

(No Model.)

J. J. ADGATE.
NEEDLE JACK.

No. 546,986.

Patented Oct. 1, 1895.

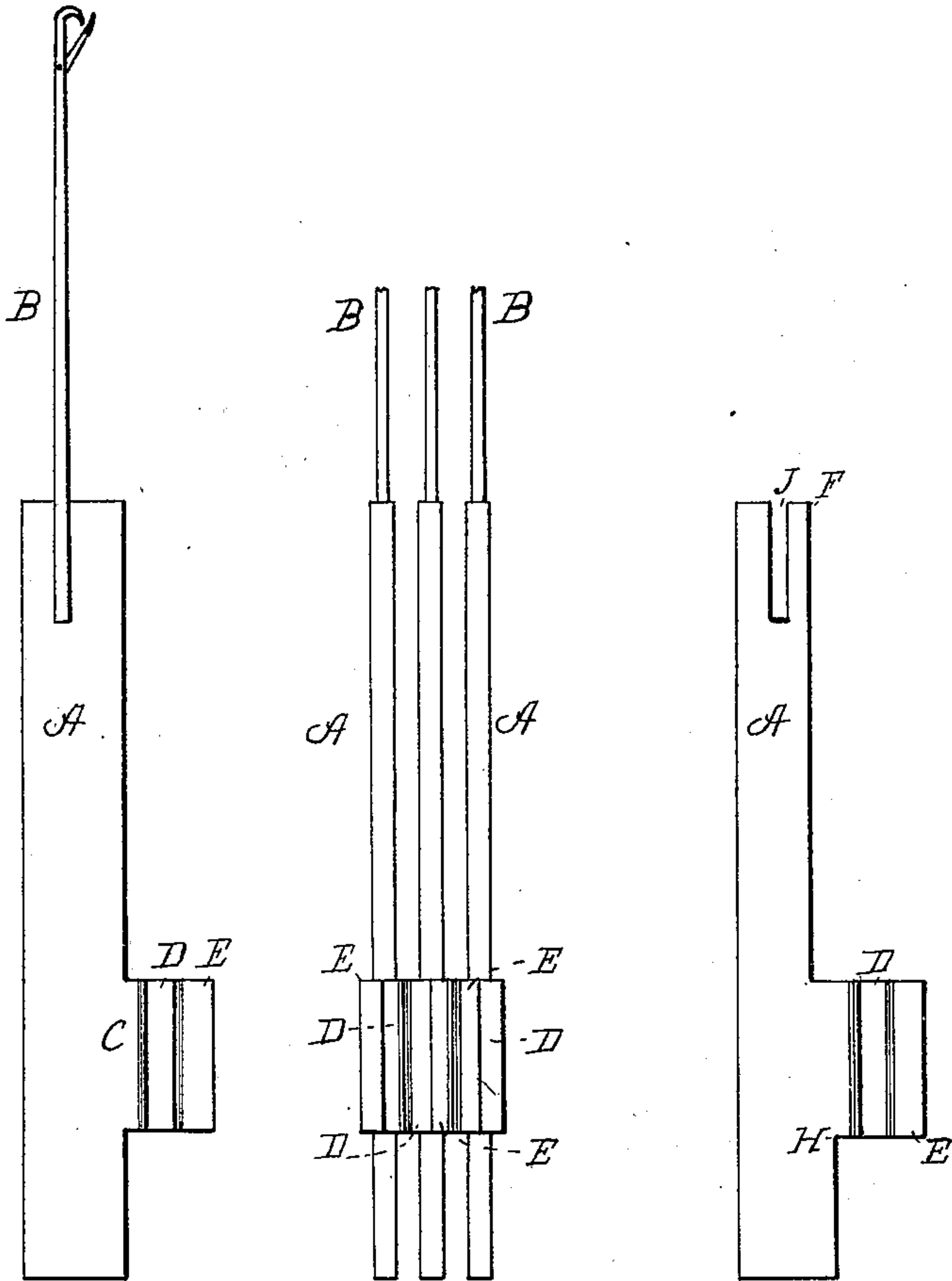


Fig-1.

Fig-2.

Fig-3.

