

(No Model.)

2 Sheets—Sheet 1.

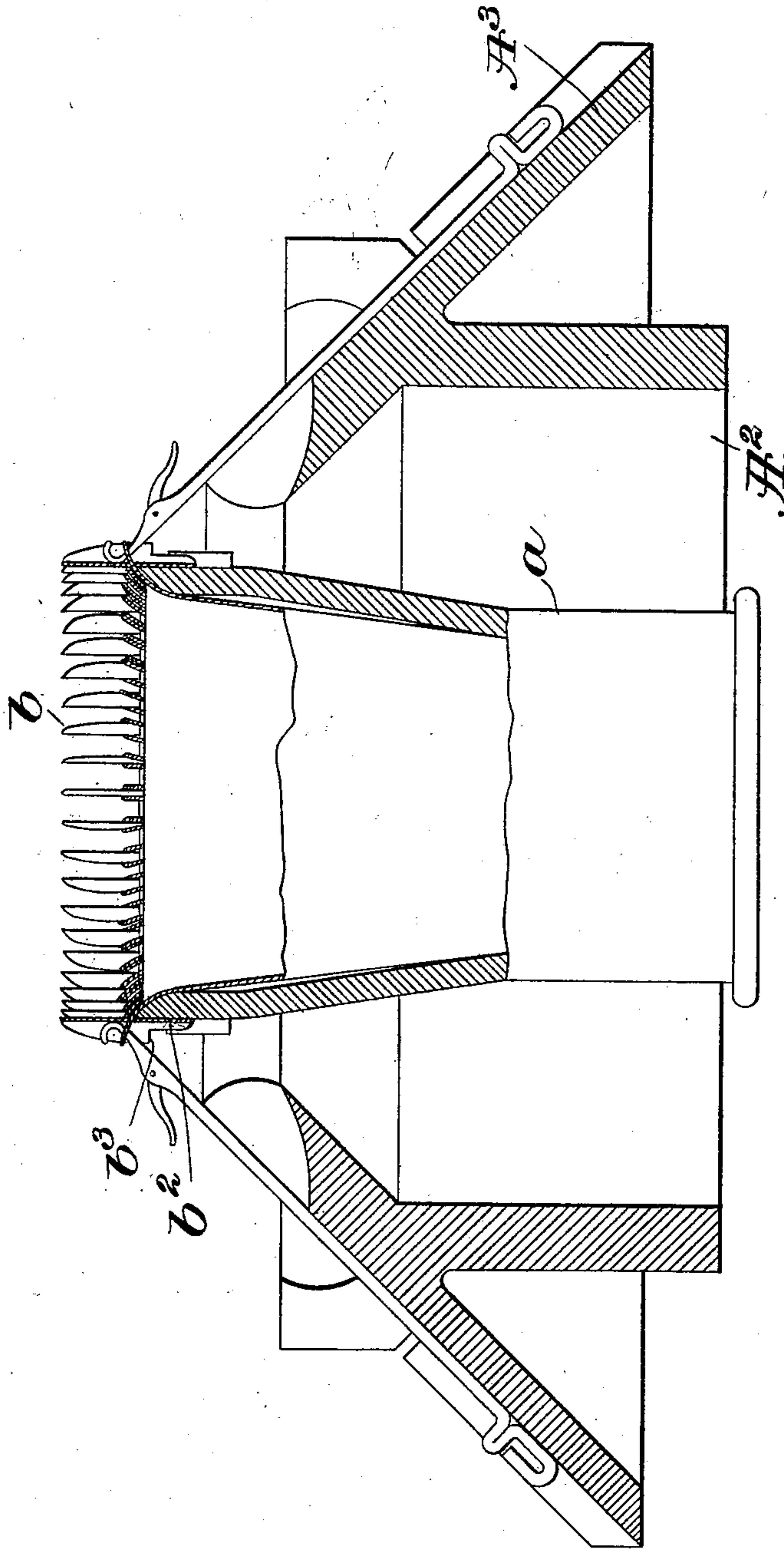
R. W. KING.

