशीन चलाना आसान हो गया है ।

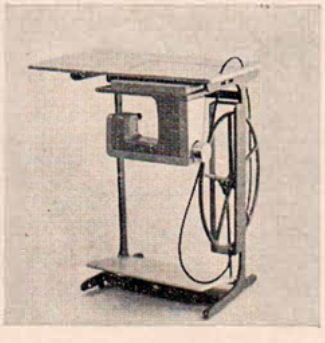
जैसा कि दिखाया गया है, सीने का काम न करना हो तब मशीन के ऊपरी हिस्से को नीचे झुकाकर मशीन को टेबल जैसा इस्तेमाल किया जा सकता है । किसी भी किस्म के खतरे से बचने तथा चलाने में आसानी सधने हेतु नये नियामक अविष्कृत किए है । यह, अविष्कृति घर के अन्य सामान के साथ सुसंगत दिखती है ।



The new design in the folded position.

Sewing machine used at present





Electric geyser

विद्युत गीज़र

Design : B. Bhaumik
Guides : S. Nadkarni
U. A. Athavanker

We often do not realise how unsafe our environment is, with all the electrical gadgets we use. For instance, an instant electric geyser connected to a shower could very well blow off if you just close the water inlet and forget to put off the electric switch. The safety valves provided are unsatisfactory. Further, these gadgets look unsafe by their very appearance. The instant type electric geyser was studied and redesigned with safety, economy and suitability to the environment as the main considerations. In the proposed design the basic principle of heating the water by passing current through a pair of plates dipped in water is used.
The main container is partitioned into two compartments. Water enters at the bottom of one portion, gets heated up and passes on to the next compartment. The hot water is taken out at the bottom of second compartment. All the controls are brought to one place by this arrangement which reduces the plumbing problems to a great extent. A new inlet valve is introduced which drains out the water in the geyser when the water inlet is closed. Consequently, no current will be flowing in the geyser. This eliminates the chances of steam formation and pressure build-up which could lead to an explosion.

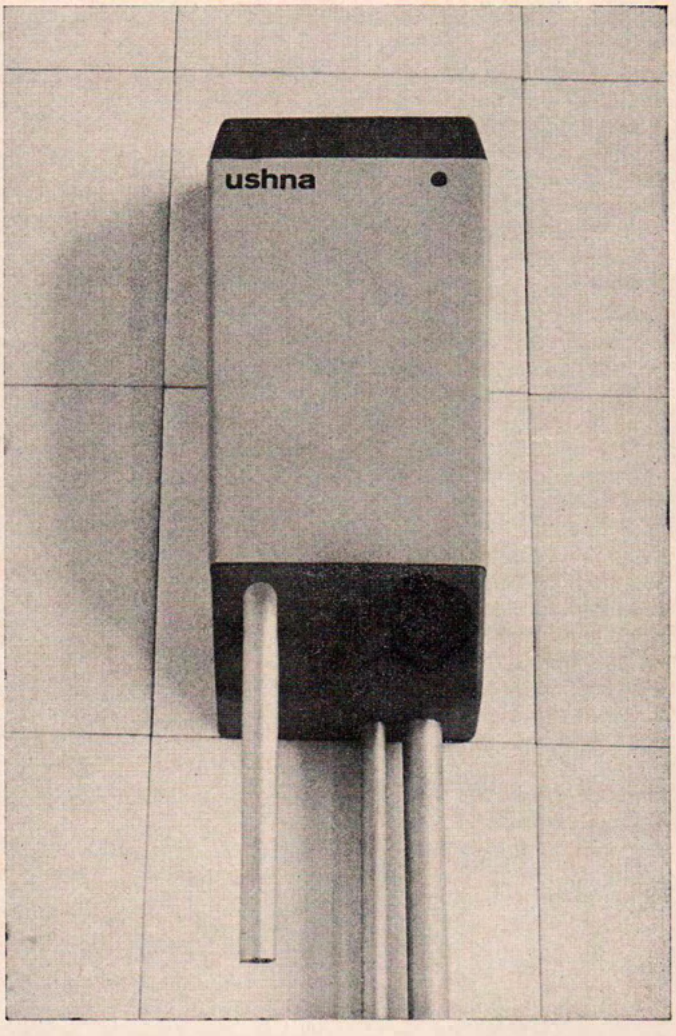
Other features of the design are

- Use of die-cast aluminium body to reduce cost.
- Elimination of need for separate marble plate.
- Possibility of placing the controls at a convenient height, away from the heating unit of the geyser.
- Use of compact rectangular form which is in harmony with the interior of a modern bath room.

प्राय: हम यह नहीं सोचते कि घरेलू विद्युत साधन हम लोगों के लिए कितने असुरक्षित हो सकते हैं । जैसे कि पानी की टोंटी बंद करने के बाद यदि भूल से बिजली का स्विच बंद न किया जाय तो झरने से जुड़ा हुआ तत्कालिक विद्युत गीज़र फट सकता है । सुरक्षित कपाट की रचना असंतोषजनक है । इसके अतिरिक्त इसकी रचना देखने में असुरक्षित लगती है । सुरक्षा, मितव्ययता तथा वातावरण अनुकूलता की दृष्टि से तत्कालिक विद्युत गीज़र की रचना का अध्ययन किया गया । इसकी रचना पानी में डूबी हुयी दो प्लेटों से विद्युत धारा प्रवाह करके पानी गर्म करने के सिद्धान्त पर आधारित है । टंकी दो भागों मे विभाजित की गयी है । एक भाग में पानी गर्म करके दूसरे भाग में ले जाया जाता है । दूसरे भाग की पेंदी से पानी बाहर निकलता है । सभी नियंत्रकों को एक स्थान पर लगाया गया है जिससे बहुत सी नलकारी समस्यायें हल हो जाती हैं । एक नये प्रवेशिका कपाटी का निर्माण किया गया है जो कि पानी की टोंटी बंद होने पर गीजर मे रुके हुए पानी को बाहर निकाल देती है, जिससे विद्युत प्रवाह बंद हो जाती है । इस व्यवस्था में भाप बनने तथा उसके दबाव से विस्फोट की सम्भावना समाप्त हो जाती है ।

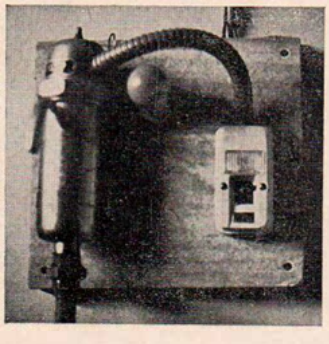
इस रचना की और विशेषतायें निम्न हैं :

- कम कीमत वाली डाय्– कास्ट एल्युमिनियम के बने ढांचे का उपयोग ।
- संगमरमर की प्लेट के उपयोग का बहिष्कार ।
- नियंत्रकों को गीजर से दूर परंतु यथा–योग्य ऊंचाई पर रखने की सम्भावना ।

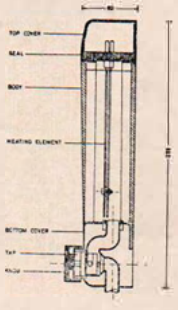


आधुनिक स्नानगृह की सुन्दरता को ध्यान मे रख कर आयताकार आकार का उपयोग ।

Existing unit.



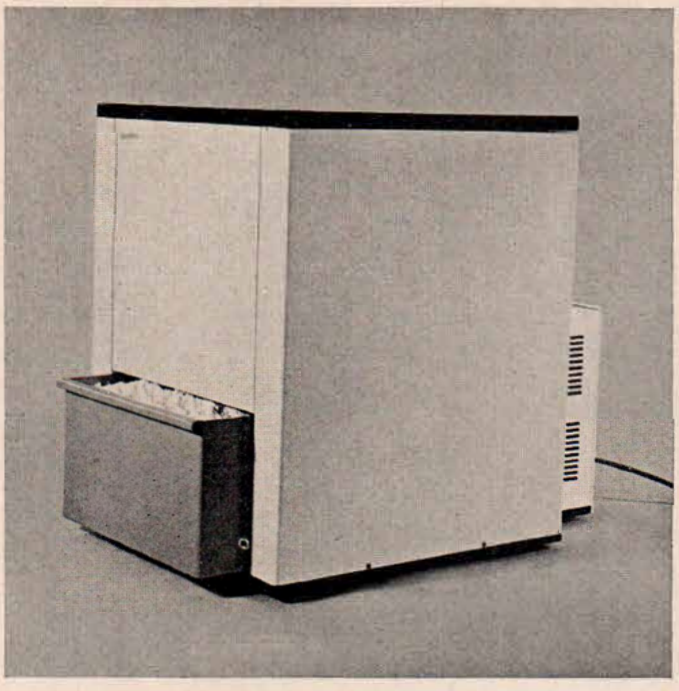
Cross-section of the new design

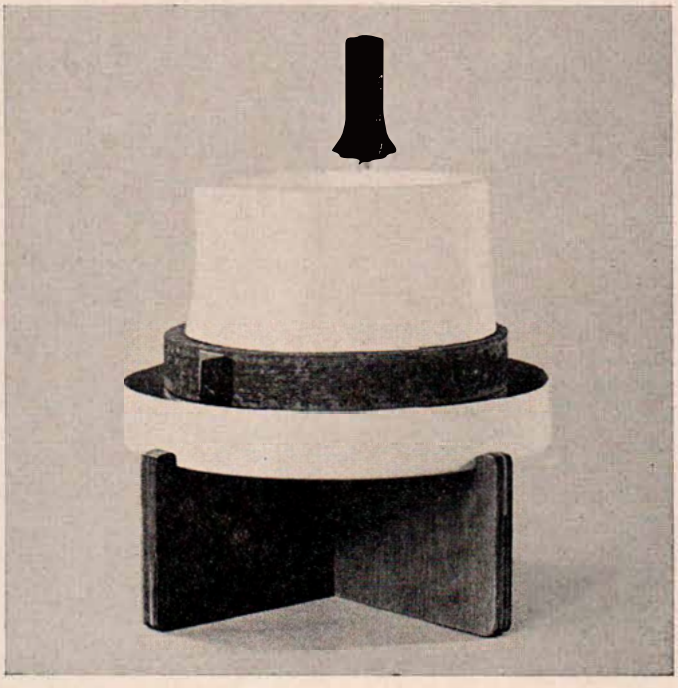


Domestic flour mill

घरेलू चक्की

Design : S. B. Bidre
Guide : M. Chattopadhyay





Getting flour ground from the foodgrains is a problem in a village or a city. Often villagers go to the nearby towns for this purpose. Even in towns and cities one has to carry the food grains to the flour mills and spend a lot of time. Consequently, the traditional stonewheel is still used to a large extent.

Study of this problem as a diploma project led to two solutions, one for hand operated unit and the other for power driven unit.

In one solution (top-right) conventional stonewheels are retained because of the low cost. A hopper and tray, made of polystyrene are introduced. The unit rests on a wooden frame. Flour is collected below the tray through a hole in the tray by means of a rubber slider attached to the top wheel. The handle is rigidly fixed to the top wheel. The additional cost will be Rs. 25/-.

In the power driven unit the same conventional stone-wheels are used along with the plastic hopper and tray. The top wheel is fixed and the motor driven bottom wheel moves in a pedestal bearing. The casting is made of fabricated M. S. sheet.

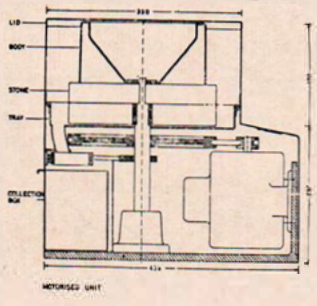
The unit can be easily cleaned and costs less than the present units mainly because of the use of easily available stonewheels and elimination of the springs. The estimated cost of the unit is Rs. 1,100/-.

अनाज पीसने की समस्या देहातों में तथा शहरों में भी है। पुरानी पत्थरी चक्की अभी भी प्रचर मात्र में इस्तेमाल की जाती है। दो प्रकार के आविष्कारों से इस समस्या को हल किया। पहले अविष्कारमें पुरानी पत्थर-वाली चक्की के पत्थर लागत कम होने की वजहसे कायम रखें है और पोलिस्टेरिनके हॉपरतथा ट्रे का नया इन्तजाम किया है। पूरे यूनिट के लिए लकडी का बैटक है। ट्रे में किये हुए सुराख द्वारा ट्रे के नीचे पीसा हुवा अनाज उपर के पैयों को जुडे हुवे एक रबर स्लायडर की मदद से इकट्ठा किया जाता है। ऊपर के पहियों में हेंडिल पक्का लगाया है।

बिजली चलित युनिट मे भी वही पुरानी चक्कीवाले पत्थर और प्लॉस्टिक के हॉपर तथा ट्रे इस्तेमाल किये है। उपर का पैया अचल रहकर मोटर चलित नीचेका पैया पेडेस्टेल बेअरिंगमें घूमता है।

युनिट की सफाई असानीसे की जा सकती है और मौजूदा युनिटसे इतनी कीमत भी कम है, क्यों कि चक्कीके पत्थर आसानीसे मिलते है और इसमें स्प्रिगका इस्तेमाल नही किया जाता। युनिट की कीमत करीबन रू. ११०० है।

Inside details of the redesigned power driven unit.



