A STUDY OF THE SELECTION, USE AND CARE OF SEWING MACHINES IN A SELECTED AREA

By

MILDRED PARKER MCKEE

Bachelor of Science

Oklahoma Agricultural and Mechanical College

1938

Submitted to the faculty of the Graduate School of
the Oklahoma Agricultural and Mechanical College
in partial fulfillment of the requirements
for the degree of
MASTER OF SCIENCE
May, 1953

A STUDY OF THE SELECTION, USE AND CARE OF SEWING MACHINES IN A SELECTED AREA

Thesis Approved:

Brenda Gould
Thesis Adviser

Adaline M. Ledbetter

A. C. Mitchell
Dean of the Graduate School

TABLE OF CONTENTS

Chapter		Page
I	INTRODUCTION.	1
II	HISTORY OF THE SEWING MACHINE	3
III	AN ANALYSIS OF THE SEWING MACHINE	19
	Types of Shuttles.	19
	Kinds of Stitches.	24
	Methods of Operation	24
	Features of the Sewing Machine	25
	Summary of Features.	27
IV	RESULTS OF THE QUESTIONNAIRE.	31
V	RECOMMENDATIONS	39
VI	SUMMARY	45
	BIBLIOGRAPHY.	48
	APPENDIX.	49

ACKNOWLEDGEMENT

The author wishes to express grateful appreciation for the valuable assistance rendered by the persons cooperating in this study. She is particularly indebted to Miss Brenda Gould, Associate Professor of Household Arts, whose constant guidance carried the entire work to its completion. To Miss Empo Henry, Associate Professor of Household Arts and Mrs. Adaline M. Ledbetter, Head of the Household Arts Department, for reading the manuscript. She wishes to extend special thanks to her husband for his constant encouragement.

LIST OF TABLES

Table		Page
1.	CLASSIFICATION OF MACHINES.	31
2.	PERCENTAGE OF TYPES OF CLOTHING MADE.	33
3.	USE OF THE ATTACHMENTS.	34

LIST OF PLATES

Plate		Page
I.	ELIAS HOWE MODEL--1845	8
II.	WILLCOX AND GIBBS MODEL--1857.	10
III.	SINGER MODEL--1851.	12
IV.	MODEL MADE IN EARLY 1900's	14
V.	MODEL MADE ABOUT 1930.	16
VI.	EUROPEAN MODEL	17

LIST OF FIGURES

Figure — Page

1. Vibrator shuttle assembly. 21
2. Oscillator shuttle assembly. 22
3. Rotary shuttle assembly. 23

LIST OF GRAPHS

Graph — Page

1. Percent using the instruction manual for oiling the machine. 37
2. Percent using the instruction manual for minor cleaning. 37
3. Percent using the instruction manual for length of stitch. 37
4. Percent using the instruction manual for minor adjustments 37
5. Percent using the instruction manual for correct stitch. 37

CHAPTER I

INTRODUCTION

From the writer's years of experience in the sewing machine business came the realization of the need for a study on the selection, use, and care of a sewing machine.

The investigation of printed material on the selection, use and care revealed the lack of information available to the consumer. Interviews with clothing teachers, extension leaders and homemakers pointed to further need for such a study.

The answers to the many questions of prospective buyers of a sewing machine were sought in this special study. It is hoped that it may be only the beginning of an effort to help the consumer select a machine that is most suited to her needs.

Specifically the purposes of the problem were:

1. To give the history of the sewing machine.
2. To make a comparison of the mechanism of various sewing machines.
3. To obtain the following information by personal interview.

a. to classify the sewing machine as to the type of bobbin
b. to know the reason for selection
c. to what extent the machine is used
d. how the instruction manual is used
e. what information would be valuable for future selection.

Part of the study was based on the results of interviews and the use of a questionnaire. A particular area was selected for the problem because it offered opportunity for the writer to collect data from personal interviews. Many of the women contacted had lived in other sections of the country. It was believed that a variety of results and opinions could be obtained. The data obtained represents individuals of various ages and income groups.

Because of advanced designs and mechanisms it was necessary to provide information on the newer sewing machines. Special suggestions from extension leaders in other states have been incorporated in this study.

CHAPTER II

HISTORY OF THE SEWING MACHINE

When the most valuable scientific discoveries and inventions of civilization are taken into consideration there is one factor common to them all--each has evolved from the particular needs of the era in which it was developed. As is true with many other important inventive contributions, the sewing machine, too, was a direct result of immediate needs of the times.

It is highly possible that the idea of mechanical sewing had been conceived in much earlier days, but the dream became a reality with design and development only when the demand became acute for more speed and increased production in the manufacture of garments.

In an effort to alleviate the tedious chore of hand sewing European inventors labored for years on crude mechanical models; however, it was American ingenuity and the miracle of mass production and promotion that gave the entire world dependable and low-cost sewing machines. Many inventions have contributed greatly to industrial progress, but only a few inventions have been so universally accepted in both the home and industry as the American perfected sewing machines.

Despite the fact that sewing by machinery was practically demonstrated over 150 years ago, it required the combined efforts of a generation of inventors to develop the original machines into the labor-saving devices of modern times. Competition and challenge sparked the momentum toward rapid advancement in mechanical movements and combination of devices.

Although many people contributed to the invention and perfection of the sewing machine, Thomas Saint, Barthelemy Thimonnier, Walter Hunt, Elias Howe, Jr., Allen B. Wilson, Isaac Merrit Singer, and James E. A. Gibbs will be recognized always as the men in whose minds the idea of the sewing machine was first conceived. It is believed that the story of design and development can be revealed best by a brief summary of some incidents in the lives of these great men.

THOMAS SAINT

In 1790 Thomas Saint received a patent for a machine to sew leather. His drawings show certain features which are essential to the sewing machines used today, but, in so far as history is recorded, Saint's idea was not put into any practical use.

BARTHELEMY THIMONNIER

A French tailor, Barthelemy Thimonnier, who was entirely ignorant of the principles of mechanics, became absorbed with an idea to produce a machine for sewing garments. He worked alone for years and neglected his business to such an extent that he was looked upon as mentally afflicted. Nevertheless, he mastered some mechanical difficulties and by 1829 produced a sewing machine which made the chain stitch by means of a hooked needle, similar to a crochet needle.

It was made possible for Thimonnier to take his machine to Paris in 1830. Because the tailors of France considered the invention as dangerous competition, mobs destroyed model after model. Despite these disturbances, Thimonnier refused to give up his dream of sewing garment seams by machinery. By 1845 his machine was so improved that he could sew 200 stitches per minute. His sewing machine business was halted for a time by the Revolution of 1848; however, it is recorded that he secured a patent in England in 1849. Although he continued to work on his models, other inventors entered the field with more practical machines. Thimonnier died in 1857 at the age of sixty-four years. However, his life cannot be considered a complete failure since he survived long enough to see some acceptance of his dreams for mechanical sewing.

WALTER HUNT

In his shop on Amos Street in New York City, Walter Hunt, a Quaker genius, made a machine that sewed and stitched cloth between the years of 1832 and 1834. His first machine and those that followed were quite successful.

Hunt's machine could not be made to do curved or angular work, nor sew a continuous seam for more than a few inches without readjustment of the cloth. It was capable of doing certain classes of work with speed, and to that extent, was regarded as a practical success. Nearly all the essential parts of modern machines were contained in Walter Hunt's invention. A pointed needle with an eye, moved by a vibrating arm, working in combination with a shuttle carrying a second thread so as to make an interlocked stitch, was used in this early invention.

It was characteristic of Hunt to spend much time in the development of new inventions, although he lacked the business sense to obtain success or secure for himself a fair share of the profits. Consequently, many of his inventions were sold for small sums before they were patented. It is considered generally true that Hunt's machine was the real pioneer of the present day sewing machine.

ELIAS HOWE, JR.

