

CENSUS OF INDIA, 1961

VOLUME II

(ANDHRA PRADESH)

PART VII—RURAL CRAFT SURVEY
(FILIGREE INDUSTRY)

BY

A. CHANDRA SEKHAR, I.A.S.,
Superintendent of Census Operations,
Andhra Pradesh.

CONTENTS

		Page
I.	Introduction	1
II.	Technique of Production	3
III.	Economics of the Filigree Industry	22
IV.	Conclusion	24
	Appendix	25

LIST OF PHOTOS

I.	How the wire was drawn before the wire drawing machine was introduced	4
II.	Drawing wire through "Kambechchu" to obtain thinner guages	5
IIIA.	Two strands of silver are wound together	7
IIIB.	The pleated wire	7
IV.	The wound wire is heated	8
V.	The wound wire is flattened	9
VI.	Outer frames of a design fixed to a wooden board ...	11
VII.	Inner ribs of a design being fixed within the outer frame ...	12
VIII.	A block being covered by 'Tankam' pieces	15
IX.	A filigree block being polished	16
X.	A few finished products	20

MONOGRAPH
ON
FILIGREE INDUSTRY
ANDHRA PRADESH

CHAPTER I

INTRODUCTION

Introduction :

1. In the heart of Karimnagar, a District Headquarters town of Andhra Pradesh, is located a very unostentatious little shop with a board "Tarkashan* Industrial Co-operative Society". Hardly any one realises that this is the centre of production of one of the most exquisite and delicate handicrafts of Andhra Pradesh, viz., the Silver Filigree work. Filigree work is not uncommon in other parts of the country like Orissa. But Karimnagar claims a technique and quality of its own which are unique.

History and Origin :

2. The history of the Filigree Industry of Karimnagar has been traced back to about 200 years. One Shri Kadarla Ramiah of Elgandal and one Shri Sriramoj Venkataramiah of Manakondur both of the traditional Goldsmith community of 'Kamsali' appear to have originated this Industry. Elgandal and Manakondur are villages lying within a distance of about 7 miles from Karimnagar. Elgandal was the District Headquarters of the then existing administration. Judged by some of the old designs of the products of this industry, it would seem that the art and design had been borrowed from foreign countries of the Middle East. There is no recorded history, however, of this industry. The present workers who are the direct descendants of the founders of the industry state that their ancestors used to tour foreign countries and it was quite likely that they had picked up the technique and the designs from those countries and with their own dexterity developed it here.

3. The industry appears to have been patronised mainly by the Jagirdars and the ruling Nawabs and the type of articles produced were purely of silver and the designs were individualistic and expensive more intended to serve the individual needs and tastes of the well-to-do, which apparently resulted in the concentration of this industry at one centre and with only a few craftsmen's families taking to it. Thus it was not broad based and did not depend on popular demand from the ordinary people. However, the products of this industry enjoy a great reputation for quality, strength and delicacy of workmanship. It is said that in 1911 the Filigree articles of this area were specially selected for the Delhi Durbar. At the Calcutta Exhibition on the occasion, the Filigree articles are said to have secured the first prize (I have, however, not been able to lay my hands on any record pertaining to this).

---

* "Tarkashan" in Urdu means drawing of wire.

4. The industry seems to have faced a period of adversity perhaps due to the disturbed fortunes of the ruling Nawabs. About 76 years ago the Nizam's Government appears to have taken some interest to better the lot of these workmen and invited them to shift themselves to Karimnagar, the new District Headquarters, where they were offered some house sites free of cost to build their houses and establish themselves there.

5. Karimnagar town is a Municipality with a population of 31,554 (1961 Census, and lies about 96 miles from Hyderabad in the North North-East direction. It is connected by a good asphalt road from Hyderabad. It is not served by a railway.

The Craftsmen Families and Master Craftsmen :

6. There are now about 35 families in Karimnagar town, all of them of 'Kamsali' community (Goldsmiths and Silversmiths) who are now engaged in this industry. The following are the 'house names' or surnames of these families :

(1) Kadarla
(2) Sriramoj (Bommakanti)
(3) Katnepalle
(4) Gadde
(5) Kannoju
(6) Tipparti
(7) Erroju
(8) Katta
(9) Ravala
(10) Vangala

7. The following are the master craftsmen :

(1) Kadarla Narayana
(2) Katnepalle Sudarsanam
(3) Sriramoj Chandraiah
(4) Gadde Nagabushanam
(5) Gadde Venkatadri
(6) Katnepalle Rajamani
(7) Sriramoj Kanakaiah
(8) Kadarla Hanumaiah
(9) Tipparti Ramakrishnaiah
(10) Sriramoj Jagannadham

8. The workers, 80 in number, have organised themselves into a co-operative society called the "Tarkashan Industrial Co-operative Society" which practically holds a monopoly of the craft. "Tarkashan" in Urdu would mean drawing of wire. The following are the present office bearers of the Co-operative Society.

President : Shri Sriramoj Chandraiah
Secretary : Shri G. Venkata Krishnaiah
Manager : Shri K. Rajamani.

CHAPTER II

TECHNIQUE OF PRODUCTION

Raw Materials :

1. The uniqueness of the Karimnagar Filigree products is that they are made of pure silver without any mixture. In other parts of the country where filigree work is practised cheaper alloys are said to be utilised. The Karimnagar Filigree workers claim that the utilisation of pure silver gives their articles strength and intrinsic value.

2. The main raw material needed for the Karimnagar Filigree work is therefore silver. A very small quantity of copper and brass is needed to make up the soldering material for joining the filigree pieces. The other articles utilised in the manufacturing processes as will be explained in the succeeding paragraphs are bee wax, 'Nawasagar', 'Gumchies', 'Bhoonsa', sulphuric acid and coal.

