INSTRUCTION BOOK

FOR THE

GEARHART KNITTING MACHINE

STANDARD MODEL

The Celebrated Gearhart Family Knitter

SOLD BY

SUPERIOR APPLIANCE & PATTERN CO.

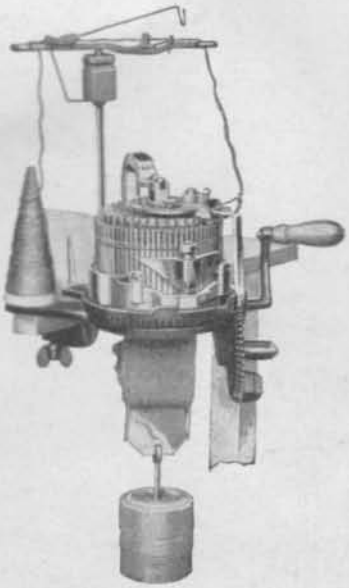
CLEARFIELD, PA., U. S. A.

Dora Pearson

Instructions for Operating

the

GEARHART KNITTER



1942 EDITION

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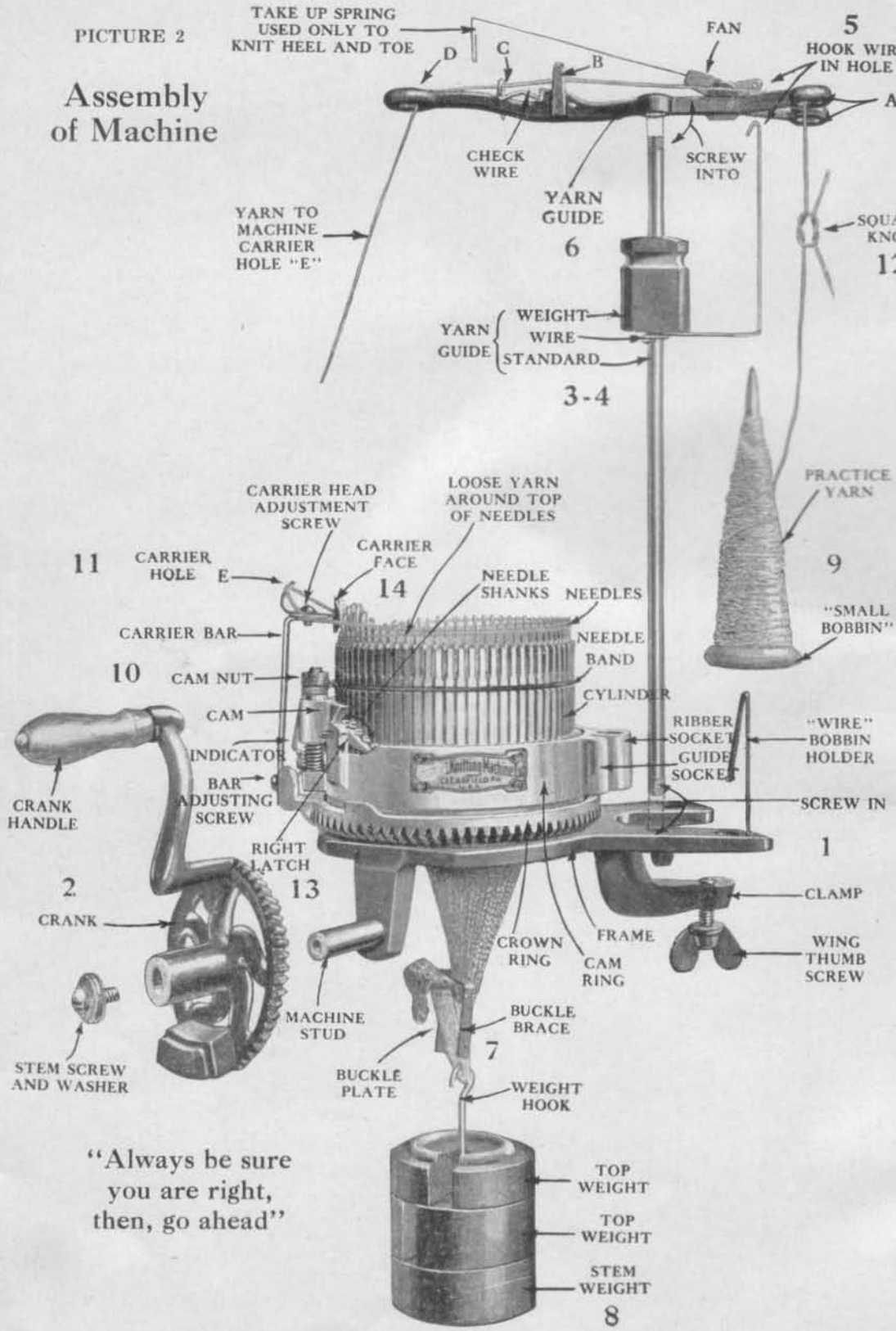
PICTURE 2

Assembly of Machine



"Always be sure you are right, then, go ahead"

Instructions for Assembling the
GEARHART KNITTER

SECTION 1.

READ THIS

Great care must be given to get the Machine together accurately. Carefully study the picture opposite and apply the following instructions in the order given, Step after Step, referring to the picture where the Steps are numbered and every action is named. When you get through with this page you should know the name of every part of the Machine. Then the rest is easy.

Step 1. Clamp the machine securely, with the **Wing Thumb Screw,** to a suitable table (an ordinary kitchen table is fine) or to the **Steel Stand.** (Instructions for **Stand** assembly are found in its packing case.)

Step 2. Push **Crank** on over the **Machine Stud** and fasten on with **Stem Screw** and **Washer.** Screw it up very tight.

Step 3. Screw **Yarn Guide Standard** into Machine Frame.

Step 4. Put **Standard Wire** on first, then the **Weight.**

Step 5. Hook the **Wire** into hole in **Fan** of **Yarn Guide.**

Step 6. Screw the **Yarn Guide** firmly onto the **Standard.**

Step 7. Secure the **Buckle** on to the section of knitting under the Machine. (If not enough knitting extends below machine, securely fasten the **Heel Hook** in the knitting.)

Step 8. Hang the **Stem Weight** onto the **Buckle** or **Heel Hook** together with both the **Top Weights.** Look at the picture again.

Step 9. Place **Small Bobbin** of **Practice Yarn** down on **Wire Bobbin Holder.**

Step 10. Carefully unwrap the few feet of setting-up yarn wound loosely around the **Cam Nut** and **Needles** in the **Cylinder.** If this yarn is broken at any place, tie it together.

Step 11. Take the end of the setting-up yarn as it comes from the **Yarn Carrier** hole "E" and thread it up through "D" under the **Check Wire** loop at "C" through the hole at "B" and down through one of the **Guide Holes** at "A".

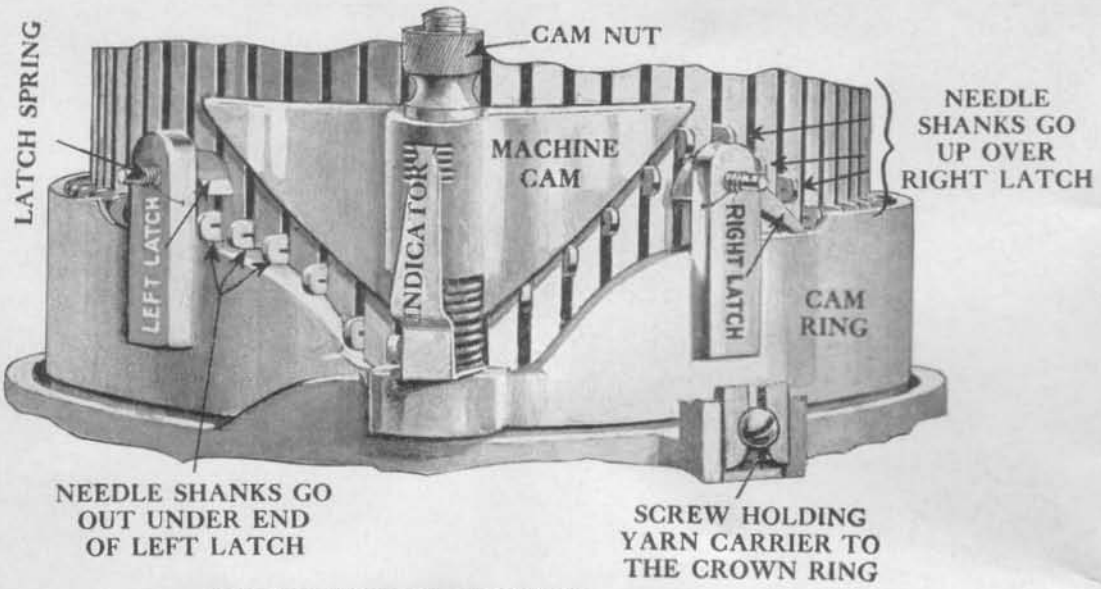
Step 12. Tie onto **Practice Yarn** with a **Square Not.** (If you cannot tie a square knot, use any other knot but it must be tight and not a slip knot.) Leave the ends hang loose to be knitted in.