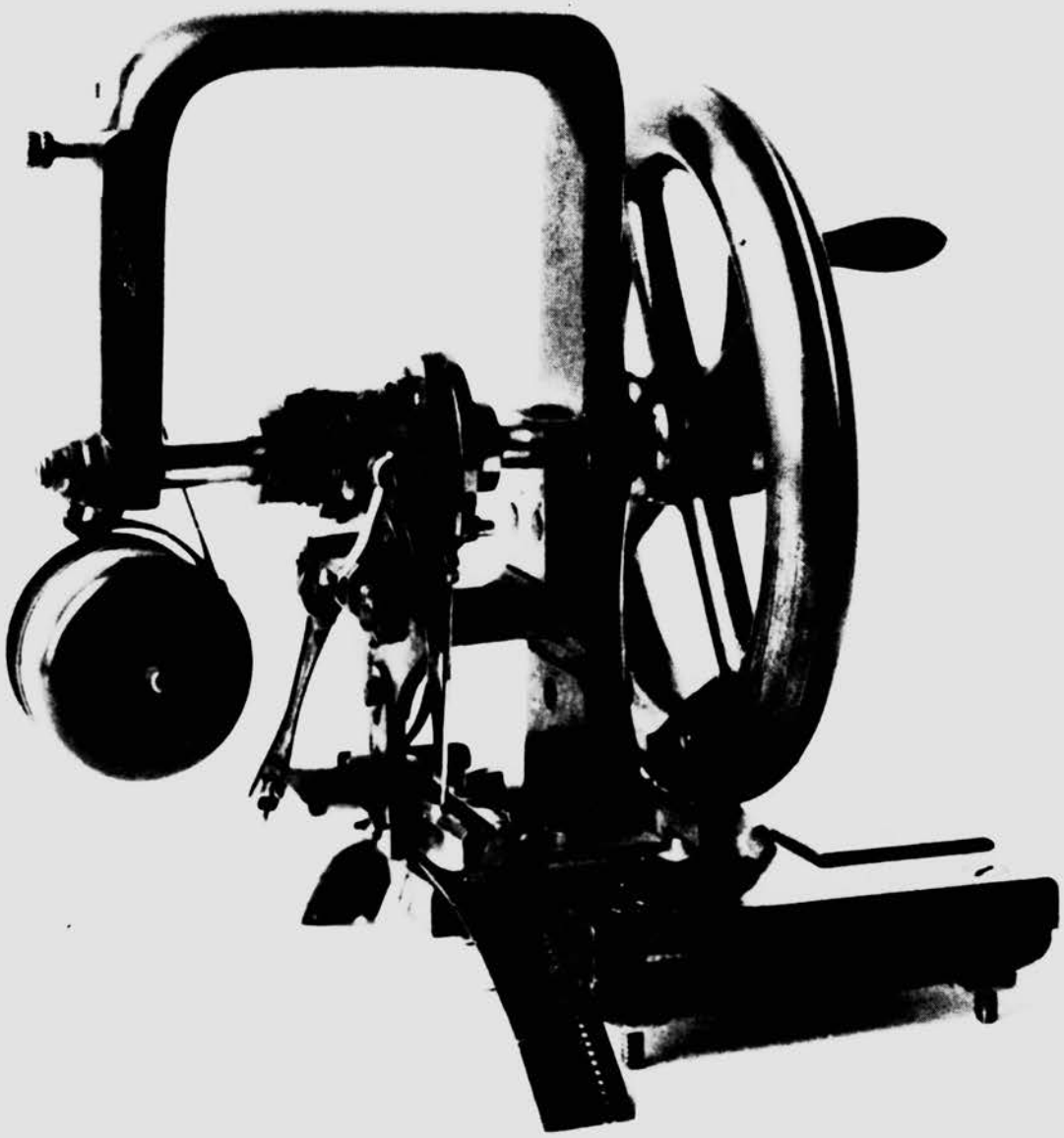
Although he was unaware of Hunt's efforts, a young Bostonian mechanic, Elias Howe, Jr., was working to make a sewing machine during the same time. His interest had been stimulated when he overheard a conversation between his master and a customer who said a fortune awaited the man who invented a good machine. Howe completed his rough model in 1844 and patented his machine in 1846.

The machine did sew; however, it was looked upon, in general, only as a curiosity and an object of amusement. It became impossible for Howe to create any American interest in use of his machine. He did stimulate interest abroad and an English manufacturer purchased one-half of Howe's patent right in 1846, and requested him to come to London to service his machines. Upon his return to America in 1849, the impoverished Howe found people more interested in his invention and models were being sold which infringed upon his patent rights.

Howe secured financial backing and challenged all manufacturers by filing law suits. Since the courts ruled that all makers should pay royalties to Howe his fortune was estimated at approximately $2,000,000 when the patent expired in 1867. Plate I shows the original sewing machine made by Elias Howe, Jr. In 1845 the model was shown in England to interest manufacturers in his invention.

PLATE I

ELIAS HOWE MODEL--1845



ALLEN B. WILSON

Wilson, an ingenious Michigan cabinet maker, was by far the most original early sewing machine inventor. The rotary hook and bobbin combination formed the special feature of the Wheeler and Wilson machine in 1849. Wilson built his first model in about sixty days. This work, even shaping of iron and metal parts, was done entirely by hand. It was the first machine that could sew curved seams and turn sharp angles. The third original model, now preserved in the National Museum, was beautifully made and very compact, weighing only six and one-half pounds.

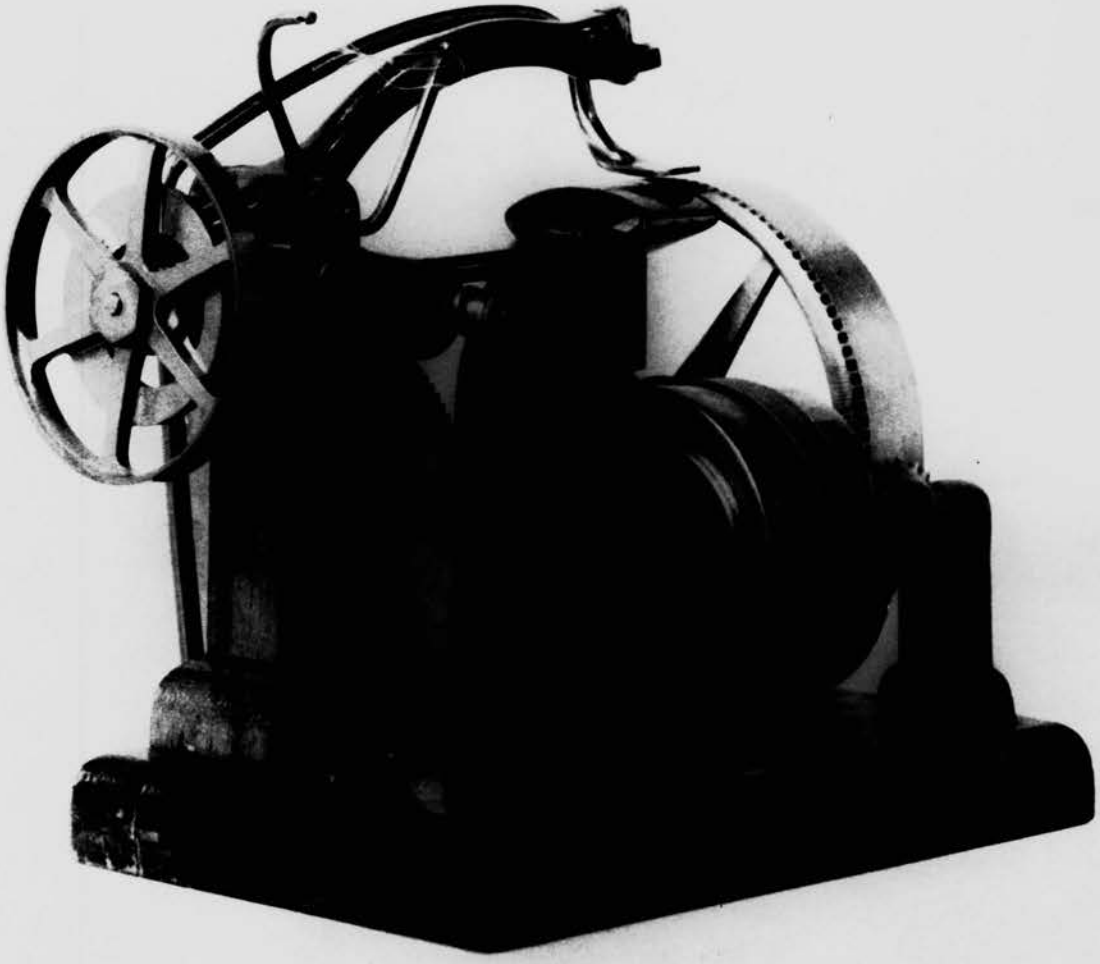
Wilson never received proper reward for his great inventive genius. A combination of ill health, the effects of his early struggles, and a keen sensitive nervous temperament made him incapable of carrying out the necessary fight for patent rights.

JAMES EDWARD GIBBS

James Gibbs, a Virginia farmer, patented a chain-stitch machine in 1856. Later, a partnership, formed in Philadelphia with A. J. Willcox, was known as the Willcox and Gibbs Sewing Machine Company. An early model bearing the trade mark Willcox and Gibbs is shown in Plate II.