TRANSFERRING MECHANISM FOR KNITTED WORK.

No. 506,852.

Patented Oct. 17, 1893.

Fig. 1.



Witnesses.

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(No Model.)

2 Sheets—Sheet 2.

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TRANSFERRING MECHANISM FOR KNITTED WORK.

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Fig. 2.

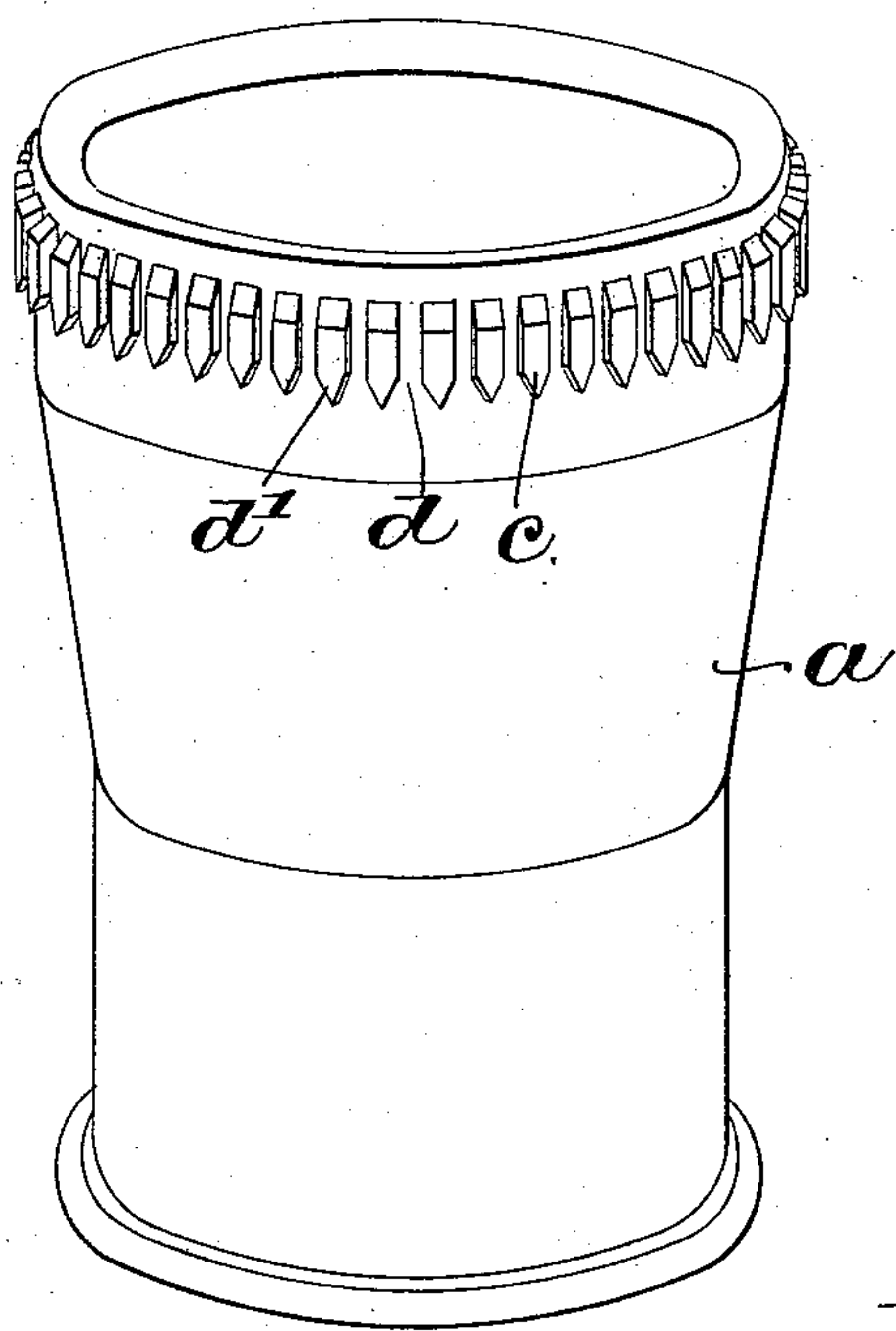


Fig. 3.