Improved manually operated grind wheel

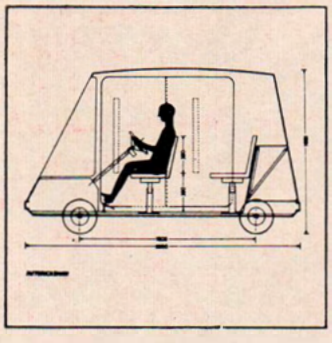
Conventional stone grinder

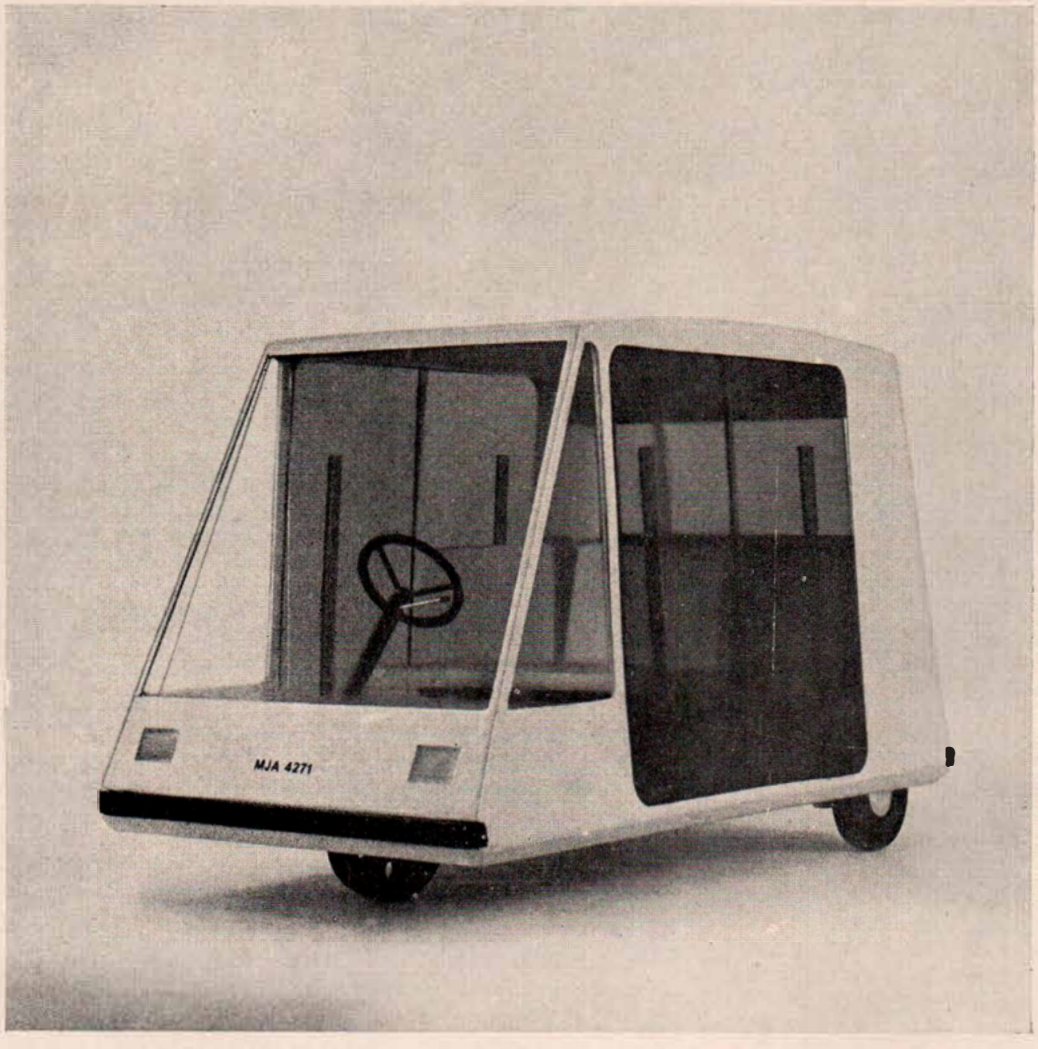
Autorickshaw

Design : J. Arvind
Guide : S Nadkarni

ऑटोरिक्शा

Autorickshaw used at present





Automobile industry in our country mostly runs under foreign technical collaborations. Few new models have appeared in the past. The changes made in these models are marginal and are far from solving the problems of comfort and safety. Autorickshaw is one such vehicle which has changed very little. Redesign of autorickshaw was tackled more to generate new ideas in this perspective than to give final technical solutions. The basic structure of the unit is kept as it is. An additional seat beside the driver is provided, which makes it possible to carry three persons besides the driver. Each seat is fixed through a suspension system. This reduces the vibrations to a great extent. The backrest of the front seat can be folded to convert the seats into a bed.
Dished type collapsible steering wheel is used for safety and comfort of the driver. Storage arrangement for luggage is provided at the backside. Baggage of bigger size can be accommodated by opening the door of the storage unit. A separate compartment is provided for the tool-set. The changes in the outer body give better visibility to the driver in addition to projecting a new image.

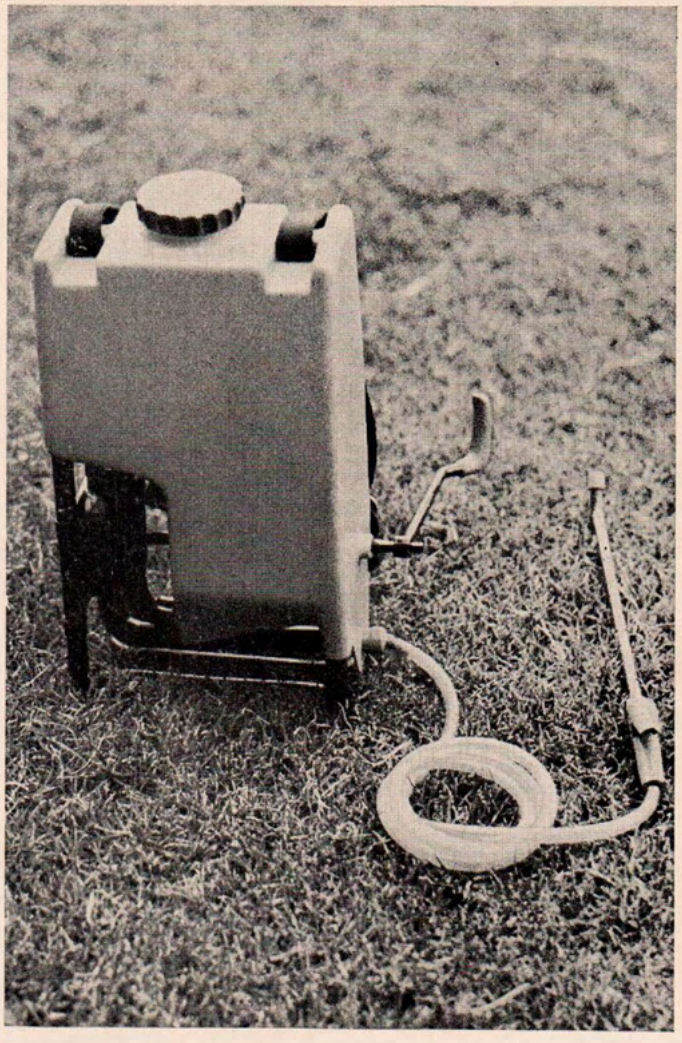
अपना देश मोटर उद्योग में ज्यादातर विदेशी तांत्रिक सहायतापर निर्भर है । पिछले वर्षों में बहुत कम नये मॉडेल निकाले गये है । इन मॉडेलों मे किये गये हेरफेर नगण्य है और खतरा टालकर आराम बढाने की समस्या हल नहीं हुई है । इस दिशामें नयी कल्पनाओंको साकार करने हेतु ऑटोरिक्षा में नवी अविष्कृति की गई ।

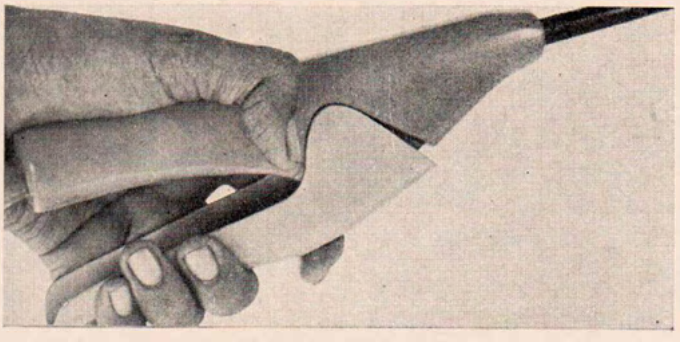
ऑटोरिक्षा के मूल ढांचे में बदल न करते हुए ड्राईव्हर के पास एक अतिरिक्त बैठका इन्तजाम किया जिससे ड्राईव्हरके अलावा तीन अन्य व्यक्तियों को सफर करना मुमकिन हुवा है । इन् तीन सीटोंको एक दूसरे को जोडा है जिससे कंपन कम हो जाता है । अगले सीट का पीठ–विश्राम हिस्सा नीचे झुकाकर सोने के लिये जगह तैयार की जा सकती है । ड्राइवर की सुविधा हेतु डिश जैसा नियामकचक्र बनाया है । पीछे की ओर सामान रखनेका इन्तजाम किया है । भंडार कक्ष का दरवाजा खोलकर वहाँ सामान रखा जा सकता है । हथियार–पूर्जे आदि रखनेके लिये अलग कक्ष का इन्तजाम किया है । ऑटोरिक्षा के बाहरी हिस्से में किये हुवे परिवर्तन से ड्राइवर को दिशादर्शन आसानीसे होकर नयी अविष्कृती का परिचय भी दिया जाता है ।

Pesticides sprayer

कीट नाशक फुहारा

Design : S. Srinivasan
Guide : A. G. Rao





Pest control is a problem of grave concern to the farmer. Only rich farmers can afford modern methods of spraying by helicopters. Most of the farmers resort to the use of hand operated equipment.

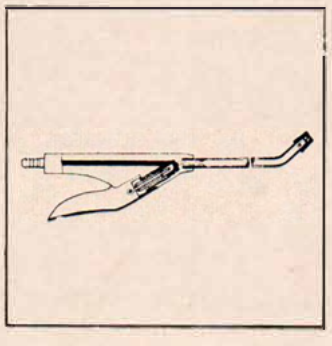
These hand operated sprayers and dusters are normally carried on the back of the person. Carrying the unit at the back and spraying in the field could become an impossible task unless adequate attention is paid to the comfort of the person at the designing stage itself.

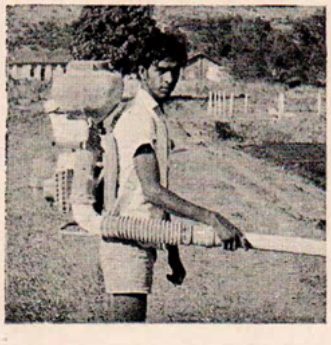
Hand operated sprayers and dusters were studied in detail. It was observed that many of the farmers are unable to buy both sprayer and a duster. A new unit which can act both as a sprayer and duster was designed. The shape of the storage tank was developed for easy carrying on the back. The shape and length of the handle were chosen for convenient operation. The shoulder straps with waist belt can be adjusted to any height as desired. Proper grip for rhe trigger facilitates easy operation. The unit made of mainly HDP and PVC components would cost much less than the combined cost of a conventional sprayer and duster.

कीट नाश एक चिन्ताजनक समस्या है । सिर्फ धनवान किसान ही हेलीकाप्टर फुहारों द्वारा कीट नाशक औषधियों का फसल पर छिड़काव करते हैं । ज्यादातर किसान हाथ-चलित उपकरणों से ही फुहारे लगाते हैं । यह उपकरण जो छिड़काव करनेवाले के पीठ में बंधा होता है, खेतों में छिड़काव करते समय काफी कष्टदायक साबित होता है । इस कारण चलाने वाले के सुविधा का ध्यान इस उपकरण के औद्योगिक निर्माण में रखना बहुत आवश्यक हैं ।

नया डिजाईन देने हेतु हाथ–चलित फुहारों के उपकरणों तथा डस्टर्स का गहाराई से अध्ययन किया गया । यह देखा गया कि बहुत से किसान फुहारा यंत्र तथा डस्टर दोनों खरीदने में असमर्थ हैं । इस लिए दोनों क्रियायें करने वाले एक ही उपकरण का अविष्कार किया गया । औषधि–संग्रह टंकी का आकार पीठ पर सुविधापूर्वक ढोने की दृष्टि से दिया गया । हाथ–चलित डंडी का आकार तथा लंबाई चलने–फिरने की सुविधा को ध्यान में रख कर निश्चित की गयी । कंधे तथा कमर के पट्टे आवश्यकतानुसार ऊपर–नीचे किए जा सकते हैं और ट्रिगर की पकड़ बहूत सुविधाजनक है । यह उपकरण जो अधिकतर एच. डी. पी. और पी. वी. सी. का बना होगा, उपलब्ध फुहारा यंत्र और डस्टर काफी कम कीमत का होगा ।

The details of the grip.
Cross-section of the new grip.
The duster used at present.
Use of duster in the fields.