Step 13. Look at the **Right Latch.** Be sure it is fixed so the **Needle Shanks** will go up over it as the picture shows.

Step 14. Look at **Carrier Face.** Make sure it has been adjusted by **Adjustment Screw** to be as close as possible to the **Needles** but not to touch them.

Setting Cam for Knitting

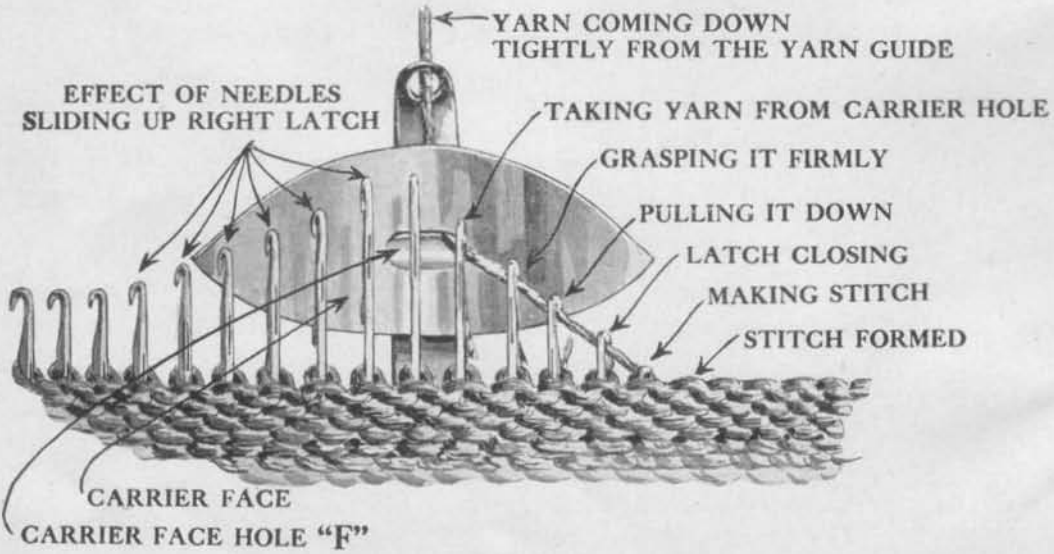
PICTURE 3



WHEN KNITTING FORWARD

Setting Carrier for Knitting

PICTURE 4



Knitting Plain Work and Learning Ordinary Adjustments

DON'T TURN THE CRANK HANDLE YET!

First. Study the front of your machine carefully and compare it with **Picture 3. Needle Shanks** go up over **Right Latch.** Look at **Picture 5** for **Parts of Needles** named. **Machine Cam** pulls them down. They go out under end of **Left Latch,** with the point of **Left Latch** riding on top of the **Shanks** when later you turn the **Crank** forward. Don't turn the **Crank** yet.

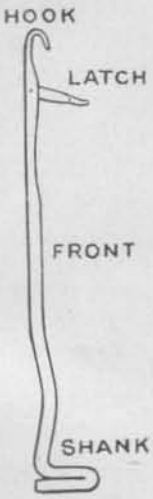
Second. The **Machine Cam** is lowered by turning the **Cam Nut** to the right, or clockwise, which forces the **Needle Shanks** down lower, to make a longer and looser stitch of knitting. Turn it down one half round to see the effect, but turn it back up again to its first position. When the **Nut** is unturned the **Cam** raises up which will make a tighter stitch of knitting. Be sure you understand this clearly as it is **very** important.

Third. The **Indicator** on the Machine enables the person knitting to write down on a piece of paper the exact position of the **Cam** which controls the size of the stitch of knitting and the width of the finished garment made.

Fourth. Before the **Crank** is turned and knitting started **at all times** look carefully at the machine to make sure the **Needle Shanks** are exactly as **Picture 3** illustrates. The **Shanks** at the **Left Latch** must be pushed down on top of the **Cam Ring** so the **Shanks** will pass under this **Latch** and not lock or cause damage to the machine when the **Crank** is turned.

IMPORTANT NOTICE

Bent or Damaged Needles and Dropped Stitches.



PICTURE 5

Carefully examine every **Needle** in the Machine. Look at this picture of a needle. If a hook is found bent or damaged or the **Latch** will not swing up and down freely to open and close against the point of the **Hook,** and if it cannot be straightened easily with the fingers, the needle must be replaced with a new needle. Extra needles will be found in one of the needle envelopes—be sure you get the same kind and size. Needles are changed in the Cylinder by first transferring its stitch to an adjoining needle then lift the needle up as high as possible, swing it out at the top away from the Machine and lift it up and out from back of the Cylinder Band. Reverse this operation to replace and transfer its stitch back on.

Dropped stitches should be replaced on the needles immediately when discovered, by using one of the extra Cylinder Long Needles found in the **Extra Needle Envelope** as a hook to lift the stitch or loop up over and onto the empty needle in the cylinder.

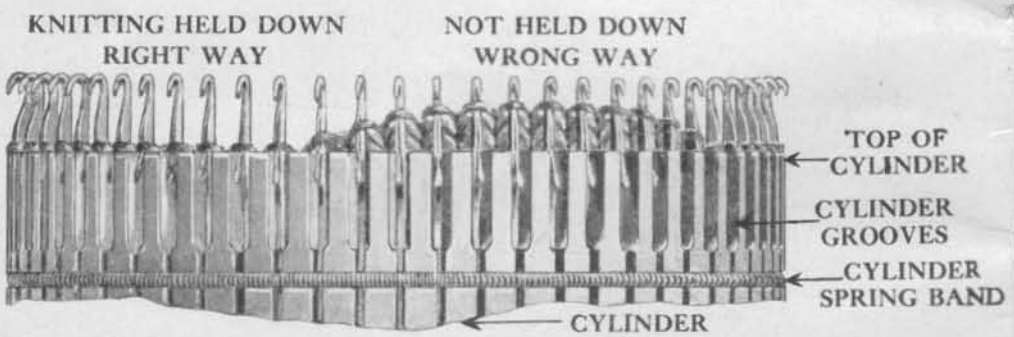
Fifth. Look at **Picture 4. Setting Yarn Carrier for Knitting.** This is the way the knitting looks if you stand back of the machine. Be sure the **Carrier Head** is in position to run as close as possible to the needles without touching them. (See Picture 2 for the Carrier Head Adjustment Screw.) Observe that the first needle takes the **yarn** as it comes through the hole in the **Carrier Face**; and the other needles carry the **Yarn** down to make the stitch, as illustrated.

Sixth. Believing that you have done everything as instructed on the preceding pages you are now ready to do your first knitting. You now have a fine working knowledge of the knitting machine, understand the principles of knitting, have learned the names of all the fundamental parts. There remains no reason why you will not easily understand everything which now follows.

