

Antique Knitters Circular

A Publication for Antique and Vintage Knitting Machine Hobbyists

Volume 2, Issue 1 January-February, 2003

To Subscribers of Antique Knitters Circular:

The "reckoning time" I spoke of in the last issue has now arrived. This is the last issue to be published under the plan followed for the first seven issues.

Even though the cost of colored ink far exceeded the printing budget, the project was rewarding in many ways. I am thankful for the new friends that contributed articles for the newsletter.

I give a special thanks to Pat Lees for writing about everything from producing fleece to making socks.

If I return to publishing, it is likely that it will be done by way of an Internet Web site because of its cost effectiveness.

In the meantime, thank you and best wishes to all.

*Fred Hauck,
Publisher*



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My First Lamb was No Sheep

After Lea and I returned from the 1999 Conference in Freeport, Illinois, I took a renewed interest in actively looking for another knitting machine. On a trip home from a family reunion, I stopped at a flea market to inquire who had the antique knitting machine. I asked the question just as though everyone should know who had the knitting machine. The first person asked sent me to the other end of the row to look for George. George said, "Why didn't you call me? They are home in my barn." The following weekend, I went to George's barn and found a Gearhart Knitter and a Lamb Flatbed. I recognized the Lamb because Ralph Kanko had his on display at the Conference. I returned home with a 1966 Lamb Family Knitting Machine built in Rochester, NY. That is how I found my first Lamb.

Fred Hauck

1866 Lamb Flatbed Knitting Machine, Class 1, SN 1683
Owned by Fred Hauck, Rochester, NY



Antique Knitters Circular

Publisher

Frederic D. Hauck
2428 English Road
Rochester, NY 14616
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Lamb Tuttle
Family
Knitting
Machine

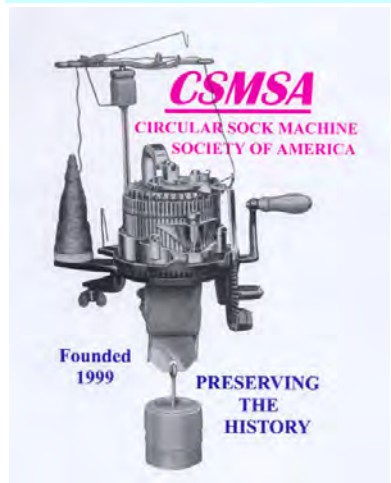


Cover Photo by George McNeil

Fred and Lea Hauck at the
Babcock House Museum, Old
Fashioned Farm Festival, 2002.



BECOME A MEMBER OF



The Genesis of the Auto Knitter Hosiery Company

By *Frederic D. Hauck*

December, 2000

My mother, Florence Way Hauck, purchased a Gearhart Knitting Machine from the Gearhart Knitting Machine Company at Clearfield Pennsylvania in 1923. After a few years of use, the knitter was put in storage and forgotten. In 1975, during a casual conversation about knitting, Florence recalled the Gearhart Knitting Machine. It didn't take long to find it and put it in working order. The machine was given to me and for several years it was used to make scarves for family members. As time went by, a few more Gearhart Knitters were found, some by chance and others by looking and inquiring. After twenty-five years of casual collecting, I have about a dozen Gearhart Knitting Machines, a Lamb Flatbed Knitting Machine and one Auto Knitter (basket case). Along with these knitters came a few owners manuals, sales brochures, letters and invoices.

After attending the first Circular Sock Machine Conference in 1999 at Freeport, Illinois, and then becoming a member of the CSMSA, (Circular Sock Machine Society of America) I have learned more about sock machines and have become interested in preserving their history.

Elsie McCarthy, a member of CSMSA, gave me some history about the Auto Knitter in an e-mail message on May 20, 1999. She wrote "Unlike the Gearhart, the Auto Knitter's genesis has not been discovered." Her observation aroused my curiosity and may have prompted me to look closer at the literature in my files. My files contained some clues that may answer the question.

I have a theory about the evolution of the Auto Knitter Hosiery Company, and the purpose of this paper is to advance my theory for those who may find it interesting. I stumbled onto this idea because the literature in my possession persuades me to think that the first Auto Knitter was copied directly from the 1914 Gearhart Knitting Machine. In the following paragraphs, drawings and text from the Gearhart and Auto Knitter companies will be presented to show why the theory holds my confidence. The pieces of the puzzle were in my possession for several years before I saw the connection.

