

# REDESIGN OF STAMP CANCELLING DEVICE FOR INDIA POST

P-II - Final Presentation

**Guide:**  
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# INTRODUCTION

Since long back India post is using hand stamp for stamp cancellation.

Only at the head post offices, GPO's machine cancellation is done. One of the reasons is cost and necessity of electricity for using them.

CPMG (Chief Post Master General) Mr. Rajan Malappuram insisted on having a new method or mechanism for stamp cancellation which should not be dependent on electricity and should improve the existing design.

India post is a 153 year old organisation, It is the largest postal network in the world with 155,333 post offices and about 601,319 letter boxes in the country.



# DESIGN OBJECTIVE

- To improve the design of stamp cancelling device, for better efficiency and less human efforts by using appropriate Technology....
- Improvement in existing method for better printing quality and efficiency in work using appropriate technology.
- A new design/mechanism which will have good cancellation speed as compared with the existing method.



# INDIA POST

- Post office reaches every nook and corner of the country.
- Reaches largest possible number of people
- Lord Clive first established the postal system in the country in 1766
- I P O was recognized as a separate organization of national importance and was placed, for the first time
- under the unitary control of a Director General of the Post Office in India on October 01, 1854.
- Both Posts and Telegraph departments started in 1854
- It completed over 153 years of its operations.



# INDIAN POST STAMPS

Details - Changes occurred till today

Print quality representation is done..

- First stamps valid for postage throughout India were placed on sale in October, 1854
- without perforations or gum
- Designed and printed in Calcutta.
- 1/2 anna, 1 anna, 2 annas, and 4 annas

Queen  
Victoria



Queen  
Victoria



- East India company started with East India Postage in 1856
- High value stamps (2,3 & 5Rs) introduced in 1895
- Existing designs reprinted in colours in 1900



- Twentieth Century
- New series of stamps in 1902
- depicting King Edward VII
- High value stamps available up to 25 Rs.



- 1911 - Stamps Of King George V
- 1926 the watermark changed to a pattern of multiple stars.

- The first pictorial stamps appeared in 1931
- showing the fortress of Purana Qila, Delhi and government edifices
- To Mark government's move from Calcutta to New Delhi



## Post Independence 1947

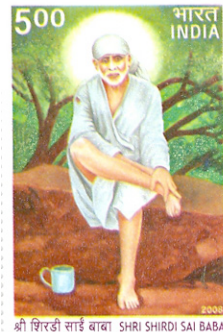


- **First Stamp of Independent India** was issued on the 21st of November, 1947
- Depicting Indian Flag with Jai Hind
- A memorial to Mahatma Gandhi was issued 15 August 1948
- definitive series appeared, depicting **India's broad cultural heritage**
- **technology and development** theme in 1955,
- series all showing the map of India in 1957

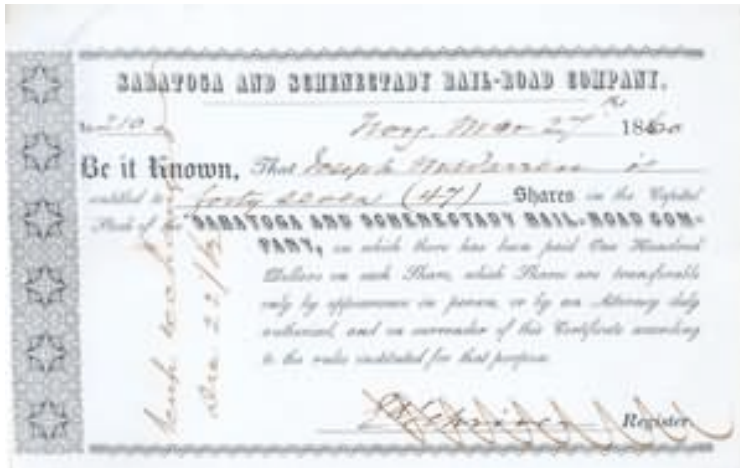


## TWENTY FIRST CENTURY

- Indian Postal Service serving the public from 155,000 post offices
- Most widely distributed system in the world
- China has 57,000, Russia 41,000 and the United States 38,000 offices
- small savings banking and financial services
- computer-generated patterns and stamps of different shapes



# TYPES OF CANCELLATIONS



## Pen cancellation

Cancellation of oldest certificates with ink pens generally though officer's name



## Punch Cancellation

Two holes in each officers' signatures

holes were punched through corporate seals





## Hole Cancellation

Very large punch cancellations removed large pieces of paper.  
Quarter-inch holes or larger diamond- or rectangular-shaped holes.

## Pinhole Cancellation

series of tiny holes, usually spelling out a word or date.





## Stamp Cancellation

Cancellation by rubber stamps. Usually, spelled words "cancelled" or "void." Red and purple inks were common

## Cut “Hammer” or “Knife” Cancellation

Hitting Hammer & razor Blades.  
This kind of cancellation is almost impossible to detect in photographs because the paper remains visually intact





## Cut-out Cancellation

Very large amounts of paper were removed, normally by slicing triangular pieces out of the officers' signatures.

## Wipe Cancellation

cancellation with a rag soaked in dilute red ink.



# STAMP CANCELLATION

- postal marking applied to a postage stamp
- indicating that the item has been used
- To avoid the re use of stamps
- Also shows some details such as date & location
- Stamps are to be pasted on top right corner.





Earlier Pen  
cancellation was  
used to cancel  
stamps.

Rubber stamps for  
cancellations





Hand Stamps



Machine  
Cancellation



## Franking Machine - US

With a franking speed of 185 items a minute, a special mailing to your top 1,000 customers takes under 6 minutes

Self-adhesive labels from the automatic dispenser to deal quickly with large or bulky items

Large, easy-to-read LCD display with user friendly menus, operator prompts and automatic date advance

Process mixed mail - no need to waste time sorting mail by size, thickness or weight

Automatic feeder to process mail up to 16 mm thick

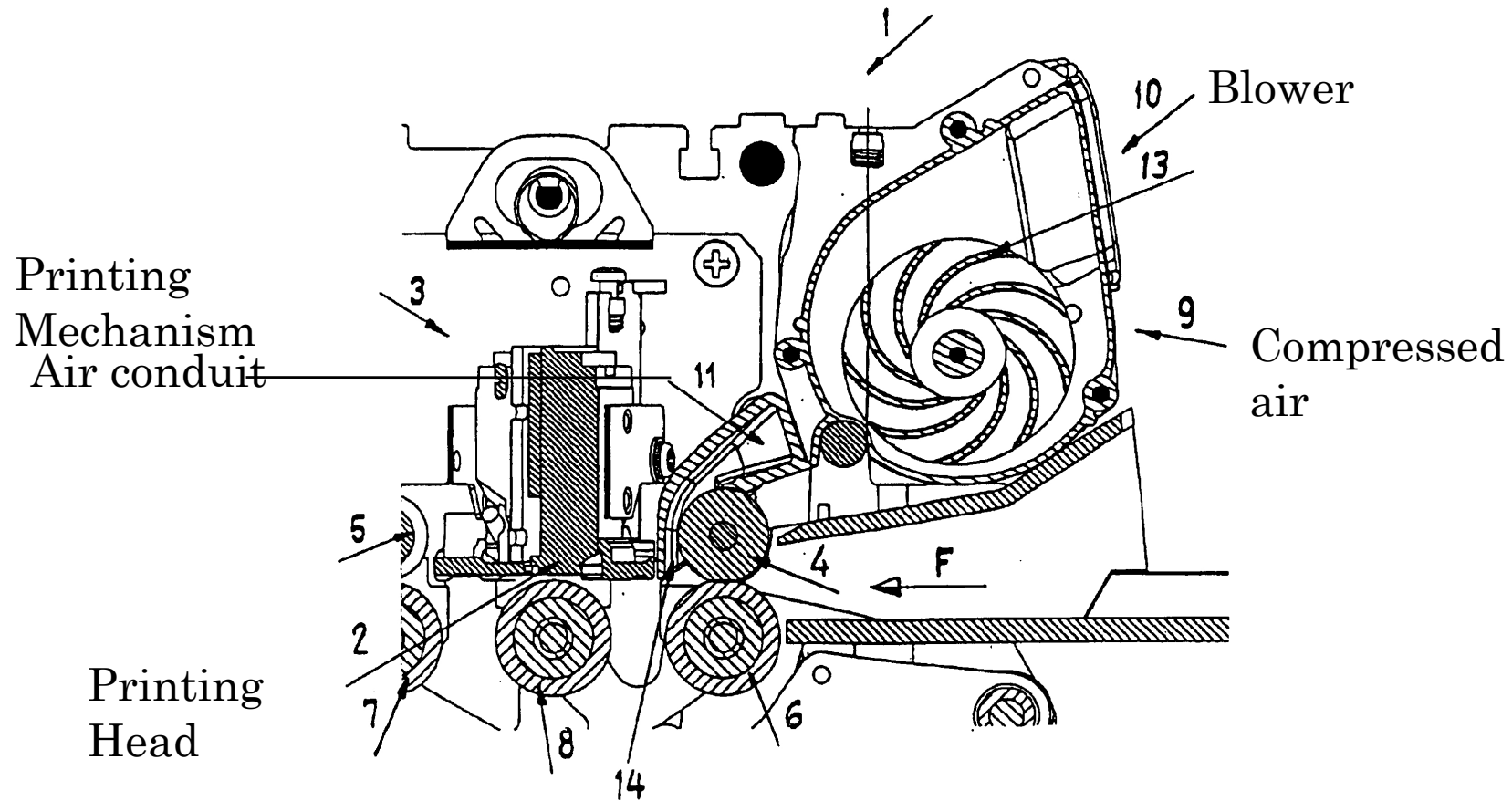
Analyse and allocate costs for up to 500 departments

Credifon<sup>®</sup> remote recrediting

High volume digital inkjet franking



# United States Franking Machine



# STAMP CANCELLATION IN INDIA

Hand stamps are commonly used

Only in big cities head post offices and GPO's are having machine Cancellations

Villages 400-500 letters/day

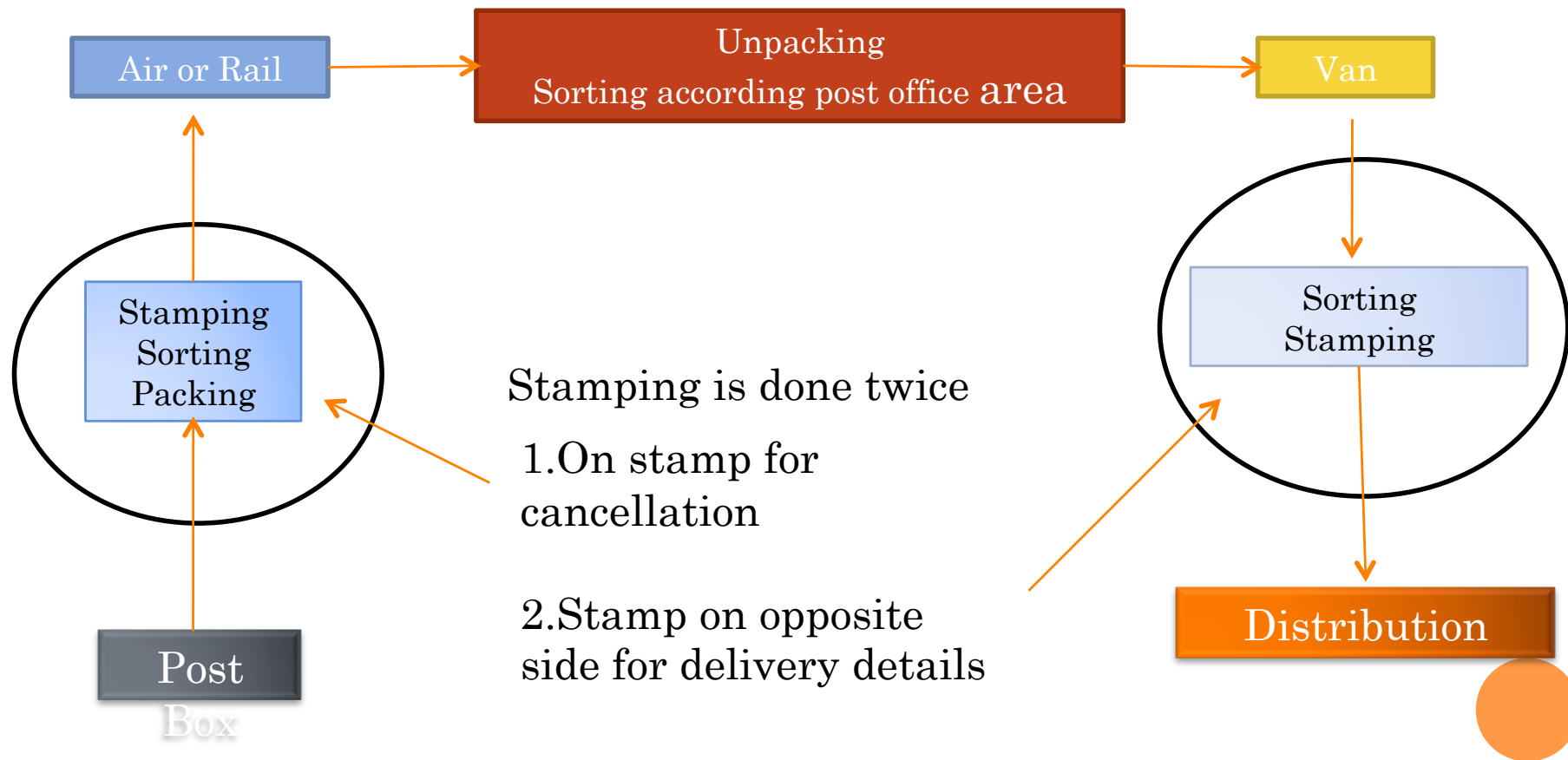
Cities 25,000-30,000 letters/day

One person stamps about 2,000 letters /day

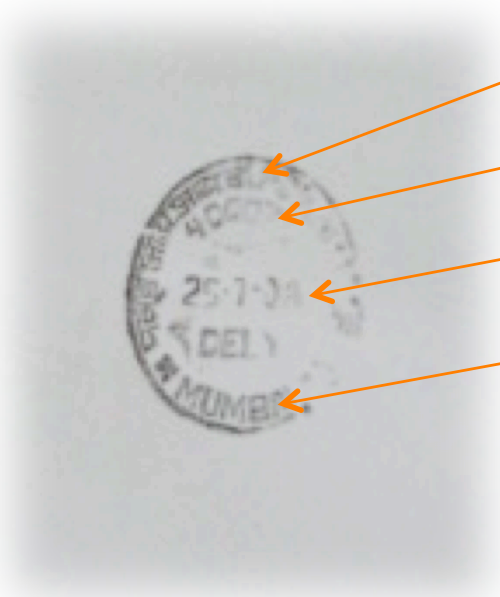
	No. Of Post Offices
Country	155,516
Rural areas	139,120
Urban areas	16396