PLATE II

WILLCOX AND GIBBS MODEL--1857



ISAAC M. SINGER

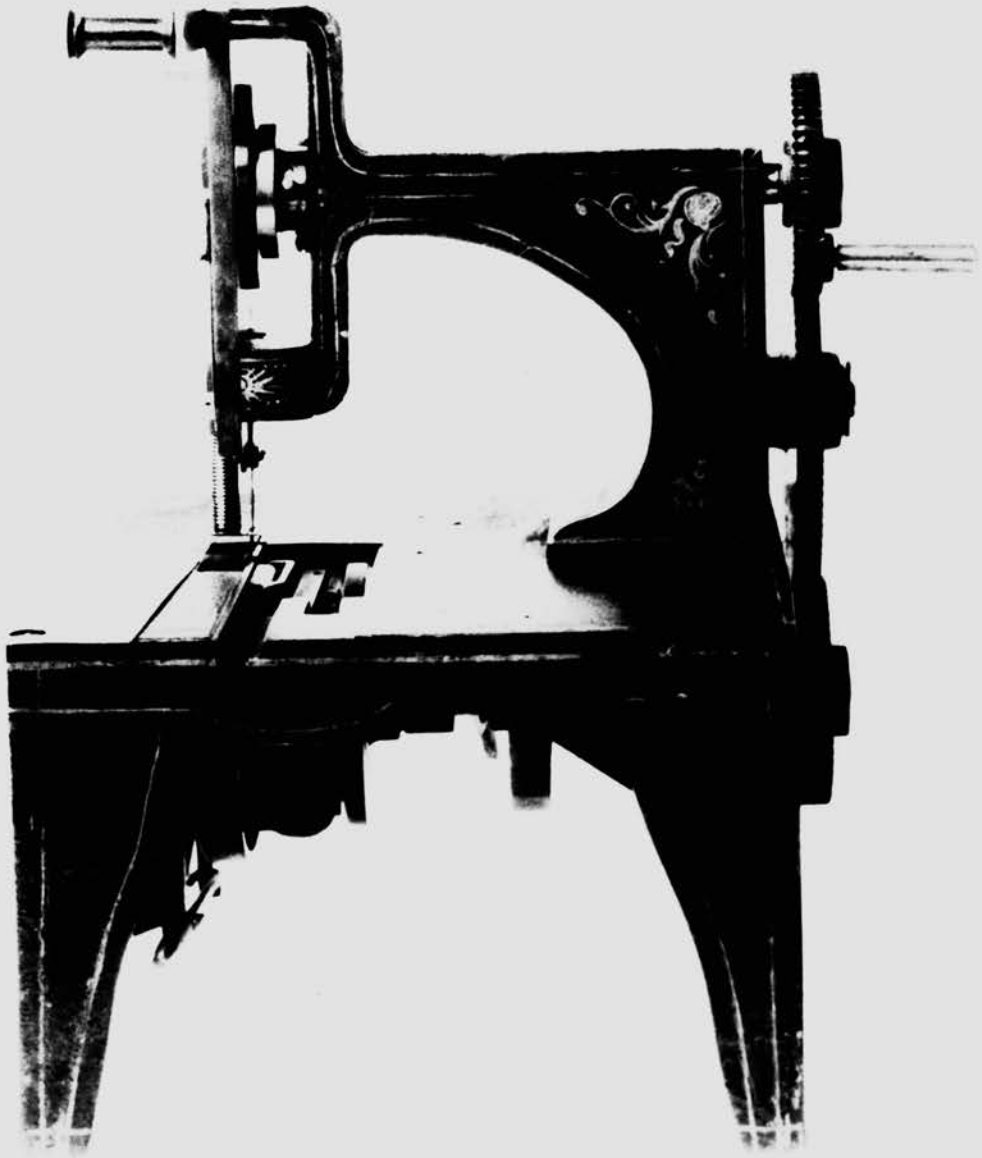
A remarkable coincidence occurred in August of 1851 when Allen B. Wilson and Isaac M. Singer were granted patents on sewing machines. Singer's early machine was distinguished by a presser foot, which permitted passage over seams and adjusted automatically to various thicknesses of cloth.

The story of Isaac M. Singer's struggle to build a practical sewing machine started with the sad tale of woe which was characteristic of previous inventors. He started with a borrowed forty dollars, failed, and was advised to give up his attempts. Despite these reverses he continued to struggle toward his goal. From friends he borrowed a few hundred dollars, which enabled him to manufacture machines in Boston. It was there that Singer, with two other men, began to work under the name of I. M. Singer and Company. It was not long until the company was in court accused of infringement on patent rights of Elias Howe, Jr. Singer secured the legal help of Edgar Clark, a brilliant man who later became an equal partner in the sewing machine company.

Isaac M. Singer deserved credit for contribution of the first successfully operating household sewing machine. His early types were used for many years and required less modification than any other original models. Singer's original patent model is shown in Plate III.

PLATE III

SINGER MODEL--1851



In 1856 a combination was formed by four men and the "sewing machine war" was ended. Each manufacturer was licensed at $15.00 a machine and this fee was divided among the four organizers--Howe, Clark, Hunt and Singer. Royalties were reduced gradually until 1877, when the last patents expired.

During the interim before expiration of the patents, improvements and new inventions had been made, and many new companies were formed. Inventors brought suit against each other to such an extent that there were in Albany at one time representatives of seven companies, each with one or more suits for infringements to prosecute or to defend.

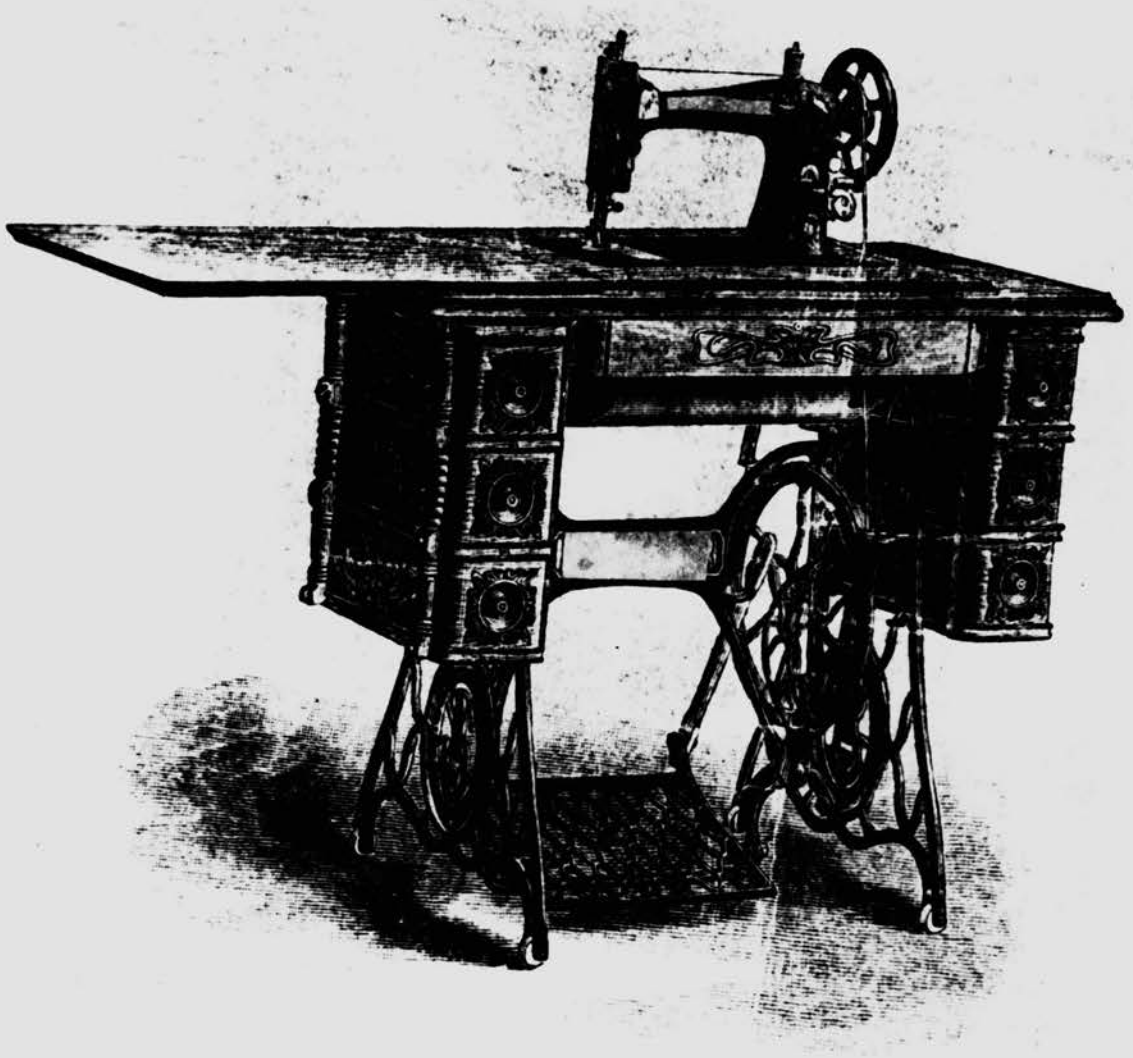
Howe proposed that they all combine and pay royalties to each other for those inventions which they used. Representatives were afraid the combination would result in the restraint of trade and consented to the formation of new companies. The result was the organization of several companies, all of which flourished in the following years.

Newer developments in the sewing machines invented in the early 1900 period are evidenced in Plate IV; the body of the machine was improved into a more streamlined appearance. The hand wheel is somewhat smaller and the body of the machine is larger than older models. Both the vibrator and rotary shuttles were used in the early day sewing machines.

During the next few years there was little change in this new household servant. This can be attributed mainly

PLATE IV

MODEL MADE IN EARLY 1900's



to the fact that tenure of patent rights did not make improvements necessary until a new patent right was issued. About 1933 the seamstress was privileged to see the addition of a backward and forward stitch regulator. This useful regulator is illustrated in Plate V.

After World War II the sewing machine industry was humming with new ideas and novel gadgets. One of the most intriguing human interest stories during the new era concerns the fabulous success of an European made machine in post war America. One man, among the thousands of displaced persons who have come to this country to build new lives, made his dreams come true in an unbelievably short time. In just five years this once impoverished man had pyramided a tiny workshop in a Bronx apartment into a thriving corporation that grossed seven million dollars annually. One of the European machines which has been received with such great enthusiasm in the United States is pictured on Plate VI.

Competition from these machines has brought about many changes and improvements in products of the American companies recently. In 1952 a leading company introduced a model which made a simple embroidery stitch by means of a three-spool arrangement. Another outstanding manufacturer displayed a zigzag machine late in 1952.