Shortly after I was given Florence's knitting machine, I learned that a lady in the Rochester area had a knitting machine. She had two Gearhart knitters and an owners manual for an **Auto Knitter Model B**. With her permission, I made a copy of the manual. I was puzzled by a label (fig. 1) on the back of the manual which read "**Superior Appliance & Pattern Co., Clearfield, Pa., Everything for Making Hooked Rugs**". The front of the manual named the Auto Knitter Hosiery Co. with offices in Buffalo, USA, Leicester, England and Toronto, Canada, as the manufacturer. I wondered why there would be an Auto Knitter distributor in Clearfield, the home of the Gearhart Knitting Machine Company. The Auto Knitter Model B looked very much like the Gearhart Knitting Machines.

A couple years later I found an Auto Knitter for sale for \$20.00 and drove 80 miles to get it. The cylinder, cam, and cam gear were broken, as they often were after long storage. The parts looked so bad the owner offered the machine to me for free because I had driven so far. I saw some wonderful sales literature in the box and insisted on paying his asking price. After reviewing all the sales slips, brochures and manuals, I felt guilty for paying so little. They are my most prized knitter items.

This newer Auto Knitter and manual were very different from the Auto Knitter Model B. The copyright date in the newer manual was 1921, and the sales invoice was dated January 19, 1922.

The instruction manuals for the 1914 Gearhart Knitting Machine and the 1920 Auto Knitter were verbatim in text and graphics, page for page, except for the names of the companies on the front covers and a few lines here and there where circumstances required. The Gearhart knitter was the "Model 1914 B" on their **Price List of Parts**,



Figure 1 This label was on the back cover of the Celebrated Auto Knitter manual.

(Continued on page 4)

(Continued from page 3)

(figure 5) while the Auto Knitter was called the “Model B” on page 1 of the **Instructions For Operating.** (figure 7)

Notice how the machines on the front covers (figures 7 and 8) are identical and the text has the same format. Blowups of the bottom left corner of the covers show the dates of the manuals. (figures 3 and 4)

A comparison of the instruction manuals of these two competitors suggests that the Auto Knitter Hosiery Company opened for business in 1920 by selling outdated Gearhart knitters under the Auto Knitter name while the Gearhart Company was already on the market with an improved model. This apparently was a short term arrangement (if there was an arrangement) because Auto Knitter was marketing a new sock machine by 1921. (figure 2)

I believe Auto Knitter started by selling Gearhart machines, then designed a new knitting machine and sold the

(Continued on page 5)