# WORKING NETWORK



# INFORMATION ON STAMP



Name of Post Office

Pin Code

Date

Location



# EXISTING METHOD



Hand stamp

Ink Pad

Person doing stamping using Hand Stamp



# HAND STAMP DETAILS



Type  
arranged as  
per date



Slot for  
inserting type

Type



# DIFFERENT HAND STAMPS



↑  
Round Stamp



← Square stamp metal



← Square stamp



# TYPES OF LETTERS



Card 9.5 X 14.5 cm

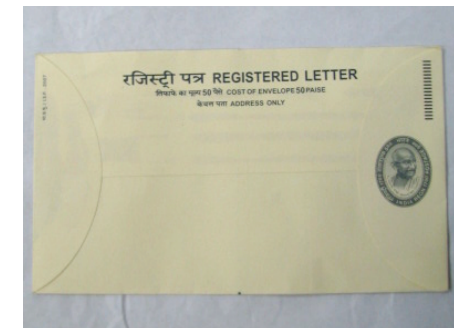
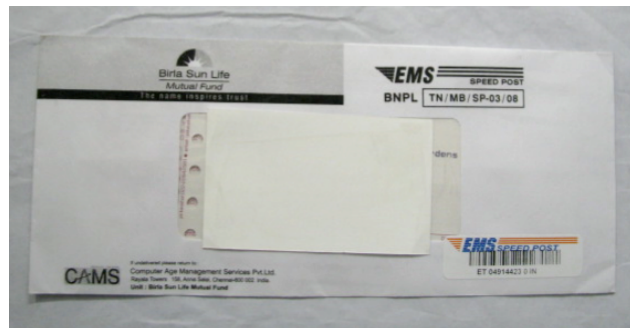


Inland 9 X 13 cm

Ensured Envelope 15 X 22.5 cm

EMS 10 X 23 cm

Registered letter 11.5 X 19 cm



# NEED FOR DESIGN

To increase efficiency

Automatic cancellation machines are costly

Stamping with hand stamp, consumes more time

Uniform stamping not possible because of pressure difference

- Ink distribution is not uniform
- Excess ink may disturb the information

Less ink may lead to half print

Regular assembly and disassembly for date change

## **Human factors:**

Generally stamping done in standing position, causes pain in legs

Regular hand movement causes wrist pain, elbow pain, back ache, pain in vertebrae etc.



# PROBLEMS IN CURRENT METHOD

- Improper ink distribution
- Standing operation
- Noise
- Accuracy
- Large number of letter
  - Person -2000 letters/day
  - Initially 65-75 letters/min
  - Peak 95/110 letters/min



# SOLVING THE PROBLEM

Providing better cancellation

Method

Good print quality

Best suitable ink(various colours)

Human comfort

Speed of operation



# POST OFFICE IMAGE BOARD



# TYPE OF DELIVERIES

Letter Bag – Ordinary – Post card, Inland, Second class etc.

Speed Bag - EMS(Express Mail Service)

Parcel Bag – Multiple of 500 gms

Packet Bag – Book post multiple of 50 gms

Account Bag – Account details

Due Bag – Dues details



# USER DETAILS

- For stamp cancellation process, the user may be person from age group of 20-50 yrs old.
- With minimum education can be 10th pass.
- May or may not have good vision
- He can easily change dates and can do the maintenance of cancellation device



# DESIGN INSIGHT

## Discussion with CPMG (MR Bali)

- **Good printing quality**

- as in existing method print was not good & indentation resulted in disturbance on letter/content in pocket.

- **Proper ink distribution**

- in existing method ink collection & deposition was not uniform which resulted in improper ink distribution

- **Cancellation with good speed**

- existing method was having cancellation speed of 80 letters/min approx

- **Not depended on electricity/manually operated**

- due to availability of electricity

- **Special Cancellation**

- Historical/monument/landmark cancellation

- cancellation having picture, which will remind some memories and thus attract users.

- Festival cancellation

- cancellation with picture of celebration & joy during various festivals.



# DESIGN BRIEF

Final design should provide good print quality with uniform ink distribution.

It is a manually operated mechanism/device and should not be dependent on electricity.

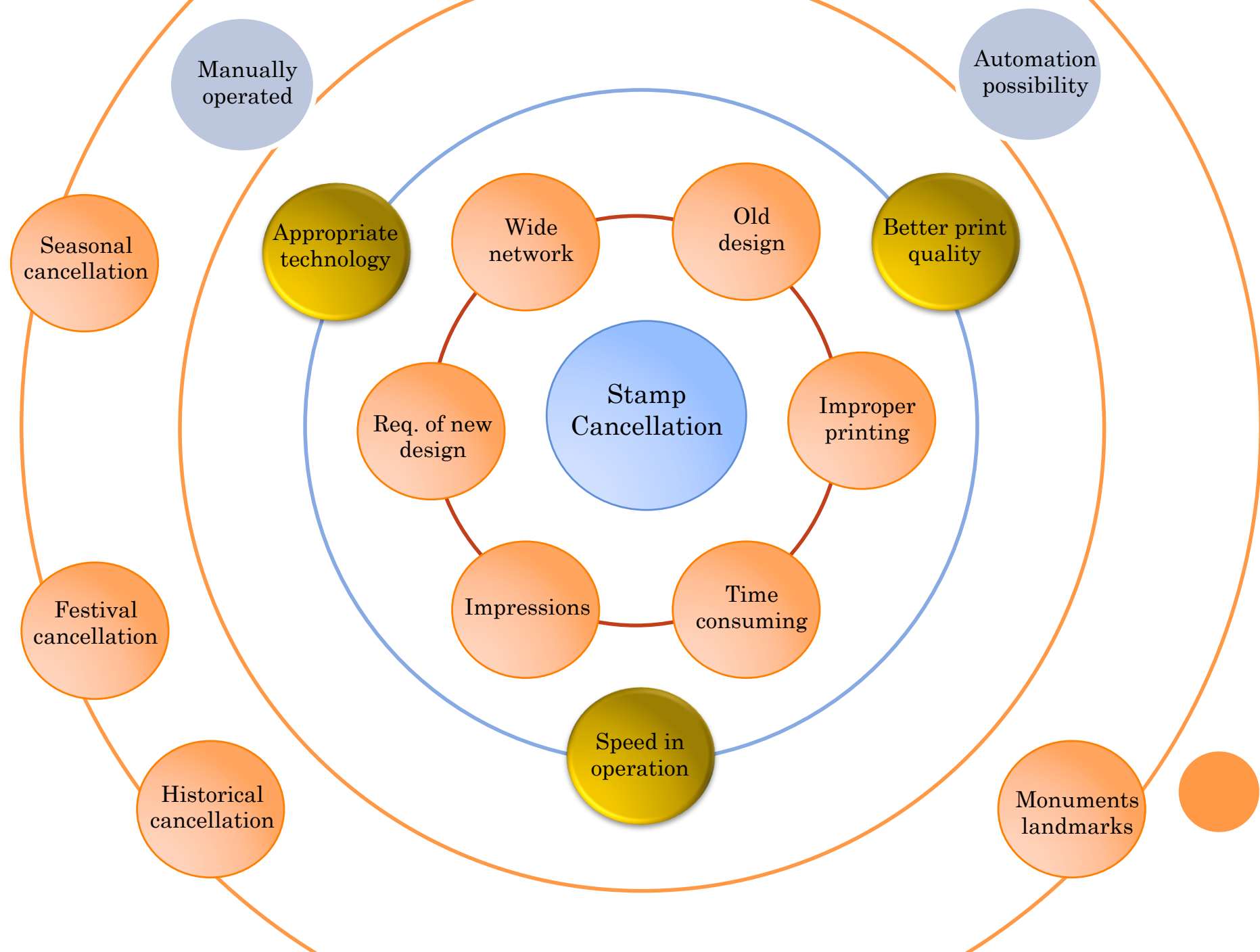
Speed of operation should increase.

Operation will include user convenience such as easy feeding, ease of location etc.

It should reduce noise.

It should also have provision for landmark/monument/historical cancellation i.e. special cancellation.





# JOURNEY DETAILS...

- Ideation
  - Metaphors
  - Analogies
    - Direct
    - Indirect
    - Fantasy
- Clustering
- Representatives
- Concepts



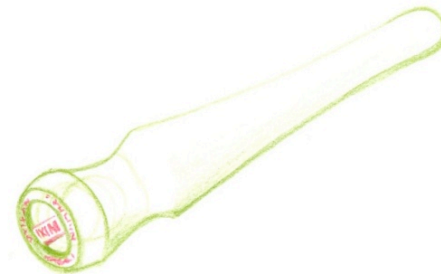
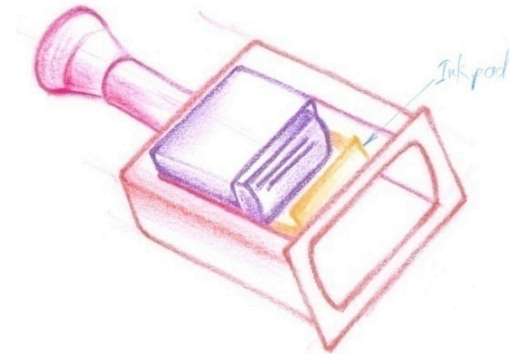
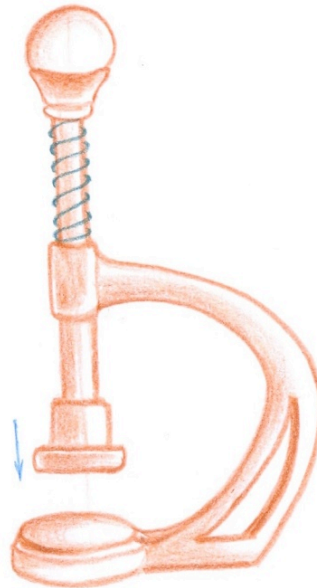
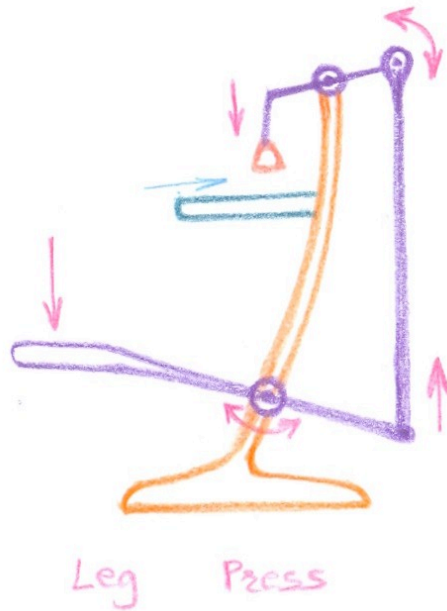
# JOURNEY DETAILS...