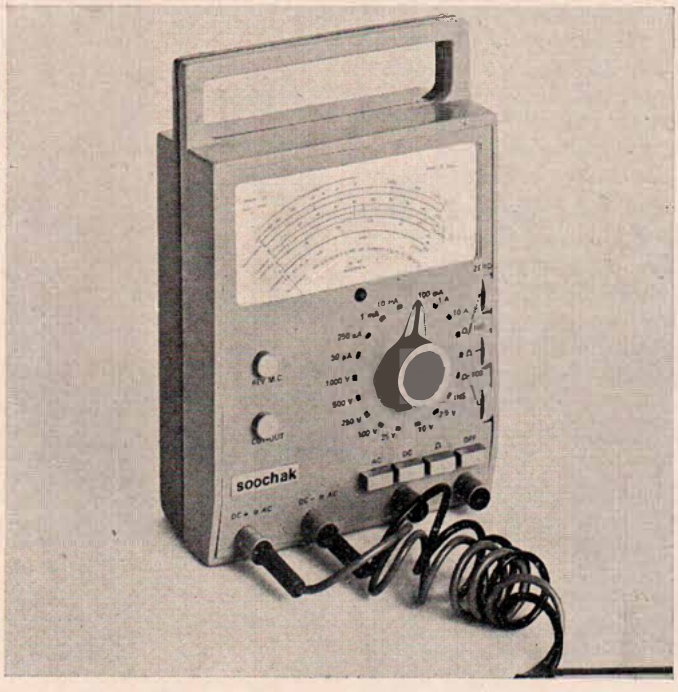


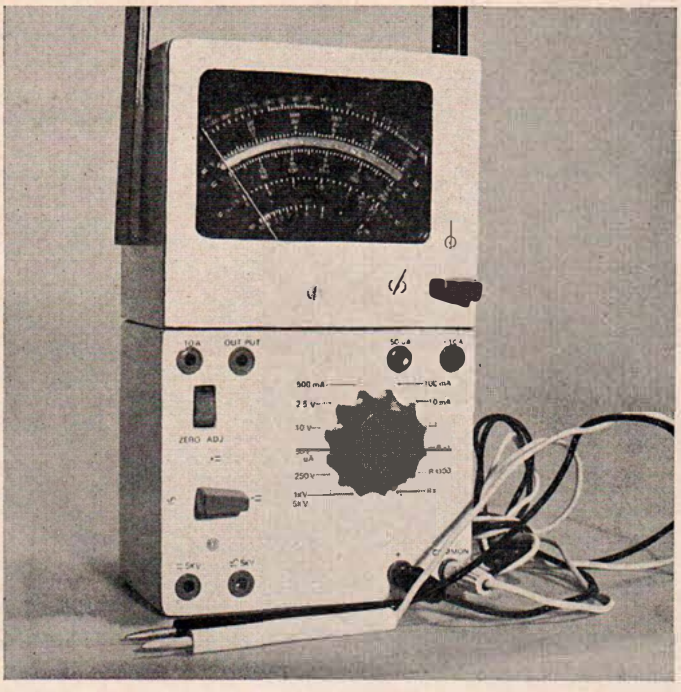


Multimeter

मल्टीमीटर

Design : L. Jethwa
R. A. Naik
Guide : A. G. Rao





Perceptual organisation is a significant contribution of industrial design in the overall development of a product. Lack of visual organisation which can lead to errors, is frequently observed in the scientific instruments produced in India. These errors could be of major consequences in measuring instruments. Study and design of multimeter was tackled with a view to increasing the operational efficiency by rearranging the various elements in it. Two solutions were arrived at.

The first solution uses the existing internal mechanism with minor changes. The improved visual organisation facilitates easy relationship between dials and knobs with improved readability. By placing terminal knobs at the bottom the problem of connecting wires crossing the dials, is avoided. The handle is integrated with the unit.

In the second solution 'portability' is emphasised. The unit is made small enough to be held in one hand. A modular system is developed to get the different ranges in readings. The dial unit at the top will be common and can be plugged to the control unit according to the range required. Control units for different ranges can be supplied to the users.

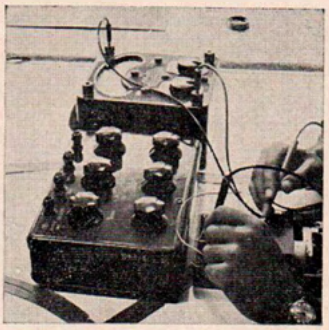
किसी प्रोडक्ट के पूर्ण विकास में इन्डस्ट्रीयल डीज़ाइन के दृष्टि संगठन का महत्वपूर्ण योग है। भारत में बने प्रायोगिक यन्त्रों में दृष्टि संघटन की कमी प्राय: पाई जाती है जो कि अशुद्ध परिणामों का कारण बन जाती है। मापक यन्त्रों में ये अशुद्धियाँ विशेष जिम्मेदार होती है। मल्टीमीटर की डीजाइन और उसका अध्ययन इन्हीं विचारों से किया गया जिससे कि इसके विभिन्न भागों को संगठित करके ज्यादा से ज्यादा कार्यक्रम बनाया जा सके। इस दृष्टि से दो सुझाव सामने आयें।

पहला सुझाव वर्तमान यंत्र रचना के साथ हल्के परिवर्तन लिये हुए है। मुख्य सुधार दृष्टि संगठन में है जो कि डायल और न्ाब के सरल सम्बन्ध में सहायक होते हुए डायल के पढ़ने की क्षमता बढ़ाता है। निचले हिस्से में टरमिनल न्ाब को व्यवस्थित करके डायल पर से गुजरते तारों को हटाया गया है। यन्त्र के साथ हेन्डल जुड़ा हुआ है।

दूसरे सुझाव में 'लघुभारता' का विशेष ध्यान रखा गया है। यन्त्र की बनावट इतनी छोटी है कि वह हाथ में सम्भाला जा सके। डायल की आधुनिक बनावट से विभिन्न श्रेणी को पढ़ना सरल है। उपर का डायल सभी श्रेणी के लिए है और मुख्य नियंत्रण से जोड़ कर किसी भी श्रेणी के उपयोग में लाया जा सकता है। विभिन्न श्रेणीयों की नियन्त्रण इकाईयां उपयोग करनेवालों को दी जा सकती है।

Multimeter used at present

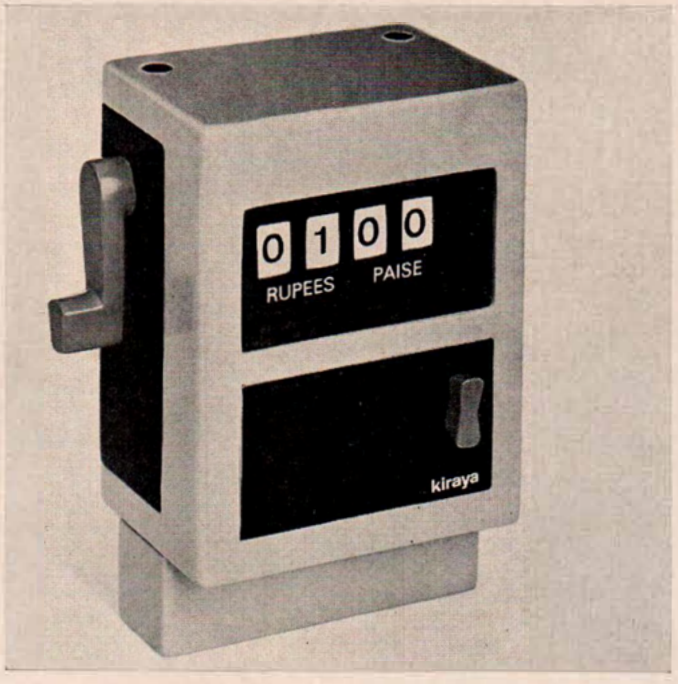
Connecting wires passing over the dial.



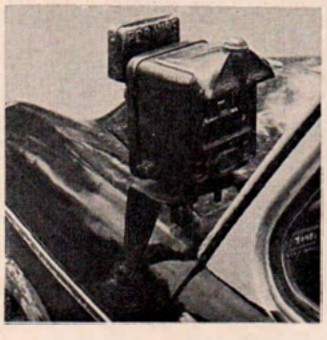
Taxi meter

टैक्सी मीटर

Design : K. C. Mahapatra
B. Kalra
Guide : S. Nadkarni



Two views of the new design fixed to the taxi.



Often we come across the irksome experience of searching a taxi meter to find the fare when we are in a hurry. It is rather surprising to find that the comforts of neither the taxi driver nor the customer has been taken care of in designing a taxi meter which costs as much as Rs. 1,500/-.

Redesigning the taxi meter was tackled as a classroom project. Two solutions were arrived at. The one shown at left side uses the same basic mechanism. The fare as well as the signs 'FOR HIRE' or 'HIRED' are in bold letters. The panels are illuminated for visibility during nights. The zero-setting lever of the meter is brought to one end for easy accessibility. The winding key is brought to the front.

The other solution envisages the use of taxi meter within the taxi. 'FOR HIRE' signal is shifted to the front side of the car. When the taxi is engaged the plate with the signal slips down and the light goes off. The other features of the design are use of bold letters, improved controls and a buzzer accompanied with the starting of the meter.

जब कभी जल्दबाजी में होतें है तब अक्सर पर हम लोग टैक्सी मिटर गणाकर करने में तकलीफ महसूस करते हैं । ताज्जुब की बात है कि रु. १५०० कीमत के इस मीटर को बनाते समय तो ड्राइवर की न यात्रियों की सुविधा का ख्याल रखा गया ।

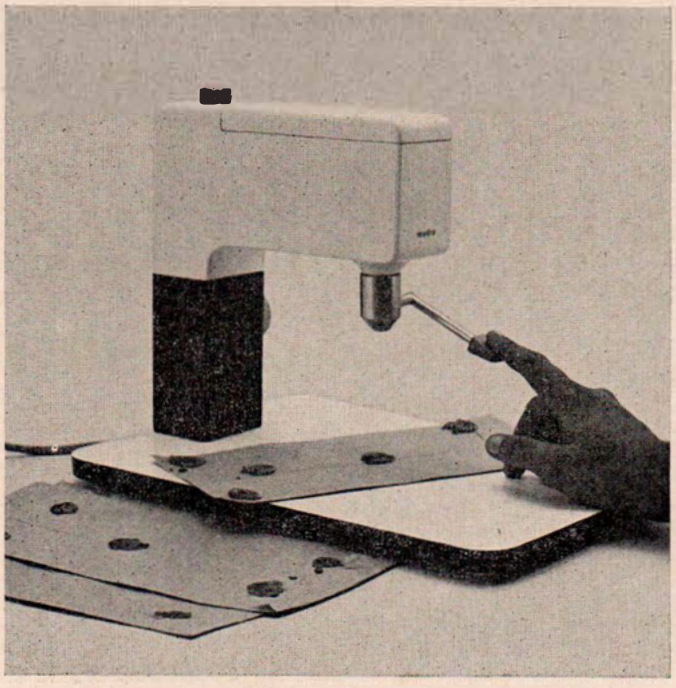
बायें हाथ की ओर दिखाये हुए सुलझन में मूलभूत यंत्ररचना कायम रखकर "किराया" तथा "किरायेपर देना है" और 'किराये पर दिया है" बडे हर्फों में दिखता है । रात के समय स्पष्ट रूपसे पढ़ें इस हेतु इनके पृष्ठभाग को जगमगाया है । आसानीसे हाथ पहुँचाकर शून्य कृतिसे शुरू करने हेतु मीटर की लीवर को एक छोरे में कर दिया है और चाबीको सामने लाया है ।

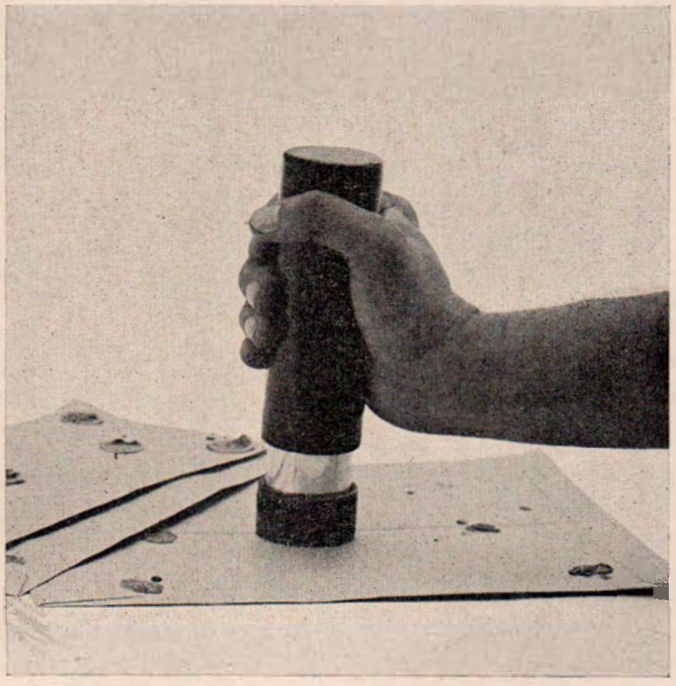
दूसरी सुलझन में मीटर को टैक्सीके अदर ही लगाया है । "किरायेपर देना है" यह तख्ता टैक्सीके अगले हिस्सेपर लगाया है जब टैक्सी किरायेपर दी जाती है तब यह तख्ता नीचे झुकनेसे उसपर की जगमगाहट बन्द हो जाती है ।

Sealing machine

सीलिंग मशीन

Design : S. B. Bidre
S. Harikumaran Nair
Guide : U. A. Athavankar





The practice of sealing letters is an age-old system. Even today most of the letters and parcels are sealed with lac for security against tampering. But the method of sealing seems to remain unchanged. The conventional method of melting the lac with a candle and pressing with a metal seal on it is slow, cumbersome, untidy and often leads to wastage of lac.