The advantages and importance of mechanical sewing have increased to such an extent that the modern day American

PLATE V

MODEL MADE ABOUT 1930

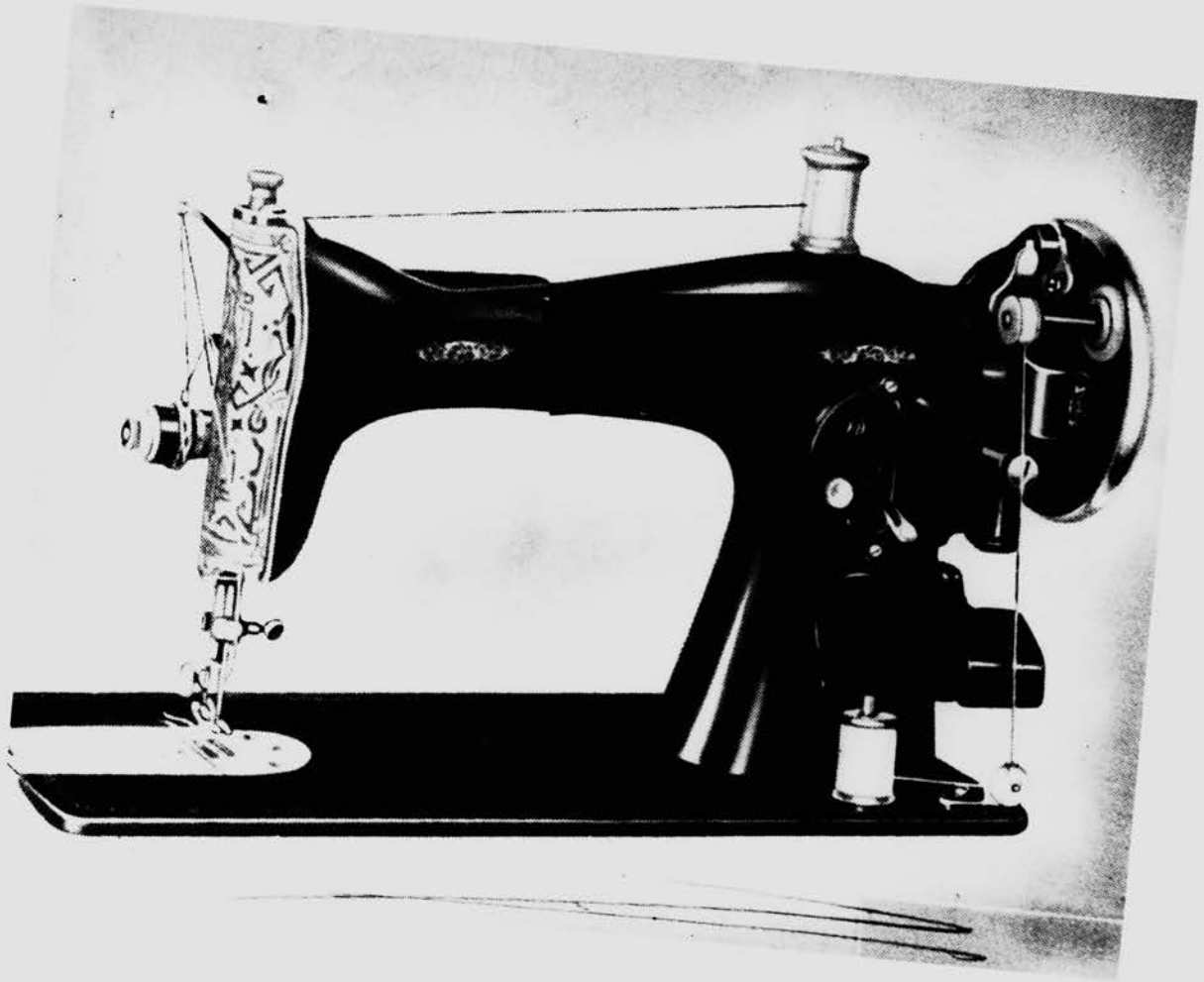
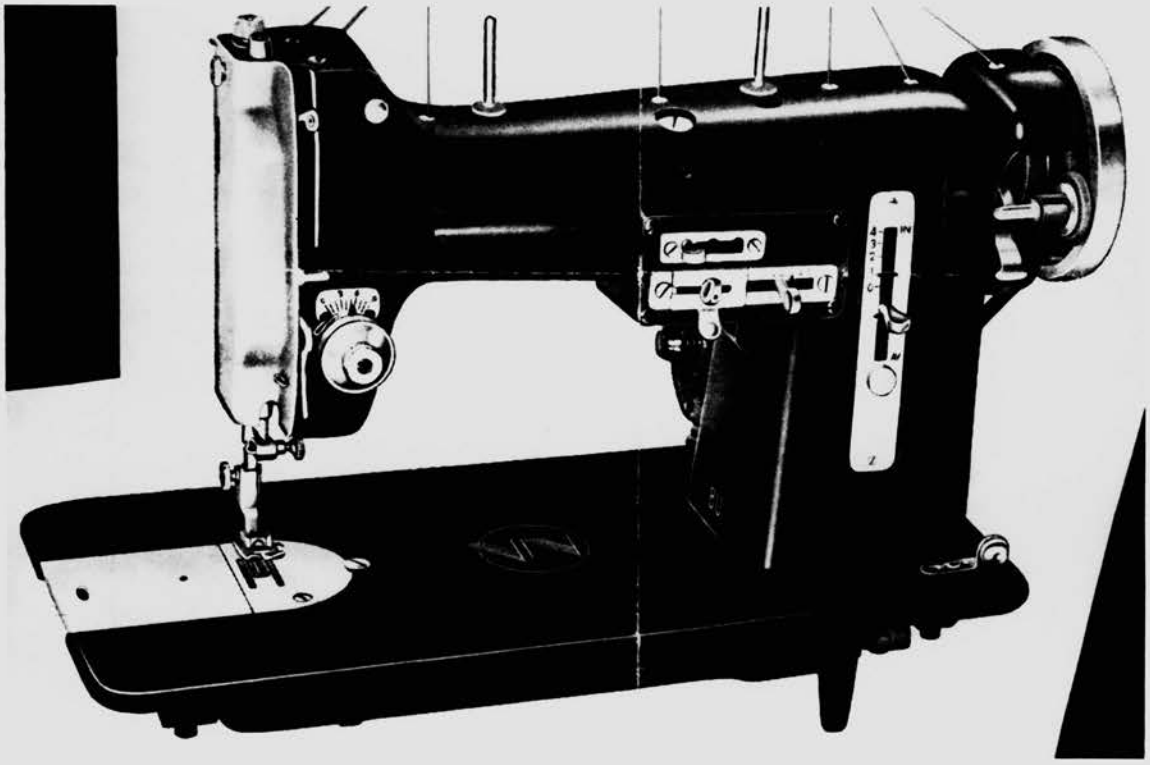


PLATE VI

EUROPEAN MODEL



consumer regards the sewing machine as a necessary part of the household furnishings. Only a few of the most important features of sewing machines have been mentioned, and a more detailed study will be presented in the next chapter.

CHAPTER III

AN ANALYSIS OF THE SEWING MACHINE

A knowledge of the sewing machine and skill in its use is an art to which women have clung throughout the centuries. Today there are many brands and models of sewing machines on the market. Some of them have new or unusual features to appeal to the buyer. With such a large and varied assortment from which to choose the selection of a machine that will be satisfactory over a long period of years may be difficult. Every standard make sewing machine has many points of excellence. In the opinion of the author there was need for information to be assembled and made available to the consumer. The writer endeavored to point out some of the features of different types of machines in the following pages.

Types of Shuttles

Sewing machines are classified according to the way in which the shuttle operates. Lock-stitch machines are known as rotary, oscillator, and vibrator.

The operation of the rotary machine can be visualized by a simple description. The round bobbin rests in a

rotating shuttle having a hook on its rim. The hook catches the loop of thread and carries the needle thread around the bobbin. The loop of the needle thread slips off the shuttle and the stitch is formed.

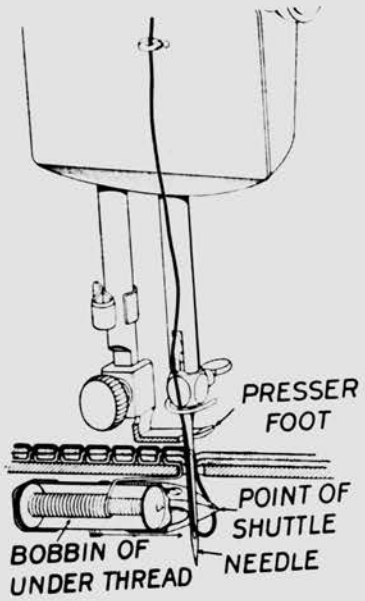
The oscillator shuttle makes a little more than a half turn with the loop of needle thread. The thread slips off to complete its passage around the bobbin as the shuttle reverses its rotation and returns to its original position.

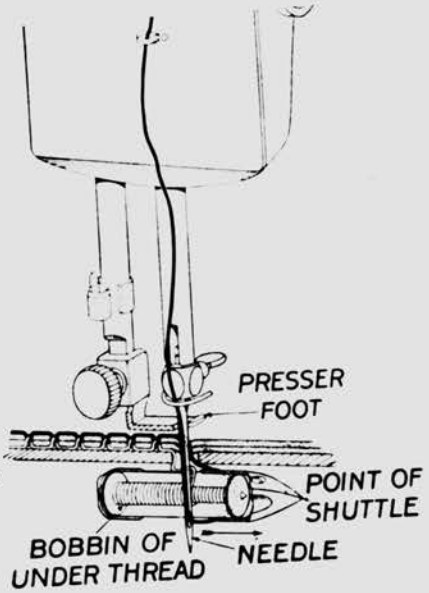
A lock-stitch is formed by the vibrator type shuttle as the upper-thread is carried through the cloth to the under side. A loop is formed as the needle begins to move upward for the next stitch. The under-thread, wound on a bobbin, is passed through the loop; then the shuttle returns to the starting place. Thus the mechanism which carries the bobbin moves back and forth continuously and is called a vibrator. Examples of the shuttle assemblies can best be observed in Figures 1, 2, and 3.