- Concept evaluation
  - Convenience
  - Sound reduction
  - Speed of operation
  - Print quality
- Workstation
  - Ideation
  - concepts
  - Human comfort
  - Situation enacting
  - Finalization
- Refinements



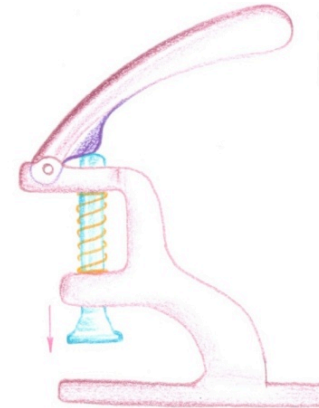
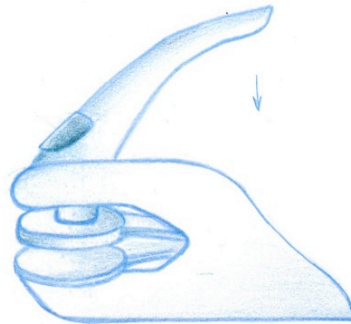
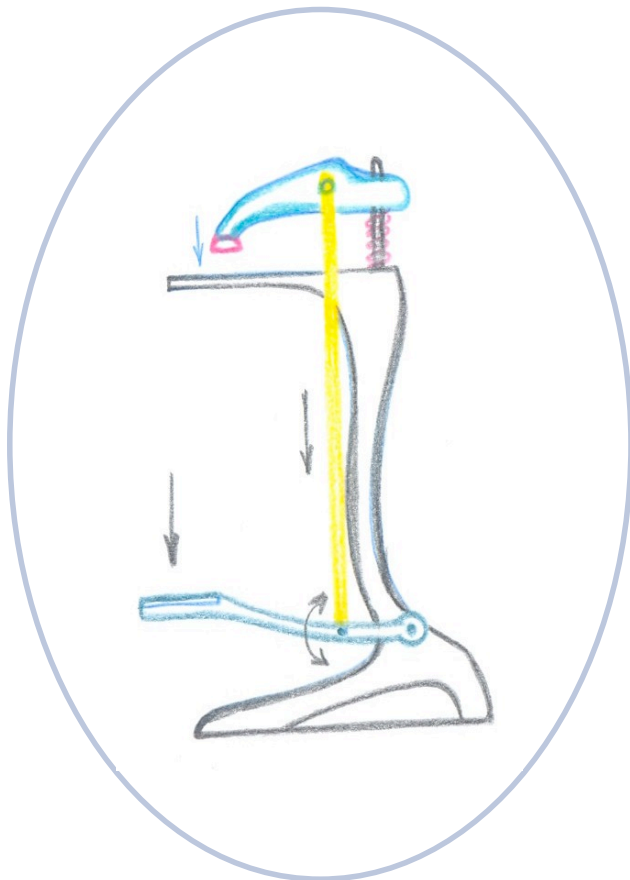
# IDEATION

## Cluster 1

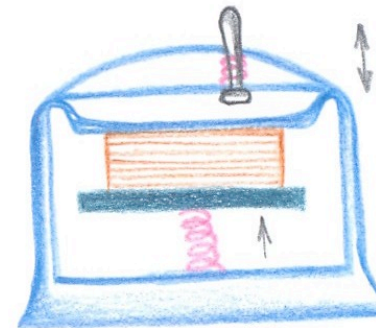


# IDEATION

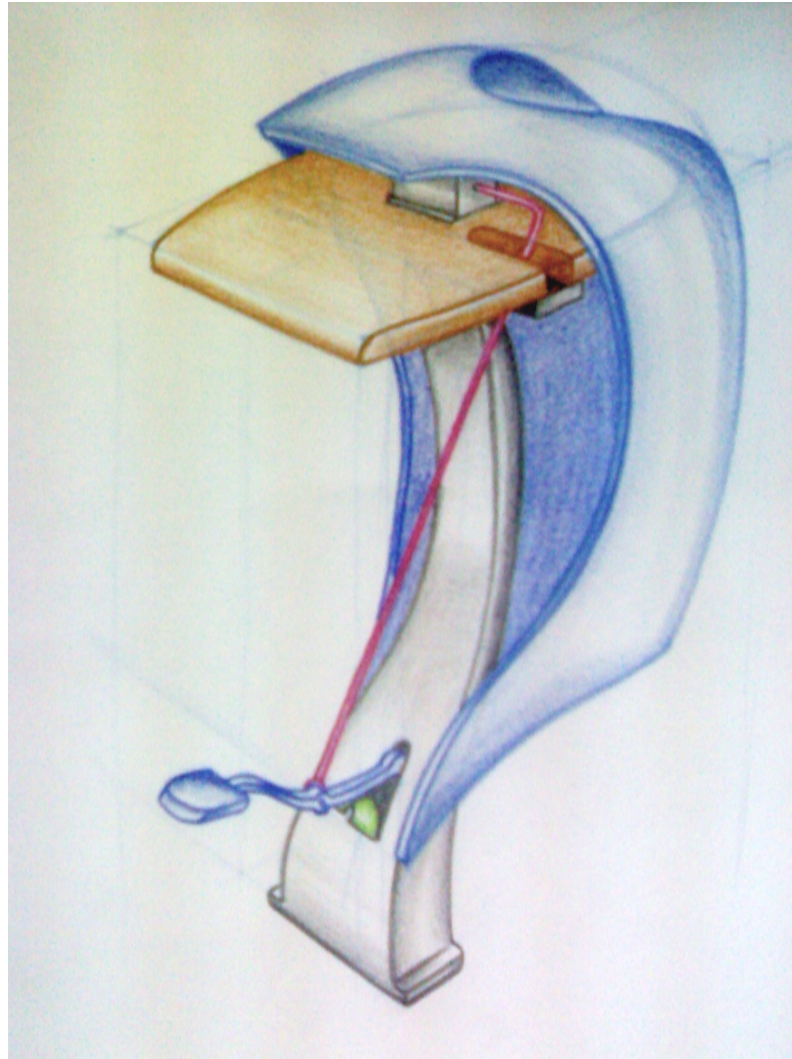
## Cluster 1



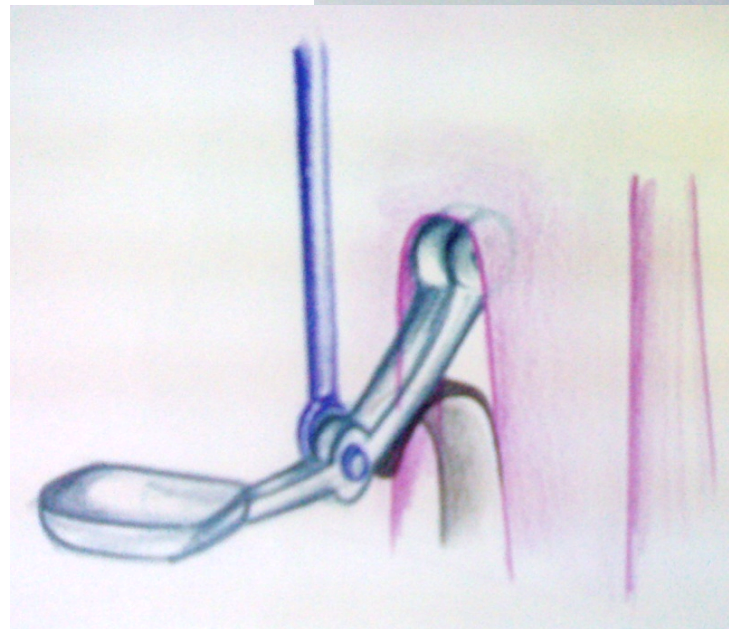
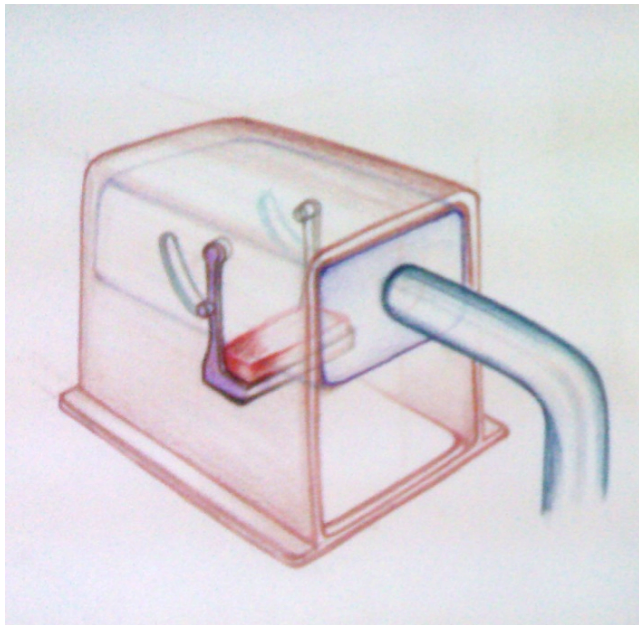
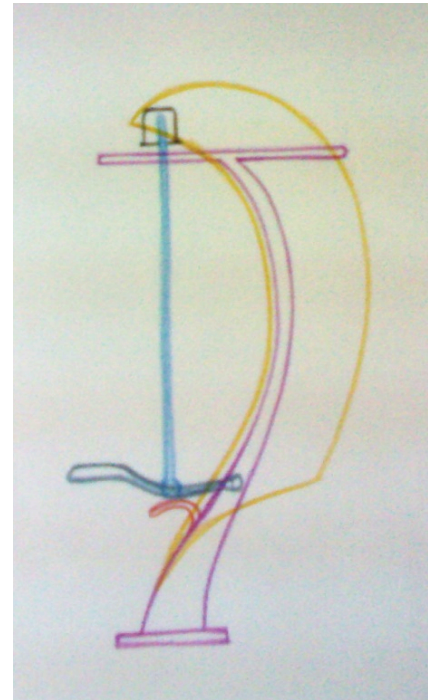
*As computer mouse*



# CONCEPT 1

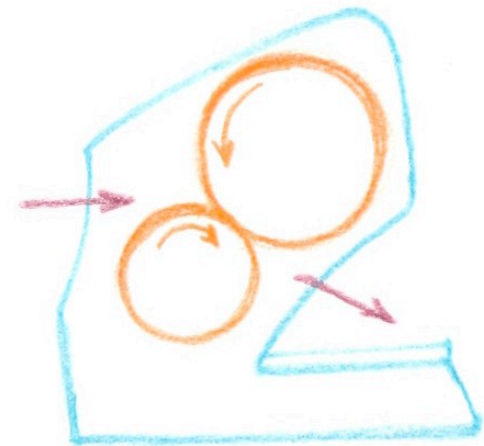
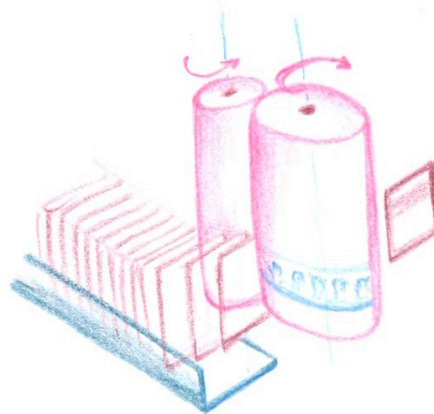
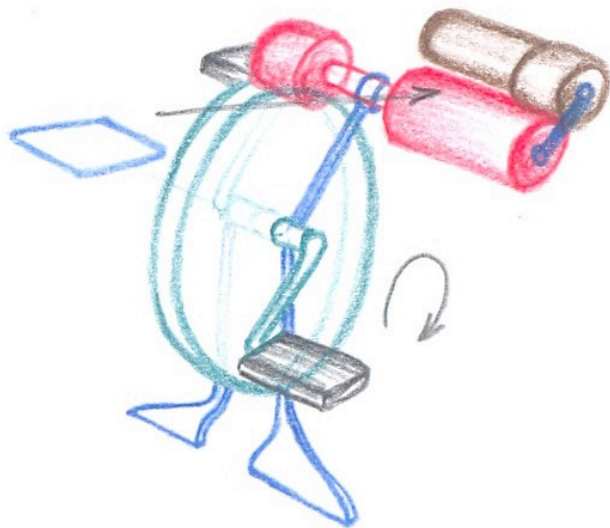
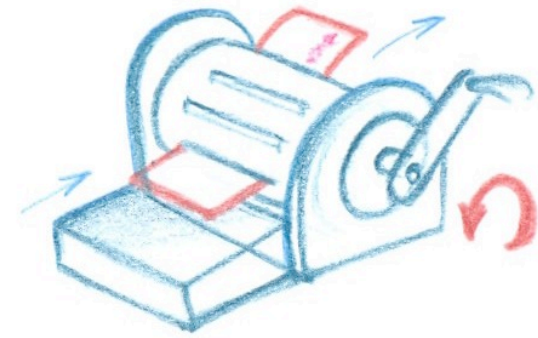