The Manufacturing Processes :

Stage I :

3. Pure silver ingots are put through a wire-drawing machine which the Co-operative Society had recently acquired with Government assistance and round wire is drawn down to 14 guage. Before the acquisition of the machine, the silver ingots were beaten on an anvil and elongated into some sort of rough wire and then it was heated and put through a steel plate wire guage called "Jantharpatti" or "Kambechchu" which had appertures of different guages. One end of the wire was passed through the "Kambechchu" and tied to an iron peg nailed into a vertical wooden pillar and the worker took the "Kambechchu" round and round the pillar by levering it with some strong iron implement so that as the wire was drawn through the hole of a particular guage in the "Kambechchu" it was reduced to that guage. (Please see Photo I). The wire was passed down from one guage to the next smaller guage and redrawn till the required guage was reached. This was both laborious and time consuming. The hand operated drawing machine has undoubtedly facilitated the easy drawing of the wire. Even then the indigenous "Kambechchu" cannot be dispensed with altogether. The drawing machine can reduce the silver ignots to a wire of 14 guage only. It is necessary to draw the wire into much thinner guage down to 34 guage for the various types of designs that have to be executed. Therefore, the 14 guage wire has to be drawn manually through the "Kambechchu" to obtain wire of thinner guage. (Please see Photo II). The "Kambechchus" are of different sizes. There are also circular discs called "Ravva Billa" with

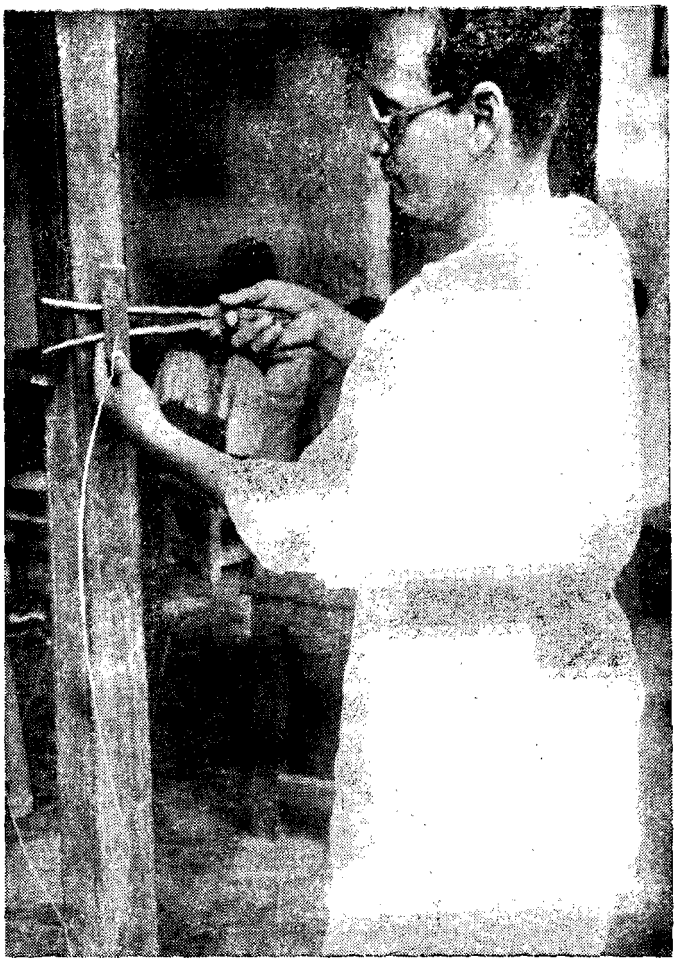


Photo I

How the wire was drawn before the wire drawing machine was introduced.

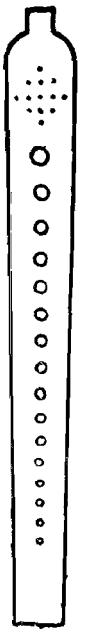


Photo II

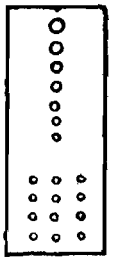
Drawing wire through "Kambechchu" to obtain thinner guages.

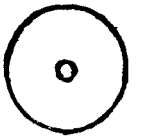
an apperture at the centre which are also used for drawing wire particularly of smaller guages. The following drawings illustrate these instruments :

"KAMBECHCHUS"



"RAVVABILLA"





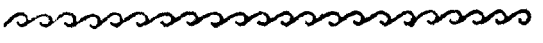
Silver wire of 34 guage is mostly used for all the finer work.

Stage II :

4. The next stage consists of the twisting of the thin silver wire and flattening it. This is perhaps the most important stage of preparation before the designs themselves are executed.

5. Two strands of the silver wire of 34 guage prepared under the previous process are now wound together using a charkha. Before winding the wire it is heated in a charcoal furnace. The strands have to be wound and rewound thrice over till ultimately a fine pleated string of silver is got. (Please see Photos III-A and III-B). The finally wound wire is rolled and put in a furnace (which is no more than an earthen pot broken into half and kept in an inverted position with burning coal in it) for 2 to 3 minutes. (Please see Photo IV).

6. The pleated wire is cut into pieces of about 2½' long. Each piece is then flattened very carefully on an anvil by beating lightly with hammer. (Please see Photo V). The flat strip that comes out will be about 36 guage with granular edges or pleats on either side. Please see the figure below :





(An exaggerated illustration of a flat strip with pleat-like edges.)



Photo III-A
Two strands of silver are wound together.