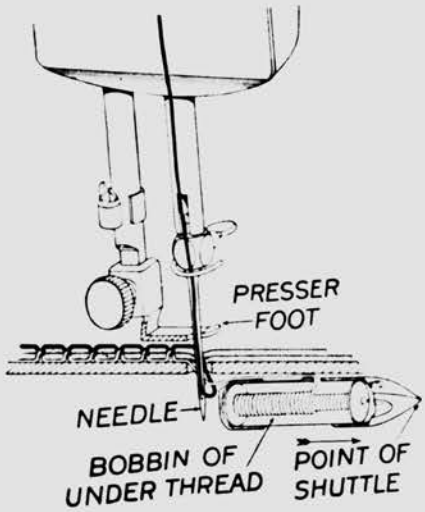
The shuttle and bobbin in the oscillator machine may be in either the vertical or horizontal position. The vertical plane of the shuttle has an advantage mechanically over the horizontal, because it eliminates one change of direction in the driving mechanism. It is easier to insert the bobbin into the shuttle from the horizontal position.

Figure 1

Vibrator shuttle assembly


PRESSER FOOT
POINT OF SHUTTLE
BOBBIN OF UNDER THREAD
NEEDLE


PRESSER FOOT
POINT OF SHUTTLE
BOBBIN OF UNDER THREAD
NEEDLE


PRESSER FOOT
NEEDLE
BOBBIN OF UNDER THREAD
POINT OF SHUTTLE

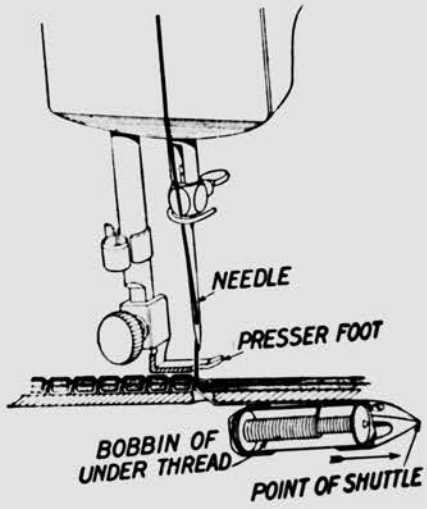
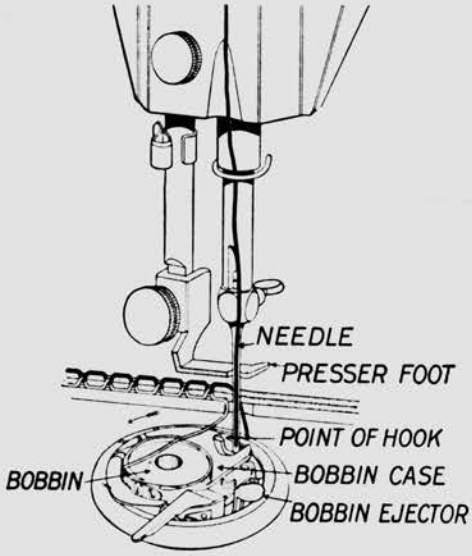
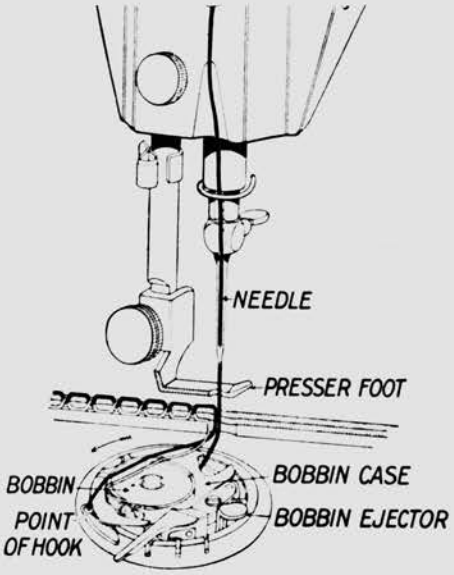
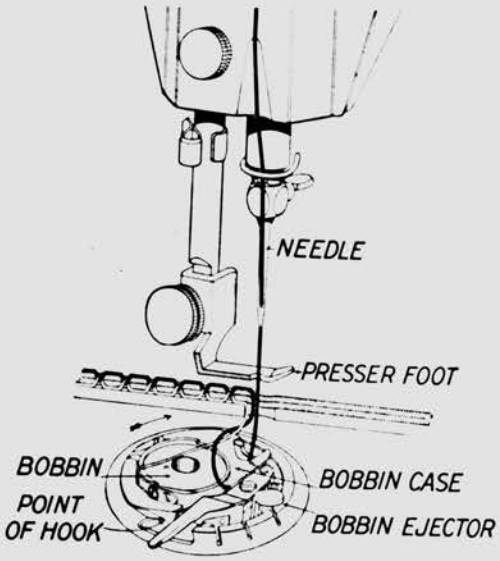

NEEDLE
PRESSER FOOT
BOBBIN OF UNDER THREAD
POINT OF SHUTTLE

Figure 2

Oscillator shuttle assembly


NEEDLE
PRESSER FOOT
POINT OF HOOK
BOBBIN
BOBBIN CASE
BOBBIN EJECTOR


NEEDLE
PRESSER FOOT
BOBBIN
BOBBIN CASE
POINT
OF HOOK
BOBBIN EJECTOR


NEEDLE
PRESSER FOOT
BOBBIN
POINT
OF HOOK
BOBBIN CASE
BOBBIN EJECTOR

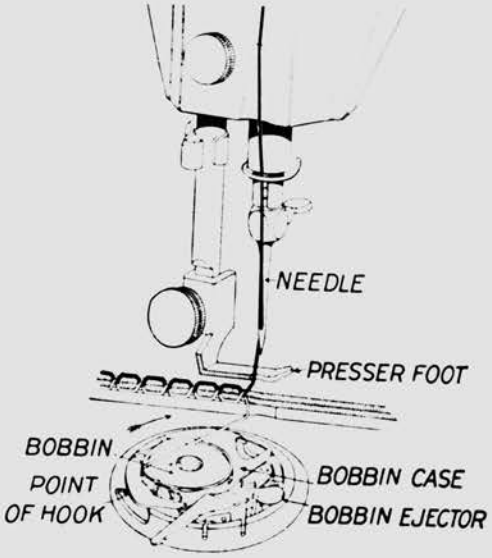
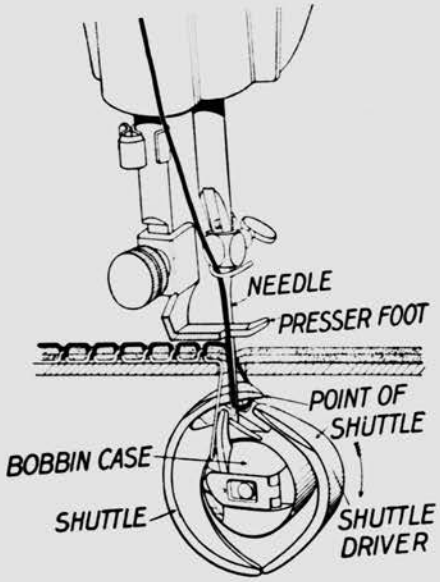
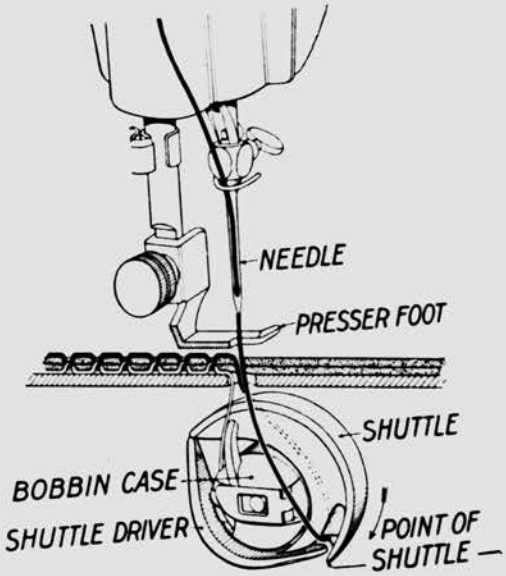
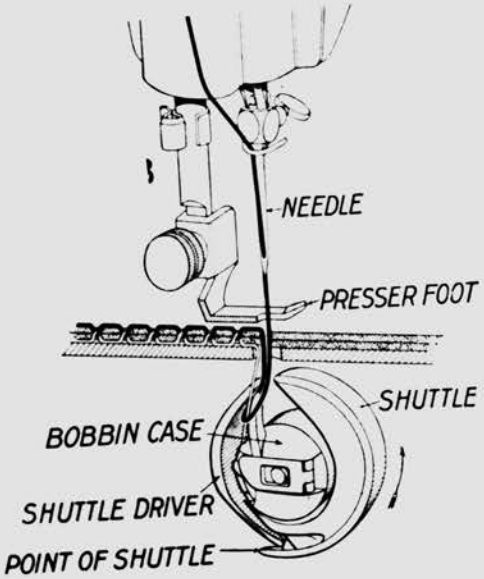