# CONCEPT 1



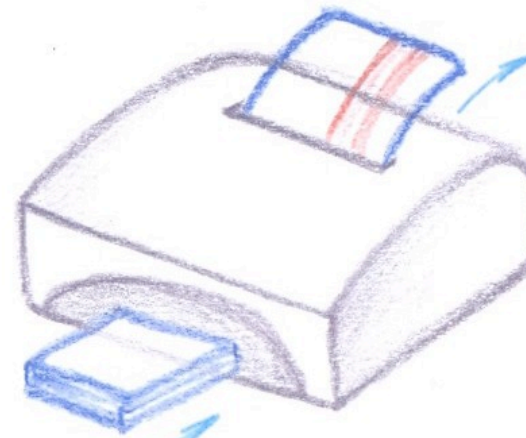
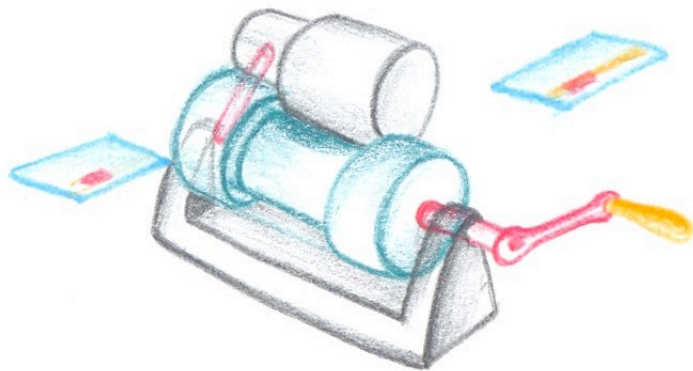
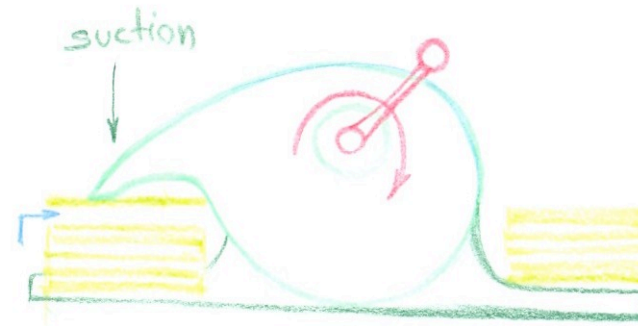
# IDEATION

- Cluster 2



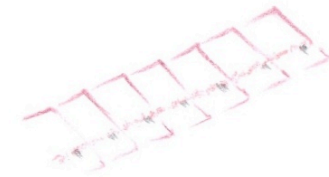
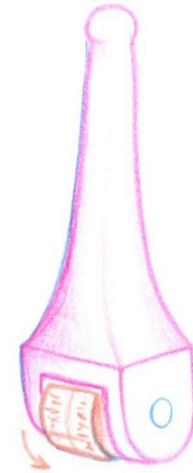
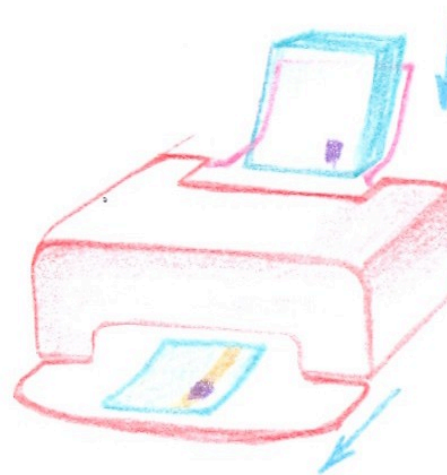
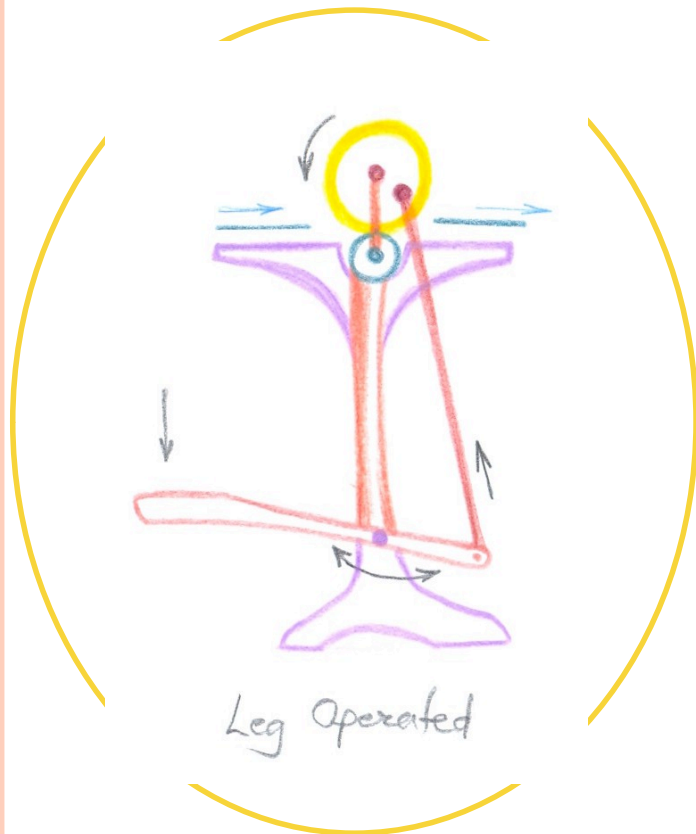
# IDEATION

- Cluster 2

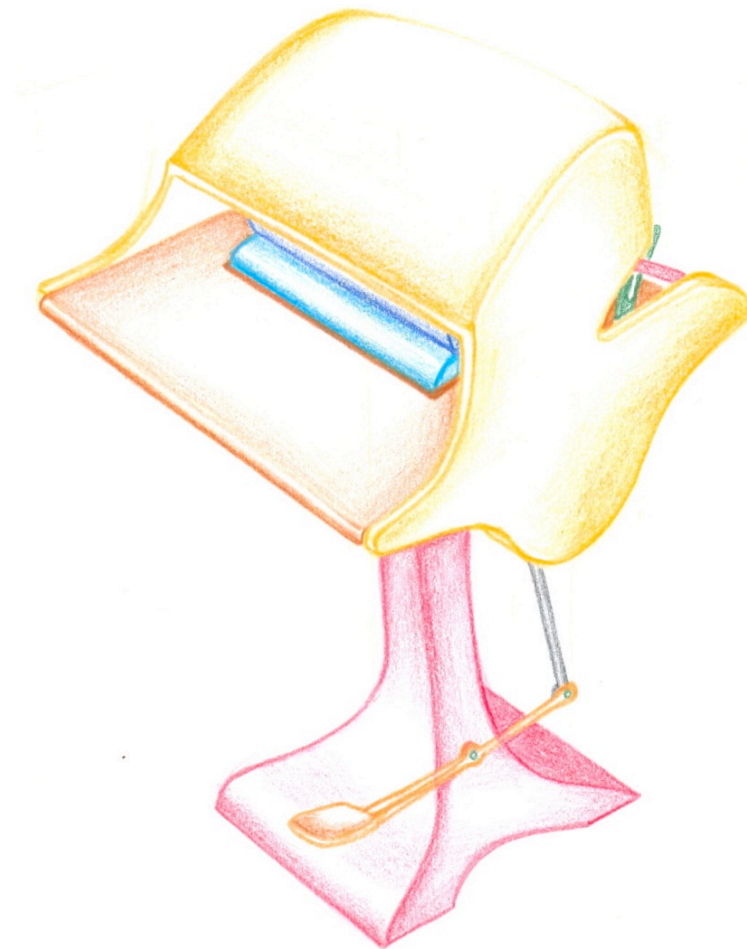


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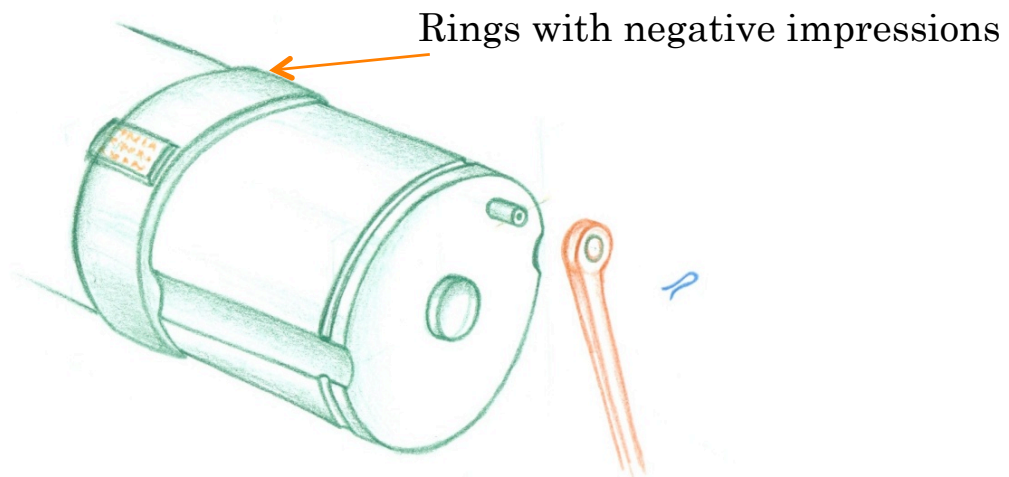
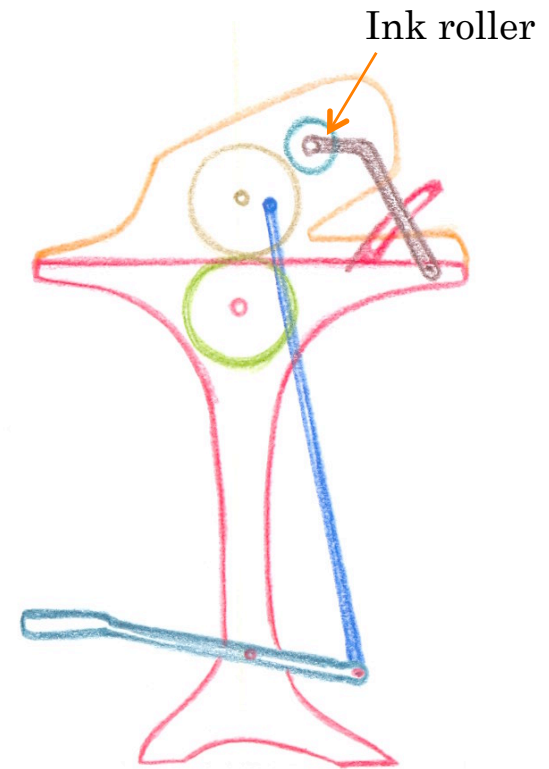
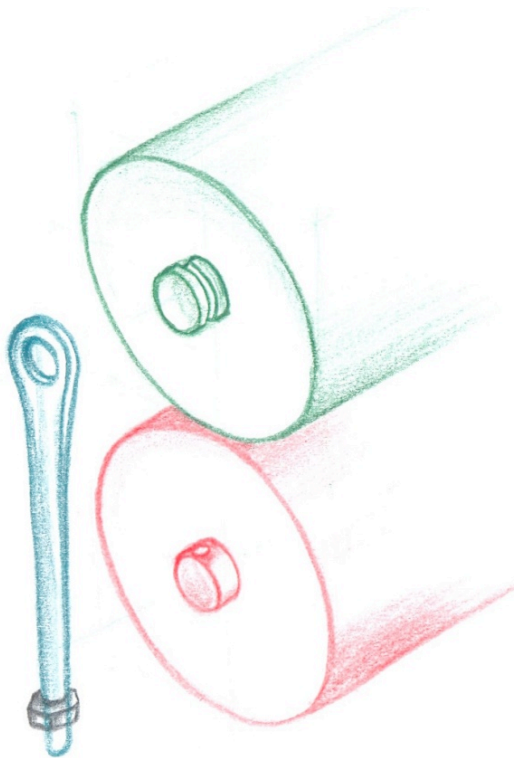
## Cluster 2