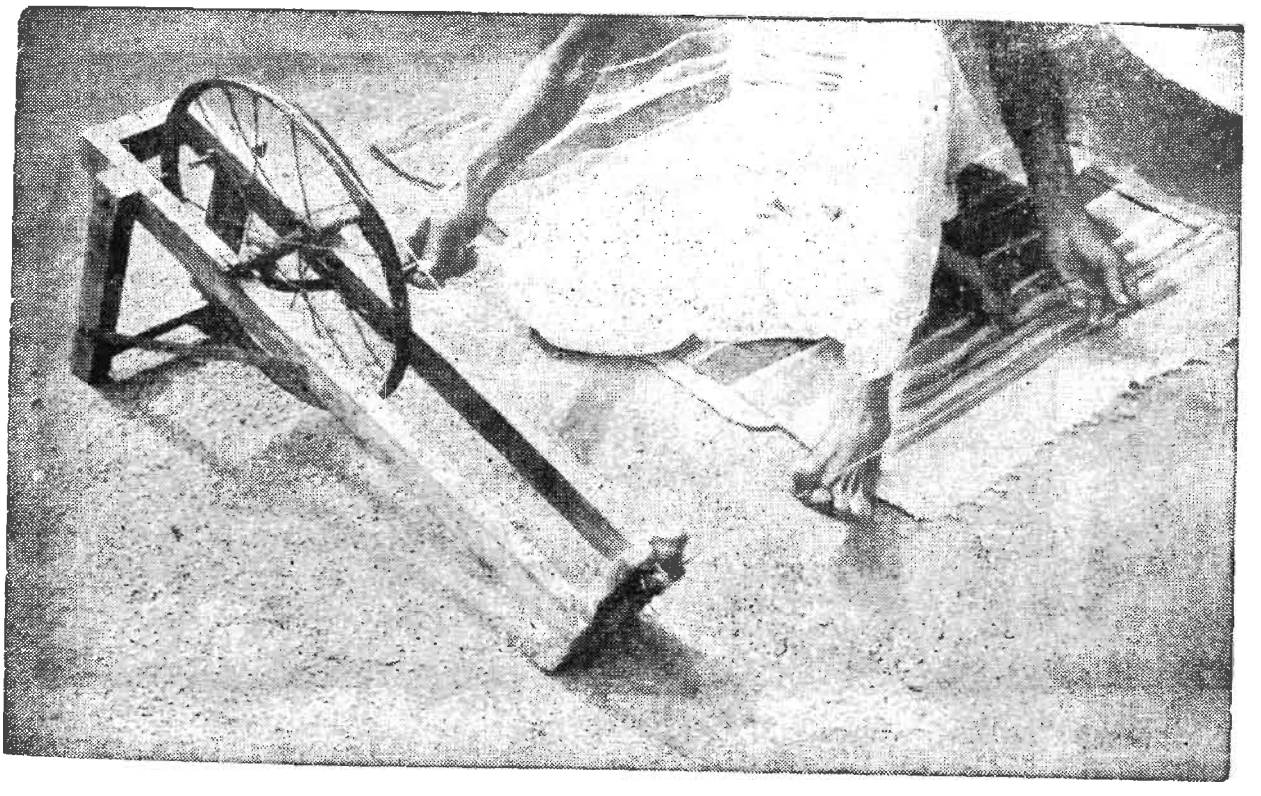


Photo III-B
The pleated wire.

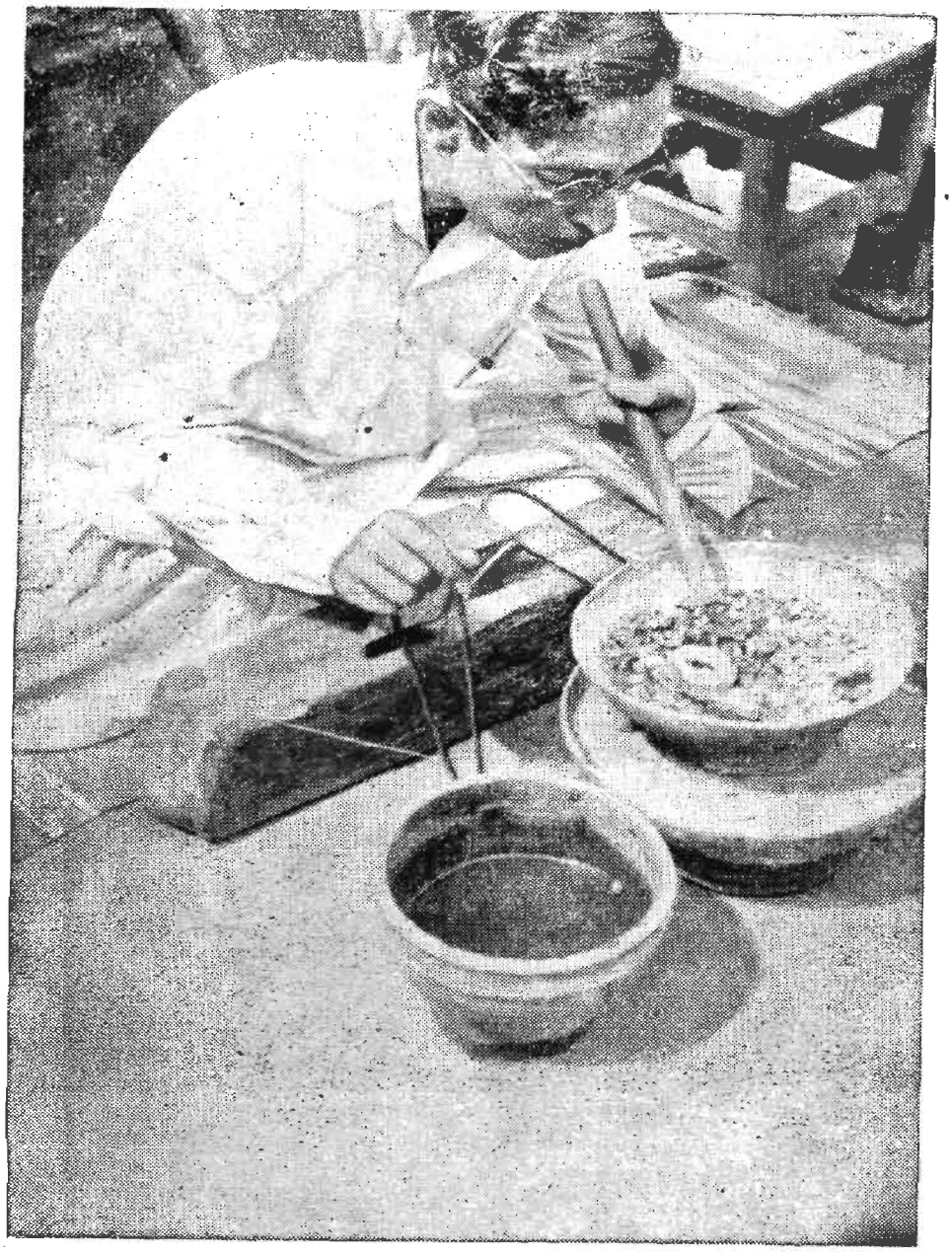


Photo IV
The wound wire is heated.