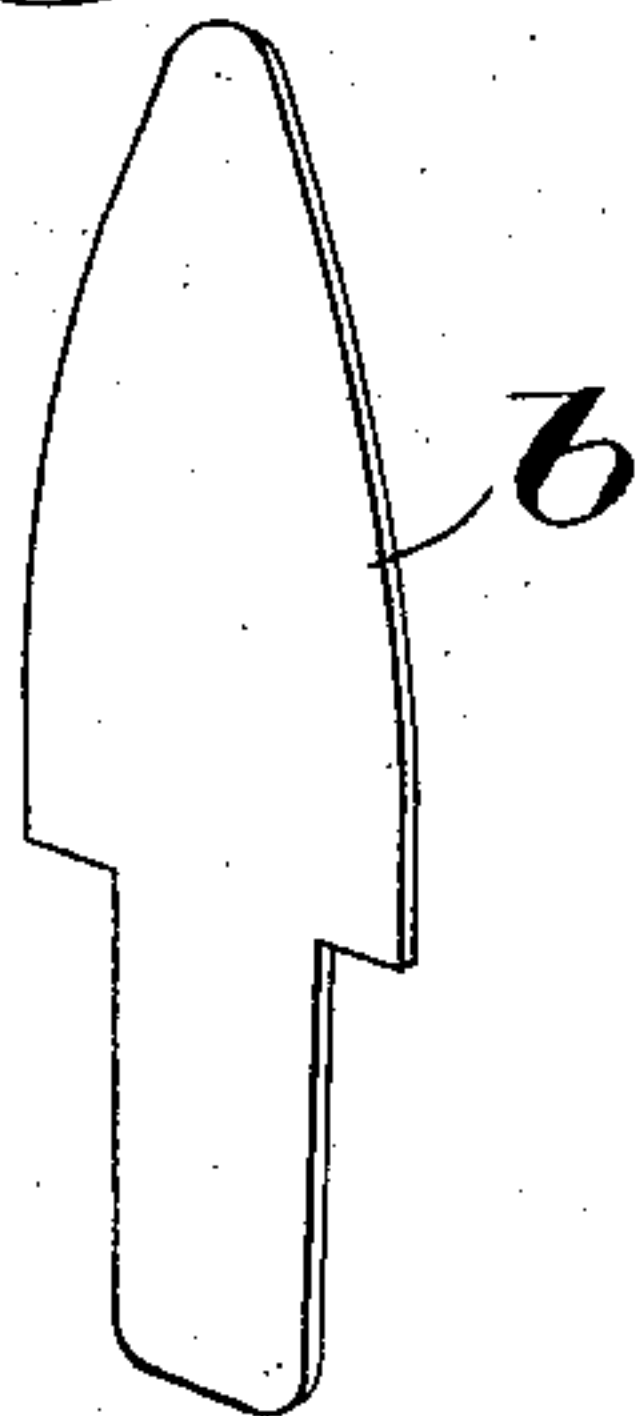


Fig. 4.