The idea of using a portable electrically heated unit for melting the lac was developed by the Mechanical Engineering faculty of IIT. The problem of designing a sealing unit using the electrically heated chamber, was tackled as a classroom project. The solutions were arrived at, one for a larger continuous demand, and the other for lower, occasional requirements.

The unit for larger demand contains a chamber with a capacity for 500 seals. The molten lac for one seal comes out with each operation of the lever. The metal seal is pressed separately. Two persons can work simultaneously. The sealing of large number of articles can be done in a short time. The unit is suitable for banks and universities in particular.

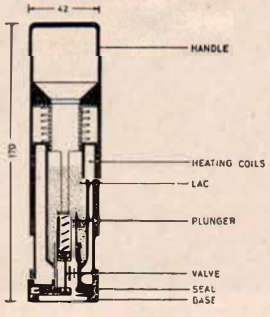
In the second solution, the metal seal is integrated with the lac melting unit. The electrically heated chamber for melting of lac is incorporated inside the handle grip. The molten lac for one seal comes out at the first stage of pressing. As the handle is pressed down further the metal insignia is pressed on the lac. The unit is suitable for day-to-day use in any office.

लिफाफों पर मुहर लगाकर बन्द करने की पध्दति काफी पुरानी है। आज भी टेंपरिंग से बचाव के लिए लिफाफों और पार्सलों पर मुहर लगाई जाती है लेकिन अभी तक मुहर लगाने का तरीका नही बदलता दिखता। लाह को मोमबत्ती से पिघलाकर और फिर धातुमुद्रा से दबाकर मुहरलगाने की हाल की पध्दति काफी धीमी, बेढंगी और मैली है और अक्सर लाह की बरबादी होती है।

विद्युतशक्ति से गरम रहनेवाले चेंबर को प्रयोग में लाते हुए एक सीलिंग यूनिट के डीजाइन का कार्य क्लास प्रोजेक्ट के अन्तर्गत लिया गया।

ऊंची मांगवाले यूनिट के चेंबर के घन परिमाण की क्षमता ५०० मुहर के लिए है। लीवर को प्रयोग में लाते ही पिघला हुआ लाह बाहर आता है। धातु मुद्रा अलग से नीचे लाई जाती है। दो व्यक्ति एक साथ इसपरकाम कर सकते हैं। ज्यादा वस्तुओं पर थोडे समय में टीक मुहर लगाई जा सकती है। ऐसी यूनिट खास करके बैंकों और विश्व विद्यालयों के लिए ज्यादा उपयोगी सिद्ध होगी।

दूसरे सुझाव में धातु मुद्रा, लाह को पिघलानेवाली यूनिट के साथ जुडी हुई है। विद्युतशक्ति से गरम रहनेवाला चेंबर मुटठी में आते हेन्डल में ही संयुक्त है। एक मुहर की जरूरत भरका पिघला हुआ लाह हेन्डल को दबाते ही बाहर आता है, ज्यों हेन्डल और नीचे की ओर दबाया जाता है, धातु मुद्रा का चिन्ह लाह पर आ जाता है। ओफीसों के दैनिक प्रयोग के लिए यह यूनिट ज्यादा उपयोगी सिध्द होगी।

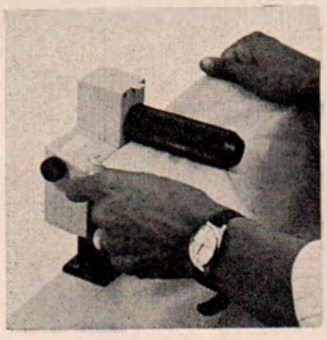


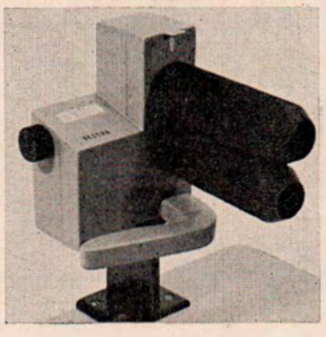
Cross-sectional view of the second solution.

Cloth measuring device

कपड़ा नापने का साधन

Design : M. R. Gandhi
Guide : M. Chattopadhyay





Readymade clothes are still unpopular in our country and cloth is mostly measured and sold as per individual requirements. The retail shops usually have to cope with seasonal demands. The gadgets used for measuring and cutting are age-old and consume a lot of time. A cloth measuring and cutting device is designed to overcome this problem.

In the new unit the cloth is inserted in between two knurled rollers and pulled. A mechanical counter at the side indicates the length of the cloth. After pulling out the required length, a mark is made on the cloth, The counter is reset to zero-reading for the next measurement. Cloth is cut by means of a knife edge fixed below.

The device can be fixed on a table. The measuring and cutting operations become much easier and quicker. Made of polypropylene the device is compact and fits into the clean tidy environment of the cloth-shops. The whole unit would cost less than Rs. 40/- when mass produced.

देश में तैयार कपडों का अभी तक बड़े पैमाने पर प्रचलन नहीं है। व्यक्तिगत जरूरत के मुताबिक कपड़ा नाप कर बेचा जाता है। फुटकर बिक्री दुकानदारों को ज्यादातर मौसमिक माँगों की पूर्ति करनी पड़ती है। कपड़ा नापने तथा काटने के मौजूदा पुराने साधनों से बहुत समय नष्ट हो जाता है। यह समस्या सुलझाने के लिए कपड़ा नाप कर काटने के नये साधन का आविष्कार किया गया।

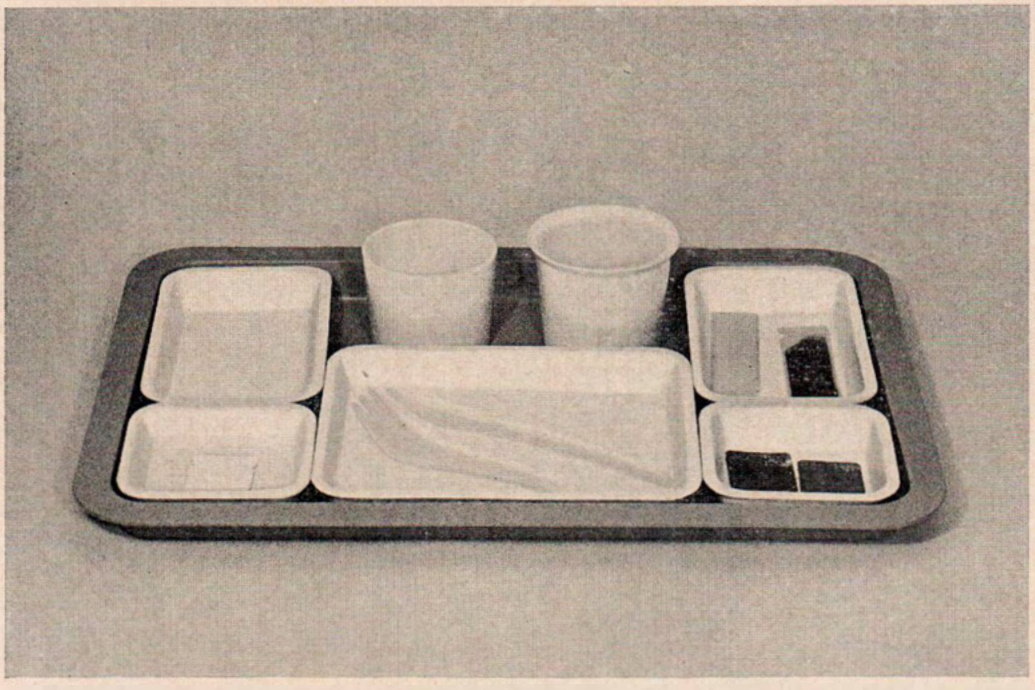
इस नये आविष्कार में कपडे को दो गोलकों के बीच अटका कर खींचा जाता है। एक तरफ के गणकयत्र से कपड़े की लम्बाई मालूम हो जाती है। आवश्यकता अनुसार कपड़ा खींचकर उस पर मार्क लगाया जाता है और नये सिरे से कपड़ा नापने हेतु गणकयंत्र फिर से शून्य पर लगा दिया जाता है। नीचे लगे हुए चाकू से नापा हुआ कपड़ा काट लिया जाता है।

यह नाप–काट साधन मेज पर लगाया जा सकता है 'जिससे नापने काटने का काम सरलता से और जल्द हो जाता है। पोलीप्रोपाइलीन से बना हुआ यह साधन सुविधाजनक है और आकर्षक ढंग मे सजाई हुए दुकान की अन्य वस्तुओं से खूब मेल खाता है। बड़े पैमाने पर निर्माण करें तो इसकी कीमत लगभग चालीस रुपया होगी।

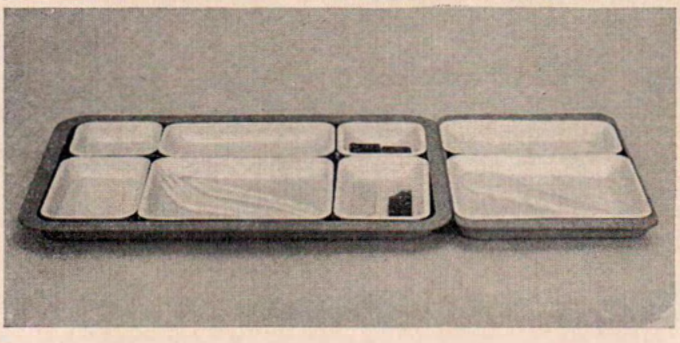
Catering system for aircrafts

Design : K. Munshi
Guide : S. Nadkarni

हवाई जहाजों में जलपान वितरण व्यवस्था



The stacking of the trays at present



New design with various possibilities

One of the major foreign exchange earners of the country today is the airlines corporations. A tough competition prevails among the international airlines corporations. Having exclusive, convenient catering service is one of the important factors in attracting passengers. Airlines corporations spend considerable amounts on the catering services. Redesigning of hardware for catering system was taken up with the help of officials of Air-India.

The main features of the design are

- Rationalisation of sizes of all hardware leading to saving in storage space.
- Use of cups with air insulation, thus avoiding the use of saucers.
- Introduction of plastic cutlery which is lighter and noiseless. The fork has a cutting edge which eliminates the awkward use of knife with the other hand.
- Use of ABS and SAN for all hardware instead of malamine and stainless steel in view of the number of thefts in the airlines.