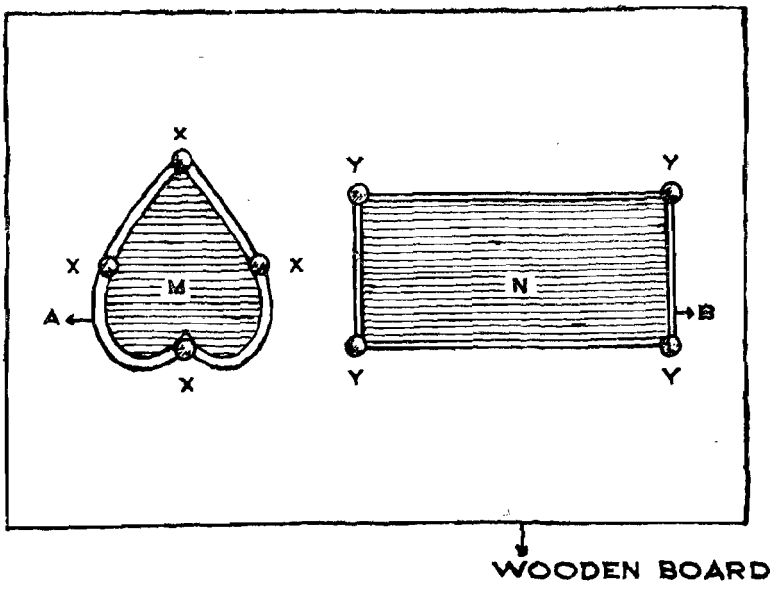
Photo V
The wound wire is flattened.

7. The preparation of these thin flat silver strips out of the twisted wire with fine granular edges is the whole secret of the filigree work. These flat pieces are later bent into different shapes and fixed vertically into spaces within a frame as will be described below giving the final piece a most attractive and delicate appearance.

Stage III:

8. Any article to be produced will be made up of a number of component parts that are pieced together. Each of these parts will be made into a block with an outer frame within which the required design is worked out and the finer details filled in. For example, a "pandan" or the box to carry betel leaves and nuts, etc., will be made up by five rectangular blocks, namely, the four sides, and the lid being joined together and fixed on to a silver plate bottom. Each of these rectangular blocks will have a thick silver frame within which the required design is made up by finer pieces being shaped and put together and fixed as will be explained in the following paragraphs.

9. Silver wire of 14 guage is needed for working up the outer frame. The 14 guage round wire that is drawn from the machine is beaten into the shape of a square wire and pieces of this 14 guage square wire are cut, shaped and joined together to form the outer frame of a given design. This frame is fixed flat on a wooden board which is smeared with bee wax to hold the silver frame as also to keep in position the pieces that are filled later to make up the inner design. An extra quantity of bee wax is applied at a few places around the outer thick frame to keep it firm as in the illustration below:



A & B : Outer frame of 14 guage

M & N : Wax smeared surface

X & Y : Bee wax reinforcements

(Photo VI also shows a wooden board with a few outer frames fixed.)

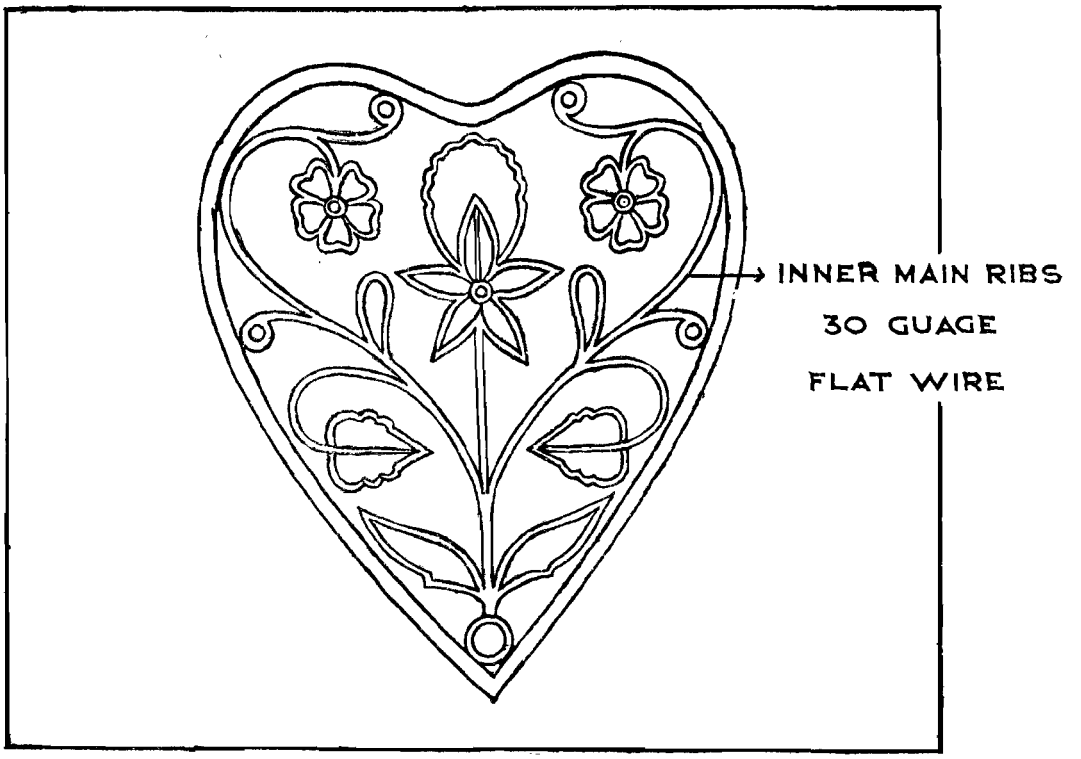


Photo VI
Outer frames of a design fixed to a wooden board.



Photo VII
Inner ribs of a design being fixed within the outer frame.