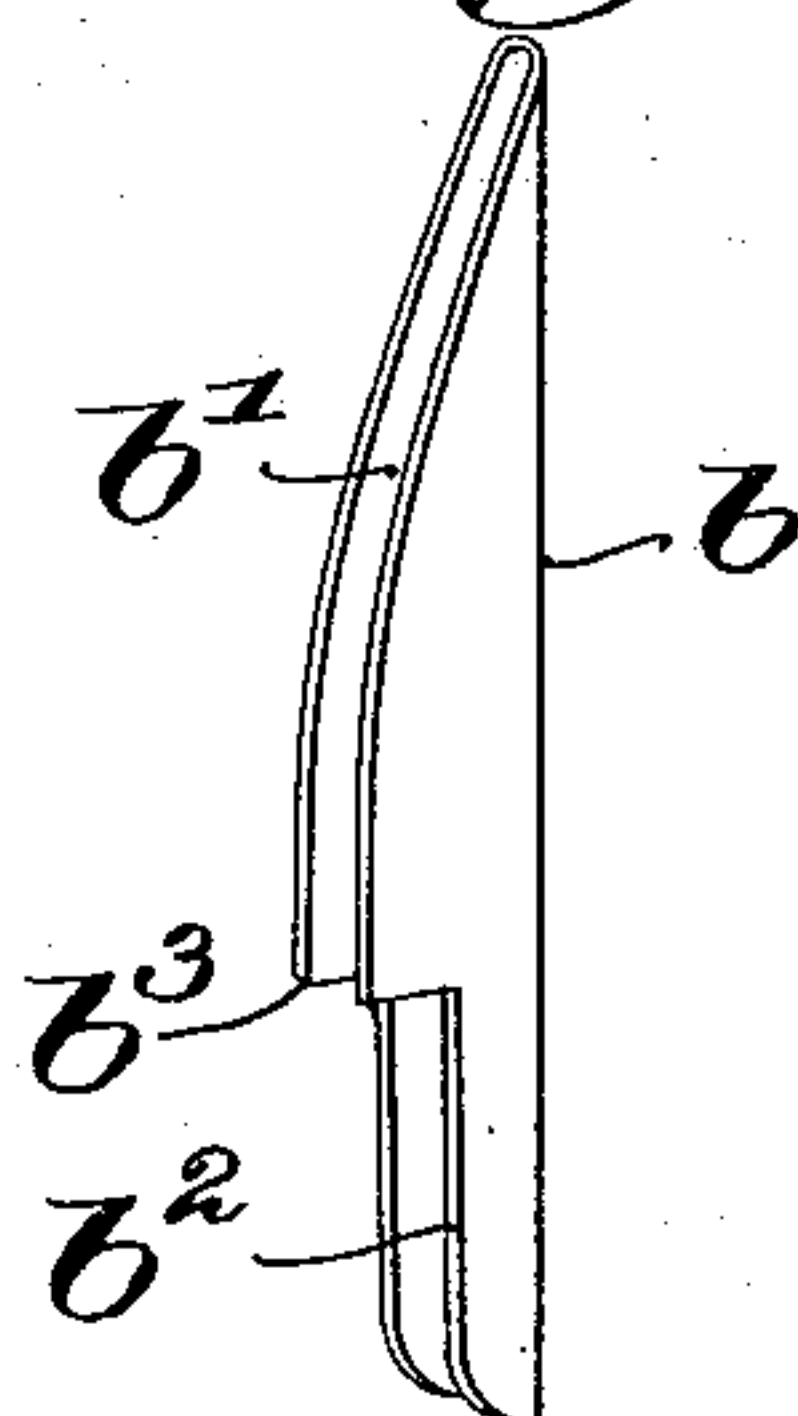
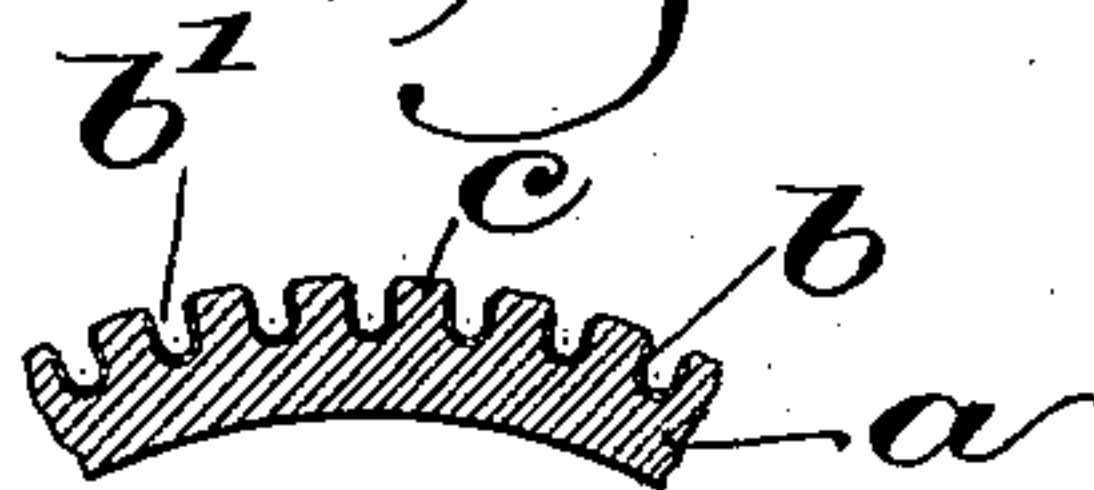