Seventh. Knitting. Be sure all needle **Latches** are hanging down, leaving the **Needle Hooks** open to take the yarn from **Carrier Face Hole "F".** See that Cylinder Spring Band is tight around the **Cylinder** to hold all the **Needles** securely, that yarn will come freely through the **Yarn Guide** holes from the **Bobbin.** With the Stem Weight and two **Top Weights** hung onto the knitting underneath, you are to steady the knitting with your left hand resting on top of **Weights** under the **Machine.**

PICTURE 6

Effect of Tight Stitches



WHEN STITCHES RISE UP WITH NEEDLES MAKE A LOOSER STITCH

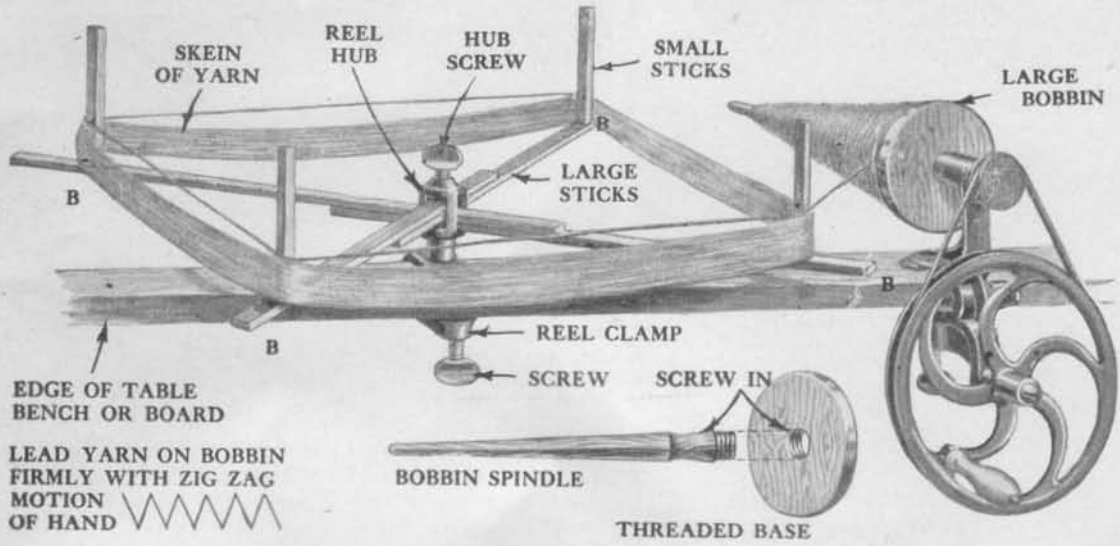
Eighth. See **Picture 6** showing some stitches raising up with the **Needles** wrong way. This is caused by too tight a stitch being made or the knitting not being held down hard enough under the machine to **keep these stitches always down on top of the Cylinder** or the yarn being knit is too heavy and not intended for that Cylinder.

Ninth. Knit a long piece of straight plain knitting, lowering and raising the **Cam** one-half turn at a time and watch the effect of the stitches being made by the needles, loose and tight. Be careful when knitting in knots to turn the **Crank** very slowly to be sure the yarn will not break. **Watch the Bobbin. Stop** knitting before the last bit of yarn comes off the **Bobbin.**

Tenth. To run knitting off **Machine**—Break the yarn off at the **Carrier** hold the weights and knitting under the machine with the left hand and slowly turn the **Crank** forward. The knitting will come off one stitch at a time and drop out of the machine as you turn the **Crank.**

PICTURE 8

Assembly and Use of Reel

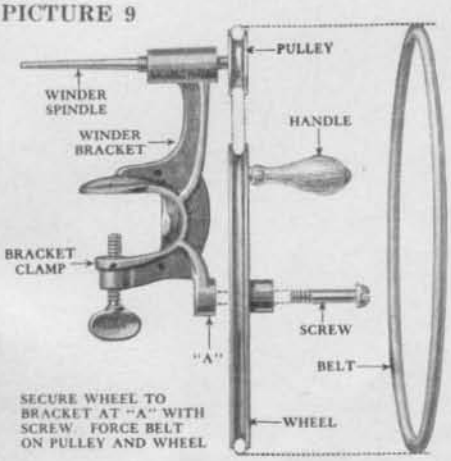


Winding Bobbins Correctly

To start unwinding a skein of yarn: break apart the two ties around it after it is on the **Reel**. This will give you two ends. Take the end which unwinds freely from around the outside of the skein. Tie the end onto the **Bobbin** to start, if desired. Never knit all the yarn off the **Bobbin.** One of the most important parts about successful knitting is in the making of a free and easy stitch on the needles. This can be done **only** when the **Bobbin** is filled freely with yarn led onto it by a staggard or zigzag motion of the left hand. Firmly grasp it between the thumb and fingers allowing it to slide through as you wind. The **Yarn Winder** and the **Reel** must be placed at least two feet apart. Good knitting can be done only when yarn comes freely from a correctly wound **Bobbin.** Knitting can not be done with the yarn unwinding from a ball or from a tangled mass on an incorrectly wound or crowded **Bobbin.**

Winder

PICTURE 9



Place **Small Sticks** in holes of **Large Sticks** at "B".

Place **Large Sticks** lapping over each other into **Reel Hub.**

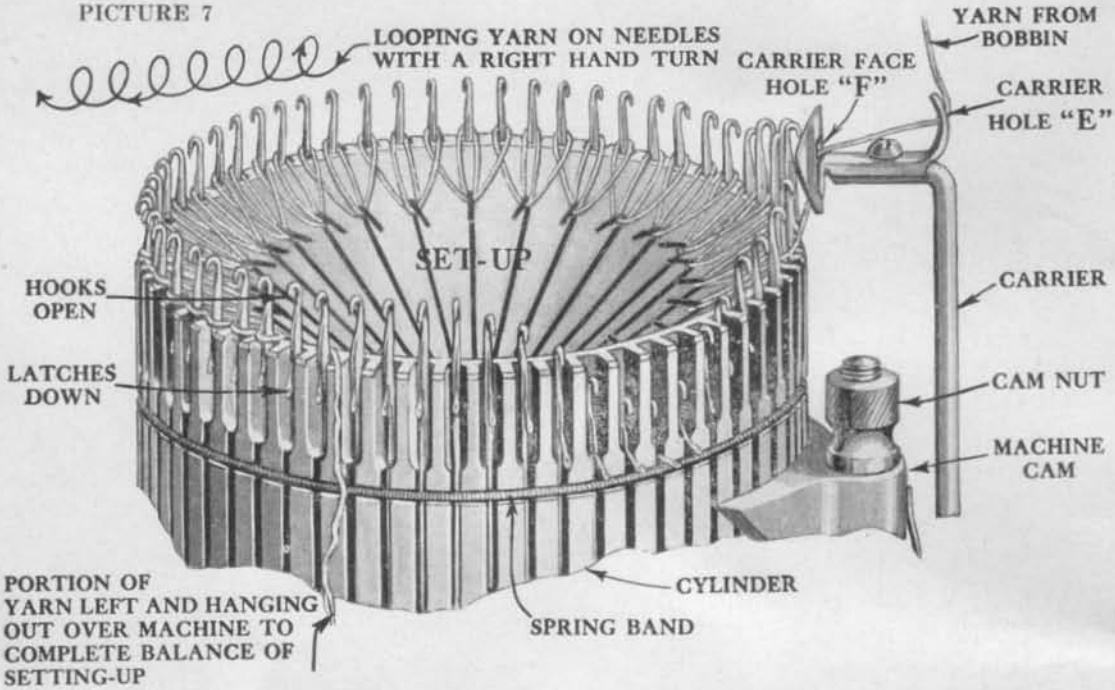
Screw up tightly **Hub Screw** and place **Hub** on **Reel Clamp** secured to table, bench or board, as **Picture** 8 shows.

Always lead yarn on **Bobbin** firmly, with a zigzag motion of the hand. If yarn becomes crowded on the **Bobbin,** and becomes loose at the end of the **Bobbin,** rewind it carefully. Never overwind bobbins as the yarn must always come off freely and too much yarn on **Bobbins** is dangerous to knitting.