10. The next step is to fill the space within the frame with the main ribs of the design. These main ribs are usually the creeper stems, leaves, flowers, etc., and these may themselves form into small frames in the shape of a heart, circle, flower petals, leaves, etc., which have to be further filled with finer work. These ribs are made up by circular silver wire of 18 to 20 guage being flattened to about 30 guage flat wires. This flat wire is cut to convenient sizes and bent to form the required shape. These are fixed vertically within the outer frame on the wooden board. The main ribs of the design are formed by the vertical face of the flat wire and not the broad side. Please see the illustration below :



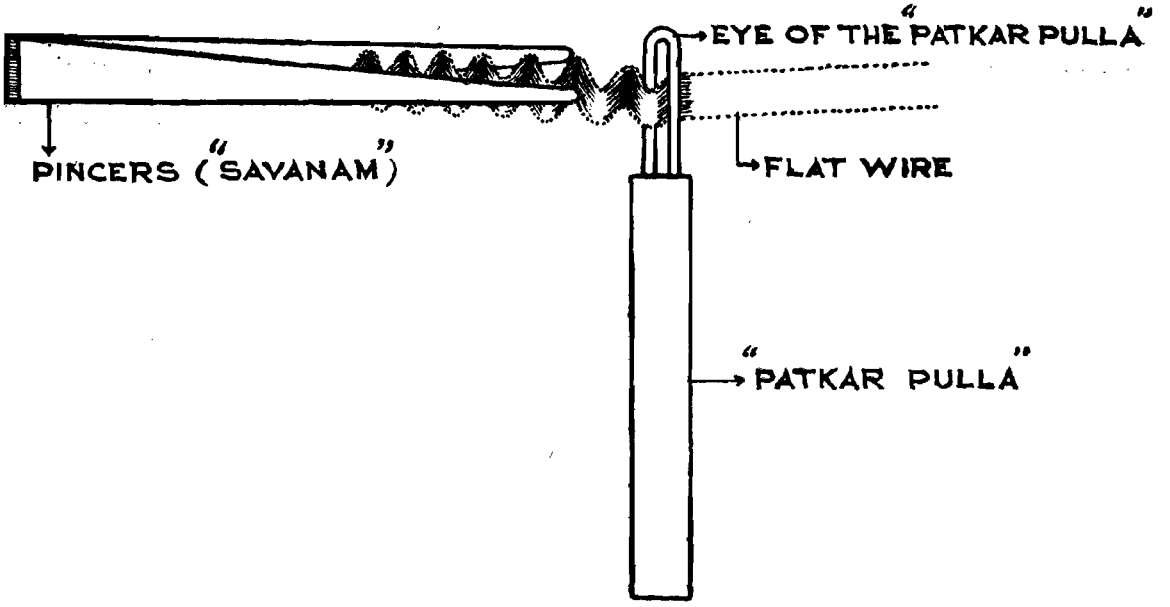
11. Photographs VI and VII illustrate the inner ribs being fixed within the outer frames on the wooden board. The dextrous hands of the craftsman neatly shaping the flat wire into delicate designs with the help of a pair of small pliers or pincers is very interesting to watch. After a design is finalised the craftsman makes a number of pieces of these inner frames of standard shapes such as hearts, circles or leaves and fixes them in proper places within the outer frame on the waxed wooden board. In the photographs a number of these pieces lying loose on the wooden board may be observed.

Stage IV :

12. The next step is to fill in the whole interspaces within the design with delicate tendrils or circular pieces which gives the entire product its character of filigree. It is these fillings that give the filigree work its distinct and delicate appearance of a mosquito curtain finish. It is here that the plaited silver wire flattened to 36 guage with granular edges, the preparation of which was described under Stage II comes in.

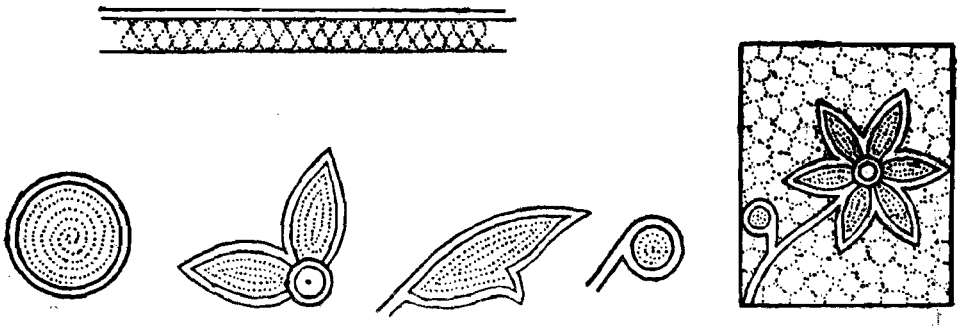
13. This flat wire strip is corrugated or rolled into different shapes and is used for filling all the interspaces of the main design. A pair of pincers and an instrument called the "Patkar Pulla" which is no more than a bent wire attached to the end of an iron rod to form an eye (Please see the illustration below) are used for giving the flat wire a regular corrugated shape. The flattened wire which is passed through the eye of the "Patkar Pulla" is bent very dexterously into a wavy design by turning the "Patkar Pulla" in alternate directions with the trained fingers of the filigree expert. The bent wire is fed into a pair of pincers. (Please see the illustra-

tion below). This is a delicate operation which is executed beautifully and with considerable speed by the expert.



14. The corrugated wire is pressed in the middle to give it the shape of alternative wave ( ). The wire is sometimes wound to give the shape of concentric circles ( ) the circular piece so made is sometimes pressed to give it an elliptical shape ( ) Small pieces of the flat wire are bent to form small Ss or double circles ( ) which are used in innumerable numbers to fill in the interspaces of the filigree design. (The workmen usually store these in large numbers in small glass bottles).

15. The workman proceeds to fill the interspaces within the frame work, the preparation of which has been described under Stage III. The corrugated continuous wire strip is used for filling the space along the border, the concentric circles within the spaces of circular inner frame, the elliptical pieces in the interspace of leaves or oblong flower petals and all other interspaces are filled with the small Ss or double circles. These pieces are also fixed vertically so that only the granular edges of the flat wire show up. (Please see the illustrations).



All this is done with the help of pincers. This operation requires great dexterity and patience. The fillings have to be closely packed together uniformly so that the ultimate net-



Photo VIII
A block being covered by 'Tankam' pieces.



Photo IX
A filigree block being polished.

work may have the strength and a uniformity of texture. The waxy surface of the wooden board helps to keep all the fillings in position.

16. As already observed it is the filling of the interspaces within the outer designs by these delicately bent pieces that gives the filigree work its distinct character. The flat thicker surface of the main ribs of a design show as a contrast against the granular delicate surface of the finer fillings of outer spaces rendering the whole design very attractive.