Fig. 5.



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UNITED STATES PATENT OFFICE.

ROBERT W. KING, OF MONTREAL, CANADA.

TRANSFERRING MECHANISM FOR KNITTED WORK.

SPECIFICATION forming part of Letters Patent No. 506,852, dated October 17, 1893.

Application filed April 19, 1893. Serial No. 470,945. (No model.)

To all whom it may concern:

Be it known that I, ROBERT W. KING, a subject of the Queen of Great Britain, residing at Montreal, Province of Quebec, Canada, have invented an Improvement in Transferring Mechanism for Knitted Work, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention has for its object the production of novel apparatus for transferring the loops of circular knitted fabric onto the needles of a knitting machine to have fabric knitted thereto, my apparatus being more especially adapted for use in connection with the class of knitting machine represented in United States Patent No. 479,986, dated August 2, 1892. The machine described in the said patent has a conical needle bed properly grooved for the reception of a series of reciprocating latched needles, the said machine having what is called a topping groove where all the needles may be slid diagonally toward the center of the needle bed, so as to place their upper ends in the same plane to receive loops, the center opening of said bed being at such time obstructed only by the said needles. The act of applying loops to the hooks of the needles brought into the same plane is designated as transferring, and the device used is called a transferrer.

The transferrer employed by me because of the position of the needles and their line of movement is of peculiar construction.

My improved transferrer consists of a holder preferably made as a hollow cylinder provided at its upper end with a series of quills (having hook guiding grooves, the bottoms of said grooves occupying preferably a position in a circle as large if not larger than said holder) open at their ends connected to the holder, so that the hooks of the needles in the transferring operation may enter at the base and pass out at the points of said quills. For the best results and to enable the transferrer to be operated quickly and without possibility of a needle hook getting into a space between two quills, rather than in a groove of a quill, I have provided between the base of the quills and the main body of

the holder a series of projections called "tricks," each groove between the tricks coinciding with a groove in a quill, the bodies of the tricks stopping the space between adjacent quills, and the mouths of the grooves between the tricks are opened by beveling the outer end of the tricks so that the hooks of the needles may find easy entrance into the proper grooves of the quills. Preferably the bottoms of the grooves in the quills will stand in a circle as large if not larger than the outer wall of the holder, such construction leaving the inner ends of the quills fully open to receive the needles.

Figure 1, in section, represents a needle bed with needles, and with my improved transferrer in position to apply the loops held by it to the hooks of the needles. Fig. 2 shows the holder with its tricks. Fig. 3 shows a blank for the production of a quill. Fig. 4 shows a quill bent into shape; and Fig. 5 is a section cutting the holder transversely through the tricks, said figure showing, however, the shanks of the quills.