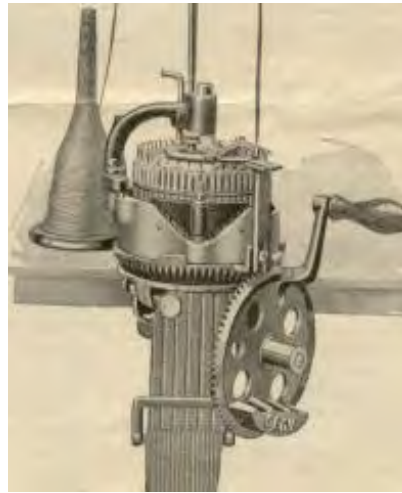


Figure 2 The later model Auto Knitter Machine

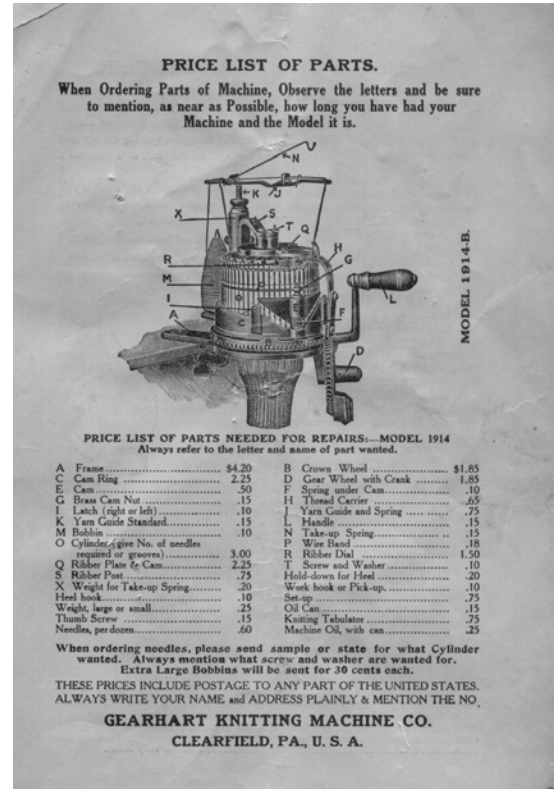


Figure 5 Parts List for 1917 Gearhart

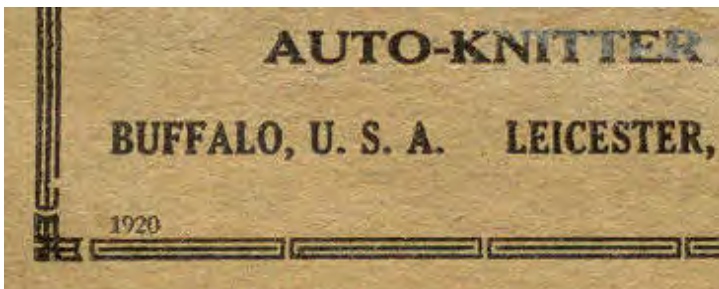


Figure 3 Date on front Cover; 1920

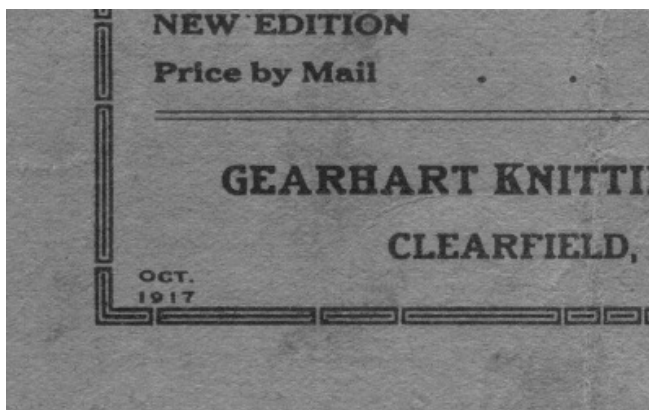


Figure 4 Date on front Cover; 1917

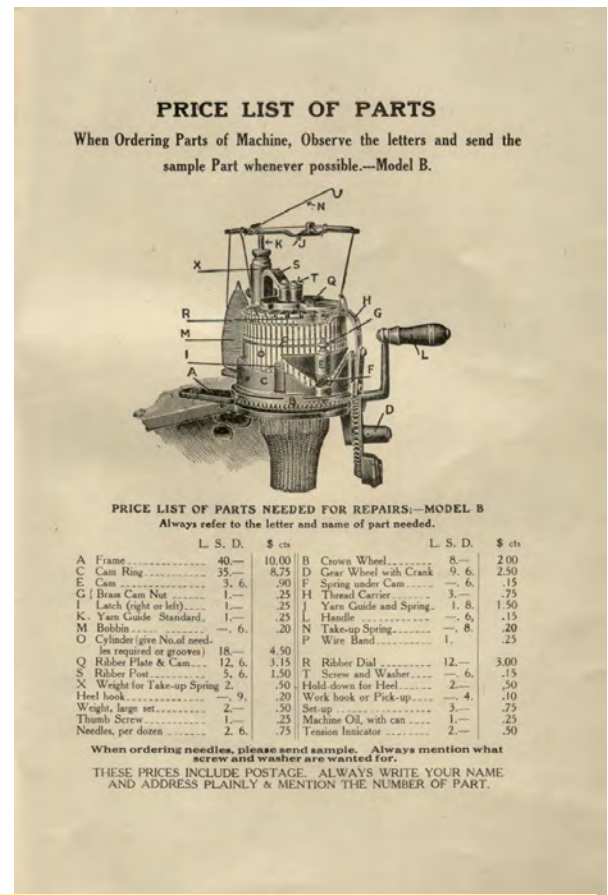


Figure 6 Parts list for Celebrated Auto Knitter

(Continued from page 4)

new model beginning in 1921. It is remarkable that of all the knitting machine makers from that era, only Auto Knitter continued under different ownerships to make machines as late as the year 2000. It seems to be the preferred sock machine for many hobbyists today.