NEEDLE
PRESSER FOOT
BOBBIN
POINT
OF HOOK
BOBBIN CASE
BOBBIN EJECTOR

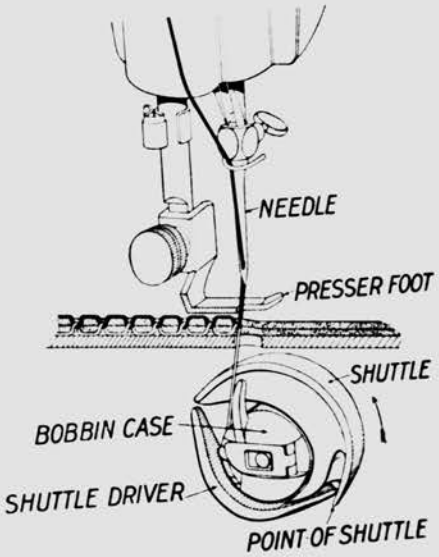
Figure 3

Rotary shuttle assembly


NEEDLE
PRESSER FOOT
POINT OF SHUTTLE
BOBBIN CASE
SHUTTLE
SHUTTLE DRIVER


NEEDLE
PRESSER FOOT
SHUTTLE
BOBBIN CASE
SHUTTLE DRIVER
POINT OF SHUTTLE


NEEDLE
PRESSER FOOT
SHUTTLE
BOBBIN CASE
SHUTTLE DRIVER
POINT OF SHUTTLE


NEEDLE
PRESSER FOOT
SHUTTLE
BOBBIN CASE
SHUTTLE DRIVER
POINT OF SHUTTLE

Kinds of Stitches

All domestic sewing machines make either a lock-stitch or a chain-stitch. A machine which uses a single thread forms a neat stitch that has a chain like appearance on the underneath side of the material. The chain stitch can be unraveled readily by pulling a loose end of the thread. This means that the seam ends must be securely fastened. This type of machine is not in extensive use in the homes of today.

When two threads are used on a sewing machine it is classified as a lock-stitch machine. The name is derived from the way in which threads are interlinked in the material to form a stitch. The work is done with one thread on the upper side of the material and one on the under side. To form a perfect stitch the upper and lower tensions must be properly balanced.

Method of Operation

Domestic sewing machines are electrically driven or are operated by a foot treadle. All treadle machines are cabinet style, while those operated by electric motors may be of the portable variety or furniture styled cabinets.

This means the mechanism of the sewing machine heads is identical. After the machine head is completely assembled

some are electrified and others are used as foot pedal machines.

Different methods are used to attach motors to a sewing machine. By the "direct-drive" method a gear on the motor shaft drives another gear on the main shaft of the machine head.

The "belt-driven" machine uses a belt from a pulley on the motor to the main drive shaft of the machine. Tension may be properly adjusted by raising or lowering the motor belt.

An electric machine operated by "friction" uses a flat-rubber-faced pulley (small wheel) on the motor shaft which moves against the hand wheel on the machine.

Features of the Sewing Machine

The vocabulary to describe the features of the sewing machine come from the manufacturers, hence the words lack uniformity. Terms used to portray the special attractions of various models can be interpreted from the following:

"Attachments"--extra pieces of equipment which can be used on the machine to give a professional finish to garments. Included in the set are the hemmers, ruffler, tucker, quilter, seam gauge, edge stitcher, binder and shirring foot. The buttonhole attachment, blind hemmer, zigzager, hemstitcher, and corder may be purchased separately.

"Automatic bobbin winder"--the bobbin is threaded evenly and releases when winding is complete.

"Three spool pin arrangement"--use top pin for plain sewing and two additional spools for simple embroidery stitches.

"Automatic Shift Lever"--backstitching and forward stitching lever automatically returns to forward stitching position.

"Built-in light"--the light is not attached, but is made into the head of the machine.

"Built-in motor"--the shell which houses the motor is made as part of the machine head.

"Calibrated thread tension"--a dial with numbers and sections marked for accurate adjustment.

"Curved feed dog"--a curved toothed part which projects upward, carrying the fabric from the operator at each stitch.

"Dial-a-stitch"--a control by which a straight or zig-zag stitch is made.

"Hinged-presser foot"--a flexible presser foot which moves easily over pins and bulky seams.

"Never-lock"--a patented stitching mechanism that prevents tangled bobbin thread.

"Open or free arm"--the arm extends over the base which allows tubular fabrics or parts of garments to be sewed more easily.

"Patch-o-matic"--a spring and screw combination which releases the downward pressure on the presser bar and allows movement of material.

"Slanted needle"--the needle bar and presser bar slant forward at an angle of nine degrees.

"Simplified threading"--the sewing thread hooks into the thread guides.

"Crinkle finish"--is a rough non-glaring surface found in gray, black and brown.

"Hammerloid finish"--is a smooth patented finish which reduces light glare.

"Light colors"--soft beige and grays are used by manufacturers on many of the new models. The familiar black smooth finish is still used to some extent.

Summary of Features

Sewing machines today are a striking contrast to those designed by the pioneer inventors, as described in Chapter II. Whereas early models were made for simple stitching only, the versatile modern machines are fashioned to give a much greater range of service with a minimum of effort by the operator. Stitches for darning, applique, cut-work, thread carding and monograming can be accomplished on many of the newer machines.

The degree of precision construction in different type machines and available attachments have necessitated considerable price variance in the many styles on the market today. The seamstress who needs a machine for plain sewing, mending, and darning will find the lower priced machines do satisfactory work and operate flawlessly. These long-shuttle machines are the least expensive; however, they do make considerably more noise than those designed with the rotary-mechanism. The more accomplished seamstress who devotes time to making slip-covers, draperies, bedspreads, and the family wardrobe in general will enjoy the smooth-running, precision machines. This type not only gives perfect basic stitches, but also has many of the new features for more elaborate and decorative work.

European models, which have the built-in zigzag needle action, are a temptation to many prospective buyers.

However, before investment is made in these more expensive models, the individual should determine to what extent the machine will be needed or used. Something novel in the field of home sewing is offered by the new "free lower arm," a feature of many modern machines which allows tubular fabrics, or parts of garments, to be sewed or mended easily by machine.

Most rotary machines have the forward and reverse stitch mechanism, an advantage for tacking ends of seams and mending. Although shoppers will find many methods by which this is made into the different machine heads, the result is always the same when sewing.

Special lights on the modern machines are valuable to the operator for the close work of sewing. The lower priced models usually have a light attached to the arm of the machine, while the more expensive styles feature a light built into the head. One model has a light that can be adjusted to throw the light where it is most satisfactory.

Nearly all manufacturers have designed their sewing machines, as well as the cabinets in which they are mounted, to making sewing easier and more enjoyable for the seamstress. Some models are set in large desks, which allow more sewing space and drawers for storage of sewing supplies. Others are concealed in what can serve as a lamp or night table. If limited space is a consideration the portable will prove most suitable. These can be obtained either in

full size or smaller than standard sized machines. Although some of these are very heavy and somewhat inconvenient to move, many manufacturers produce the light weight portables.

A desire to determine to what extent and satisfaction the average homemakers, professional seamstresses and teachers use the sewing machine prompted the author to interview 113 women. The questionnaire used and the information obtained in the survey will be discussed in Chapter IV.

CHAPTER IV

RESULTS OF THE QUESTIONNAIRE

The information disclosed in the following pages was obtained by personal interviews with 113 women in a selected area. The questionnaire was set up to gain the following information:

1. type of sewing machine according to shuttle assembly.
2. reason for selection of the sewing machine.
3. the extent to which the sewing machine is used in the home.
4. the use of the instruction book.
5. desired information for future selection of a machine.

Questions were worded, in so far as possible, to avoid the answers of "yes" and "no". The purpose of the questions concerned the kind of garments constructed rather than the number of garments made.

Data was obtained through interviews with 35 women who lived in a rural area; 46 urban homemakers; 15 seamstresses who earned money by sewing for others; and 17 women in the professional field. The professional field is referred to as the home economists who follow their profession.

All of the 113 interviewed lived within a selected area. This study included persons from various income levels.

The writer offered no opinion as to the kind of sewing machine used in the home, nor attempted to influence the individual toward future selection. A discussion of the features of various types of machines from the viewpoint of the author was avoided throughout the interview.

Types of Sewing Machines

The analysis of the data that determined the classification of sewing machines has been presented in Table 1.

TABLE 1

CLASSIFICATION OF MACHINES

	Groups Interviewed			
Type of Bobbin	Urban Homemaker	Seamstress	Prof.	Rural Homemaker
Fully Rotary	25	6	10	14
Vibrator	4	2	1	7
Oscillator	13	5	6	10

From the group classified as full rotary bobbins, ten sewing machines were European models.

It was interesting to note that only 34 machines were operated by treadle, while the remaining 79 were electrically

driven. Three of the 79 indicated that they had attached electric motors to their foot pedal machines.

"A good dose of competition is the best thing that could have happened to the sewing machine business."[1]

The results of the ages of machines owned by the various groups interviewed showed that 39 owned machines less than five years old, while 11 were from five to ten years old. Durability of a sewing machine can be noted by the fact that 29 owners indicated their household servant was from 10-20 years. Fourteen machines were estimated to be from 20-25 years old, while seven boasted of operating the same machine for more than 30 years.

The desire for some new or unusual feature on sewing machines was expressed by 56 women. The remaining 57 were happy with their selection.

Table 2 has been set up to show what percentage of the women interviewed used their machines to make clothing, household linens, and slip covers.

---

[1] Business Week, No. 1206 (Oct.11, 1952), pp. 130-134.