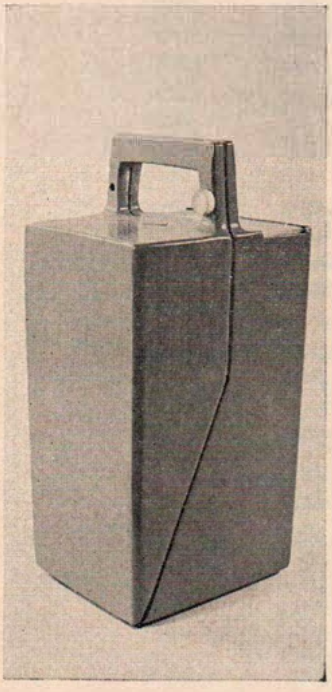
आजकल हवाई जहाज निगम देश के लिए विदेशी मुद्रार्जन का एक बड़ा साधन है । अन्तर्देशीय हवाई जहाज निगमों में जलपान वितरण व्यवस्था को आकर्षक बनाने की होड़ लगी हुयी है । हवाई जहाज निगमों द्वारा जलपान वितरण की सेवायें समाधान कारक बनाने में काफी पैसा खर्च होता है । एयर-इंडिया के अधिकारियों की सहायता से एक विद्यार्थी ने जलपान व्यवस्था की एक नई रचना की है । इस रचना के खास गुण निम्न हैं :

- सब सरंजाम का आकार मर्यादित रखने से जगह की बचत ।
- हवाबोप्टिन कपों के इस्तेमाल से रेकाबियों की जरूरत नहीं रहेगी ।
- वजन में हल्की तथा आवाज रहित प्लास्टिक की छूरियाँ तथा चम्मचों का इस्तेमाल । इन चम्मचों से ही काटने का काम लिया जाने से चलते हवाई जहाजों में दूसरे हाथ में चाकू लेकर काटने की मुसीबत से छुटकारा ।
- हवाई जहाजों में अकसर होने वाली चोरियों के कारण स्टेनलेस स्टील तथा मलेमिन के बदले सब बर्तन ए. बी. एस. और एम. ए. एन. का इस्तेमाल ।

Lunch box

उपाहार डिब्बा (लॅच बक्स)

Design : J. K. Bansal
Guide : U. A. Athavankar



Lunch box for carrying food from home to working place is a common product in a city like Bombay. There are regular organisations which undertake the work of collection and distribution of these boxes from the houses of individuals to their work-sites. As many as two lakh people avail these services in Bombay alone. Yet these lunch boxes are shabby. The outside box as well as inside containers get corroded in course of time. The food gets cold by the time it reaches the person. It is not possible to accommodate different items of food in the identical round containers. Many a time one item gets mixed up with the other.

A study was made of food habits of people from different regions and the standard facility that would be required. The sizes and the shapes of containers were arrived at accordingly. For instance, a flat container is included, for items like chapati or papad. All the containers are of injection moulded polypropylene. The outer box is of two parts with thermocole insulation. This keeps the food sufficiently hot for 4 to 5 hours. The whole box would cost around Rs. 30/-.

घर से कार्य-स्थानों तक भोजन ले जाने के लिए उपाहार डिब्बे का चलन बम्बई जैसे शहर में बहुत है । कुछ खास संस्थायें हैं जो इस कार्य को दक्षता पूर्वक करती हैं । दो लाख से अधिक व्यक्ति इस व्यवस्था से लाभ उठा रहे हैं । फिर भी इन डिब्बों की बनावट में बहुत कमियाँ हैं, जैसे बाह्य आकार आकर्षक नहीं है बाहरकी पेटी तथा भोजन पदार्थ रखने के कक्ष मे जंग लग जाता है, उपभोक्ताओं के पास पहुँचने तक खाना ठंढा हो जाता है, एक ही प्रकार के गोल डिब्बों मे विभिन्न प्रकार के भोजन पदार्थ को रखना मुश्किल होता है और कभी-कभी भोजन पदार्थ एक दूसरे में मिल भी जाते हैं ।

उपरोक्त कमियों को ध्यान में रख कर विभिन्न प्रान्तों के लोगों के भोजन पदार्थों तथा सामान्य आवश्यकताओं का अच्छी तरह अध्ययन कर के डिब्बे का आकार निश्चित किया गया । जैसे चपाती और पापड़ के लिए समतल डिब्बे का आकार निश्चित किया गया । अंदर के सब डिब्बे मोल्डेड पोलीप्रोपाइलीन के बनाये गये । बाहरी डिब्बा दो भागों में थर्मोकोल ईनसुलेशन के साथ बना हुआ है जिससे भोजन पदार्थ ४-५ घंटे तक गर्म रहता है । पूरे डिब्बे की कीमत लगभग ३० रुपये होगी ।

Boxes carried on cycle.

Transferring boxes at stations.

Chaining for security.

In transportation.

mobile shop design analysis

u. a. athavankar and harikumar nair

need

need
for casual buying
for quicker service
for cheaper items

need
to employ yourself

with lesser capital outlay
with lesser overheads

needs create new products
the hardware supports new needs
then to support the hardware the
needs are nourished

like
booths on the road
portable shops

shops on wheels

the need grew ... the hardware changed
without a conscious design attempt

the need diversified and flourished
followed by unorganised attempts to improve the hardware
to accommodate the diversified needs

this is how the mobile shops grew...but
did the design keep pace with the
diversified needs?

they sell anything

bhel, ragada,
samosa, frankie

tea and coffee,
fruits, pan, cigarettes

books
magazines
souvenirs...

they serve the people -

people in hurry -
relaxed people -
idling people...

but they thrive mostly on regular customers

so they tend to stick to their place

the mobile shops turn out to be
not so mobile ...

community

they sell the articles on street

the shop nearby also sells the same articles

take for instance bhel-puri

one can always sit
in the comfort of
the restaurant

waiter in clean uniform ...
gives you a printed menu ...
serves bhel in clean plates ...
you can have spoon too

it all looks clean and hygienic ...

yet

there is something special about this bhel ...

standing and watching him mix it ...
giving your special instructions ...

there is something casual
about the process ...
about the atmosphere ...

besides it is always cheaper and faster

yet, you wish

the people had not thrown the litter around
the flies were not there
the shop was not looking so unclean
may be the beggar won't keep looking ...

may be there was some place
to sit and relax in the shadow

it's time someone does something about it ...

product

the mobile shop
in its simplest form

is a 6' x 3' flat work top
on four wheels
and a chassis

has no break, no seat
nothing to hold and push...

like all flat tops
it lends itself to all kinds of uses
though not so easily

occasionally
it has a small lockable storage box below

you can reach it
only if you can sit, lean and bend

it is custom - made...
you can always improvise...

get the cupboards made, roof erected
you can always paint the wood

or if you have money...
you can put sunmica or aluminium top

you can get your name - board painted and so on

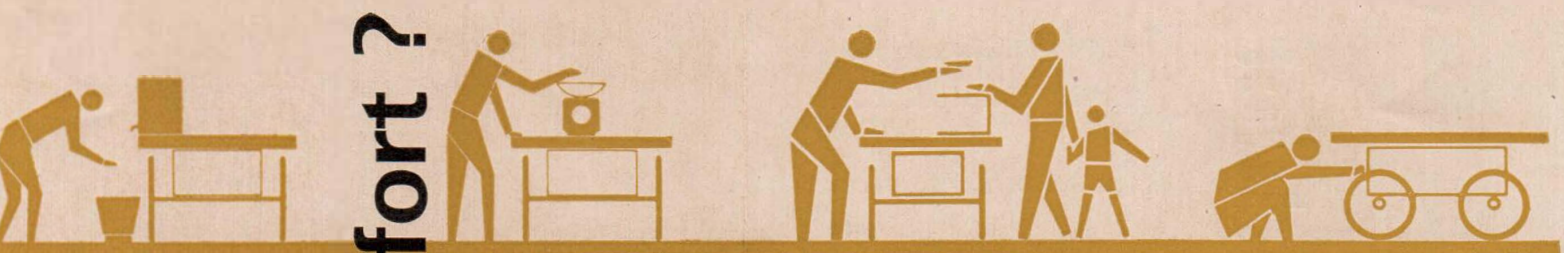
yet
with all these private improvisations

between two shops selling same articles
there is something common...

in the way the elements are organised
the shop is operated

even the owners seem to have
a mysterious similarity...

in backgroud...in culture



comfort ?

and
between the two shops selling different articles
the requirements vary in details...

it is a matter of using a stove or not using it-
weighing or not weighing -
washing or not washing-
displaying or not displaying

yet
they all have a 6' x 3' worktop
with owners and customers circling around it
is this an expression of a shop?
whether it is for preparing or serving...
whether it is for keeping stove or pani-puri matka...
whether it is for storing dishes or puris...
the worktop has the same height
where is the man-machine relationship?

it is a single top of 6' x 3'
for serving - for cooking - for storing - for preparation
why this confusion?
and are the corners really accessible?

and this roof ... just sufficient to protect the shop
Should the customer always stand in sun?

there is this problem of hygiene - can't the flies be kept away?
can't the waste be tucked in the basket?
can't the water supply be easily available?
and what happens to the waste water?

do we have to wait till the situation becomes really bad?

they need something...

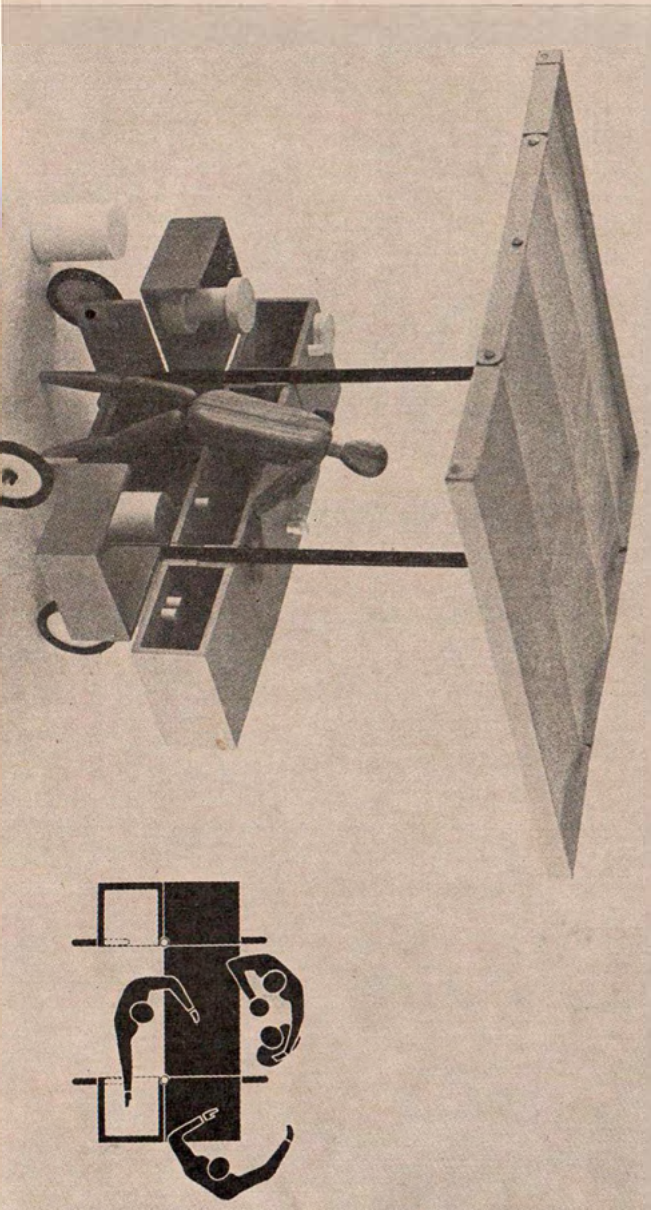
something more than just plain 6' x 3' worktop and a rigid ugly roof on top

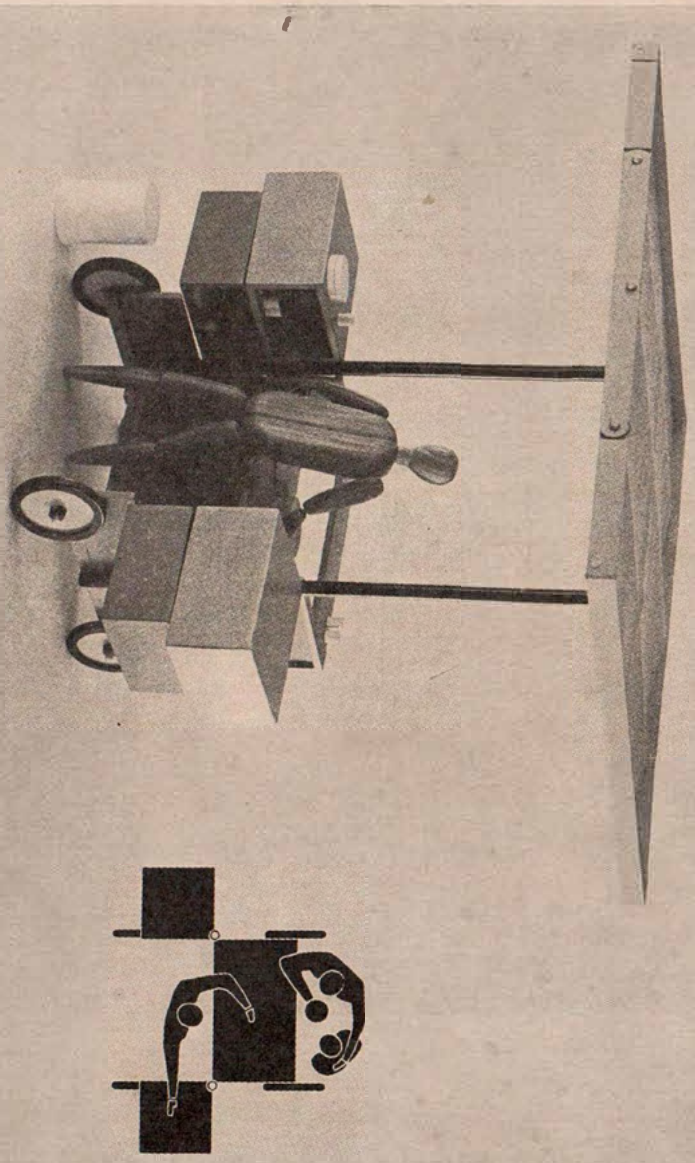
it has to have different serving counters and preparation areas