On April 3, 2002, while visiting friends in Clearfield, Pennsylvania, I talked with a great granddaughter of Joseph Gearhart and agreed to share documents with her. She has become interested in the history of the Gearhart Knitting Machine Company.

On returning home, I again studied documents I had copied at the Clearfield Historical Society a few years earlier. I found a statement that Emery Gearhart, youngest son of Joseph E. Gearhart, had “headed up” a company called the **Superior Appliance & Pattern Co.**

Emery Gearhart was also credited with the “home work” system that ultimately bankrupted the company when it was overwhelmed with too many socks.

As I mentioned earlier, Superior Appliance & Pattern Co. was printed on the back of the Auto Knitter manual. This means that Emery Gearhart had an interest in the Superior Appliance & Pattern Co. in Clearfield at the same time his father, two brothers, and he, were managing the Gearhart Knitting Machine Company. The documents go on to say that one of the key products of Superior Appliance Co. was a rug hook based on a mechanical rug knitter invented by Joseph Gearhart.

I had read these documents before, but did not pick up on the interesting connection between Emery J. Gearhart and the Superior Appliance & Pattern Co. and finally the possible connection with a new company, the Auto Knitter Hosiery Company.

How can one not wonder if Emery Gearhart founded, or helped found, the Auto Knitter Hosiery Company, as it was typical of his nature to promote new and aggressive management policies for the Gearhart Company? At the very least, the two companies knew of each other. Auto Knitter could not have exactly copied the Gearhart machine without being noticed.

The Next Step

Further research in the Clearfield Historical Society and Clearfield Library, and interviews with Gearhart family members may shed more light on the question, “Did the founding of the Auto Knitter Hosiery Company have a connection to the Gearhart Knitting Machine Company?”

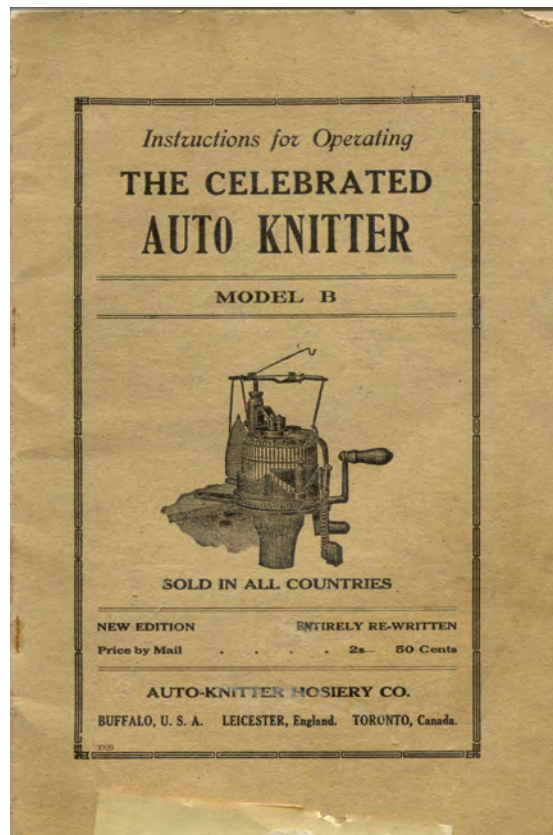


Figure 7 Front Cover, Auto Knitter Model B



Figure 8 Front Cover, Gearhart 1914 Model B

Searching for Auto Knitter Model B

by Fred Hauck

Here is the latest piece of the Auto Knitter puzzle. I recently acquired a knitting machine from Murray Clark, North Woodstock, NH. The machine was sold to Murray as an Auto Knitter and he understood it to be an Auto Knitter. However, on inspecting the box of parts, I found what looked like a Gearhart machine. I told Murray, "this is a Gearhart." It had three cylinders and would enable the assembly of three Gearhart machines from the extra parts in my possession. So I brought it home with that in mind.

After examining the box and a few paper fragments inside, I learned the machine is indeed an Auto Knitter. However, it is an Auto Knitter Model B, which is really a Gearhart Model 1914 B.

The box has a very small fragment of the shipping tag which reads, NY 747-A (Curt St.) No. 16599. The city name is missing except for the last letter, half of an "o". A magnifying glass is needed to read all the text.