Stage V :

17. The next stage is to see that the entire design along with the outer frame is fixed firmly together.

18. The workman secures together the entire design as laid in position on the wooden board by a gummy substance. For this purpose he prepares a solution of Borax locally called "Veligaram" or "Sohaga" mixed and boiled in water. A fine paste is also prepared by rubbing briskly "Guruginja" (*abrus-prectaroius*—the seed used as grain in the measurement of weight of gold) with its outer cover removed against a flat stone with a little water spread on it. The "Veligaram" solution and the "Guruginja" paste are mixed together and spread over the finished design on the wooden board.

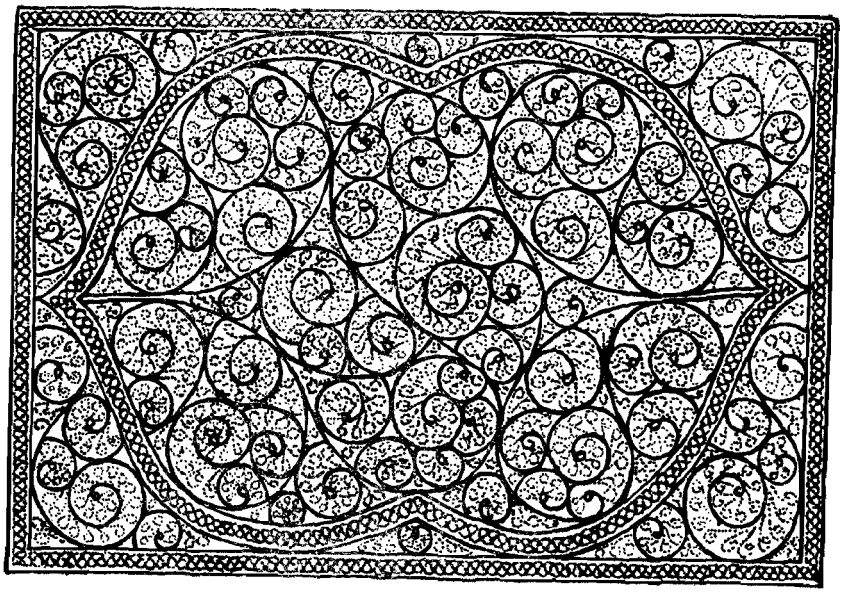
19. The entire block of design along with the outer frame is then carefully removed from the wooden board by heating the block to melt the bee wax. The frame with the design in it remains intact on account of the close packing and the spreading of the gummy solution as detailed in the last paragraph.

20. The next step is to see that the entire design so delicately made up with thousands of individual pieces put together is firmly fixed. For this purpose the workman prepares small square strips 1/3" square cut out of a very thin sheet of an alloy of silver and copper mixed in the proportion of 3 : 1. This is locally referred to as "Tankam". These "Tankam" pieces are spread on the design so as to completely cover it. (Please see Photo VIII). The block with the "Tankam" pieces spread on it is placed on a charcoal furnace. After the block is heated sufficiently, dry paddy husk is sprinkled on it which bursts into a flame helping to completely melt the "Tankam" spread on the design. This is very important. The workman keeps testing by sprinkling the paddy husk to see if the block has been sufficiently heated to enable the "Tankam" to melt. The "Tankam" melting away with a burst of flame as if by magic is almost greeted with joy on the face of the workman! The molten "Tankam" apparently gets into the crevices and helps to secure together all the silver pieces firmly and permanently. The workmen reckon that for 100 tolas of the main silver work, 6 tolas of "Tankam" will be required. The block is then removed from the furnace and cooled by dipping in cold water.

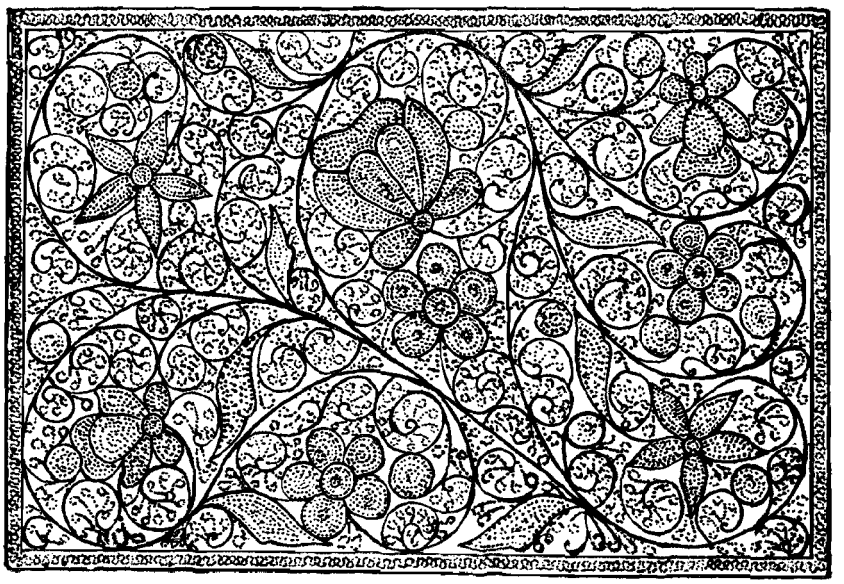
Stage VI :

21. The final stage is to clean the blocks, polish them and join the component units to make the finished product.

22. The block after it is removed from the furnace on completion of the "Tankam" process is put in dilute sulphuric acid for about 5 minutes. It is said that originally the workmen used to use mere tamarind solution for the purpose. It is then polished with a fine wire brush which gives it the final gloss. (Please see Photo IX).



Karimnagar design.



Creeper and Flower design.

23. The finished blocks are then attached together to make up the required articles. Almost all the articles are fixed on to a plain bottom plate of silver. The bottom silver plates are also prepared by workmen themselves by beating silver into thin plate and cutting into shape. The Co-operative Society has acquired a plating machine which helps to press silver into plates of required guage. The joining of the component blocks is done by soldering them with an alloy of silver and brass mixed in the proportion of 2 : 1, called "Ravva". It is reckoned that for an article of 100 tolas of main work 1 tola of "Ravva" will be needed.