## CONCEPT 2

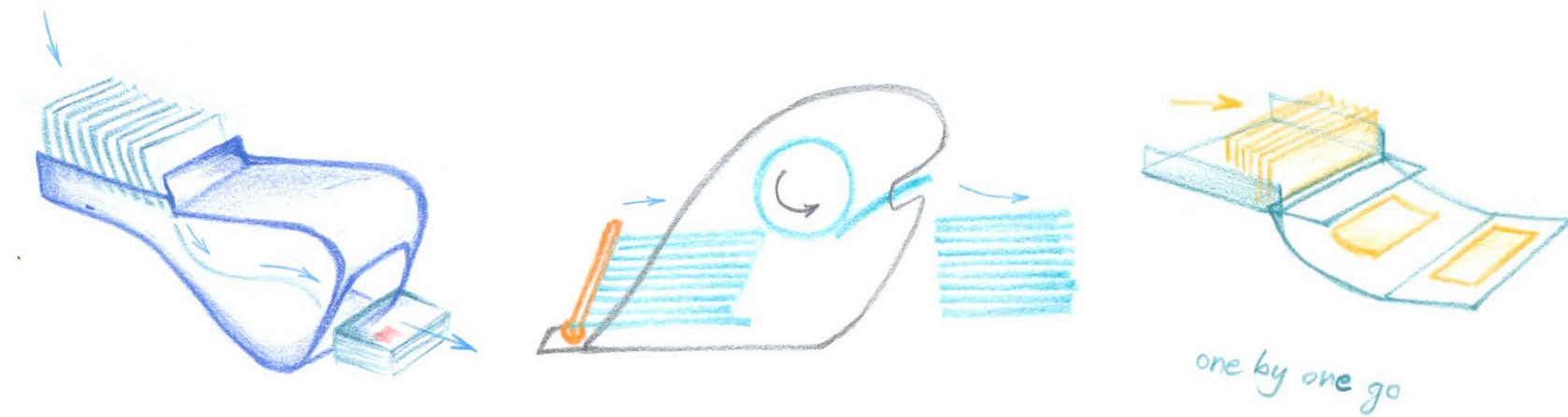


## CONCEPT 2



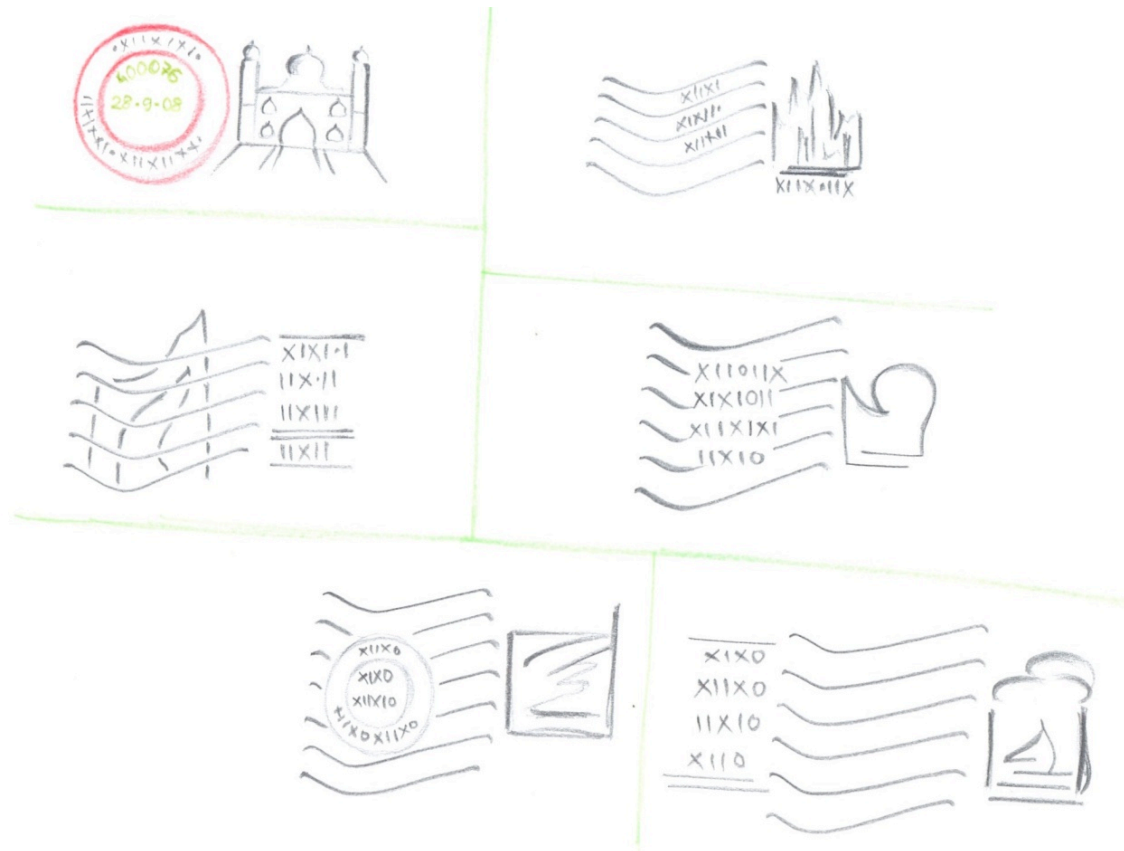
# IDEATION

- Some ideas for one by one letter



# IDEATION

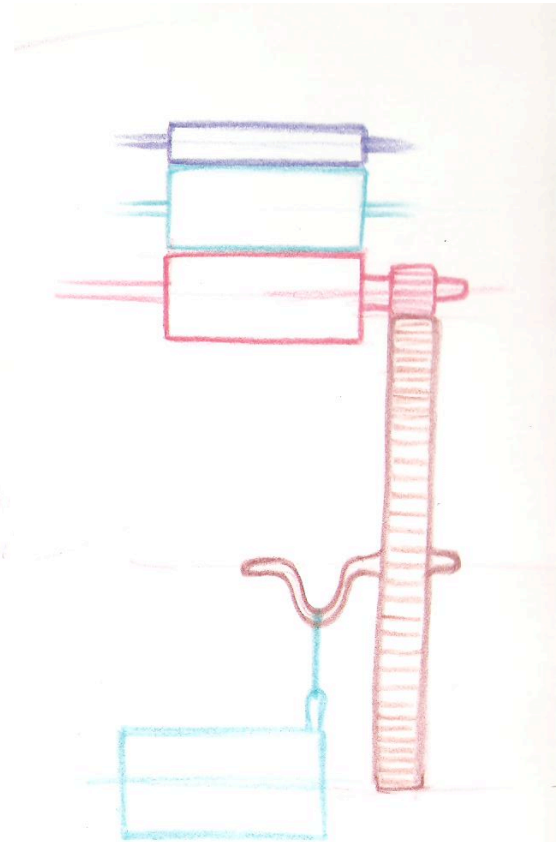
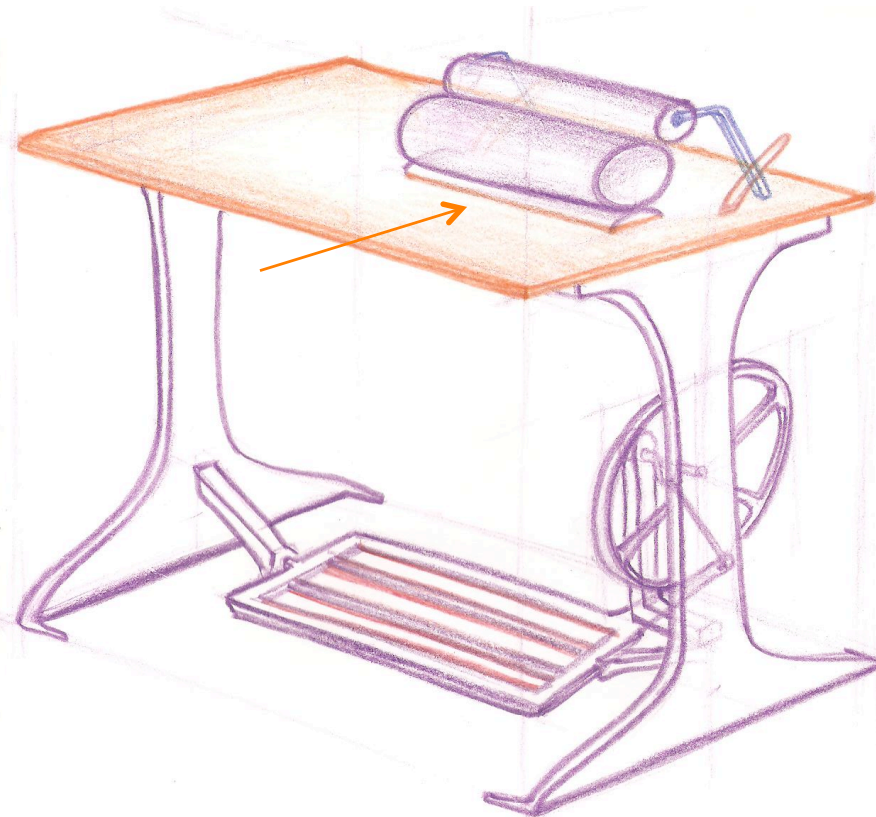
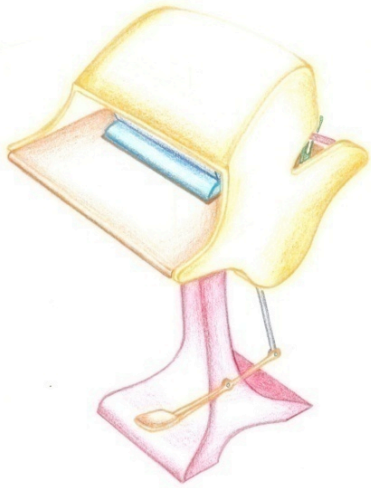
- Cancellation



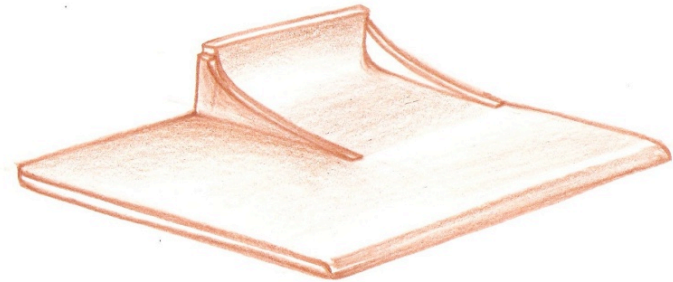
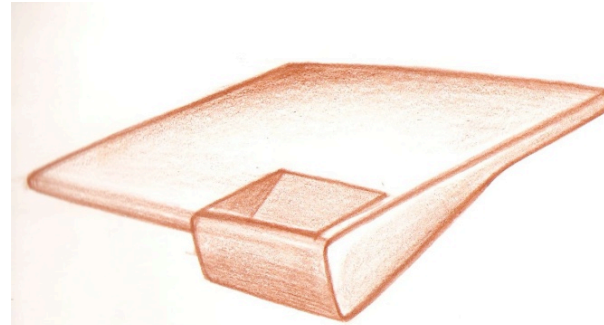
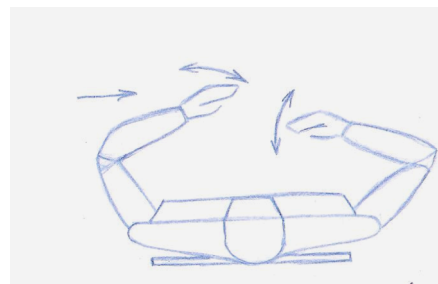
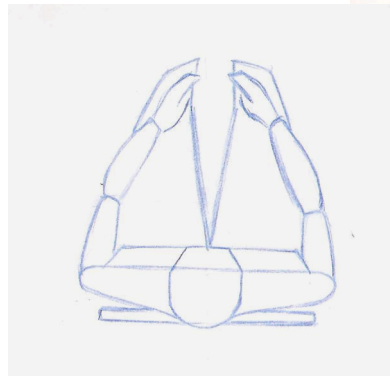
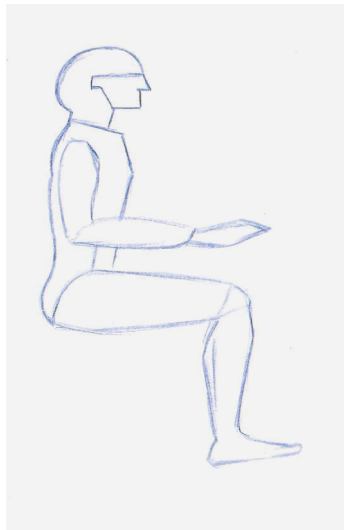
# CONCEPT EVALUATION

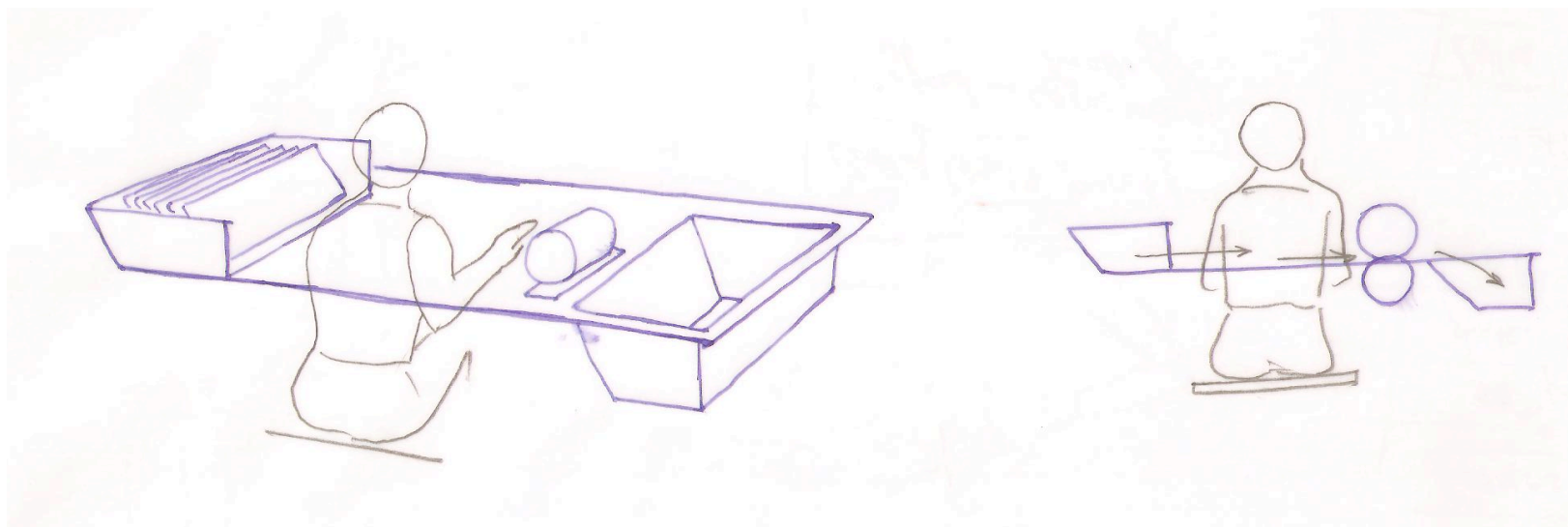
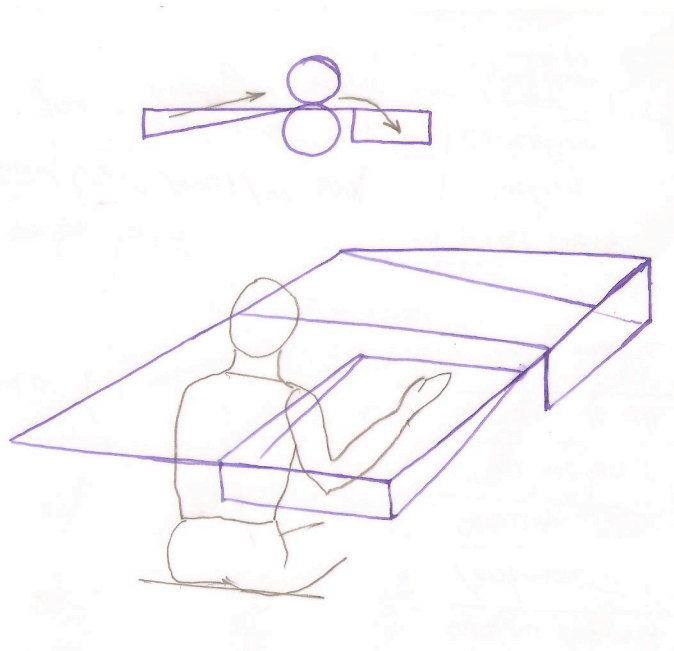
	Print quality	Ease of location	feeding	Sound reduction	convenience	speed	Automation possibility
Concept 1 Recipro.	6	7	5	6	5	6	5
Concept 2 Roller	8	8	7	8	7	8	8