TABLE 2

USE OF THE MACHINE

Type of garments	Rural	Urban	Seam.	Professional
Small garments	.28	15.2	0	17.6
Dresses & B.	51.4	.67	33.3	23.5
All clothing	37.1	78.3	75	41.2
Curtains	54.3	52.2	40	29.4
Bedspreads	.28	39.1	33.3	23.5
Table Linens	25.7	30.2	.7	17.6
Kitchen Linens	40	26.0	.7	23.5
Slip Covers	17.1	21.7	20	23.5
Men's Shirts	25.4	6.5	26.6	17.6

Because attachments have been designed to give a professional finish to garments most machines are sold with a set of attachments. The zigzagger, hemstitcher, blind hemmer, and buttonholer are not included with the set. These may be purchased as "extras." The number of women who made use of the attachments may be observed in Table 3.

TABLE 3

USE OF THE ATTACHMENTS

Attachment	Rural	Urban	Seam.	Professional
Hemmers				
Narrow	8	15	4	3
Adjustable	3	4	2	1
All Widths	3	9	0	1
None	21	18	9	12
Ruffler				
For clothing	9	17	3	3
For curtains	14	9	3	3
Tucker	3	13	1	6
Quilter	1	13	2	4
Cording Ft.	5	12	0	3
Zipper Ft.	14	31	11	9
Buttonhole Att.	10	18	9	8
Zigzagger	1	6	1	2
Binder	0	4	0	0
Blind Hemmer	0	2	0	2
Hemstitcher	0	0	0	0

The adjustable hemmer is a part of the set of attachments supplied with most family machines. This hemmer will make a hem of any desired width up to one inch. The survey revealed that the narrow hemmer was the most frequently used attachment. A total of 60 women reported they made no use of the different width hemmers. Facts pointed out that few women used the ruffler or tucker. The quilting attachment

was not used to any great extent, however, it was noted that a greater percent of the urban homemakers indicated they made bedspreads, where they possibly found use for this particular gadget. The zipper foot was used extensively. This could be due to the large number of women who make dresses.

Less than half the total number interviewed used a buttonhole attachment. The comparatively low number may be explained by the cost of the attachment and the patronizing of a shop which offered a sewing service.

Little, if any, attention was merited by the binder, hemstitcher, blind hemmer, and the zigzag attachment. These were considered to be difficult to operate.

The shopper today is likely to be carried away by demonstrations on attachments given by salespeople in stores or state fairs. She must realize the demonstrator operated the sewing machine, used the various attachments, until perfection was achieved. It may be impossible for the seamstress to devote sufficient time to the use of each individual attachment to become efficient.

Only 22 of the number interviewed stated there was no light on their sewing machines. Questions with regard to the location of the light revealed 28 were attached to the back and 60 were on the front of the machine head. Seventy-four of those who owned a machine with a light expressed a desire for manufacturers to have sewing lights with greater illumination.

A booklet of instructions is issued with every sewing machine sold. The manual includes diagrams and explanations on the use and care of the machine. Graphs 1, 2, 3, 4, and 5 show to what extent the various groups interviewed used the manual.

In some instances it was stated that the instruction book had been lost or misplaced. Several women expressed the need for more detailed instructions on the care of the machine.

The majority of those interviewed revealed that their sewing machine had never been serviced by a service man. Women who reported the most frequent care of the machine were alteration women in downtown dress shops.

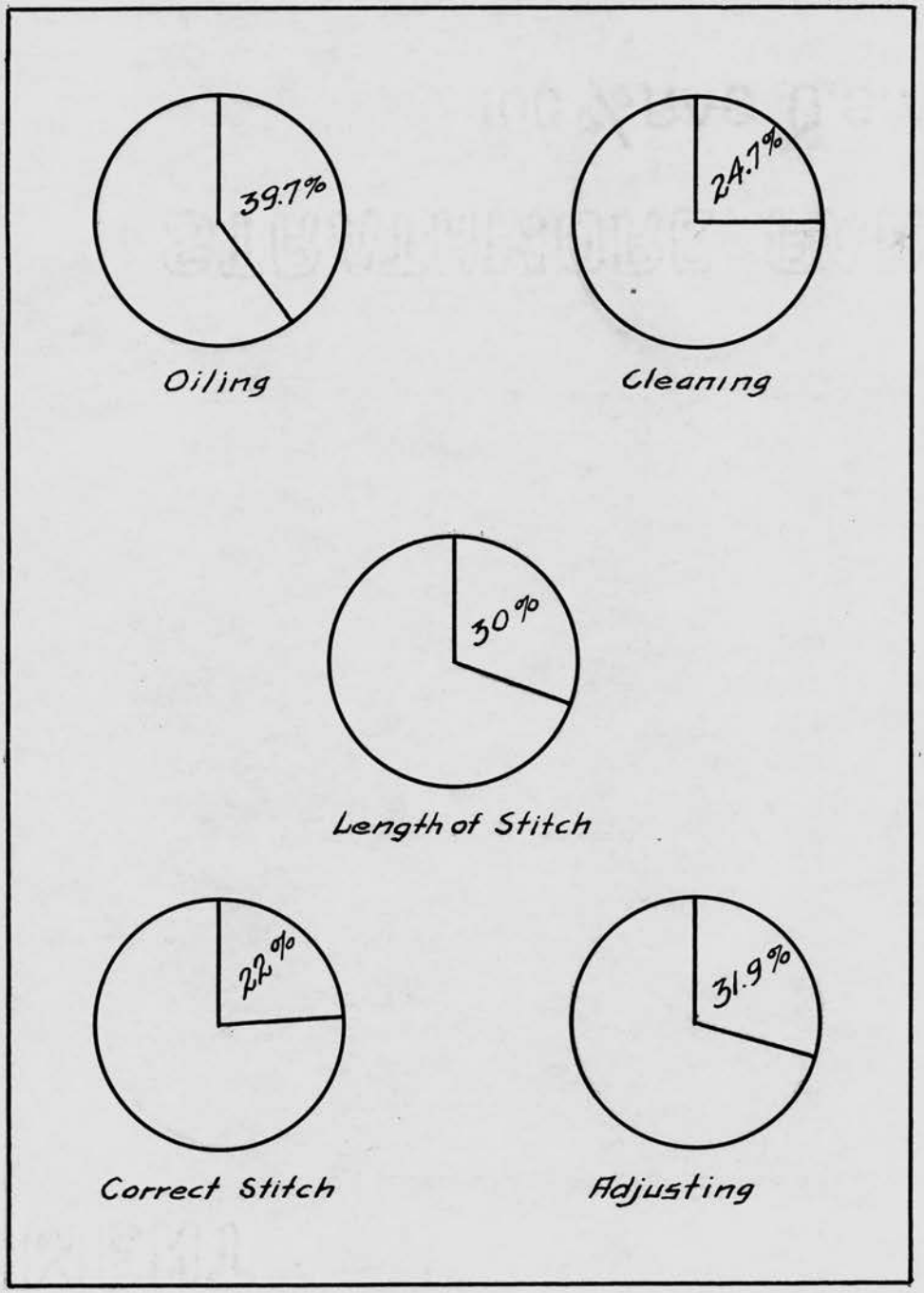
When the question "what information would be valuable for future selection?" was asked, the majority of women expressed a desire to know more about the European made sewing machines.

It was stated that the zigzag needle action of this particular model would be of a greater advantage to home-makers who construct most of the family wardrobe.

"Buy from a local dealer and know that the machine can be serviced," was another comment made many times.

Many women admitted that they needed to have a wider knowledge about mechanical features and construction. Several expressed the desire to actually operate more than one kind of machine in their home or at the store before the final selection was made.

GRAPHS 1, 2, 3, 4 and 5


39.7%
Oiling
24.7%
Cleaning
30%
Length of Stitch
22%
Correct Stitch
31.9%
Adjusting

A full sized gear-driven machine head, mounted in a durable cabinet, should be the first choice of the seamstress, were the remarks made by this particular group.

A conversation with one dressmaker in regard to her sewing machine revealed that her teen-age daughter was the proud owner of a new cabinet style machine. One home economics teacher and two homemakers indicated that they owned both a portable and a cabinet machine.

Several homemakers stated that they sewed only for pleasure and preferred a light weight portable machine which could be moved easily.

The majority of women in all groups indicated verbally that the sewing machine was a necessary part of every household. It not only saved time and money, but afforded also many hours of pleasure.

CHAPTER V

RECOMMENDATIONS

It was the aim in Chapter III to show the types of sewing machines owned by a selected group of women; to what extent the machines were used, and the information desired for future selection. As a result of the findings the author made the following recommendations on the selection, use and care of the sewing machine to the prospective buyer.

1. The selection of a sewing machine should be determined by:
    a. the amount of sewing done in the home.
    b. in what part of the home the machine is to be used.
    c. whether or not the buyer is permanent or transient.
2. Seek more information from the well informed salesman on the use and care of a machine.
3. Ask for more instruction on the use of the sewing attachments.
4. Try several models of machines either in the home or at the store.
5. Select a machine head with a dull finish to avoid the reflection of light.

From the 113 women interviewed came many comments on changes or additional features that could be included in the sewing machine. On this basis the author wished to make recommendations to the manufacturer.

1. Standardize brand names on all sewing machines made by one company.
2. Incorporate a light on the machine that will give greater illumination.
3. Design a feed dog that will allow the machine to make a perfect back stitch.
4. Include a corder foot, a blind hemmer, and more bobbins with each set of attachments.
5. Clarify the instruction manual for:
    a. ease of threading the machine.
    b. use of the attachments.
    c. places to oil the sewing machine.

A thorough analysis of the statements made by those interviewed revealed additional recommendations that were worthy of mention.

1. Direct attention toward the use of research findings in testing laboratories, and the literature printed by the manufacturers of sewing machines.
2. Use, or have available for use, several types and models of sewing machines in high schools and colleges.