Articles and Designs :

24. The filigree articles that are generally produced are trays and "pandans" (betel leaf holders), which are very widely used particularly by the old Jagirdari families of Hyderabad. The "Pandans" are generally rectangular in shape. They are also produced in different shapes such as heart, circular, oval and so on. Various other fancy articles such as 'Kumkum' containers, scent holders, cigarette cases, match box holders, etc., are also being produced in different shapes such as aeroplanes, peacocks, etc. The basic mode of manufacture of component parts and designs is the same. The different shapes are produced by the ultimate joining together of the component units. Photo X gives a few typical articles that are produced.

The following list gives a complete list of the type of articles that are produced by the filigree workers :

1. Attardans (scent containers) in the shape of lotus, peacock, flowers, aeroplanes, birds, crane, fish, lotus flower with leaves.
2. Powder or Kumkum boxes in rectangular, octagonal, heart, oval, round and mango shapes.
3. Trays in different shapes—rectangular, heart, oval, round, octagonal, flowers with grape wine leaves, etc.
4. Flower stands, calendar stands, lamp stands, visiting cards cases.
5. Cigarette cases, ash trays, match box holders.
6. Buttons for sherwanis, coats and shirts.
7. Broaches with designs of leaf, bird, star, branch, butterfly, etc.
8. Ladies ornaments such as bracelets, bangles, necklaces, lolacks, jumkas, etc.
9. Pandans in different shapes.

25. The designs adopted are generally floral designs with creepers, leaves and flowers. The workmen are prepared to execute any design given to them by a customer. There, however, appears to have been a general decline in the standards of design and delicacy of work now executed. The oldest original design is called the "Karimnagar" design which reflects most delicate and exquisite workmanship. The present tendency is to have more and more bolder designs with less and less finer work. The designs on the opposite page give an idea of some of the delicate designs adopted. There is no organised effort at the standardisation and improvement of designs.

Workshop and Tools :

26. The workshop facilities and tools required for this industry are very simple indeed. The very fact that the industry is being carried on in a little country-tiled shed in the backyard of the office-cum-workshop of the Co-operative Society bears testimony to the simple needs of the workmen. Only 4 families use this workshop. The rest carry on the industry in their own homes. The ordinary equipment of the gold or silversmiths appears quite adequate to

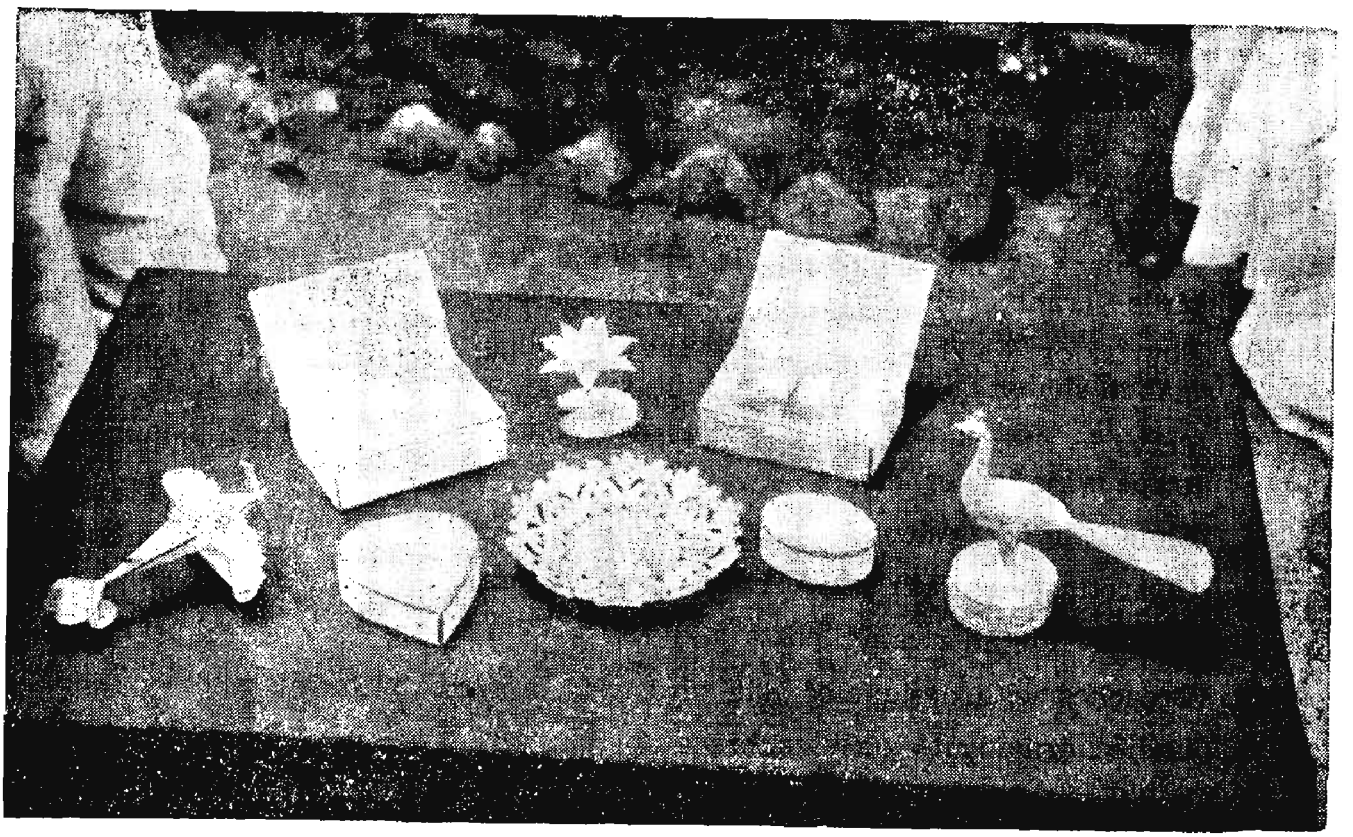


Photo X
A few finished products.

carry on this industry. Only a special skill has to be developed for the delicate technique involved.

27. The equipment and implements needed may be listed as follows :

1. A furnace, blower and crucibles for smelting silver and the preparation of silver ingots, "Tankam" alloy and "Ravva".
2. Anvil and hammer, wire drawing equipment such as "Kambechchus" of different guages.
3. Charkha for twisting wire.
4. Wooden boards and bee wax.
5. Pincers ("Savanam"); "Patkar Pulla"; cutting pliers.
6. Simple charcoal furnaces (broken pots with charcoal).
7. Polishing brush.
8. Other ancilliary equipment such as vices, chisels, files, hack-saw, hand drills, punches, tongs, shears, compasses.
9. (Wire drawing and plating machines which have been acquired by the Co-operative Society are considerable labour saving devices).