Adjustment of **Winder Reel** is quickly made to fit any size skein of yarn by loosening **Hub Screw** and sliding **Large Sticks** in such a manner that the skein of yarn will fit snuggly around **Small Sticks.**

SETTING UP NEW STITCH, PLAIN

PICTURE 7



IMPORTANT Always have the **Weights** hanging on the knitting under the machine and lower **Machine Cam** sufficiently that the **Weights** will keep the stitches as formed from raising with the **Needles** or you will have trouble. When turning **Crank** always watch each **Needle** for first round of knitting clear around the **Machine.** When you are sure all needles are knitting, you can knit as fast as you like, but always be careful of knots in the yarn, going slowly while they knit in.

Step 1. Turn **Crank** forward slowly until **Carrier** rests at right side of machine, like **Picture 7.** (Never run machine when it is empty, only as necessary.)

Step 2. The **Set-up** is like a bunch of small bent wires fastened together at one end and a wire with a hook fastened to it.

Step 3. Thread the yarn from the **Bobbin,** through holes "A", "B", "C" and "D" of the **Yarn Guide** (see **Picture** 2) and bring it down through **Carrier** hole "E" and hole "F".

Step 4. Pull out through this last hole "F" about six (6) feet of the yarn and let it hang down over the machine onto the floor as it comes from the **Carrier** hole "F".

Step 5. Hold the **Set-up** with the left hand pushing it up into the **Cylinder** from underneath the machine as **Picture 7** shows it. See that **Needle Hooks** are open and **Latches** are down.

Step 6. With your right hand grasp close up to the **Carrier** the yarn laying over the side of the machine, letting it slip through the first finger and thumb as you loop it first around a **Set-up Hook** then a **Needle.** Work around the back of the **Cylinder**—always turning the loop loosely with a right circular motion as illustrated. Yarn must be looped

around each **Needle** once and can be looped around each **Set-up Hook** twice for plain set-up.

Step 7. Set up all the **Needles** around the back and to the front as illustrated, hanging the yarn you have left of the six feet, out over the machine to complete balance of setting up on remaining **Needles after Step 8.**

Step 8. With the left hand pull down firmly on the **Set-up** underneath the machine, turn the **Crank** carefully and slowly. The first **Needles** in front of the **Carrier** hole "F" should begin to take the yarn and form stitches slowly, one at a time. Continue to turn the **Crank** until the **Carrier** is around to the left side of the machine.

Step 9. Finish setting up the remaining **Needles** around to the start where the first stitches were made. To make sure you set up on all the **Needles,** loop yarn around the first three **Needles** again. Place the remainder of the original six feet of set-up yarn up over and down inside of the **Cylinder.**

Step. 10. Hook the **Stem Weight** onto the **Set-up** underneath the machine and place the two **Top Weights** on this **Stem Weight.** It is now ready to knit.

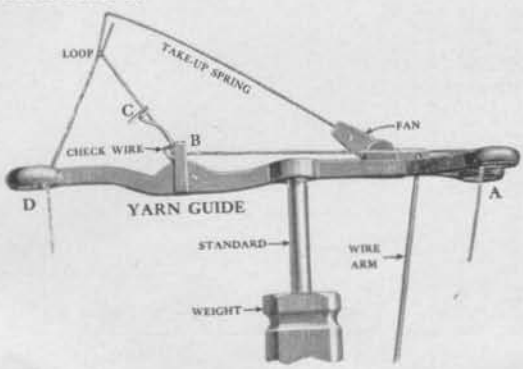
IMPORTANT Set up the yarn on the needles loosely and don't pull the **Set-up Hooks** tight to the **Needles** or you may have broken stitches requiring you to set up again. When knitting is set up as instructed, with right hand turn around each **Needle,** it will not ravel back. In knitting the first few rounds, as soon as you have set up on all the needles, turn **Crank** very slowly and watch each **Needle** form its first stitch. Make sure all the **Needle Hooks** are open to take the yarn as it comes through the **Carrier Face Hole.** Pull down on the **Set-up,** with the knitting fastened to it, sufficient to keep the new stitches formed down on top of **Cylinder.** See **Picture 6.** If stitch is too tight, force **Machine Cam** lower with **Cam Nut.** If you have not learned to do plain knitting yet, work through **Pages 5 and 6.**

GETTING READY TO KNIT HEEL OR TOE

Threading the Yarn-Guide for Knitting Heel and Toe

Getting ready to knit **Heel**—Pull all slack yarn, if any, down through "A" to the **Bobbin** and loop up yarn between "C" and "D" **with Take-Up Spring,** but observe—

PICTURE 10



That Take-Up Spring is straight and moves freely up and down where it is connected to **Yarn Guide** at the **Fan.** If it sticks move it up and down until it moves easily and apply a drop of oil if necessary.

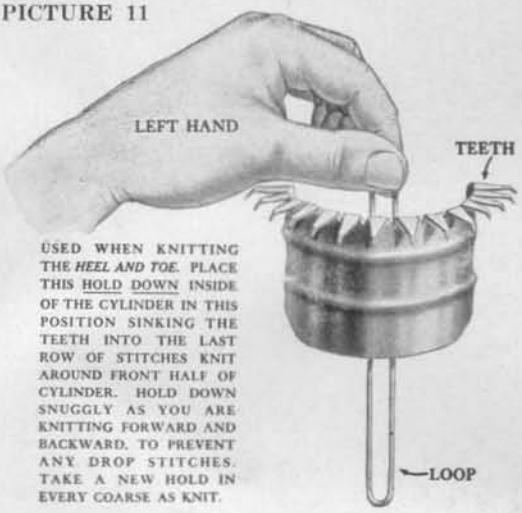
When the **yarn is looped** with the **Take-Up Spring** as **Picture 10** shows, **the Check Wire** should pinch or press against the yarn at Post "B" preventing the yarn from sliding through only as the machine pulls it down in knitting. The yarn must go on top of the **Check Wire** when it comes through hole "B", as shown in **Picture 10.**

The **Weight** must move freely up and down on the **Standard** and rest on the **Wire Arm** to operate the **Take-up Spring** properly.

Use of the Hold-Down

The **Hold-down** is a half-round metal instrument used as an assurance against making dropped stitches in knitting the **heel** and **toe.** Look at **Picture 11** for instructions covering its use. Be sure and get the **teeth** hooked into the stitches and not resting on the top of **cylinder.**

PICTURE 11



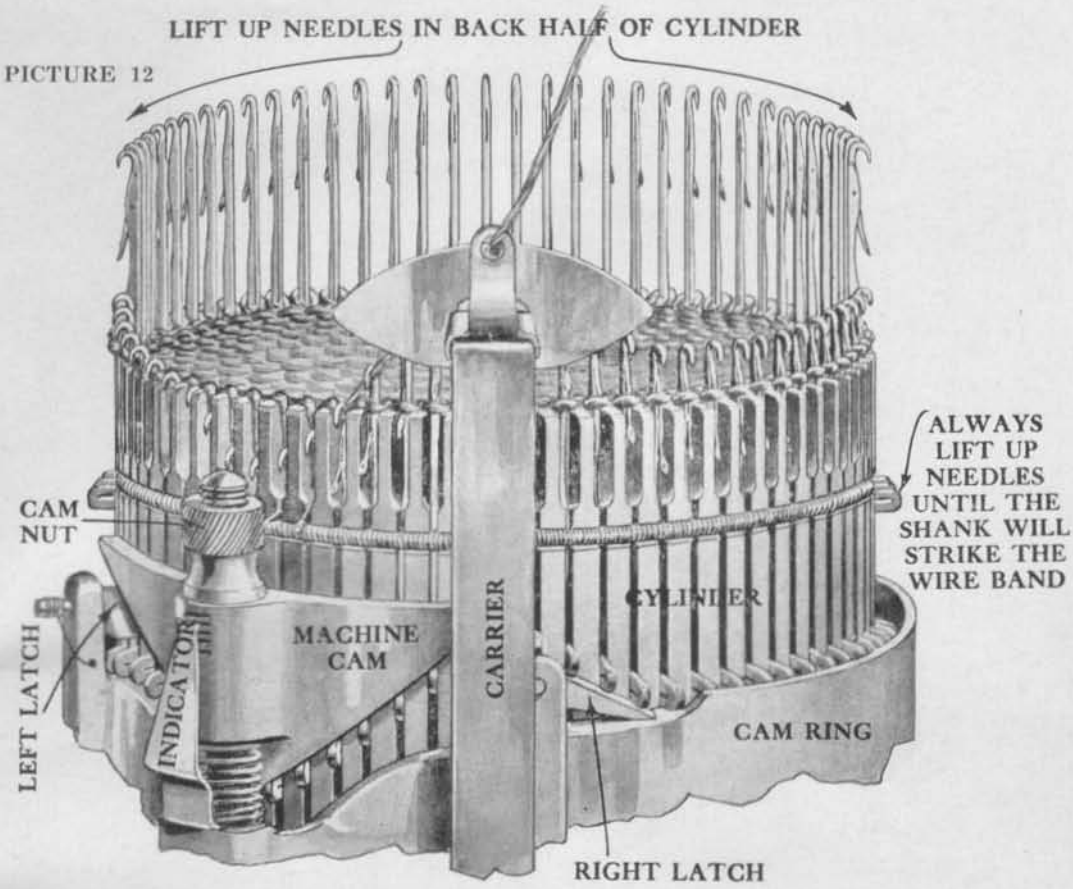
USED WHEN KNITTING THE *HEEL AND TOE.* PLACE THIS HOLD DOWN INSIDE OF THE CYLINDER IN THIS POSITION SINKING THE TEETH INTO THE LAST ROW OF STITCHES KNIT AROUND FRONT HALF OF CYLINDER. HOLD DOWN SNUGGLY AS YOU ARE KNITTING FORWARD AND BACKWARD, TO PREVENT ANY DROP STITCHES. TAKE A NEW HOLD IN EVERY COARSE AS KNIT.