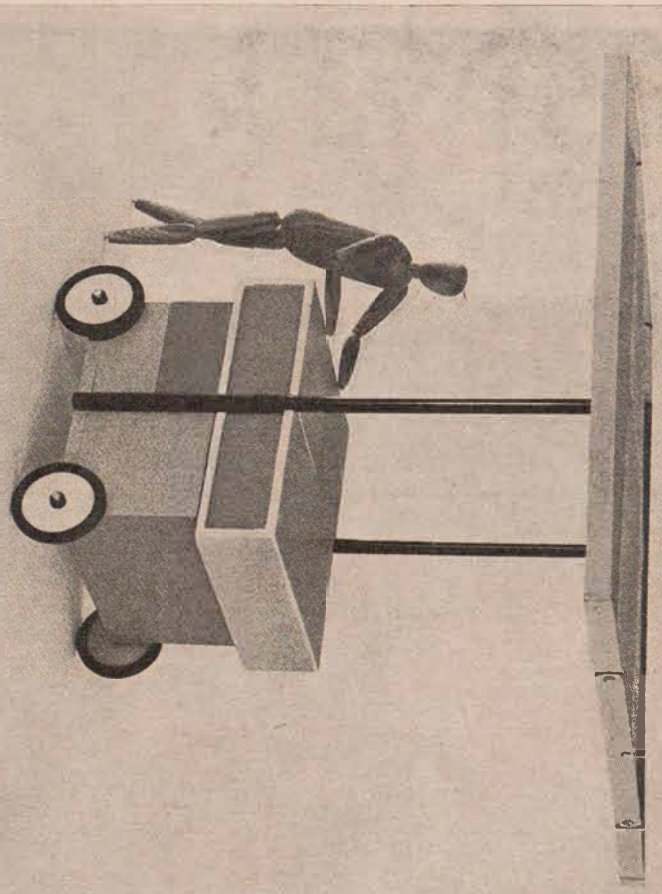
it has to have a roof to protect the people

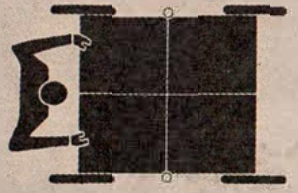
it has to fit itself to that casual atmosphere

solution









solution ?

yet

the shop should be flexible ...

flexible to accommodate -
if and when necessary ... a stove or a matka at the right height
a display unit
a portable washing facility
and so on ...

is it too ambitious to think that
one can design a shop that fulfils all these constraints ?

can these problems be solved by a hardware ?

take, for instance, the problem of hygiene ...
you can always design a hardware that is easy to clean
that keeps the eatables in a closed box ...
but can you assure that the boxes will remain closed ?
may be they can automatically close
but will it adversely affect the speed of his operations ?

take, for instance, the problem of trash
should this problem be solved by designing the hardware alone ?

may be the hardware needs the support of a community
a group that can maintain and nourish that gay and casual atmosphere

a group that can occupy the place
where there is enough space to move about
where shared washing facilities are provided and maintained

a group that can educate people to throw trash in the bins
or may employ persons to collect it time and again

a group that can maintain the hygiene in that area
something that is important
yet
outside the purview of designers

what are the chances of a hardware surviving
without the support of a group action ?

"Tryst with Destiny"
Education Ministry's
Pavilion at Asia 72

The work of designing the pavilion on "Education" was assigned to the design team at the Industrial Design Centre by the Ministry of Education for its pavilion at the Third Asian International Trade Fair - commonly known as Asia '72.

The efforts of the team culminated in presenting the pavilion "Tryst with Destiny", distinguished from the rest of the pavilions by its simplicity and purity. An abstract theme was developed which depicted the transformation of India, through educational efforts at every level, into a modern nation during the last twentyfive years.

The pavilion conveyed this theme through murals, illuminated photographs, filmed interviews, a theme film and a visual communication programme consisting of posters, folders, etc. The limitation of putting up the pavilion in three to four days time was given utmost consideration. Mass producible plastic units which could be easily transported and assembled in a short time were designed.

The displays were divided into sections at different split-levels inside the pavilion. In the first level one was confronted with India's youth - faces of children, adolescents and young adults. Mirrors intermingled with these photographs so that the viewers' images blended with the displays. In the background was a large mural by the calligraphist and graphic artist, R. K. Joshi, evoking the linguistic diversity of India through which a texture of unity was woven.

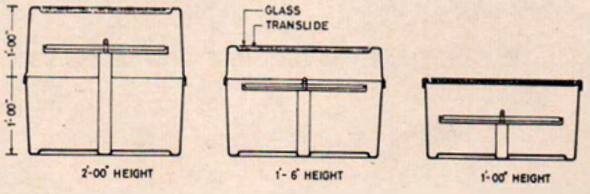
At the second level, there were illuminated photographs candidly depicting our national problems during the last twentyfive years and the answers that the education was seeking to provide to them. In this section there was a mural by the eminent painter, Baburao Sadwelkar, on the theme of the emergence of India from a traditional base into the modern world.

At the third level, a mural by the well-known graphic designer, Bhai Patki, portrayed the concept of 'the whole man' that education sought to develop and a number of illuminated photographs depicting human creativity in its varied forms brought out through education.

At the next two levels the films were shown. There were five audio-visual booths where visitors could individually view and listen to a student, a parent, a teacher, an employment expert, and an eminent educationist. These were candid interviews expressing non-official opinions on education, and the Ministry of Education boldly presented these views to the public.

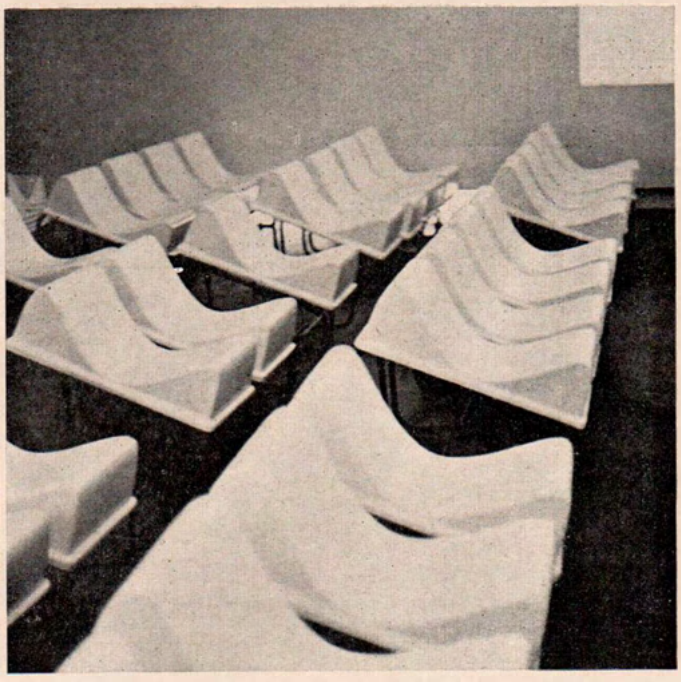
Next was the auditorium where the theme film, 'Tryst with Destiny' was shown. Finally, there was a photographic display showing the impact of education on various activities in India.

Details of the cubical display units

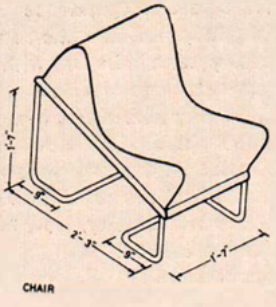


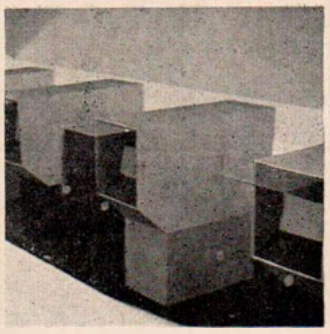
DISPLAY BOXES

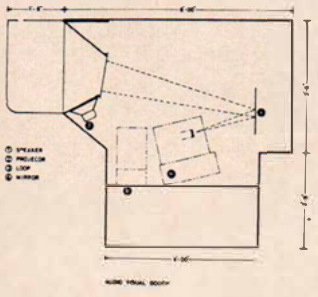
'भाग्य से सौदा' ऐशिया ७२ में
शिक्षण मंत्रणालय का मंडप



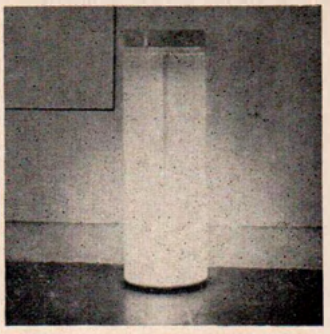
Chair specially designed for the film show at the pavilion.

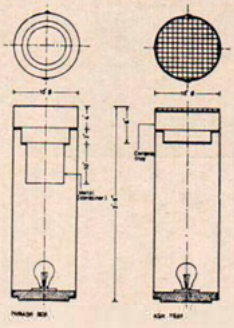






Audio-visual booth with a continuous loop film inside.





Litter tray and Ash tray.

शिक्षा मंत्रणालय ने तीसरे ऐशियाई अंतर्राष्ट्रीय व्यापार मेले के लिए, जो कि साधारणतया ' ऐशिया ७२ ' के नाम से जाना गया, 'शिक्षा' से सम्बधित मंडप के डीज़ाइन का कार्य इन्डस्ट्रीयल डीज़ाइन सेन्टर की डीज़ाइन टीम को सौंपा.

अन्य मंडपो की तुलना में इस 'भाग्य से सौदा' मंडप को सादगी और शुद्धता के लिए विशिष्ट बनाकर, टीम के प्रयत्न साकार हुए । एक पृथक विषय को पुष्ट किया गया । जो कि शिक्षा के माध्यम से पिछले २५ वर्षों में, एक आधुनिक देश के रूप में, भारत में हुए परिवर्तन को चित्रित करता है ।

मंडप मे, इस विषय को, भीत्ति-चित्रों, प्रकाश-युक्त फोटों, चित्रित भेंट-वार्ता कों, विषय-चित्र और पोस्टरों तथा फोल्डरों युक्त दृष्टि सम्बधित कार्यक्रमों द्वारा प्रस्तुत किया गया । तीन से चार दिनों के सीमित समय में मंडप निर्माण के कार्य को प्रमुख माना गया । भारी तादाद में बननेवाली प्लास्टिक इकाईयों की डीज़ाईन की गई जो कि कम समय मे ले जा सके और जोड़ी जा सके ।

मंडप के विभिन्न विभाजित तलों पर पूरे प्रदर्शन को विभिन्न भागों में बांटा गया था । पहले तल पर ही सामना होता है, भारत के युवा-रूप से बच्चों के चेहरे, तरूण और युवा-वर्ग । इन फोटों के साथ दर्पणों को भी सम्मिलित किया गया, जिससे की दर्शक का प्रतिबिंब भी प्रदर्शन में मिल जा सके । पिछले भाग में रखा गया था, प्रसिद्ध कलाकार और ग्राफिक चित्रकार आर. के. जोशी. का भीत्ति-चित्र, जो एकता से बुनी भारत की बहुभाषी-भिन्नता को आवाज देता है । दूसरे तल पर प्रकाश युक्त फोटों थे जो कि पिछले पच्चीस वर्षो की राष्ट्रीय समस्याओं एवं शिक्षा के माध्यम से प्राप्त हलों को स्पष्ट रूप से चित्रित करते थे । इसी खंड में प्रसिद्ध चित्रकार बाबूराव सदवेलकर का एक भीत्ति-चित्र भी था । जिसका विषय था पारम्परिक आधार से आधुनिक दुनिया की ओर उभरता भारत ।

तीसरे तल पर प्रसिद्ध ग्राफिक डीज़ाइनर भाई पतकी का भीत्ति-चित्र, शिक्षा से अनुसरित 'एक पूर्ण मनुष्य' को चित्रित करता था । और उसी तल के विविध प्रकाश-युक्त फोटो शिक्षा के माध्यम से उभरते विभिन्न मानवीय निर्माणों को दर्शाते थे ।

बाद के दो तलों पर फिल्मे दिखाई जाती थी, वहाँ पांच ध्वनि-दृष्टि बूथ थे । जहा दर्शक अलग अलग एक छांज, एक अभिभावक, एक शिक्षक, एक रोजगार-दक्ष और एक प्रसिद्ध शिक्षा शास्त्री को देख सकते थे और सुन सकते थे । सामान्य जन से सम्बन्धित थे स्पष्ट भेंट वार्ताएँ शिक्षा और शिक्षा-मंत्रणालय के बारे में गैर सरकारी विचारों को सूचित करती थी और ये विचार जन साधारण के समक्ष खुले रूप में प्रस्तुत होते थे ।

समीप के मंडप में विषय फिल्म 'भाग्य से सोदा' दिखाई जा रही थी ।

अंत में, भारत के विभिन्न क्षेत्रों पर शिक्षा का प्रभाव दर्शाता हुआ एक चित्र–प्रदर्शन था ।

विषय फिल्म 'भाग्य से सौदा', शिक्षा से सम्बन्धित प्रयत्नों और

The theme film - 'Tryst with Destiny' sought to relate the nation's educational efforts to its twentyfive year history since independence. It was a three-screen film presenting three different aspects of the basic theme in terms of a single composite image. Track one (left) and track two (centre) presented contrasting images of India's struggles and problems and efforts and achievements. Track three (right) was a series of animated drawings made by a little boy on a slate in response to the words in the spoken commentary, interpreting them in his own child-like way. The film opened with Jawaharlal Nehru's historic inaugural speech proclaiming India's independence, from which the theme-phrase 'Tryst with Destiny' was taken. The film immediately plunged into India's post-independence struggle for self-liberation and development, linked up with the recurrent image of a little school boy with a very heavy satchel plodding towards school. Said the commentary, repeatedly, "Yes, we did make a Tryst with Destiny. How far have we kept our appointment?."