The other loose fragments contained words "From Auto Knitter-Hosiery Co., Inc., 821 Jefferson St., Buffalo, NY". Also "1 Duplex Model B", "value \$40.00", "Amer. Ex Collect", and "Conn.". Quite interesting is the small tag that appears to have fallen off the cam ring, "AUTO KNITTER MODEL B." The cam ring still has a shadow of where a label had been attached. An attempt was made to show the text by scanning the fragments and enhancing the images.



Machine label

Inside the box was a round disc of wood to stabilize a cylinder, and a second small box for a third cylinder. It is thought that the term "duplex" indicated the machine was sold with two cylinders. Simplex had one cylinder, and triplex had three cylinders.



View of box inside

The Gearhart machine in my collection has the Gearhart label. Except for



Shipping tag fragments found in the box

the labels, there are no obvious differences in the machines, and without the original boxes, shipping tags or documentation, there is little chance of recognizing the early machines sold by Auto Knitter.

The evidence that Auto Knitter had a relationship with Gearhart is compelling. What is still unknown is whether or not the Gearhart Company purposely helped the founding of the Auto Knitter Hosiery Company. It is my hope that by writing this article, someone will realize they have additional pieces of the puzzle and will offer that information to those searching for the origin of the Auto Knitter Company. If you have documents or machines from the early Auto Knitter, please inform



Tag on box shows "Curt St" some where in NY



A shadow outlines the spot where a label was attached

(Continued on page 7)



Vague images of text read value \$40.00 and 821 Jefferson St., Buffalo, NY

(Continued from page 6)

me and others that are searching.

Dr. Richard Candee, 6 Scituate Road, York, Maine 03909, (207) 363-6635; e-mail rcandee@maine.rr.com and Elsie McCarthy, 47 Goose Pond Road, Lyme, NH 03768, (603) 795-2966; e-mail lemccarthy@valley.net are two individuals who are actively searching for Auto Knitter records. Dr. Candee is searching for information on all types of antique knitting machines.

Reducing Snags From Bobbin to Needle

by Fred Hauck

One of the most effective ways to eliminate problems while knitting is to make sure yarn feeds from a tangle free bobbin to the latch needles with a minimum of friction and snags along the way. Here are a few hints that may improve the way the yarn supply is set up.

There is a great temptation to feed yarn from an existing cone or ball when there is no apparent back tension. Any small tug of resistance from the yarn supply quickly magnifies the strain on the needles which must pull yarn off the bobbin and through several guide holes. Test your supply in this manner. Thread up the machine in the normal way. Take the yarn as it exits the yarn carriage and go up through the last hole in the top guide, bypassing contact with the needles. Then pull the yarn down toward the floor with a slow gentle pull. Pull several feet of yarn from the supply and note the amount of pull exerted. Do this with several of the supply cones you plan to use. Make a mental note of the force required to pull yarn through the guides specified.

Next, place a supply cone near your feet and feed yarn from it down through the last top guide hole, to the yarn carriage, and to the needles set up with knitting. Set tension on "loose". Crank the sock machine forward and knit slowly with one hand while holding back lightly and with slack on the yarn with the other hand. Pull short lengths from the supply so the only back tension is from your hand. This time, note the amount of back tension on the yarn required to stall the machine. You may be surprised to see how little tension it takes to make the crank hard to turn and how easy to turn with slack yarn. If you do this test with the various yarn supply methods you use, you will easily identify which methods give trouble free feeding of yarn.

The next issue is the resistance to yarn sliding in the yarn guide holes. The entrance and exit on the yarn carriage are most critical. Note that the yarn enters the carriage at a sharp right angle and exits at a sharp right angle. On some carriages the hole was drilled and left with a machining burr. Such was the case with a Home Profit Master Machine fresh out of storage. The ragged hole created extra drag on the yarn at those sharp edges. A significant improvement was made by chamfering the exit hole with a slight radius and adding a plastic bead to the entrance hole. Plastic beads are inexpensive in craft shops. Find one with a smooth hole one eighth inch in diameter. Use adhesive (JB Weld works good here) to bond the bead over the entrance to the carriage and to the entrance of the brake wire hole.

Simple adjustments in handling the yarn supply and reducing friction in the guides usually results in fewer dropped stitches and allows more attention to be given other aspects of machine operation. The crank will turn easier and there will be less wear on the machine.