To knit the **heel** and **toe,** only the needles in the front half of the **cylinder** shall be in use. The knitting right back of these needles must be held down and this cannot be done by the use of the **buckle;** therefore, the **hold-down** is provided for this purpose. The **hold-down** with the **stem-weight** hanging to its loop down inside of the knitting, is used in such a way that no loops around the needles are permitted to rise up with the needles, after the needles form their stitches. Proper care must be taken to hold down, with the thumb and fore-finger of the left hand resting down on top of the **teeth** on the ends of the **hold-down.** This action, if you press down hard enough, will prevent the first and last few needles, knit in each course backwards and forwards, from dropping stitches. After each course or two of knitting, lift up the **hold-down** and grasp a new set of stitches back of the needles and never allow the **teeth** to rest down on top of the **cylinder.**

The **heel-hook** is sometimes used in knitting the first part of the **heel** and **toe,** by hanging the **stem-weight** on it, down inside the knitting, with the **hooks** inserted in the stitches back of the first three and last three **needles** being knitted on across each course. At the same time the fingers of the left hand or the **hold-down** without **weight** are used to press down the knitting back of the **needles** across the front of the **machine,** as the stitches are being formed. See **Picture 15.**

NOTES

Setting Machine for Heel and Toe



The Toe is made just the same as the Heel except in knitting the last two rounds of Toe at the finish. (Covered by instructions on Page 15.)

Yarn Carrier must be in position at front of machine like Picture 12.

Screw Cam Nut Down at least three-fourths of a turn. This lowers the **Machine Cam** slightly to make a looser or longer stitch. After the **Take-Up Spring** is looped on the yarn in the **Yarn Guide** the same size stitch is formed as in the ankle of hose because the **Take-up Spring** will cause a little more tension or strain on the yarn going to the machine.

Lift up all the Needles around the back of the **Cylinder** as shown. The **Red Marks** on either side of the **Cylinder** divide it in half. Use the **Pick-up** for lifting needles. The **Pick-up** is a long needle-like wire with the sharp end bent over slightly and which you found when unpacking machine. **Needles** must be lifted until their **Shanks** will strike the **Wire Band.** They are then out of use.

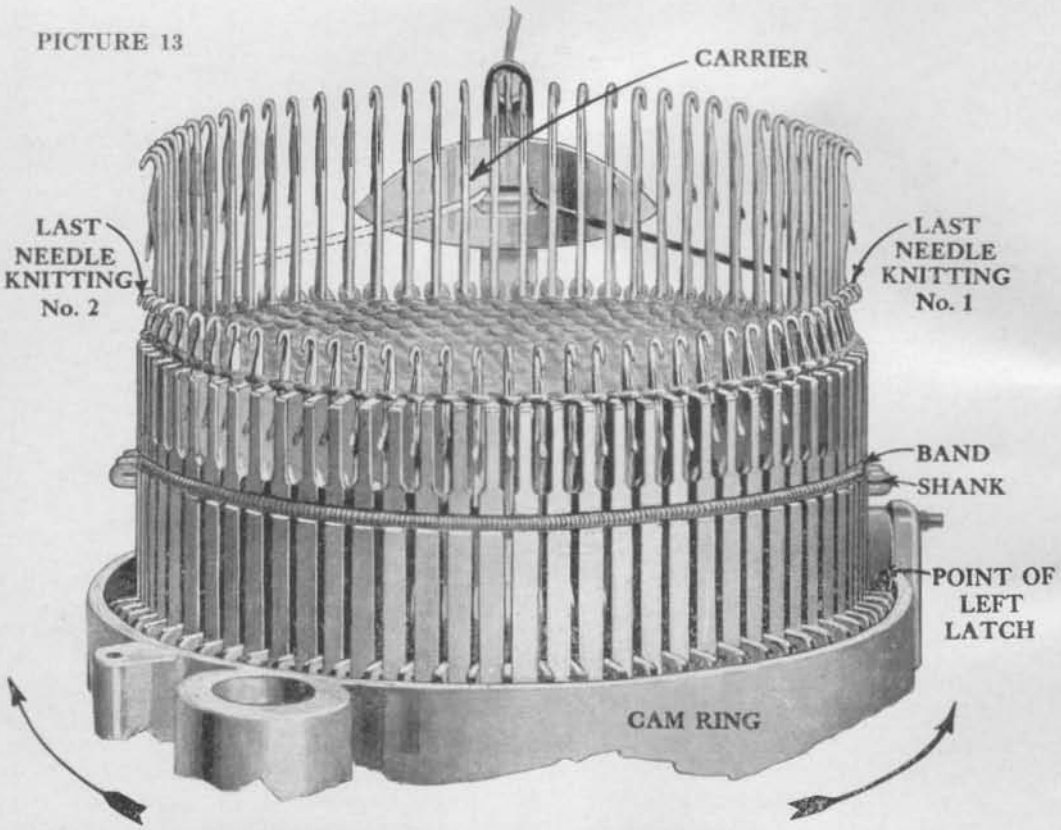
Re-enforced Heel and Toe can be made by threading a second strand of yarn or cotton thread through the **Yarn Guide** and into the machine, but the **Machine Cam** must be forced down lower to make a looser stitch to allow for the extra bulk of the yarn being knitted.

KNITTING HEEL AND TOE

Starting First Half

It is assumed that you now have everything set and ready as told on **Page 11**—the **Yarn Guide** threaded, **Machine Cam** lowered three-fourths of a turn, or more, of **Cam Nut** screwed down, and the **Hold-down** in your left hand and placed down inside of cylinder with the **Teeth** hooked into the last round of knitting. (Holding down with the **Teeth of the Hold-down** in the last round of knitting means the last round at the edge and inside of the **Cylinder** and not the last stitches or loops on the **Needles.**)