स्वतन्त्रता प्राप्ति के पश्चात के पच्चीस वर्षों के बीच का सम्बन्ध दर्शाती थी । एक संयुक्त दृष्य के रूप में मुख्य विषय के विभिन्न भागों को जोड़ती यह फिल्म तीन पर्दों पर एक साथ उभरती थी । पहले ट्रेक (बाया) और दूसरे ट्रेक (मध्य) पर भारत की समस्याओं, प्रयत्नों और सफलताओं का सूक्ष्म प्रस्तुतीकरण था । तीसरे ट्रेक पर एक छोटे बालक द्वारा स्लेट पर बनाये हुए चित्रों का एक उत्साही क्रम था जो कि एक बोली गई कोमेन्ट्री के साथ-साथ बाल सुलभ भाषा में प्रस्तुत हो रहा था । फिल्म का प्रारंभ, भारत–स्वतंत्रता की घोषणा के अवसर पर जवाहरलाल नेहरू द्वारा दिये गये ऐतिहासिक प्रतिष्ठापन सम्बन्धी भाषण से होता था । जिससे की विषय वाक्य–खण्ड 'भाग्य से सौदा' लिया गया था । तत्काल फिल्म, भारत के स्वतंत्रता प्राप्ति के बाद वे निजी मुक्ति और प्रगति के प्रयासों को दर्शाती थी और बार उभारनेवालें एक स्कूली बच्चे के चित्र से जुड़ती थी, जो कि एक भारी बस्ते को सम्भालता हुआ यह कहता था-हां ! हम ने भाग्य से सौदा कर लिया है । कहां तक हम इसे निर्धारित कर पाये हैं ?

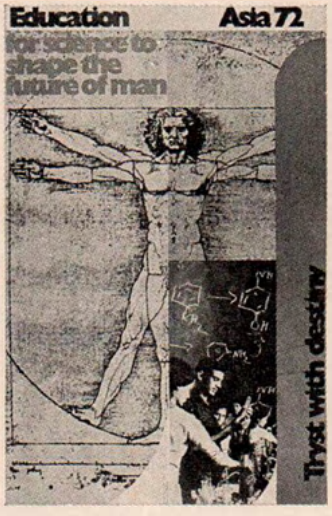
समाज संदेश के रूप में, यह आहवाहन, शिक्षा शास्त्रियों, शिक्षकों, छात्रों और जनसाधारण के एक बड़े हिस्से को सम्बोधित करता था । चाहे वो इस प्रदर्शनी में भाग लें या न लें, इसे पूर्ण रूप से अपना संदेश पहुंचाना था । और वह भी स्वयं के प्रयास से । यह आहवाहन न्यूनतापूरक नही अपितु सम्पूर्णता लिये हुये था । शिक्षा संस्थाको, जिला परिषदों और पंचायतों को पोस्टर दिये जानेवाले थे ।

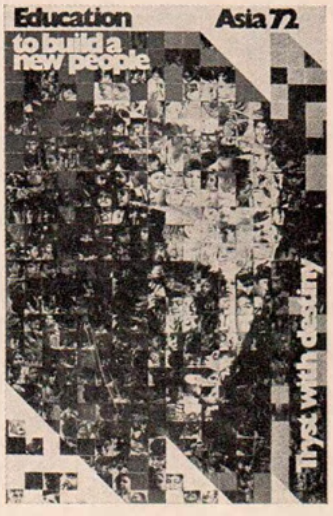
The various personalities portrayed in the interview films.

(from left to right)

1. A.B. Shah—parent and teacher
2. G. D. Parikh—educationist
3. L. S. Kanodia—employment expert
4. Adil Jussawala—Teacher
5. Yatin Shah—Student
6. Claude Alvares—Teacher

"Tryst with Destiny" — Visual communication programme.





As a mass communication strategy, the object was to address the educationists, teachers, students and the widest section of the public. Whether they attended the exhibition or not, it still had to do its communication fully and all by itself. The campaign wasn't planned to be only supplementary but also complementary. The posters were to be given away to the educational institutes, zilla parishads and panchayats.

Exhibition Committee :
V. N. Adarkar - Chairman
Sudhakar Nadkarni
Dilip Chitre
Yeshwant Chaudhary

Design :
Sudhakar Nadkarni
Uday Athavankar
Mani Chattopadhyay
Gopinath Rao
Subodh Dhairyawan
Roby D'Silva
Abdul Gaffoor

Design prototypes :
Rajan & IDC staff

Execution :
D. P. Tamhane
Design Organisation, Bombay.

Theme films & interviews :
Dilip Chitre
Osborne D'Souza
Ram Mohan
S. S. Oberoi

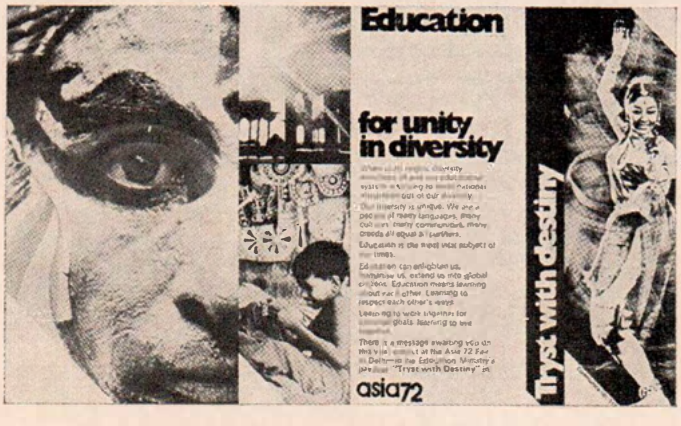
Voice :
English : S. Berkeley Hill
Hindi : Vinod Sharma

Animation Drawings :
Ashay Chitre

Editing :
Madhu Naik
Produced by : Art Commercia, Bombay.

Visual communication programme :
Yeshwant Chaudhary
Communica/Corporate Communications
Bombay

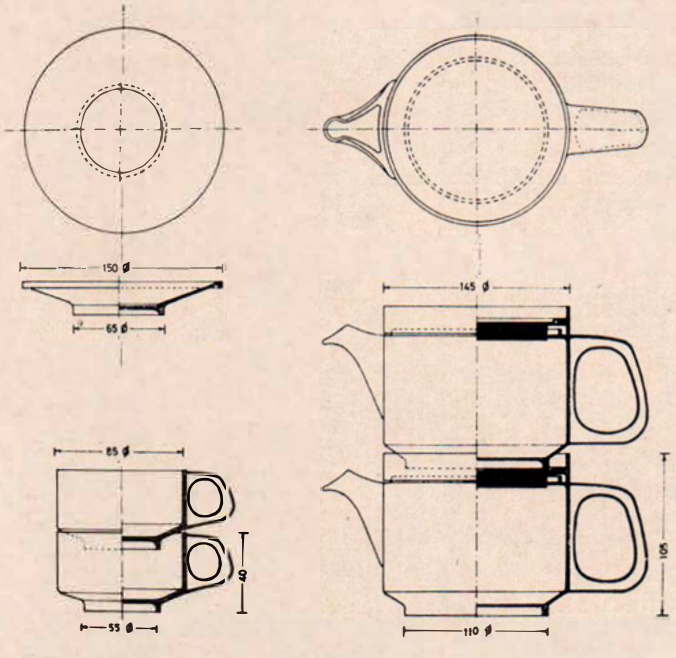
Printing :
Thompson Press (India) Limited, Delhi



Tea and Coffee sets in Ceramic ware

Design : A. Gaffoor

सेरामिक वेअर में चाय और काफी के सेट



TEA SET

Ceramic design has mostly remained as a decorative art rather than a functional act. The result is the highly decorative ceramic-ware we see in the market today. The comfort aspects have hardly been improved. The tea or coffee pot with the small opening at the top remains uncomfortable for cleaning. The lids continue to be vulnerable for breakage. The handles are difficult to handle and often break due to their weak joints with the main body. Above all the sets are rarely stackable.

Tea and coffee sets were developed at the Centre to inject the ideas of functionalism in the Indian ceramic market. The main features of the design are

- All the units are stackable.
- The tea and coffee pots have easy access for cleaning.
- The wooden lid being less vulnerable to breakage increases the life of the set.
- The handles are comfortable to lift.
- The joints between the handle and main body of each unit are stronger, thereby reducing the rejection percentage in manufacture.
- The cup fits into the well defined groove in the saucer.

व्यवहारिक कार्य के स्थान पर सेरामिक डिज़ाइन ज्यादातर सजाने की कला ही रह गई है। जिसका परिणाम यह है कि हम आजकल बाजारों में सजावटी सेरामिक वेअर ही देखते हैं। सुविधा का पहलू शायद ही सुधारा गया है। चाय और काफी सेट के ऊपर का खुला हुआ छोटा हिस्सा सफाई के लिए दिक्कतशुदा होता है। साथ ही साथ इन सेटों के विभिन्न पात्र शायद ही एक दूसरे पर संतुलित रखे जा सकते हैं। व्यवहारिक प्रयोग के इन विचारों को मार्केट में प्रविष्ट कराने के लिए सेन्टर में चाय और काफी सेट के डिज़ाइन पर कार्य किया गया। डिज़ाइन की मुख्यताएँ यें हैं—

- हरेक पात्र एक दूसरे पर संतुलित रखा जा सकता है।
- चाय ओर काफी पात्रों की बनावट सफाई की पहुंच के अदर हैं।
- लकड़ी का ढक्कन कम कमजोर होने की वजह से सेट को ज्यादा उपयोगी बनाता है।

Prof. V. N. Adarkar, Hony. Adviser, inaugurated the exhibition of Industrial Design from Federal Republic of Germany at the Coomaraswamy Hall on 16 may 1973.

१६ मई १९७३ के दिन सलाहकार श्री. व्ही. एन. आडारकरजीने फेडरल रिपब्लिक ऑफ जर्मनी द्वारा आयोजित औद्योगिक अविष्कार प्रदर्शिनी का उद्घाटन किया ।

Prof. S. Nadkarni attended the meeting of the ICSID Working Group IV at Vienna during 4-7 June 1973, and participated in the discussion on 'Design in Developing Countries".

व्हिएन्ना में प्रोफेसर नाडकर्णी जी ४ से ७ जून १९७३ तक आय. सी. एस. आय. डी. के वर्किंग ग्रूप की सभा मे हाजिर रहे और "विकसित देशों में अविष्कार" चर्चा में उन्होनें भाग लिया ।

Prof. D. Gulati is guiding the fourth batch students of the Centre in the Post Office System Study as a part of the field survey work conducted during May 1973.

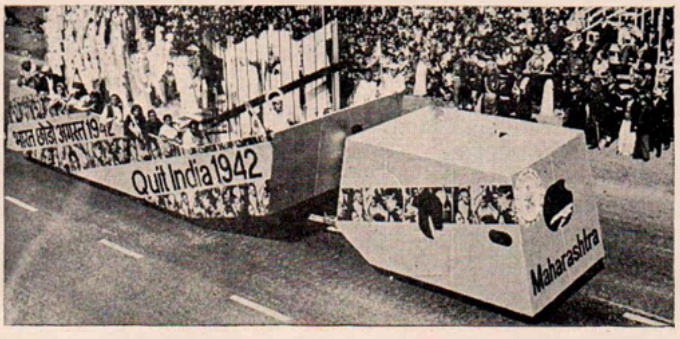
प्रोफेसर डी. व्ही. गुलाटी मई १९७३ में आयोजित डाकघर कार्यपद्धति अभ्यास केंद्र के क्षेत्र निरीक्षण कार्यक्रम में केन्द्र के ४ थी बॅच को मार्गदर्शन कर रहे है ।

The Centre designed the stands and arranged the displays for the exhibition that was held at the IIT Bombay during the Prime Minister's visit on the occasion of the 10th Annual Convocation of the Institute.