7. Consult the instruction manual for oiling electric motors on machines. (Some require a motor lubricant, while others may be oiled with regular sewing machine oil).
8. Follow the instruction manual for general oiling of the machine head.

If the machine runs hard, it should be thoroughly cleaned and overhauled under the direction of one who has had experience. However, a bulletin on cleaning may be secured from the Department of Agriculture, if an individual wishes to undertake this project. Mechanical difficulties sometimes arise from normal wear of the sewing machine. If such problems occur the owner should consult a reliable dealer or write to the manufacturer.

It is necessary to observe some measures of precaution in order to receive the maximum amount of service from the sewing machine. Several suggestions were made by the author to insure perfect operation.

1. Operate the machine only when there is fabric under the presser foot.
2. To prevent damage to the presser foot and feed dog keep a small piece of cloth underneath the presser foot when the machine is not in use.
3. Forcing the fabric through the machine will bend the needle.
4. Keep the slide plate closed when the machine is in operation.

5. Avoid operation of the machine when the presser foot is raised.

The working parts of a sewing machine have been designed to stand many years of use without wear beyond the point of simple adjustment. Common machine troubles can be avoided by a knowledge of their cause. Frequent sewing machine disorders and their causes are:

1. An imperfect stitch is the result of the thread tensions not perfectly adjusted. If the thread is tight on the underneath side of the fabric, the top tension is too loose. If the thread on the upper side is straight, then the top tension is too tight.
2. The sewing machine needle should always be sharp and straight. A blunt needle will pull the threads in the material. A bent needle will constantly break the thread.
3. If the machine skips stitches the cause may be:
    a. crooked needle
    b. needle improper length
    c. needle too small for thread
    d. needle set wrong side out
    e. needle incorrectly threaded
    f. needle set too high or too low
    g. excess oil on shuttle assembly

4. Common causes of thread breakage are:
    a. machine incorrectly threaded
    b. needle set too high or too low
    c. needle incorrectly threaded
    d. bent needle
    e. needle wrong side out
    f. needle too fine for thread
    g. upper tension too tight
    h. sharp or rough places on shuttle
5. If stitches appear to be imperfect on underneath side of cloth the machine may be incorrectly threaded or the upper tension is much too loose.
6. If the material puckers one or both tensions may be too tight.

Only the most common sewing machine difficulties have been mentioned in the preceding discussion. A machine which has been kept clean, oiled and ccrrectly adjusted should produce a perfect stitch.

Many sewing machine problems may be solved by careful study of the instruction manual which is with the machine. If the book has been lost ask a sewing machine dealer or an extension leader for a chart or pamphlet on the use and care of the machine.

CHAPTER VI

SUMMARY

Although the modern sewing machine differs slightly from the earliest model made by the pioneer inventors, it has been called "one of the most useful things ever invented."[1]

Sewing machines have remained as permanent guests in American homes and in millions of homes throughout the world. The advantages and importance of sewing have increased to such an extent that the public regards the sewing machine as a necessary part of household furnishings.

The desire to determine to what extent and satisfaction the average homemaker used the sewing machine prompted the author to carry out this research.

A study of the selection, use and care of sewing machines in a selected area was made by the use of a questionnaire. One hundred and thirteen women were interviewed. Of this group 35 lived in a rural area, 46 were urban homemakers, 15 were seamstresses and 17 were home economists. The data obtained through personal interviews

---

[1] Business Week, op. cit.

were thoroughly studied and tabulated for more careful examination.

Sewing machines were classified as to the type of shuttle assembly. The survey revealed that 65 women owned a full rotary machine, 14 made use of a vibrator type, and 34 used the oscillator machine. Only 34 of the total number were operated by a foot treadle while 79 were electrically driven.

Information collected from the interviews was descriptive as to the degree to which the sewing machine and the attachments were used. It was found that a majority of the group constructed most of the family wardrobe. Professional women stated that due to the lack of time, they made only dresses and blouses. Eighty-three of the 113 women reported that they made no use of the attachments. This was largely due to the lack of understanding of how to operate the attachments flawlessly.

Thirty-nine percent used the instruction manual for oiling and cleaning the sewing machine. Thirty-one percent reported that they had consulted the booklet when minor adjustments were made.

In answer to the question "what information would be valuable for future selection?" the remarks showed high interest in the more versatile European model. An over-all knowledge of the mechanical construction of a sewing machine was deemed necessary to make a wise choice. The group as a

whole felt that every homemaker should analyze her individual sewing problems before the final selection of a sewing machine.

As Helen Hall aptly expressed in her book, Simplified Sewing, "a sewing machine is not only a convenience but a necessity. The speed of the present day demands quick action, this is equally important if sewing is to be interesting."

BIBLIOGRAPHY

Books

Hall, Helen. Simplified Sewing. New York: Prentice Hall, Inc., 1943.

Singer. Machine Sewing. New York: Singer Manufacturing Company, Inc., 1930.

Bulletins

Lewton, Frederick L. The Servant in the House. Singer Manufacturing Company, Inc., New York.

Robb, B. B. Care and Adjustment of the Sewing Machine. Cornell Extension Bulletin, No. 815 (August, 1951).

United States Department of Agriculture. Sewing Machine Cleaning and Adjustment No. 1944.

Magazines

Herbener, R. "How to Keep Your Sewing Machine Stitching Perfectly." Better Homes and Gardens (October, 1952).

_____ "Pamper Your Sewing Machine." Successful Farmer 49 (March, 1951).

_____ "Sewing Machines." Consumer's Research 24, No. 5 (November, 1949).

_____ "Sewing Machines are Humming." Business Week No. 1206. (October 11, 1952).

_____ "Sewing Machines are More Versatile Than Ever." Practical Home Economics XXI No. 5 (January, 1953).

APPENDIX

SEWING MACHINE CHECK SHEET

KIND OF MACHINE

____Foreign
____Full Rotary
____Vibrator
____Oscillator
____Treadle
____Electric
____Rebuilt

AGE OF MACHINE

____1-5 years
____5-10 years
____10-20 years
____20-25 years
____25-30 years
____over

WHY DID YOU SELECT THE PARTICULAR MACHINE?

____Because friend had one
____Cost
____Performance
____Dealer's Influence
____Guarantee
____Other reasons

DOES IT MEET YOUR NEEDS?

____Yes
____No

TO WHAT EXTENT IS THE SEWING MACHINE USED?

<u>Clothing</u>

____Small garments
____Dresses and blouses
____All clothing (except heavy coat and men's clothes)
____Mending

<u>Household</u>

____Curtains
____Bed Spreads
____Table linens
____Kitchen linens
____Slip covers

ATTACHMENTS USED

Hemmers
- ____Narrow
- ____Adjustable
- ____All widths
- ____None

Ruffler (or) Gatherer
- ____For clothing
- ____For curtains

Tucker
- ____Yes
- ____No

Quilter
- ____Yes
- ____No

Cording Foot
- ____Yes
- ____No

Zipper Foot
- ____Yes
- ____No

Buttonhole Attachment
- ____Yes
- ____No

Zig-zagger
- ____Yes
- ____No

Blind Hemmer
- ____Yes
- ____No

Binder
- ____Yes
- ____No

Seam Guage
- ____Yes
- ____No

Hemstitcher
- ____Yes
- ____No

DECORATIVE DESIGNS OR STITCHES MADE ON SEWING MACHINE

____Yes
____No

HOW EFFECTIVE IS THE LIGHT?

____Glare
____Throw light in wrong place
____Enough light

Placement of light
____Front
____Back

FORWARD AND BACKWARD STITCH

____Yes
____No

HOW IS INSTRUCTION BOOK USED?

_____For Oiling
_____Minor Cleaning
_____Length of Stitch
_____Correct Stitch
_____Minor Adjustment

HOW OFTEN IS MACHINE COMPLETELY SERVICED?

Electric
_____1-5 years
_____5-10 years
_____Never

Treadle

_____1-5 years
_____5-10 years
_____Never

WHAT INFORMATION WOULD BE VALUABLE IN MAKING SELECTION?

APPROXIMATE AGE OF HOMEMAKER

____under 30
____30-45
____45-60
____over 60

NOTATIONS OF INTEREST

Comments

WHAT DO YOU PARTICULARLY LIKE ABOUT YOUR MACHINE?

WHAT WOULD YOU LIKE ON YOUR MACHINE THAT YOU DO NOT HAVE?

VITA

Mildred Parker McKee
candidate for the degree of
Master of Science

Thesis: A STUDY OF THE SELECTION, USE AND CARE OF SEWING MACHINES IN A SELECTED AREA

Major: Household Arts

Minor: Agriculture

Biographical and Other Items:

Born: July 8, 1916, at Reed, Oklahoma.

Undergraduate Study: Oklahoma Agricultural and Mechanical College, 1935-1938.

Graduate Study: O.A.M.C., 1952-53.

Experiences: Teaching, 1938-1942; Selling, 1942-1945; Owner of sewing machine business, 1945-1952.

Member of Business and Professional Women's Club; Beta Sigma Phi, and Home Economics Association.

Date of Final Examination: May 11, 1953

THESIS TITLE: A STUDY OF THE SELECTION, USE AND CARE OF SEWING MACHINES IN A SELECTED AREA

AUTHOR: MILDRED PARKER MCKEE

THESIS ADVISER: BRENDA GOULD

The content and form have been checked and approved by the author and thesis adviser. The Graduate School Office assumes no responsibility for errors either in form or content. The copies are sent to the bindery just as they are approved by the author and faculty adviser.

TYPIST: Elizabeth J. Kerby
KERBY TYPING SERVICE