PICTURE 13

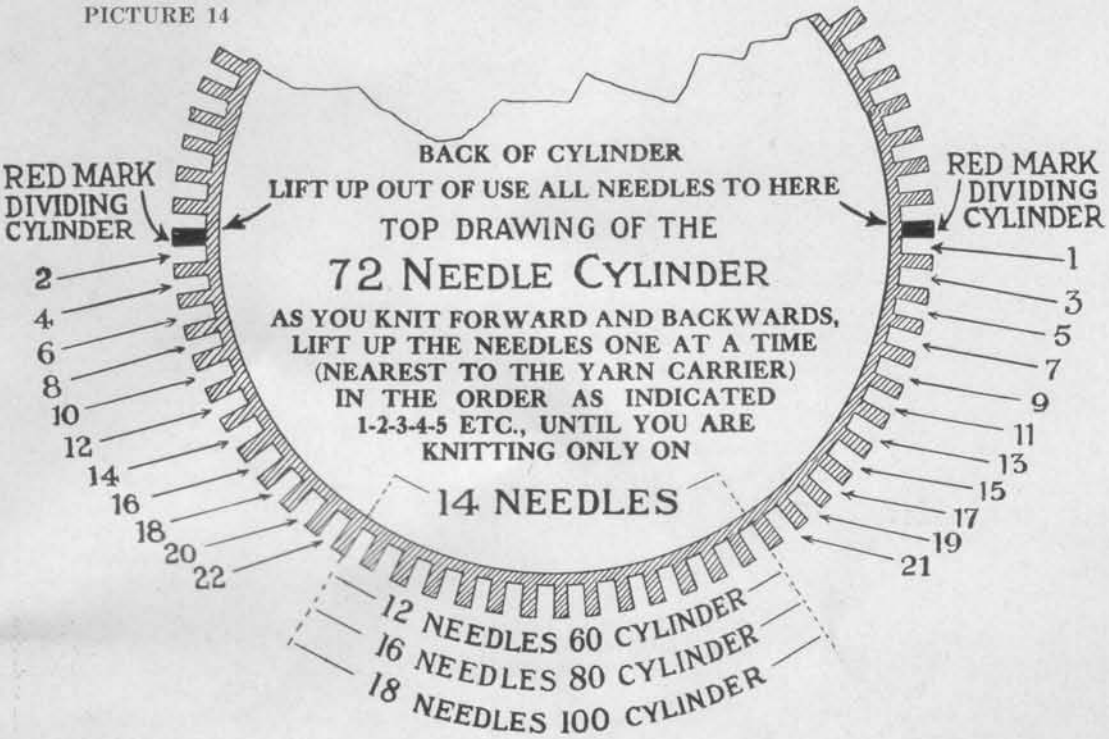


Step 1. Look at **Picture 13.** Turn the **Crank** forward in the direction of first move with the **Carrier** stopping at the back of machine. The point of **Left Latch** must fall down off of the **Shank** of the last **Needle** knit on. A clicking sound will be heard as it drops off and strikes on the **Cam Ring.** Always make sure of this by turning **Crank** around a little further and listen for the click.

Step 2. Lift up the last needle knitting, (look at **Picture 13** again) until **Shank** strikes **Band.** See **Picture 14,** this is needle No. 1. Use the Pick-up to lift all needles and hold in right hand while knitting.

Guide and Key for Heel and Toe

PICTURE 14



Step 3. Slowly turn the **Crank** backwards and as the **Carrier** comes around from the back, watch the **Yarn Guide Take-up Spring** pull the slack yarn up from the **Carrier.** Always be sure in knitting every course, backwards and forwards for Heel and Toe, that **all** the slack yarn is taken back each time. This is very important to successful knitting. If you continue to turn the **Crank** the **Needle Shanks** will start going up over the point of **Left Latch** and form stitches. Be careful now to press down firmly on the **Hold-down.** Finish knitting the course across the front of machine in the direction of second move, **Picture 13,** until you hear the **Right Latch** click down off of last needle, No. 2.

Step 4. Lift up the last **Needle** knitting, No. 2, on the left hand side of machine; look at **Pictures 13** and **14** again.

Step 5. Slowly turn the **Crank** forward; study Step 3 again, only your last needle knitting will be No. 3 this time and you are knitting forward.

Step 6. Lift up needle No 3, knit backwards across front of machine, then No. 4 and turn **Crank** forward. Continue to do this backward and forward lifting one needle each time as numbered in **Picture 14,** until you are knitting on only 16 needles for the 80 cylinder. Take up the slack yarn and use **Hold-down,** beginning each course. Go slow at first; speed will quickly come through practice. **Be sure you are right, then go ahead.**

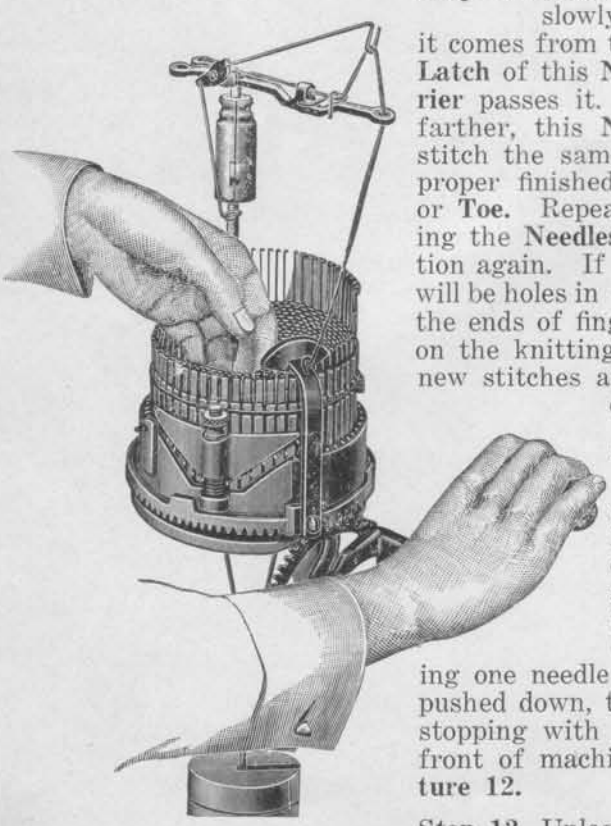
Second Half

Step 7. When Step 6 is completed the last course across the front of machine should always be knit forward with the **Yarn Carrier** resting around the right of and to the back of **Cylinder** in the direction of first move.

Step 8. Instead of using the **Hold-down** now use the **Heel Hook** (a v-shaped bent wire instrument with the two ends curled over). Place this **Heel Hook** up inside of the **Cylinder** alongside of the knitting, hooking it through the stitches—as far up as possible—made by needles 21 and 22. Hang on the **Stem Weight** only.

Step 9. Push down part way, with the end of thumb of left hand, the last needle knit on. (If number 72 cylinder is being used, it is needle No. 21. If number 80 cylinder is used, it is No. 23. If 100 cylinder it is No. 31.) The **Needle** pushed down should not be pushed clear down but just far enough so that its **Latch** will lie over the loose yarn stretched across the front of this **Needle**, coming from the last **Needle** knit upon, to the **Yarn Carrier** hole. If pushed clear down like the rest, the **Latch** will close on the **Needle Hook** and cause a dropped stitch. Always watch this and never push the **Needles** clear down.

PICTURE 15



How to Hold Down for Knitting Second Half

Step 10. Reverse or turn the **Crank** backward slowly, and you will see the yarn, as it comes from the **Carrier** hole, lap up over the **Latch** of this **Needle** pushed down, as the **Carrier** passes it. As the **Crank** is turned back farther, this **Needle** will then make its new stitch the same as the rest. This gives the proper finished effect in the completed **Heel** or **Toe.** Repeat this same operation in pushing the **Needles**, one at a time, down into action again. If this is not correctly done there will be holes in the finished **Heel** and **Toe.** Use the ends of fingers of left hand to press down on the knitting inside of the **Cylinder** as the new stitches are being formed across each course, like **Picture 15.**

Step 11. **Needle** 22 is pushed down into action the same way after the course is knit across the front in direction of second move. Knit forward again and push down **Needle 19**, then **20**, then **17**, etc., knitting backwards and forwards, pushing one needle down each time until No. 4 is pushed down, then knit forward only part way, stopping with the **Carrier** resting directly in front of machine, as in the beginning, **Picture 12.**

Step 12. Unloop the **Take-up Spring** from the yarn on **Yarn Guide.** Unscrew **Cam Nut** one-half turn or more to its original

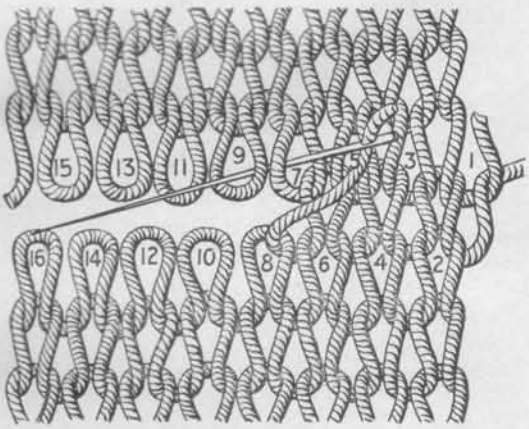
position again. Push down into action all the **Needles** around the back of **Cylinder** including needles 1 and 2. Carefully examine them and see that their **Latches** are all down and **Hooks** are open.