The needle bed A^3 having a shank A^2 , and the needles therein, are and may be as in my said patent, and in connection with said bed and needles, I shall in practice use a suitable conical cylinder or cam ring, substantially such as is designated by the letter B' in said patent, the said cam ring used having a topping groove by which to put the hooks of all the needles into what is called topping position, or a position in which all the hooks are in the same horizontal plane.

The transferrer is composed of a holder a , preferably a hollow cylinder, adapted to be passed up from below through the shank of the needle bed, while the needles are in topping position, or with their hooks in substantially the same horizontal plane. To the upper end of the holder I have added a series of quills b made from a blank substantially such as is shown in Fig. 3, the said blank being folded substantially centrally, as represented, to leave a groove b' open at its base b^3 to let the hook of a needle when about to engage a loop, enter the open end of the groove of the quill nearest the holder. The quills have shanks b^2 preferably also grooved as represented. These shanks may be attached

to the holder in any suitable manner but preferably the holder will be provided with a series of "tricks" or projections *c* extended therefrom to leave between them grooves *d*,
 5 into which grooves the shanks of the quills enter and are therein held firmly by flanging or upsetting a portion of the edges of the tricks onto said shanks, as shown in Fig. 5. The lower or inner ends of the tricks are
 10 shown as beveled or cut away as at *d'* to leave wide open spaces for easy entrance therein of the hooks of the needles, thus enabling the hooks to enter unerringly the grooves of the quills, as the holder having loops of a top or
 15 cuff suspended on its quills, as in Fig. 1, is pulled through the cylinder in a direction toward the line or plane occupied by the butts of the needles. It will also be noticed that I have so applied, as I prefer, the quills that
 20 the bottoms of their grooves occupy a position in a circle substantially coincident with the circumference of the holder, such location of the quills leaving their guiding grooves entirely unobstructed at their inner ends.
 25 Prior to my invention I am not aware that the quills of a transferrer and adapted to receive the loops of a circularly knitted fabric have ever been left entirely open or unobstructed at their inner ends, so that a hook
 30 of a needle may enter at the base or inner end of the groove of the quill and pass out of the outer end of the quill, nor am I aware that a transferrer having quills has ever had its body portion or holder provided with
 35 grooves to receive the hooks of the needles and direct them unerringly into the grooves of the quills. Hence this invention is not limited to the exact shape shown for the quills, or for the tricks, so long as the quills have
 40 their grooves open at their inner ends for the entrance of the hooks of the needles.

While I have shown my transferrer as employed in connection with diagonally arranged needles in a conical bed, yet it will be obvious
 45 that it may be used with any arrangement of needles wherein the hooks of the needles are

directed toward or radiate from a common center.

Having described my invention, what I claim as new, and desire to secure by Letters 50 Patent, is—

1. The combination with a needle-bed, and a series of needles disposed therein and occupying a position radial to a common center, of a transferrer composed of a holder provided 55 with a series of quills having their grooves unobstructed at their inner ends to enable the said quills to be drawn on and past the hooks of the needles, said hooks entering the grooves of the quills at their inner ends and leaving 60 the quills at their outer ends, substantially as described.

2. A transferrer composed of a holder provided with tricks, and a series of quills having their grooves coincident with the spaces 65 between the tricks, the grooves between the said tricks serving to lead the hooks of the needles correctly into the grooves at the inner ends of the quills, substantially as described. 70

3. A transferrer composed of a holder provided with tricks, and a series of quills having their grooves coincident with the spaces 75 between the tricks, the grooves between the said tricks being wide at their mouths to facilitate the ready entrance of the hooks, substantially as described.

4. The holder provided with tricks extended therefrom to leave open grooves at both ends of the tricks, combined with a series of quills 80 grooved from end to end and held in the grooves between said tricks, the bottoms of the grooves of the open quills standing substantially in the line of the circumference of the holder, substantially as described. 85

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ROBERT W. KING.

Witnesses:

GEO. W. GREGORY,
 EMMA J. BENNETT.