Lamb Flatbed Knitting Machines

by Fred Hauck

The invention of the Lamb Flatbed Knitting machine attracted world attention when it was introduced at the World Fair in 1863. In 1865 Lamb began manufacturing machines in Rochester, NY. By 1867 Lamb had established the business in Chicopee Falls, Massachusetts, where the company still survives to-

(Continued on page 10)

Circular Sock Machine Leads to Invention

by Fred Hauck

My job as an engineer at Eastman Kodak Company involved the development of microfilm readers and printers that used photographic printing paper developed by application of heat. It was called a photothermographic process. The paper required uniform heating to develop the image and the equipment favored for that heating step consisted of a fabric covered drum rotating within a curved heated platen. The fabric covered drum in use had a short service life and contributed to non-uniform heating of the paper. There were 45,000 printers in customer service, and replacement costs were high.

While addressing this problem, it occurred to me that a fabric covered drum could be made inexpensively by stretching a knitted tube over a drum core. The thought came about largely because my mother had recently given me her antique Gearhart Knitting Machine, and it was ideal for knitting a fabric tube just the right size for a four inch diameter drum.

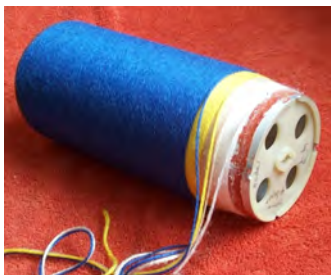
I arrived at work the next day with a knitted tube and by the end of the day had constructed and tested a drum covered with Aunt Lydia's rug yarn. It was not surprising that the prints had a very attractive but unacceptable pattern of stockinet in the background of the image. The test led to further experimentation, and within days a tool had been designed that packed the yarn tightly on the drum surface. Yarns in local yarn shops were unable to withstand the high processing temperature, and further testing was done using heat resistant materials. The yarn covered drum was a success and became the replacement part for customer equipment as well as the part used in new printers.

A Research Disclosure document number 17729 was published under my name, titled "Compacted Textile Cylinder Cover". Development continued and the process was used to construct multi-layer fabric rollers of various sizes and surface characteristics. The nature of the surface depended on the yarn composition and the pressure applied when packing the yarn in place. Rollers were tested for lubricating fuser rollers in copiers and for cleaning toner from electrostatic surfaces. A three layer yarn packing tool was developed that heated the yarn while packing, thereby making the surface hard and smooth. The same tool provided means of applying adhesive for bonding the yarn. Extended development led to rollers with very soft surfaces which could be used to transport delicate films.

It is unlikely that a "Compacted textile Cylinder Cover" would have been conceived if my mother had not given me her Gearhart Knitting Machine.



Original drum had a short service life.



Drum covered with four layers of yarn.

Yarn on a porous core provided a lubrication applicator. Bottom roller with adhesive.



Yarn drum with simple tool for compacting single layer.



Very soft roller for cleaning or transporting film.



Three layer tool with heat and adhesive features.

Gearhart Family News

by Fred Hauck

Joseph Emory Gearhart still has descendants living in Clearfield, Pennsylvania, where he operated the Gearhart Knitting Machine Company. When the 2001 CSMSA Conference was held in Clearfield, planners of the event included an open house, and made sure that descendants of J. E. Gearhart were invited to visit the conference.

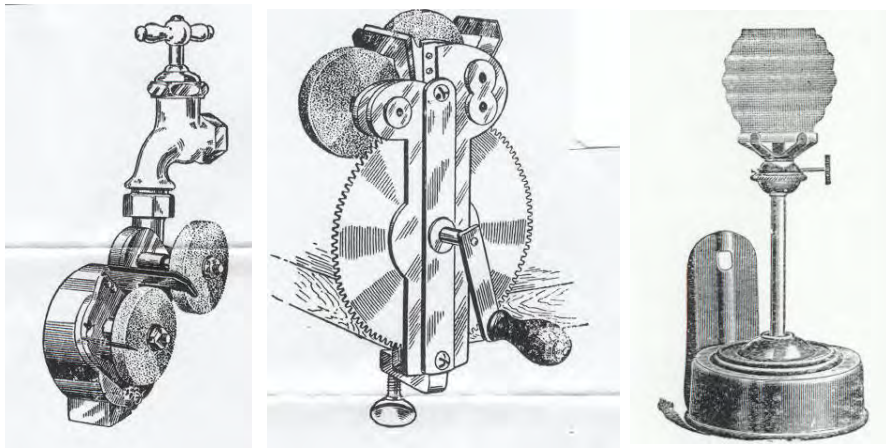
I had the good fortune of meeting Mary E. Dague and her daughter Dinah, grand daughter and great grand daughter of J. E. Gearhart, and had the opportunity to present Mrs. Dague a scarf made on a Gearhart Knitter. Since that time I have met with Mrs. Dague and Dinah to learn more about the Gearhart history. Dinah is interested in documenting Gearhart genealogy and history of the Gearhart Knitting Machine Company. She consented to having her picture taken with a framed photograph of J. E. Gearhart for use in this newsletter.