Step. 13. Hold down firmly on knitting under the **Cylinder** gathering up the knitting under the machine with left hand and thumb and knit forward again for plain knitting the foot of the hose. Turn about 80 rounds of knitting for the foot counting the number of times the **Yarn Carrier** passes the front of machine.

Step 14. The **Toe** is knit the same as **Heel** but always in finishing off the **Toe,** knit 4 extra rounds after all the **Needles** are pushed down into action. These four extra rounds are made to permit the toe being pressed out flat with a damp cloth laid on first and a hot iron used, after the finished hose is taken from the machine. To run the hose off of the machine, break the yarn off at **Carrier** and turn the **Crank** forward slowly, holding the knitting as it drops out of the machine.

Closing the Toe

PICTURE 18



Proper Stitch to Make in Closing the Toe

IMPORTANT

Explanation of Picture 18 for Closing the Toe

Look at the picture again, notice that the **upper half** represents the stitches across the **top** of the foot of hose; the **lower half** across the **toe** side of hose.

The closing yarn must be placed through each loop or stitch in the same way as illustrated or you will not have it closed correctly. This is very important.

Notice how the **needle** and **yarn** was passed down through Loop 2, up over the opening and down through **Loop 3,** over and up out of **Loop 5,** across up over the opening and down through **Loop 4.**

The yarn is drawn each time over across the opening exactly in the manner indicated which makes the closing stitch like the knitted stitch and if done properly, no one can detect where the closing was made.

Try to get the closing stitch the same size as the machine stitch and not too loose or too tight. This comes easy with practice.

Closing up the toe may at first appear to be a long hard process, but practice and experience will soon make this a simple and easy process, to be done in a few moments. Follow these instructions very carefully and when properly done the place of closing cannot be detected from the adjoining stitches.

First. Press out with hot iron, using a damp cloth laid on the toe only. (The steam sets the stitches.)

Second. Take hold of the loose end of yarn and ravel back these last four extra rounds of knitting. The toe will then be ready to finish. Break off all but two feet of this raveled-back yarn.

Third. Secure a darning needle and thread up this two feet of yarn which you will use to close across the toe.

Fourth. Hold the toe securely with your left hand, placing the first finger between the edges to be drawn together, and gather up all loops or stitches working toward the left, clear across the epening—

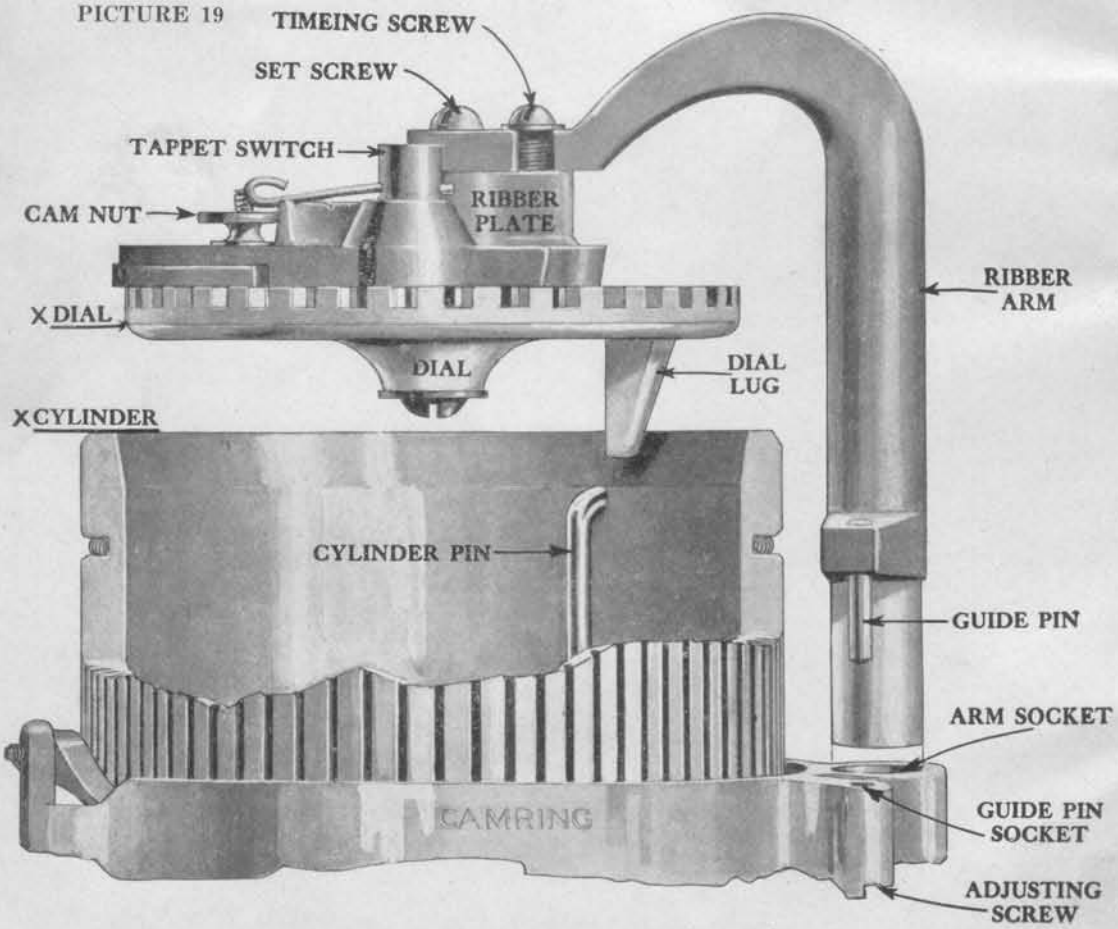
Fifth. Passing the needle in through loop 1 and out loop 3, in through loop 2 and out 4. Pass in through loop 3 again and out through 5, etc. See **Picture 18.** Be sure the needle passes through each loop or stitch two times in and out as illustrated and the yarn passes across the opening to draw up the edges.

Sixth. Do not draw the loops or stitches tightly. When toe is closed, secure the end of yarn into knitting, working in, about two inches and break off the remainder, but do not tie a knot in the end as it will show in the finished hose.

IMPORTANT—If one loop or stitch is missed in closing up, this missed stitch will ravel or slip back up the foot of the hose and produce an unsatisfactory garment. Needle and yarn MUST be passed loosely through every stitch TWO times.

Setting the Ribbing Attachment

PICTURE 19



Knitting with the Ribbing Attachment

The **Ribbing Attachment** was properly adjusted to the **Knitting Machine** and a ribbed top of a Standard Hose was knitted with it at the factory, so no readjusting should be necessary. The beginner should study **Picture 19** carefully. If any trouble is experienced, study the **Adjustment Illustration, Picture 20.**

1. Take off any knitting which may be set up on the **Cylinder.** Place the **Ribber** on the **Machine** exactly in the position as illustrated and always be sure in placing it on that the **Lug** on the **Dial** slides down beside and rests against the right side of the **Cylinder Pin.**

2. The **Ribber Arm** should be pushed down firmly into the **Arm Socket** as far as possible until the **Guide Pin,** going into its socket, rests on the end of the **Adjustment Screw** which is located inside of the **Guide Pin Socket.**

3. The bottom of **Ribber Dial** at X should be even with top of **Cylinder** at X. Look at **Picture 19.** Height of **Ribber** must be readjusted when **Cylinders** and **Dials** are changed.

4. Observe, when the **Machine Crank** is turned forward, the **Dial** will not turn because the **Dial Lug** rests against the **Cylinder Pin.** This is the position it must be in at all times when knitting.