संस्था के १० वें वार्षिक कन्वोकेशन सम्मेलन की अवसरपर आयोजित किये हुवे प्रदर्शिनि में, जिसको प्रधान मंत्री ने भी भेंट दी थी, केंद्रद्वारा बनाये हुए स्टँड तथा प्रदर्शिनी कक्ष ।

At the instance of Begum Ali Yavar Jung, President, Society for Clean Cities, the Centre designed a hand-cart with sufficient storage facilities and proper canopy for being used as a mobile stall by the hawkers.

'स्वच्छ शहर' कार्यक्रम की अध्यक्षा श्रीमती अलीयावर जंग की सूचना के अनुसार केंद्रने एक हाथगाडीका अविष्कार किया जिसमें सामान रखने की काफी गुंजाईश है और जिसमें जरूरत के मुताबिक फेरीवाले चलते फिरते स्टॉल बनानेवाले तालपत्रियों का भी इन्तजाम है ।



The float "Quit India 1942" was designed by the Centre for the Maharashtra Govt. at the instance of the Prime Minister of India. This was one of the Republic Day Pageants held at the capital on 26th January 1973 to commemorate the Silver Jubilee of India's independence.

प्रधान मंत्रीजी के अनुसार महाराष्ट्र राज्य सरकार की ओर से केंद्र ने " भारत छोडो १९४२" फ्लोट बनाया । २६ जनवरी १९७३ को राजधानी दिल्ली में मनाये गये स्वातंत्र्यदिन रौप्य महोत्सव के अवसरपर गणतंत्रदिन मेले में इस फ्लोट को शु मार किया था ।

Young designers in industry

औद्योगिक संस्थाओं में युवा डिज़ाइनर

The main object of setting up the Industrial Design Centre in 1969 was to meet the requirements of the national industry in the sphere of product design so as to enable them to compete both in the home as well as in the export markets. The industries in India are very much conscious of this need and promptly responded to the Centre's offer to participate in the programme. This will be evident from the fact that a number of national industries availed of this opportunity in getting either their own candidates trained at the Centre or selecting the candidates at the time of interview for post-training employment in their undertakings.

This sponsoring of the candidates for the course conducted at the Centre meant guaranteed employment to the selected candidates on completion of the course so that the training imparted is properly utilised in national interest. As a matter of fact, by this method the programme offered has been made need-oriented by taking up projects in which the industry is genuinely interested. The candidates are selected on all-India basis, strictly on merit.

It is heartening to note that the candidates on completion of their course have been well-received by the industries.

प्रोडक्ट डीज़ाइन के क्षेत्र में, राष्ट्रीय औद्योगिक संस्थाओं की जरूरतों को पूरा करने के लिए, १९६९ में इन्डस्ट्रीयल डिजाइन सेन्टर की स्थापना हुई जिससें कि ये संस्थाऐं देश के अंदर और बाहर के बाजारों की स्पर्धा में उतर सके । भारत की उद्योग संस्थाऐं इस जरूरत के लिए काफी सजग थी और सेंटर द्वारा प्रस्ताविक इस प्रोग्राम का काफी उत्साह से स्वागत किया । कई राष्ट्रीय उद्योग संस्थाओं ने ट्रेनिग दिलाकर या इन्टरव्यू में उम्मीदवारों को, अपनी संस्थाओं में ट्रेनिग के पश्चात की नियुक्ति के लिए चुनकर, इस उत्साह का प्रमाण दिया ।

सेन्टर द्वारा चलाये गये कोर्स में विभिन्न उम्मीदवारों की स्पोन्सरिग कोर्स के पश्चात के एम्पलोयमेंट का जिम्मा दिलाती है जिससे कि ली गई ट्रेनिग राष्ट्रीय हित के लिए सही रूप में उपयोगी सिद्ध हो सकें, वास्तव में इस तरह प्रस्तावित प्रोग्राम जरूरत से जुड़ा रहता है और उद्योग संस्थाओ से सम्बन्धित प्रोजेक्टो पर कार्य कर सकता है । उम्मीदवारों का चुनाव राष्ट्रीय स्तर पर पूर्णतया योग्यता के आधार पर होता है ।

List of past students and the respective industries in which they are working

First row-left to right :

M. J. Joshi	-	IBM World Trade Corporation
S. S. Kshirsagar	-	Godrej & Boyce Mfg. Co. Pvt. Ltd.
P. A. Rao	-	American Universal Electric (India) Ltd.
S. K. Dastoor	-	Tata Electric Companies.
N. T. Nagarsenkar	-	Hind Cycles Pvt. Ltd.
V. Ramasubban	-	Mukand Iron & Steel Works Ltd.
Dev Suman	-	Mahindra & Mahindra Ltd.
K. N. Prakash	-	Murphy India Ltd.

Second row-left to right :

K. Munshi	-	Mulchandani Electricals Pvt. Ltd.
B. Bhaumik	-	Tata Engg. & Locomotive Co. Ltd.
S. Srinivasan	-	Tata Engg. & Locomotive Co. Ltd.
V. K. Rao	-	Tata Electric Companies-NELCO works
S. R. Menon	-	Voltas Ltd.
A. K. Siddha	-	Murphy India Ltd.
S. S. Date	-	Kirloskar Brothers Ltd.
R. Kadiru	-	Rallis India Ltd.

Third row-left to right :

K. K. Trivedi	-	Polestar Electronics Pvt. Ltd.
L. Jethwa	-	Bright Bros. Pvt. Ltd.
S. Bidre	-	Telerad Pvt. Ltd.
J. Arvind	-	Telerad Pvt. Ltd.
B. Kalra	-	IBM World Trade Corporation
R. A. Naik	-	Centron Industrial Alliance Pvt. Ltd.
K. C. Mahapatra	-	Electronic Corpn. of India Ltd.
S. H. K. Nair	-	Free-Lance Designer.

PBX - New Design

Prof. S. Nadkarni served on the Committee for Evolution of New Designs of Switch Boards and Attendant Positions used for Private Branch Exchanges, constituted by the P. & T. Directorate. The faculty of the Centre evolved a new design for the PBX at the request of the Directorate.

16 mm Cine Projector

The Centre redesigned the 16 mm cine projector for the Photophone Ltd.

Teleprinter

The Centre carried out the visual improvement programme for the teleprinters manufactured by Hindustan Teleprinters Ltd.

Switchgear

The Centre redesigned the handle, cabinet and colour scheme for the Sentinel Switchfuse manufactured by Vertex Manufacturing Co. Ltd.

Study-tour to the U. S. A.

The Hony. Adviser and the Faculty-in-Charge were deputed to visit some of the outstanding design institutions, and environmental design centres, and to meet some well-known designers in the U. S. A. The object of the visit was to study and observe the working and the methodology adopted, and during the period of 45 days they visited 15 outstanding institutions. A report on the study tour was submitted.

CIDCO

The services of Prof. S. Nadkarni have been requested for by the City and Industrial Development Corporation, Maharashtra as consultant for their environmental design Projects.

पी. बी. एक्स–नयी उपरचना

प्रो. नाडकर्णी "प्राइवेट ब्रॉंच एक्सचेंज उपयोगित, स्विच बोर्ड एवं सहायक स्थानों" की नवीन परिरचना समिति के सेवार्थ, पी. एन. टी. के इच्छानुसार, पी. बी. एक्स की नयी रचना किया।

१६ एम. एम. चलचित्र दर्शक

केन्द्र मे फोटोफ़ोन लि. के लिए १६ एम. एम. चलचित्र दर्शक की द्वितीय परिरचना कि गई।

टेलिप्रिंटर

हिन्दुस्तान टेलिप्रिंटर कंपनी निर्मित टेलिप्रिंटरों के लिये केंद्रने दिखावट–शुधार कार्यक्रम कार्यान्वित किया।

स्विचगिअर

केंद्रने व्हेरटेक्स मॅन्युफॅक्चरिंग कंपनी निर्मित सेंटिनल स्विचफ्यूज के लिये रंग–योजना, हँडल तथा कॅबिनेट का नया डिज़ाइन बनाया।

अमेरिका का अभ्यास–दौरा

मानद सलाहकार तथा विषय–प्रमुख ने अमेरिका अभ्यास–दौरा किया। वहाँ की मशहूर डिज़ाइन संस्थाओंको एनव्हीरानमेंटल डिज़ाइन केंद्रोंको भेंट दी और वहाँ के मशहूर अविष्कारकोंसे मुलाकात कर उनके स्टूडिओंज भी देखें। वहां की कार्यपद्धतिका अवलोकन और अभ्यास करने हेतु दौरा आयोजित किया था। ४५ दिनों की दौरान में १५ मशहूर संस्थाए देखी और दौरे का विवरण प्रस्तुत किया।

सिडको

महाराष्ट्र के सिटी एवं इन्डस्ट्रियल डेवलपमेंट कार्पोरेशन ने अपने इनवाइरन्मेंटल डिज़ाइन कार्यों के लिए प्रो. एस. नाडकर्णी की सेवाएँ अपने परामर्श दाता की हैसियत से आमंत्रित करीं।

ICSID'73 KYOTO

世界インダストリアルデザイン会議

8th ICSID General Assembly and Congress

The 8th ICSID General Assembly and Congress will be held in Japan in October '73. This would be the first Congress of ICSID in Asia. Two thousand delegates from all over the world will be participating in the ICSID Congress. The theme of the Congress would be "Soul and Material Things". The three elements of the Congress would be the "Congress Hall", the "Congress Plaza" and the "Congress City".

In the Congress Hall, the lectures and panel discussions will take place. The famous author of "Zero a 1 Intini", Arthur Koestler will deliver the Memorial speech with the theme as our 'age'. Three scholars will present three special speeches. Mr. Jean Baudrillard, the young French Sociologist will speak on 'the social aspects of design'. Dr. Frederich Vester, Biologist and Environmentalist from Munich will present his views on 'environment in the age of crisis', and Dr. Bernard J. Muller Thym, American Management Consultant will speak on the "physiology of organisation".
The main theme of the Congress 'Soul and Material Things' will be discussed in twelve separate panel discussions. A guest panelist will address each group on the subjects given below :
Mrs. Jane Jacobs - author . Nature and Environment
Dr. Michel Lechat - physician . Nature - living organism
Prof. Max Bill - designer . Individuals - aesthetics
Dr. Christopher Evans - psychologist . Individuals - identity
Dr. Rolt Garnlc - aesthetician . Individuals - personality
Mr. Richard Wurman - architect . Community - participation'
Sir Colin Buchauan - author . Community - mobility.
Mr. Lister Sinclair - mathematician - writer, actor and business executive . Culture - image
Mr. Simon Majaro - management consultant . Culture value

There would be special sessions to discuss the following subjects :

1. Design as a state policy
2. Design and enterprise
3. Design for the relief of disaster areas
4. Design for developing countries
5. The education of industrial designers.

The Group IV of the ICSID will submit its report on Design for developing countries.

The Congress Plaza will feature exhibits, films, slides, and impormptu speeches and presentations of participants. It will become the 'market place of ideas and exchanges'. Through the media of ICSID Boxes, individuals, groups, organisations, governments and enterprises will be able to make personal presentations.

Kyoto, the Congress City, will receive the Congress news events by way of 'the Voice of design'. Kyoto will be turned into a "Cycling City", to make the Congress a non-polluting event. One Thousand bicycles will be provided to the participants who feel hardy and healthy enough to experience the City via the 'intimate and intriguing streets, roads and palls.

SIDI

The socjety of Industrial Designers, India (SIDI) has formed with professional designers as its members. Consolidation of design profession will be the basic aim of the society. The society plans to establish a close liason between Industry, Designers and Educational Institutes. The first issue of a bi-monthly bulletin will be brought out in October '73. All professional designers are wel-come to join the society. Design students are invited to become student-members of the society. All correspondence may be addressed to

The General Secretary
SIDI
Care
Industrial Design Centre
Indian Institute of Technology
Bombay. 400076

IDC—Output 1973

Editorial Board :	V. N. Adarkar S. Nadkarni A. G. Rao
Coordination :	M. Chattopadhyaya Rajan
Photo :	Wilas Bhende A. K. Nagarkar
Hindi translation :	L. Jethwa N. S. Kulkarni
Printing :	G. L. Lalwani I I T Press
Blocks :	Commercial Art Engravers Pvt. Ltd.
Cover :	Shoe Shine Stand
Solutions:	Suhas Kakde, R. A. Naik

Industrial Design Centre
Indian Institute of Technology
Powai, Bombay-400076