

No. 764,968.

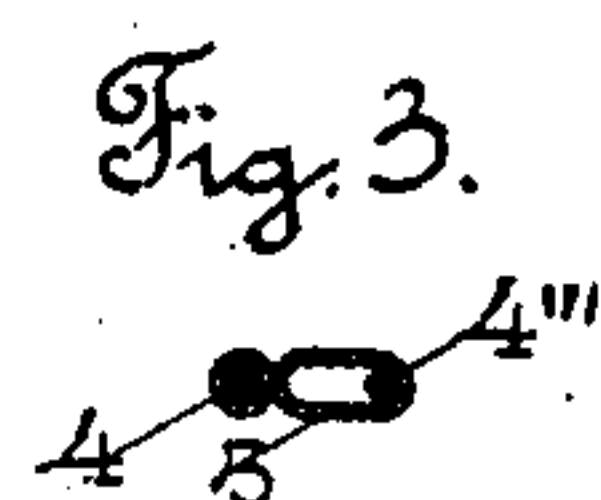
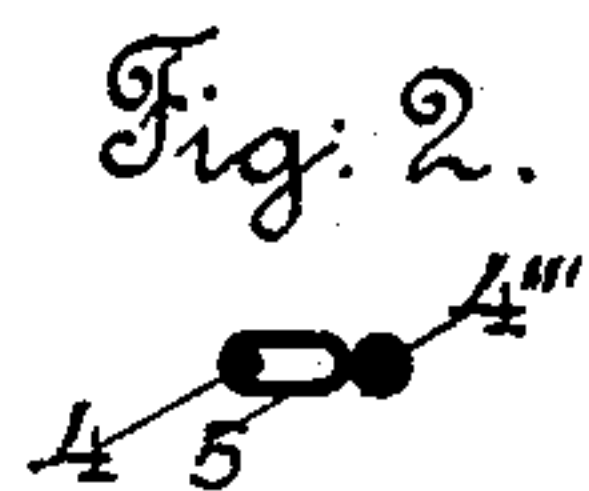
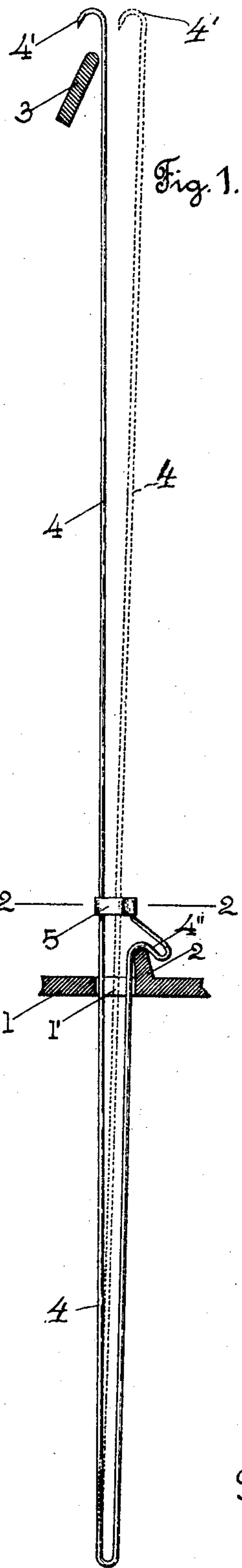
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W. WATTIE.

WIRE LIFT NEEDLE FOR JACQUARD MECHANISM.

APPLICATION FILED MAY 5, 1904.

NO MODEL.



Witnesses
M. Brett
M. Heas.

Inventor
William Wattie
By John Dewey.
Attorney.

UNITED STATES PATENT OFFICE.

WILLIAM WATTIE, OF WORCESTER, MASSACHUSETTS, ASSIGNOR TO
CROMPTON & KNOWLES LOOM WORKS, A CORPORATION OF MAS-
SACHUSETTS.

WIRE LIFT-NEEDLE FOR JACQUARD MECHANISM.

SPECIFICATION forming part of Letters Patent No. 764,968, dated July 12, 1904.

Application filed May 5, 1904. Serial No. 206,469. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM WATTIE, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Wire Lift-Needles for Jacquard Mechanism, of which the following is a specification.