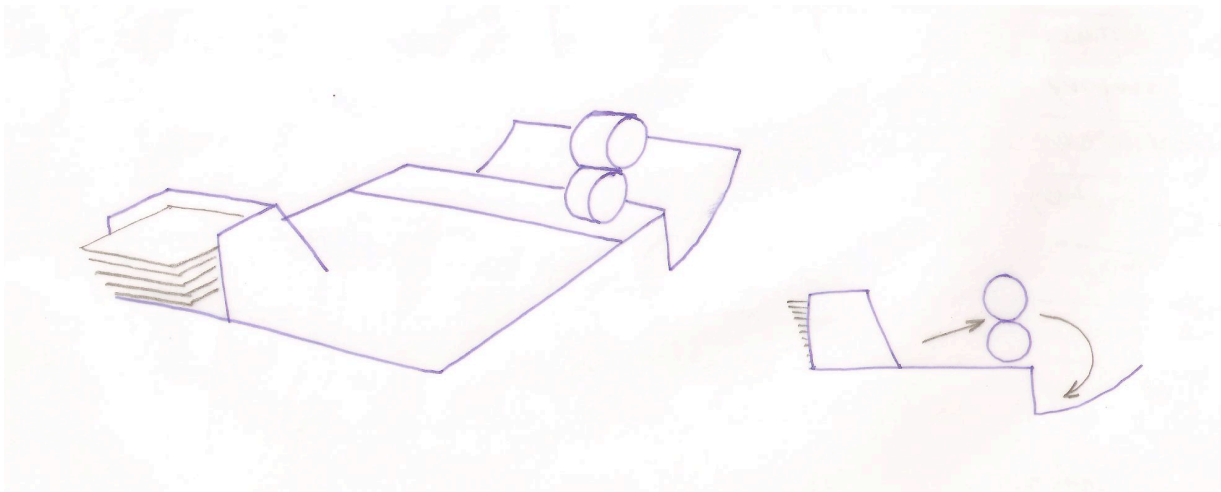
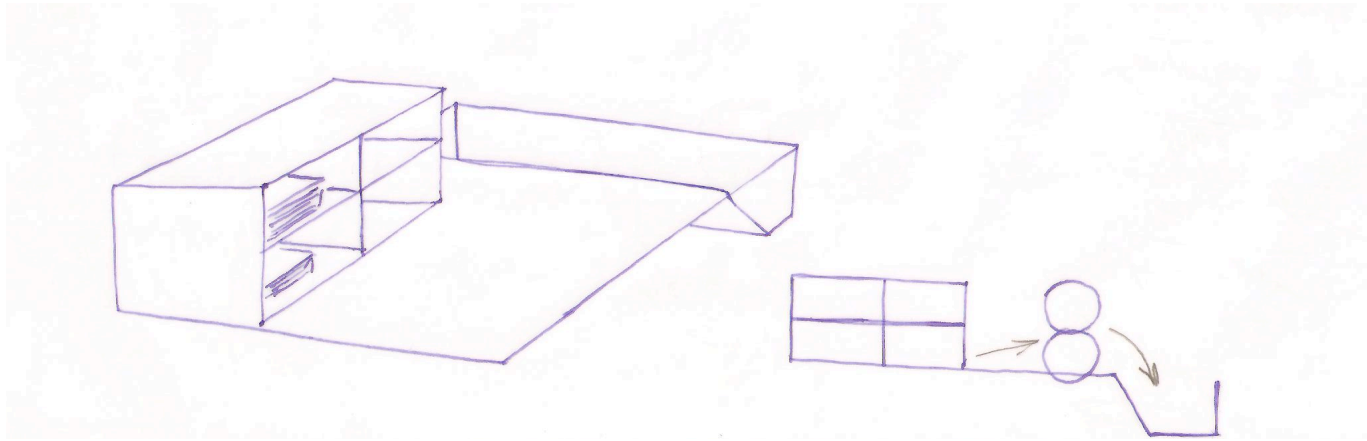


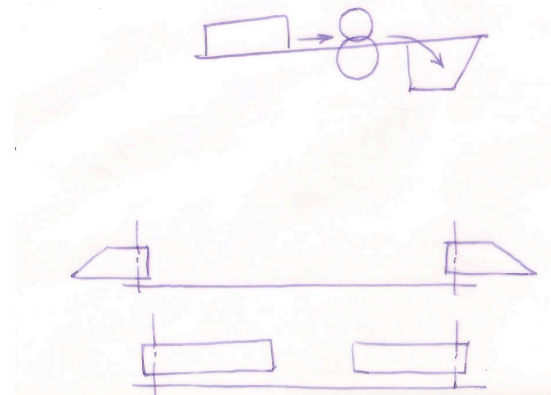
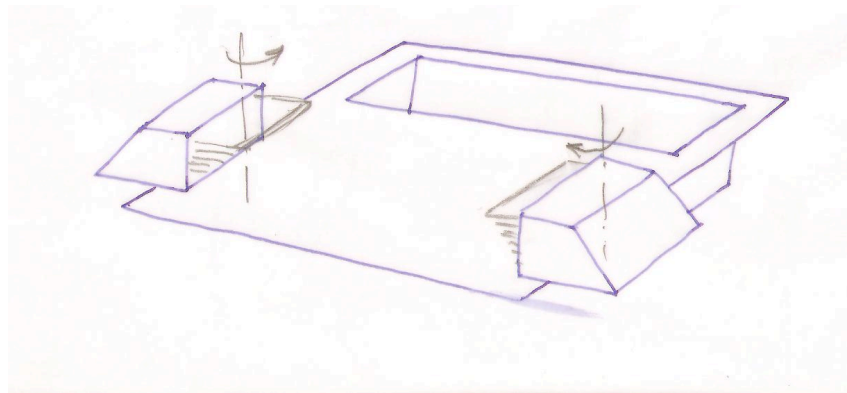
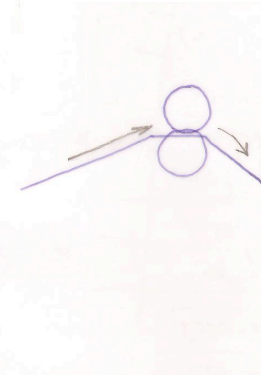
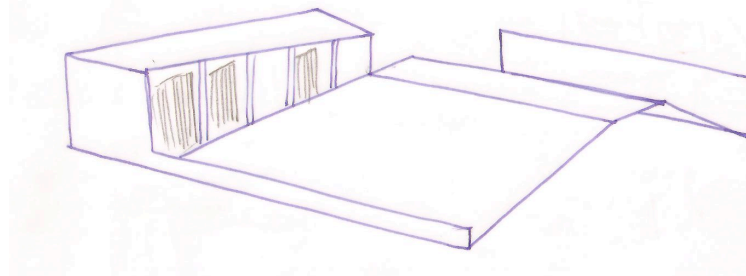
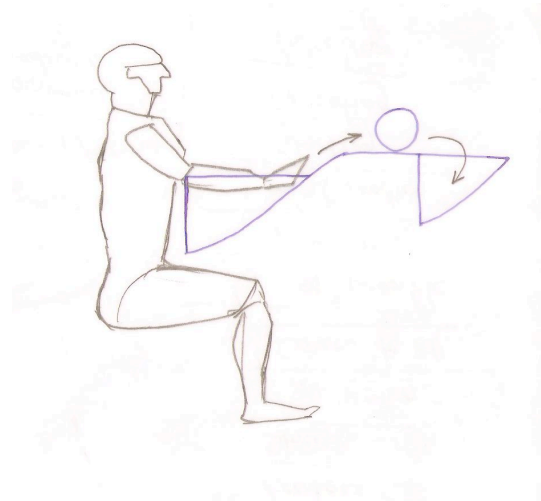
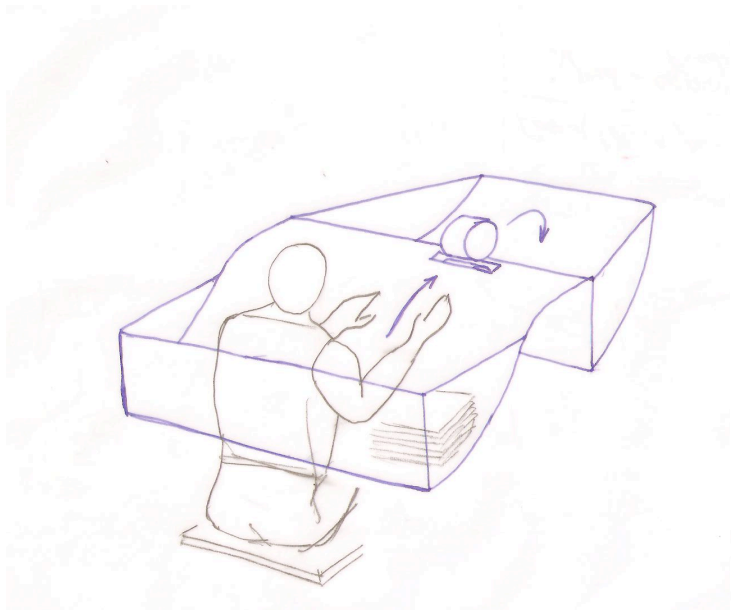