CHAPTER III

ECONOMICS OF THE FILIGREE INDUSTRY

Cost of Production :

1. The cost of an article is almost entirely made up of the cost of silver which is the main ingredient plus the labour charges.

2. The cost of an article is arrived at on the basis of its weight. Even the labour charges are arrived at on a graded scale with reference to the weight of an article. The cost of silver in an article of 10 tolas weight is taken as— ... Rs. 25/-

The labour charges are worked out at the rate of Rs. 2/- per day for a craftsman. It is reckoned that a craftsman will be able to work on 2 tolas of silver a day. Therefore, an article of 10 tolas is said to involve 5 days labour of one craftsman. Hence the labour charges on this article are— ... Rs. 10/-

The sale price of the article is fixed at— ... Rs. 35/-

The workmen have also got a rough and ready system of calculating the weight of the articles. The articles are reckoned to be generally 1½ fingers in height. Every single finger width of such an article is said to consume 2 tolas of silver. Thus an article 5 fingers in width is said to consume 10 tolas of silver.

The statement given in the Appendix gives an idea of the time taken by a worker in the manufacture of an article with two tolas silver.

Annual Production and Marketing :

3. The following statement gives the details of annual production for the last four years.

Year	Value of the articles produced. Rs. nP.
1957-58	20,969-94
1958-59	15,501-33
1959-60	17,127-06
1960-61	12,389-59

The average production works out to Rs. 16,496.98 nP.

4. The average annual sales are reported to be as follows :

Source of marketing	Value of articles sold. Rs. nP.
To the Government Sales Emporium	10,425-56
In open market	9,697-55
Total ...	20,123-11

There is no regular demand for the articles. Articles are produced as per the demands placed on the Society. It is reported that generally the workmen have full work during November to May when the demand seems to be more.

Earnings of a Worker :

5. The average earnings per month of the skilled and semi-skilled craftsmen are reported as follows :

		Full time worker.	Part time worker.
1.	Skilled craftsmen	Rs. 67-50	Rs. 30-00
2.	Semi-skilled craftsmen	„ 50-00	„ 20-00

6. The following statement gives the total number of skilled and semi-skilled workmen engaged in filigree work at Karimnagar :

		Skilled craftsmen	Semi-skilled craftsmen	Full time	Part time
1.	Workers within the fold of the Co-operative Society.	25	10	6	29
2.	Workers outside the Society. ...	24	—	—	—

Government Assistance for the Industry :

7. At one time it looked as though this industry which enjoyed a fame all of its own might become completely extinct. The industry faced severe competition from filigree work in other States which used cheaper alloys and took to more mechanised production and obviously the cost of production was much less than the Karimnagar products. But the Karimnagar filigree worker is too proud of his own technique and the pure silver content of his articles giving them a high intrinsic value to change over to any cheaper modes of production. The decline of the influence and economic power of the Jagirdars also had its adverse effect on this industry.

8. The advent of the popular Government saw the needs of this reputed but declining industry. In the year 1957 they provided security to enable the "Tarkashan Industrial Co-operative Society" to obtain credit facilities to an extent of Rs. 25,000/-. The Society has managed to repay Rs. 10,000/- so far. The Society has managed to acquire their present office-cum-workshop at a cost of Rs. 7,000/-. The Government also gave an outright grant of Rs. 5,000/- in 1956-57 with which three wire drawing machines costing Rs. 1,200/- each have been acquired. The State Government has been sanctioning managerial assistance to an extent of Rs. 3,000/- per year from 1957-58.

CHAPTER IV

CONCLUSION

1. This noted handicraft of the Andhra Pradesh State does not appear to have as yet re-blossomed into the state of its former glory. It has no doubt been revitalised by the efforts of Government. Greater patronage, standardisation of designs and products, perhaps a slightly improved workshop facilities, and stimulation of demand by creating interest in foreign markets may go a long way to put back the industry on a firmer path of progress.

2. Before I conclude I wish to express my gratitude to the office-bearers of the Tarkashan Industrial Co-operative Society and its workmen who so patiently explained to me all the aspects of the industry and demonstrated the various processes. I am also thankful to the Assistant Director of Industries for the information he furnished and last but not the least the Collector of Karimnagar and the Revenue officials who rendered all the assistance to enable me to study the industry thoroughly.

A. Chandra Sekhar,

Superintendent of Census Operations,
Andhra Pradesh.

APPENDIX

Statement showing the time taken for manufacturing of the silver filigree articles.

Working Chart

Name of the worker: Shri K. Sudarshan.
Silver (two tolas) given to him on 12-8-1958 at 10-50 A.M.

(a) Melting the silver (two tolas)	...	10-55 A.M.	5 minutes taken.
(b) Drawing wire from the machines with the help of an assistant (wire guage No. 14).	...	11-00 A.M.	5 -do-
(c) Heating the wire and drawing the wire from the wire-guage to make further smaller size with hand for outside of design. Size of wire is 18 guage.	...	11-15 A.M.	15 -do-
(d) Heating and drawing wire for inside design, further smaller size, through wire guage with hand operation. Wire size is guage No. 36.	...	12-10 P.M.	55 -do-
(e) Winding the wire through Charkha.	...	12-35 P.M.	25 -do-
(f) Flattening the wound wire by hammering with hand.	...	1-10 P.M.	35 -do-
Interval	...	1-10 to 2-30 P.M.	
(g) Arranging the wire according to the design.	...	2-30 to 5-30 P.M. 3 hours; and on 13-8-58, 11-00 A.M. to 12-45 P.M. 1-45 hours.	
(h) Soldering, preparing and fixing.	...	1-45 P.M.	1 hour taken.
(i) Polishing.	...	2-15 P.M.	30 minutes taken.

Time taken for manufacture of two tolas of silver filigree article (tray) is 8 hours 35 minutes.

(The above statement has been prepared by courtesy of the Manager of the Co-operative Society and Industrial Inspector, Karimnagar).