5. With the **Dial Lug** against the **Cylinder Pin,** remove from the **Cylinder** as many **Needles** as there are empty **Grooves** in the **Ribber Dial,** (study **Picture 20**) which will be every other **Needle** clear around the **Cylinder** opposite and in front of every **Dial** needle **Groove.** When knitting this will give a 1 and 1 **Rib.**

6. When **Needles** are removed from **Cylinder,** remove the **Ribbing Attachment** and lay it aside. Set up new stitch on the remaining **Cylinder Needles** the same as for plain setting up. (See **Page 8.**) On the 80 **Cylinder** there will be 40 **Needles** to set up—on the 72 **Cylinder,** 36 **Needles,** etc.

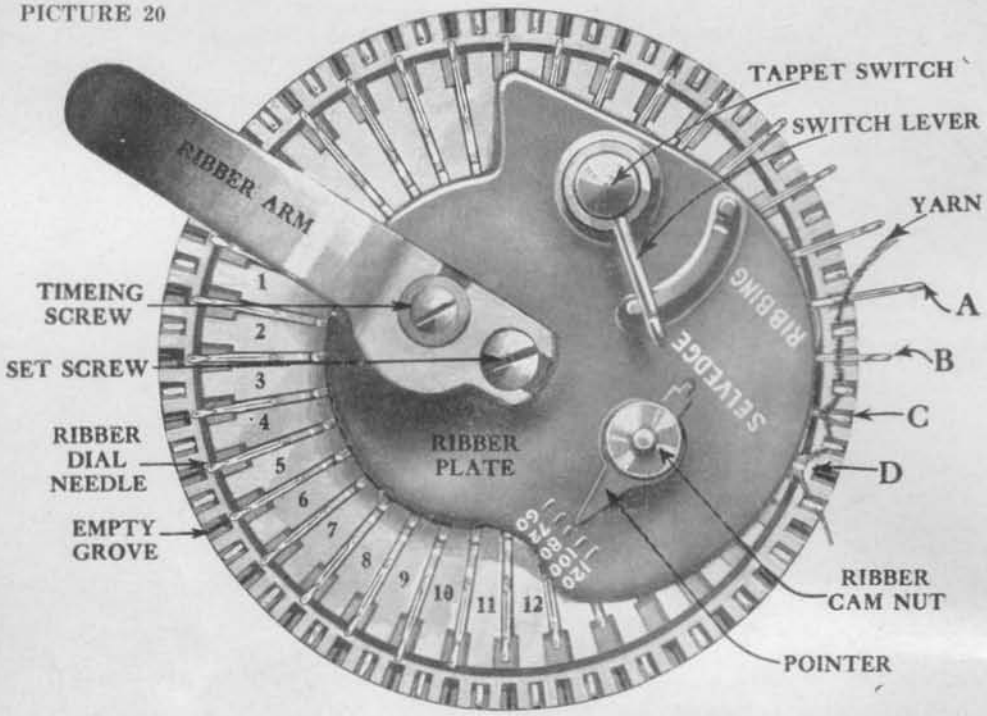
7. Knit at least 10 rounds—count the times the **Carrier** passes front of **Machine**—then place the Ribbing Attachment on the **Machine** again as instructed in **Paragraph 1,** but leave the knitting on the **Cylinder.**

8. Swing the **Tappet Switch Lever** to **Selvedge** or the **In** position, **Picture 20,** and place **Dial Needles** with the needle hooks open, in all the empty **Dial Grooves,** turning the **Crank** forward as necessary to clear the **Grooves.** Be sure to use the size of needles which fit the **Dial Grooves.**

9. Swing the **Tappet Switch Lever** to **Ribbing** or **Out** position. Be sure the **Dial Needle Hooks** are open to receive the yarn from **Carrier** as the **Crank** is turned forward to knit. The **Pointer** should be set to the number which corresponds with the **Cylinder** being used, by loosening the **Ribber Cam Nut.** If 80 **Cylinder,** set at 80, etc. The yarn from **Carrier** should fall on the open **Dial Needles** and they should begin to make the stitch as **Picture 20** shows "A", "B", "C", "D". Carefully watch each **Cylinder** and **Dial** needle take the yarn and form its stitch.

Adjusting the Ribbing Attachment

PICTURE 20



10. The machine is now set for ribbing. Turn the **Crank** forward about 20 times to see if everything is working right, and watch the needles knitting.

11. Selvedge for Ribbed Top is made by **First** knitting at least 5 rounds of white cord or different colored yarn. This different colored yarn marks where the **Selvedge** starts. Then, **Second,** tie on the hosiery yarn and knit one round. **Third,** knit two rounds only with the **Tappet Lever Switch** swung to **Selvedge** or **In** position (See Picture 20) which puts the **Dial Needles "out of action". Fourth,** swing **Switch Lever** again to **Ribbing** or **Out** position and continue to knit the ordinary length, about 55 rounds, for ribbed top for men's hose.

12. To remove **Ribbing Attachment** the **Dial Needle** stitches must be transferred to the cylinder needles, put back into the empty **Cylinder Grooves.** Transfer in the following way:

13. Turn **Crank** until **Ribber Arm** is like **Picture** 20. Insert the end of the **Pick-Up** back of **Shanks** of the twelve needles numbered on **Picture** 20, and push the **Dial** needles out of **Dial** until the ends or heels of needles tip up and out from under the **Ribber Plate.** Take hold of these needles, one at a time, with the right hand and simply lift its stitch over and onto the empty **Cylinder** needle just placed in **Cylinder.** Be careful not to allow stitch to slip off until it is put over **Cylinder** needle.

14. Turn the **Crank** forward a quarter of a turn to clear six more needles in front of machine, and transfer their stitches. Turn **Crank** forward again for enough to clear all the remaining **Dial Needles**—push them

completely out of **Dial,** then the **Ribbing Attachment** can be lifted out of the machine and these last needle stitches can be transferred quickly when the **Attachment** is off. If **Attachment** cannot be lifted off easily, use the **Screw Driver** as a pry beside the **Arm Socket.** A drop of oil on the part of **Ribber Arm** which fits into **Socket** will help.

15. The machine is now ready to do plain knitting again. About 90 rounds of knitting is an ordinary length for the leg of men's hose.

Large Bobbins carefully wound and placed either on the floor or stand shelf should now be used in all knitting hereafter. Do not re-use the practice yarn except for sample knitting. Knitting can always be raveled out and re-used on the machine but knots should be cut out and the ends spliced.

General Observations

1. IF MACHINE LOCKS:

If **Dial Needles** lock under **Ribber Dial** and **Crank** will not turn, push in each **Dial** needle "A", "B", "C", "D", with your finger or swing the **Switch Lever** just a little toward **Selvedge** and turn the machine **Crank** slightly. Or, there is a damaged **Dial Groove,** in which case the **Dial** should be taken off of **Ribber Plate** by removing **Screw** and **Washer** on under side of **Dial** and the damaged place smoothed down with some sharp instrument or a new **Dial** secured from the factory. If the point of **Machine Latch** strikes against the **Cylinder Needle Shanks,** the machine will lock. (Cylinder should be removed and the point of Latch re-sharpened with a steel file.)

2. DROPPED STITCHES:

There are several reasons for dropped stitches, as follows—

Needle **Hooks** are not open to receive the yarn.

Needles are damaged and **Latches** will not close freely in knitting. New needles should be secured from the factory.

The **Yarn Carrier** is not adjusted low enough to prevent **Dial Needle Latches** from closing until their **Hooks** receive the yarn.

Pointer is not adjusted in far enough to force the **Dial Needles** to complete their stitch. Knitting is not held down hard enough under **Cylinder** for the weight of yarn you may be using. Or the **Carrier** is not adjusted to deliver yarn to **Cylinder Needles.**

Ribber is not properly **Timed** to operate the **Dial** needles correctly. If yarn coming from **Carrier Hole** "F" does not fall directly into the open hook of the **Dial** needles "A", "B", "C", "D", and across the **Latch** where the **Latch** is joined to the needle so the **Hook** will be sure to take the yarn, the **Timing Screw, Picture 20,** should be loosened and the **Ribber Plate** forced slightly one way or the other for the correct result.

Crank should not be turned backward when **Ribber** is on the machine.

Machine with Ribbing Attachment