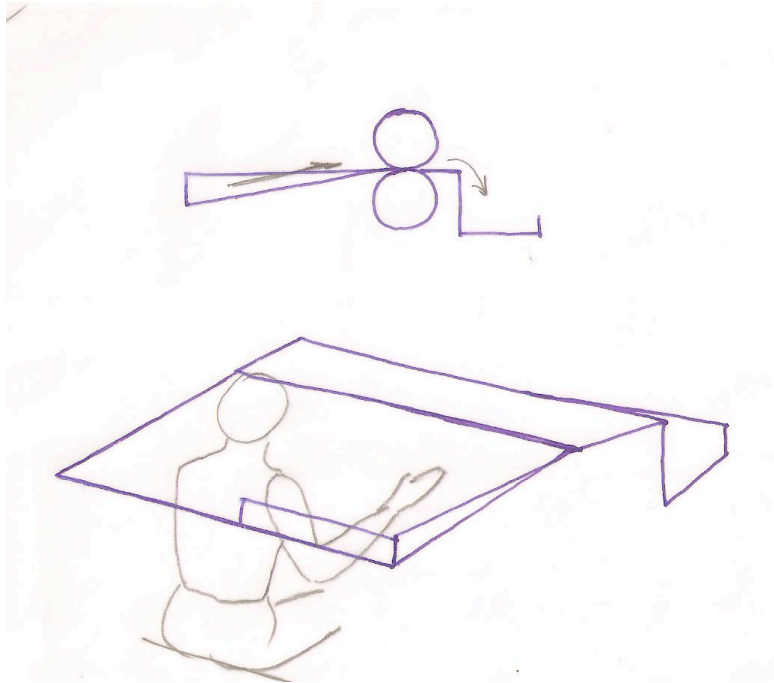
# WORKSTATION



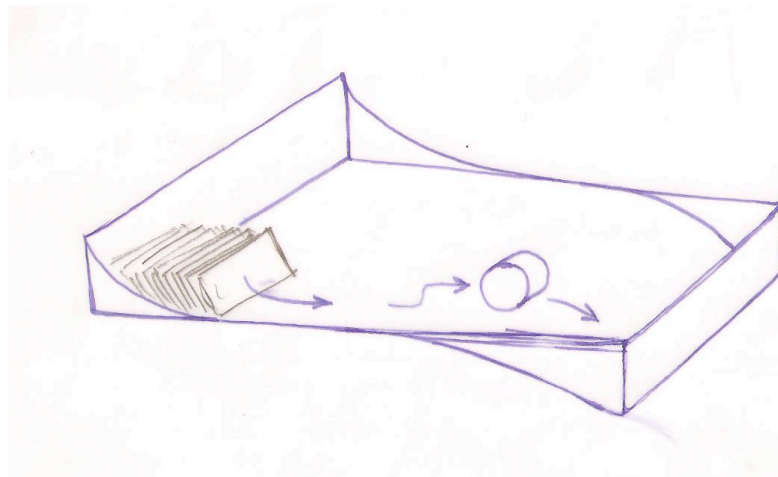




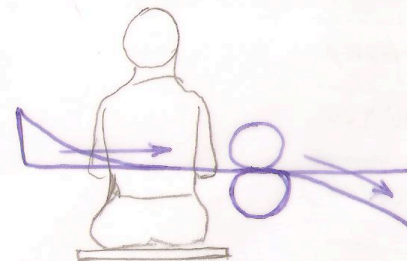




Concept A

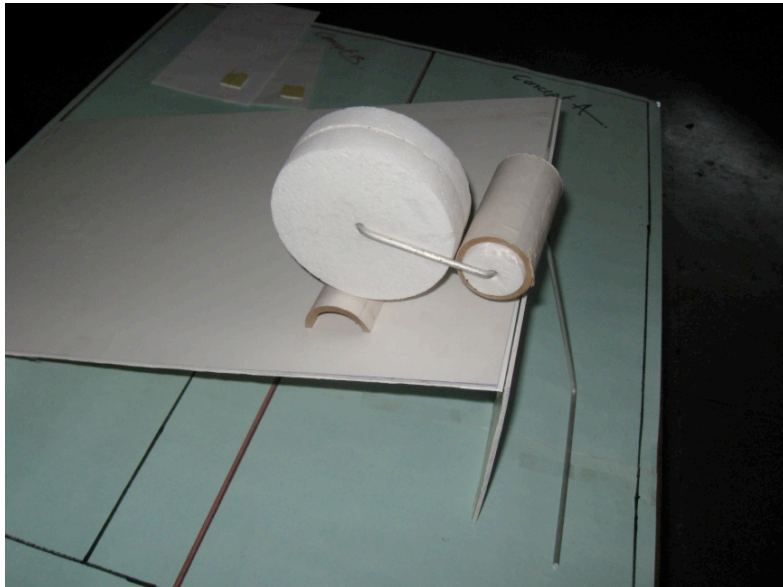


Concept B



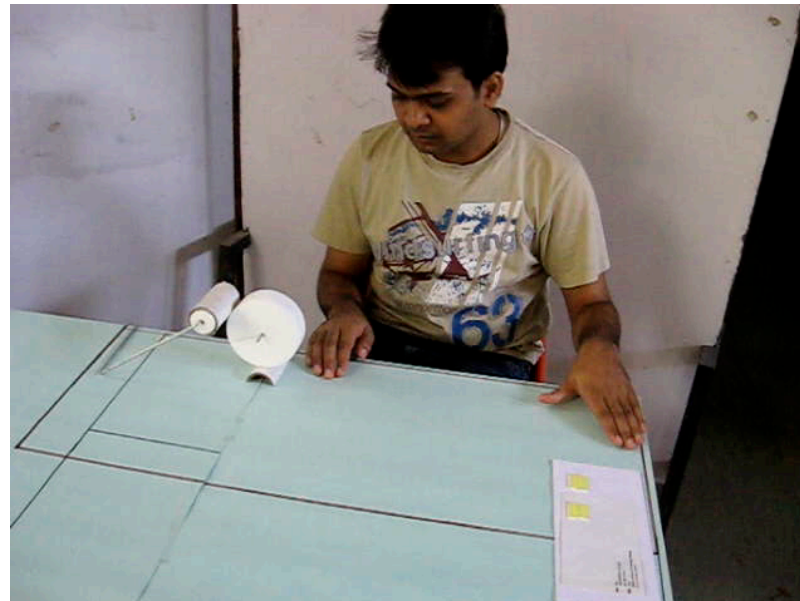
# ENACTING

## Concept A



# ENACTING

## Concept B



# WORK STATION SELECTION

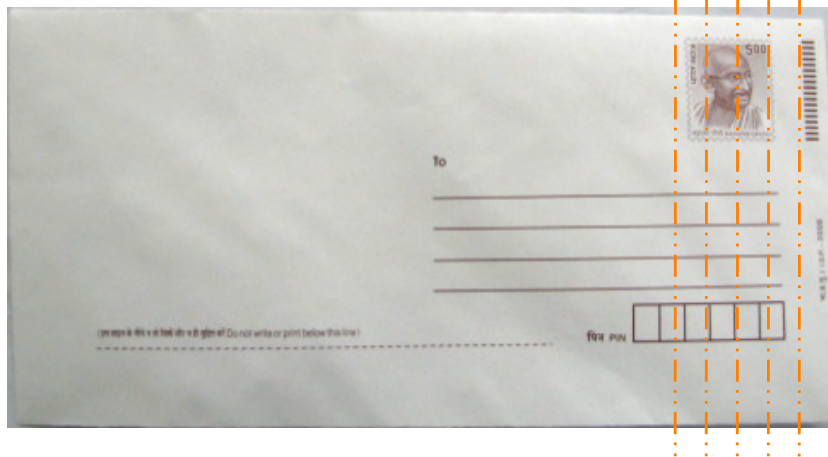
Collected good factors from both and arrived with a new work station

- Front feeding
- Less hand movements
- Comfort in operation
- Easy to locate
  - Width 85X35 cm
  - Height 70 cm

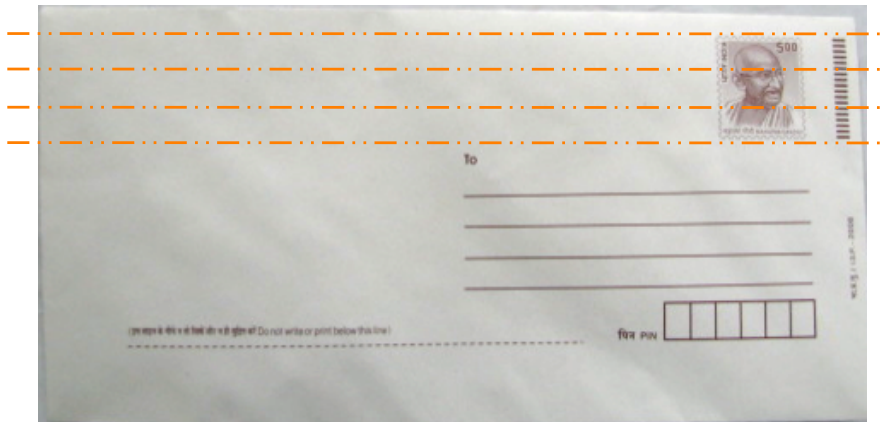


# CANCELLATION PRINTS

Two possibilities: horizontal and vertical



Cutting the name  
and address



Horizontal  
cancellation is  
selected

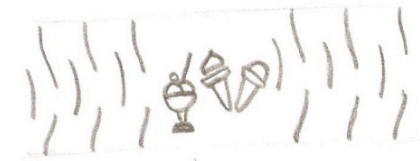
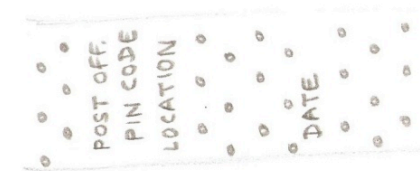
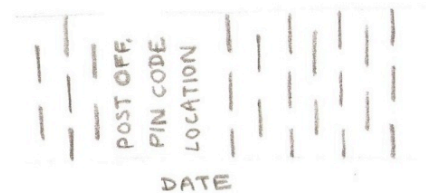
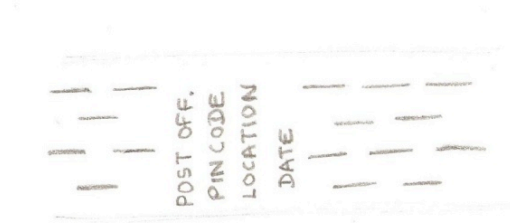


# POINTS FOR CANCELLATION

Smallest size of stamp  
2X2cm

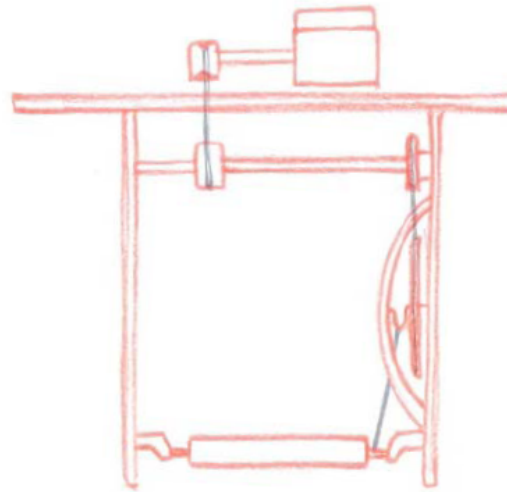
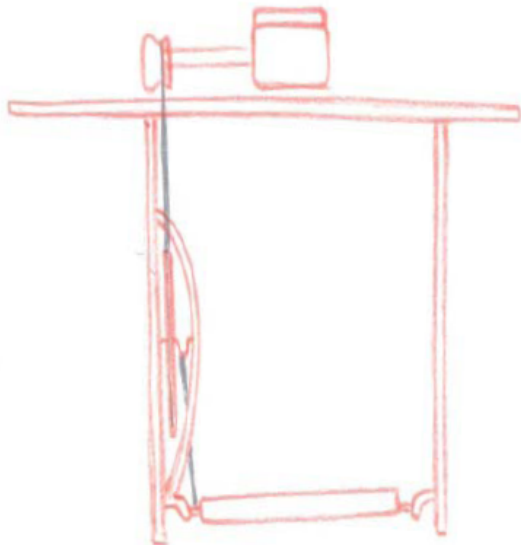
so the empty space  
should not exceed than  
2X2