Several of the Gearhart descendants honored the CSMSA Conference with their presence and I thank them for their visit. I hope to continue working with Dinah as we learn more about the operations of the Gearhart Knitting Machine Company.

Dinah Dague with a framed photograph of her great great grandfather, Joseph Emory Gearhart.



Joseph Emory Gearhart



Above; Water operated sharpener, hand operated knife sharpener and lamp designed by J. E. Gearhart.



Fred Hauck presented a knitted scarf to Mrs. M. E. Dague at the Clearfield Conference.

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day.

Although the Lamb Flatbed Knitter was far out numbered by circular machines, they were adaptable to both factory and home use as were the circular machines. Large format machines were also built for factory use, but the family machines ranged in size from 8 inches to 24 inches bed length. Gold stencil on bright black paint made the machines attractive and probably helped sales considerably.

The Flatbed machines had a large heavy carriage that moved back and forth over two rows of needles. The two rows were arranged so one or both rows of needles would knit as desired. Two rows knitting formed “double flat knitting”, basically a one and one rib. Knitting could be done on only the front or back row or one could knit up one row and down the other, thus forming a flat tube. By selective switching of cams, knitting could also be done in the shape of a “U” and opened into a wide flat web. The design allowed the reduction of needles in operation at one or both ends to adjust the size of the tubes or webs. A half dozen needles may be used to knit narrow webs and I-Cords.



This is an 1870 Lamb Family Knitting Machine Class 1, SN 13864

A small textile company in Rochester, NY, bought Lamb Flatbeds, and established a factory for manufacturing garments. The business had several machines and hired workers to produce items for sale to the public.

I have used my 1870 Flatbed, SN 13864, to make neck strings for name tags and sun glasses. The machine pictured here was purchased in poor working condition. It was completely dismantled, cleaned and reassembled with new needles from the Lamb Knitting Machine Corporation. The cams were slightly damaged and required repair with hand tools. The bright metal was polished, but paint and stencil was only lightly cleaned and coated with light oil for protection.

The 1866 Lamb Knitter on the right, SN 1683, was manufactured in Rochester, NY. This machine also required extensive cleaning and new needles. It has the

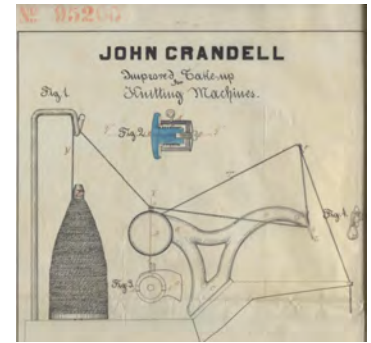
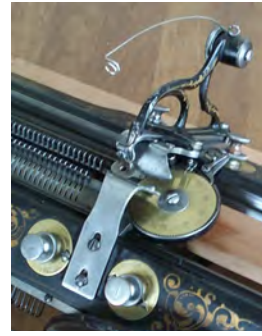


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“crown type” yarn feed. The serial number was stamped in several places on the 1866 machine as well as on a round button on the right end of the carriage.

The spring type yarn feed on the 1870 machine patented in 1869, Lamb Patent No. 95,200, was invented by John Crandell. The 1870 machine had the serial number on the button and one other place on the needle bed.



The spring type yarn feed above is pictured beside the patent drawings of the assembly. The picture also shows the counter, tension adjusting knobs and the latch openers.



1866 winder base



Combination bobbin holder and yarn guide.



Serial number button



1870 winder base

The stenciling was more elaborate on the 1870 machine and was placed on the small accessories where practical. Parts of the winder with changes in stencil design are shown below.

The yarn guide was a stand alone unit with features to hold three bobbins.