My invention relates to wire lift-needles for jacquard-machines, and more particularly to an improvement on my wire lift-needle shown and described in my United States Letters Patent No. 394,800. In said patent the confining-band, which ties the two parts of the lift-needle together, is located below the lower hook on the needle, and the band is compressed upon and fastened to both wires of the U-shaped part of the needle. I have found in practice that the confining-band on the needle in said patented construction being below the lower hook on the needle is liable to chafe and produce friction on the lift-bar on the guide-plate in the movement of the guide-plate and the needle. I have also found that the confining-band being compressed upon and fastened to both wires of the U-shaped part of the needle the main upright wire of the needle cannot bend or give between its ends or from its lower end, but is rigidly held at about its middle point intermediate its ends by the confining-band compressed thereon. This is objectionable, especially in the case of short lift-needles, for it requires more power to move the upper hook end of the needle away from the griff, and the ends of the horizontal indicator needles or wires connected with the lift-needles are liable to punch holes in the jacquard-cards.

The object of my invention is to improve upon the construction of my patented lift-needle and to overcome the objections above mentioned.

In my improvements I place the confining-band above the lower hook on the needle and above the lift-bar on the guide-plate, and I do not compress the confining-band on both wires of the needle, so that the needle is free to bend or give between its ends or from its

lower end, as will be hereinafter fully described.

Referring to the drawings, Figure 1 shows a wire lift-needle of my improved construction, with a detached section of the griff and of the guide-plate. The broken lines show the main upright part of the needle bent between its ends within the confining-band. Fig. 2 is a section through the confining-band and the needle, taken at a point indicated by line 2 2, Fig. 1; and Fig. 3 corresponds to Fig. 2, but shows a modified construction.

In the accompanying drawings, 1 is the guide-plate, having an opening 1' there-through and the lift-bar 2 thereon, and 3 is the griff.

4 is the lift-needle, which is bent back upon itself in the usual way to form the U-shaped part, which extends through the opening 1' in the guide-plate 1.

On the upper end of the needle 4 is the top hook 4', adapted to catch over the griff 3 in the usual way. At about the middle of the needle 4 is the lower hook 4'', adapted to catch over the lift-bar 2 on the guide-plate 1 in the ordinary way. The hook 4'' has its projecting end bent backwardly toward the main part of the needle 4 and then bent upwardly and substantially parallel with the main part of the needle 4 to form an attaching end for the confining-band 5, which is preferably made of sheet metal. One end of the confining-band 5 is in this instance compressed upon the upper free end 4''' of the hook 4'' and secured thereon. The other end of the confining-band 5 is in this instance left open, as shown in Fig. 2, to loosely receive the main part of the needle 4 and allow said needle to freely move therein away from the griff 3, as shown by broken lines.

The advantages of my improvements will be readily understood by those skilled in the art.

It will be seen that by placing the confining-band 5 above the lift-bar 2 the same cannot come into contact with the lift-bar, and there is no liability of any friction or wearing of the band. By leaving the confining-

band open, so that the main part of the lift-needle 4 can move freely therein, the whole length of the main part of the lift-needle 4 is free to move from the extreme lower end to the top hook 4'.

It will be understood that the details of construction of my improvements may be varied, if desired.

The confining-band 5 may be compressed on the main part of the needle 4 and loose on the end 4''' on the hook 4'', as shown in Fig. 3, if preferred.

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

1. The combination with a wire lift-needle having a double portion at its lower end, and a hook thereon, with its end bent upwardly and toward the main part of the needle, of a band on the main part of the needle, and on

the end of the hook, substantially as shown and described.

2. The combination with a wire lift-needle of U shape at its lower end and having a hook thereon, of a band attached to one part of the needle above said hook, and the other part of the needle free to have a lateral motion within said band, substantially as shown and described.

3. The combination with a wire lift-needle, having the U-shaped portion at its lower part, and the lower hook with an upturned end, of a band attached to said upturned end, and loosely encircling the main part of the needle, substantially as shown and described.

WILLIAM WATTIE.

Witnesses:

JOHN C. DEWEY,
MINNA HAAS.