Possibility of  
advertisement

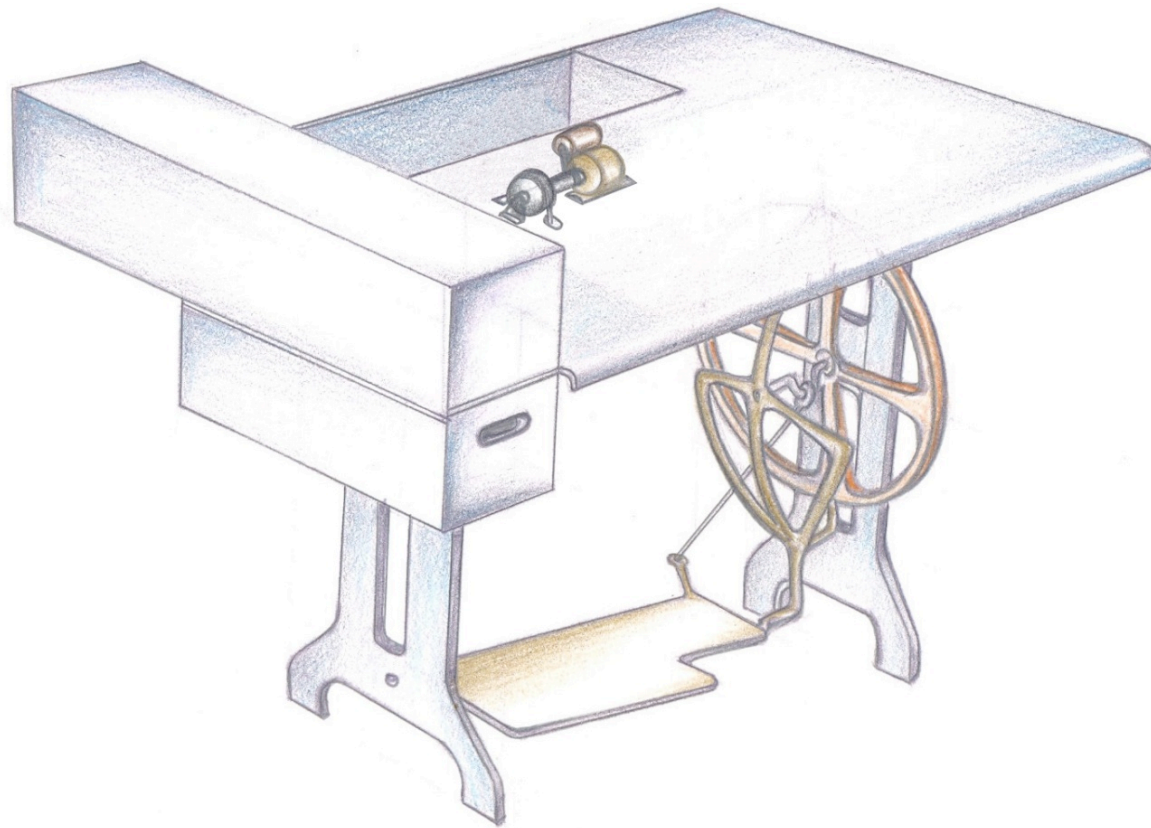


# ARRIVING AT FINAL CONCEPT...

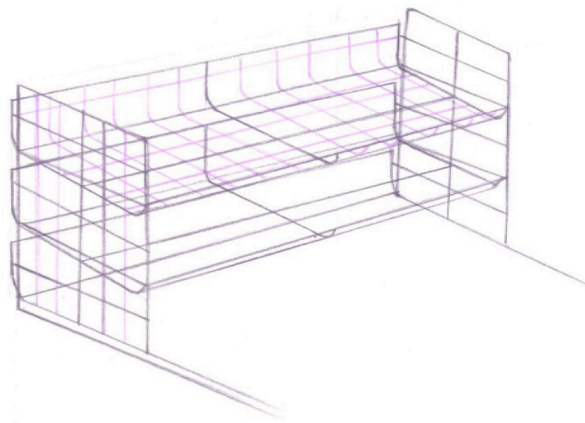
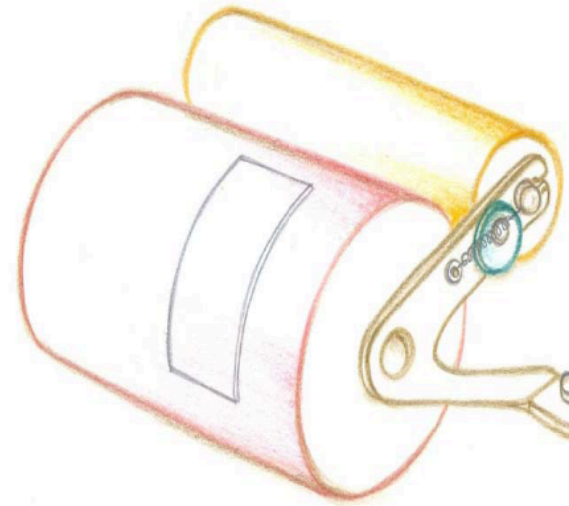
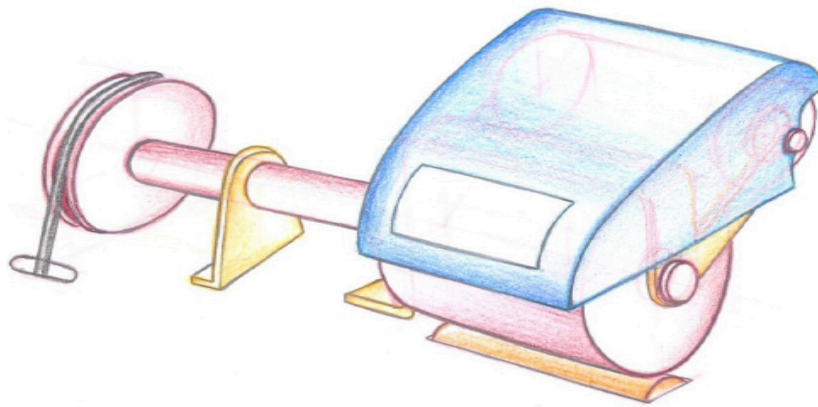
- Better print quality
- Offset inks
- Historical, monument, landmark
- Speed of operation
- Human comfort
- Advertisement potential



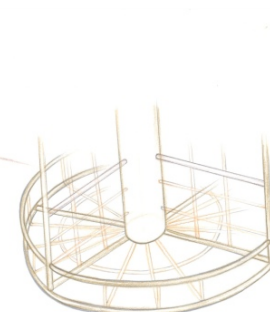
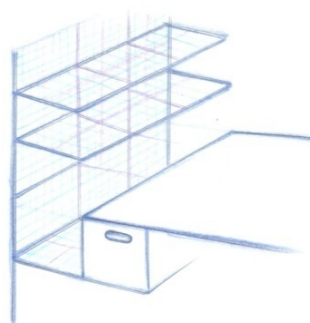
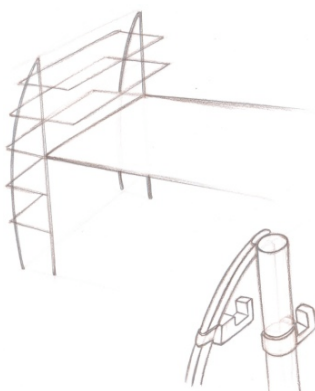
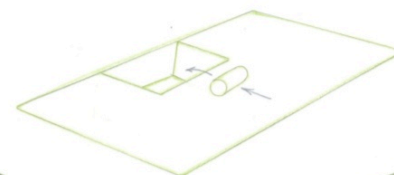
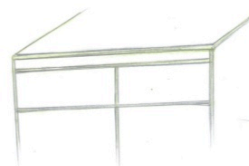
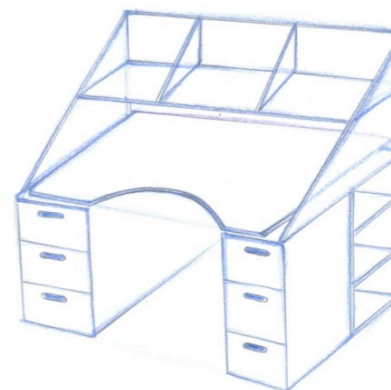
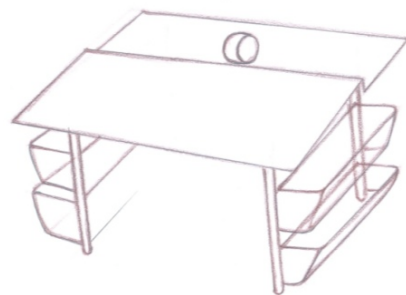
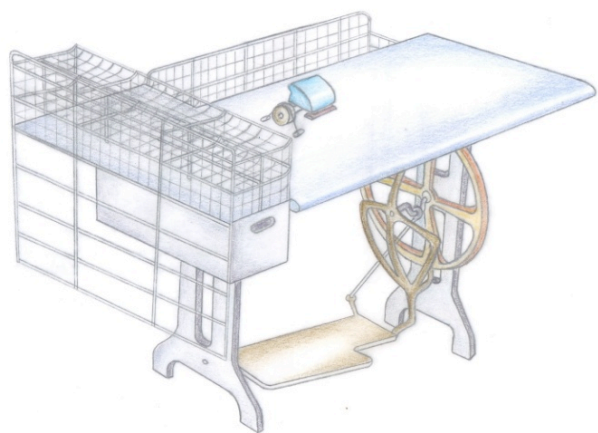
# FINAL CONCEPT RENDERING



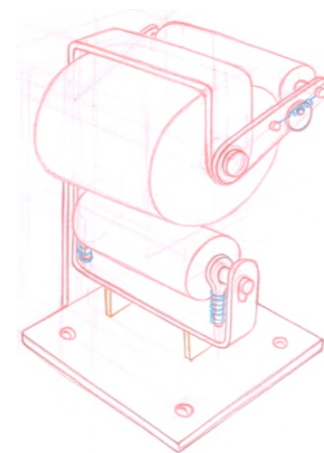
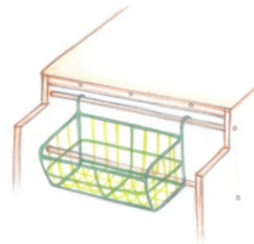
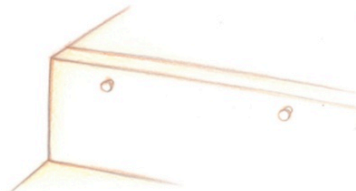
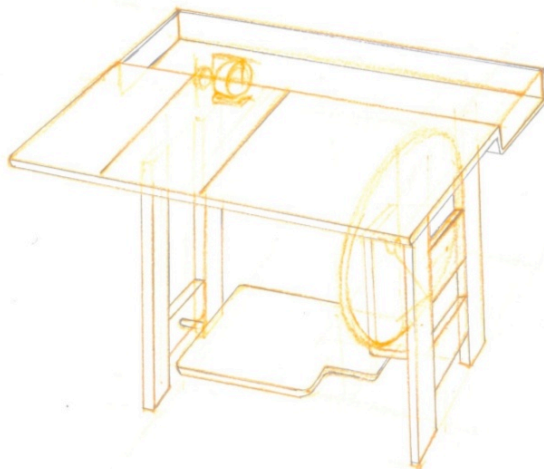
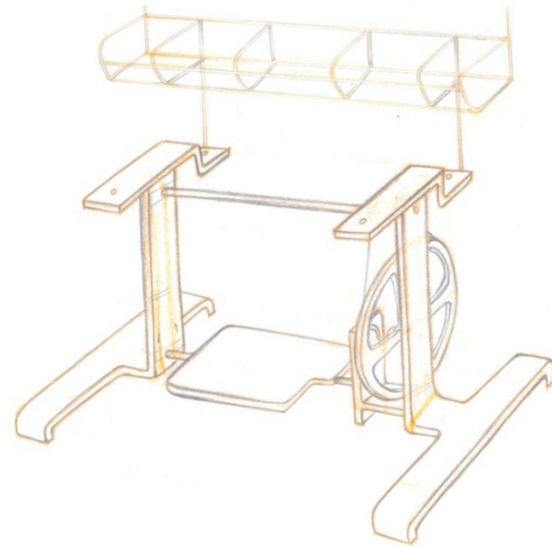
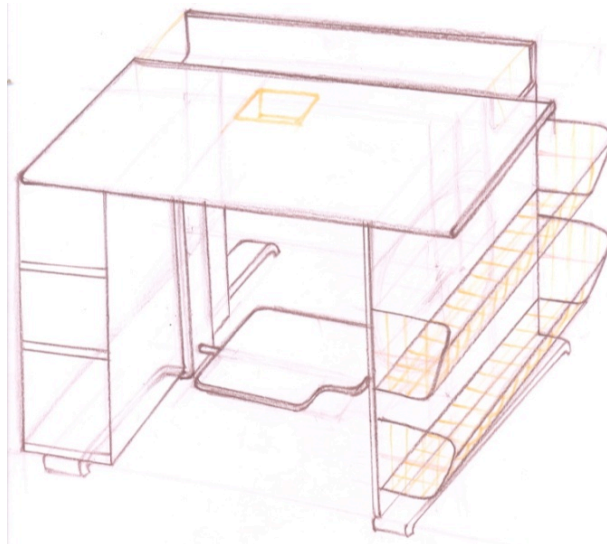
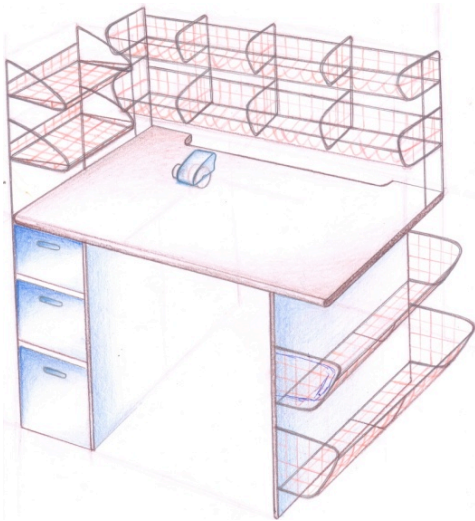
## SOME DETAILS



# REFINEMENT



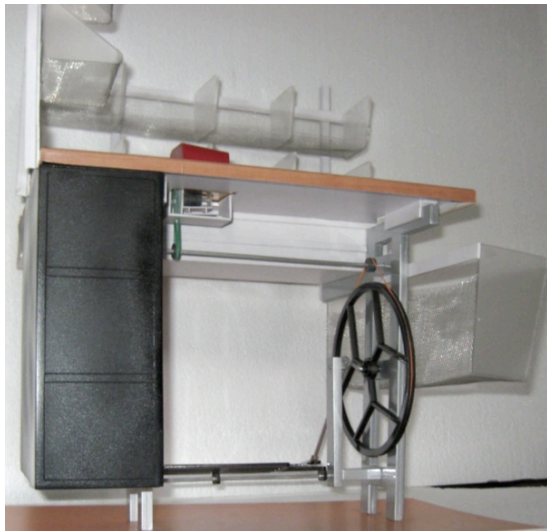
# REFINEMENTS..



## FINAL PRODUCT..

- Good print quality
- Speed in operation
- Easy feeding
- Can be used for letter sorting







Final design is a pedal operated mechanism, and printing is carried out using rollers. Flywheel provides uniform torque and motion is transferred from pedal through flywheel to the print roller. Speed of operation can be controlled by pedal. Electric Motor can be further connected to this mechanism for automation.

### Core Benefits:

- Good print quality
- Increased Speed of operation
- Convenience in feeding
- Special cancelation possibility
- Same table can be used for letter sorting
- Easy maintenance
- Right-left handed both can operate



THANK YOU!