When the Lamb Flatbed Knitters are demonstrated for a group, folks marvel that this machine from 1863 technology is capable of so many variations in knitted product. I tell people that the machine was making socks in time to make a pair for Abraham Lincoln. A Lamb advertisement from about 1870 claims “Pair of Socks Complete in Thirty Minutes” and “Knits Over Twenty garments”. The price for the Class 1 Flatbed complete with all extras was \$60.00. A polished black walnut table with drawer and cast-iron legs sold for \$8.00.

Sales literature claimed “The Lamb Machine has taken Highest Premiums, Gold and Silver Medals, at all Agricultural and Mechanical Exhibitions including the Paris Exposition of 1867.” A pocket size book of thirty pages published by Lamb listed 7 Gold, 11 Silver, and 3 Bronze Medals. Sixteen state fairs were listed that awarded “Diplomas” in the period 1865 to 1870.

Dr. Richard Candee has a growing register of 43 Lamb Flatbed Knitting Machines. Contact Dr. Candee at rcandee@maine.rr.com if willing to add your name to the list of owners.



Cast-iron table for Lamb Flatbed

The Stitches Per Inch Ratio is increased when the heel spring is engaged. The ratio is decreased about the same amount when the tension nut is turned down 1/2 turn. Some manuals say to decrease the tension 1/2 turn when using the heel spring to maintain the same stitch count for the heel as the leg. Elsie McCarthy leaves the tension the same when engaging the heel spring to purposely increase sock weight in heel and foot.

Plan ahead and decrease tension before starting the sock to prevent too tight a tension when the heel spring is engaged.

Lubrication—Grease or Oil

A Beginners Guide

by Fred Hauck

Lubrication of a circular sock machine is a topic of importance to every user. Many good suggestions for lubrication have been offered, but it still requires individual experimentation to find a method that works best on a given machine. If you are just learning to operate a sock machine, this article may help you get the most out of available lubricants.

The first problem I encountered when learning to lubricate my knitter was oil on the knitted fabric. Many of the antique knitters have old worn and rusty needles, and efforts to make them knit has led to over lubrication. Sock machines have several places that need lubrication to improve operation. No one type of lubricant is ideal. If the gear ring and cam ring were greased with heavy axle grease, the machine would be hard to crank. If too much light oil is applied, it will flow out the bottom and drip on fabric under the cylinder.

Another consideration is the precision or lack of precision of the working parts. Sewing machines are precision made machines. One drop of light oil in a sewing machine bearing will last for several hours. The same drop of oil on a latch needle begins draining away as soon as it is applied.

Is one drop of oil on each needle enough or too much? I used a light oil with a small spout and counted 37 drops to fill a 1/4 teaspoon measure. That means it would take 1/2 a teaspoon to oil 74 latch needles. That is 10 times the oil required to lubricate latch needles. Place one drop of oil on a vertical metal surface and watch it flow for 20 minutes. You will see that it runs about 15 inches down the surface. Oil on a latch needle has the same tendency, and only a thin

film will remain for long term lubrication.

With these lubrication problems in mind, I have adopted a procedure that adequately lubricates all machine parts while eliminating excess oil on knitted goods. An All Purpose White Lithium Grease or automotive chassis grease is suitable for greased places, and No. 5W-20 engine oil works for all other spots. The machine needs to be dismantled for cleaning and applying grease to some places. Remove the cylinder and cam, clean the bearing surfaces and apply a coating of oil with a tooth brush or small artist brush. If grease is used on these bearings, the machine may turn a little harder than necessary. Remove the crank wheel from the base and apply grease to the bearing post. Grease can also be applied to the tension cam post, the ribber plate shaft and to the open gear teeth on the gear ring and crank. I use a tooth brush to apply grease to the gears in a thin coating and wipe off excess. After assembly of the machine, wipe off all exposed surfaces with a small cloth patch containing a few drops of light oil. Follow that by wiping with a clean cloth. Put one drop on each up throw latch.

Apply a few drops of oil to the ribber plate and dial. Finally, brush oil onto the cylinder and needle shanks in the grooves and brush oil on the needle hooks and latches. Seven drops of oil on a tooth brush are sufficient to lubricate the cylinder and all its needles, and 5 more drops to oil the ribber and its needles. This will consume 1/10 as much oil as applying one drop on each needle. A very thin film of oil on the stand, base and body of the machine will prevent rust and brighten the appearance of old knitting machines.

By following this procedure, your machine will have adequate lubrication and rarely contaminate the work with oil.