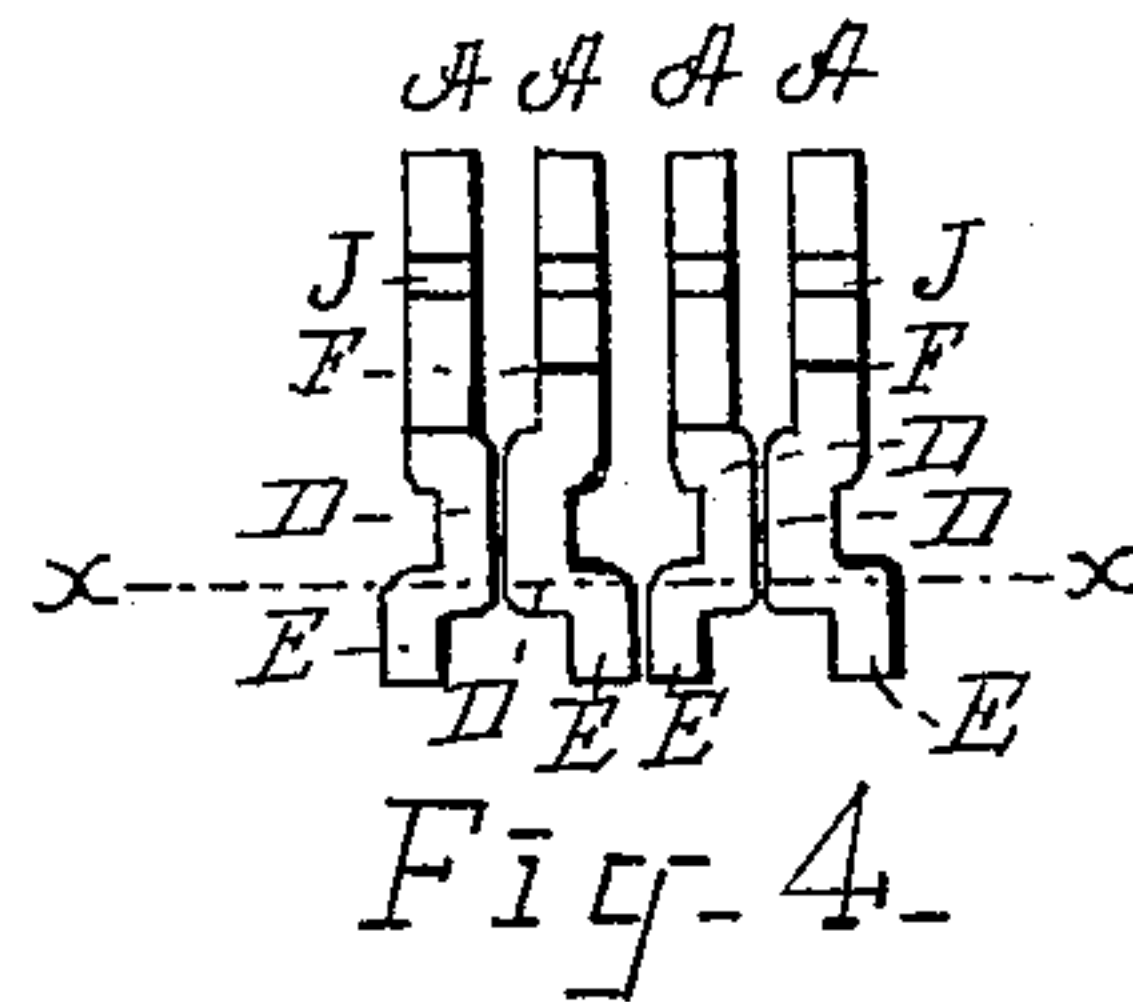


Fig-4.

WITNESSES:
Herbert J. Kinde
W. D. Neiley

INVENTOR
Joseph J. Adgate
BY
Andrew Wilson.
ATTORNEY.

UNITED STATES PATENT OFFICE.

JOSEPH J. ADGATE, OF LIBERTY, ASSIGNOR TO JOHN BENTLEY, OF
NEW YORK, N. Y.

NEEDLE-JACK.

SPECIFICATION forming part of Letters Patent No. 546,986, dated October 1, 1895.

Application filed November 5, 1894. Renewed July 3, 1896. Serial No. 554,891. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH J. ADGATE, of Liberty, Sullivan county, New York, have invented certain new and useful Improvements in Needle-Jacks for Knitting-Machine Needles, of which the following is a specification.

My invention relates to that class of jacks which are made of a single piece of metal and in which the needles are inserted and fastened, and particularly to so forming the knees of the jacks that it shall not be necessary to reinforce them by soldering or riveting another piece of metal to them, but the metal of the original thickness of the knee is so disposed as to furnish the necessary support to the adjacent jacks; and my invention consists particularly in the details hereinafter set forth.

In the drawings, Figure 1 is a side elevation of my improved jack with a needle inserted therein. Fig. 2 is an edge view of a series of three of the jacks, the upper part of the needles being broken away. Fig. 3 is a side elevation of the jack for the bent needles used in weft-thread machines, and Fig. 4 is a top view of a series of four jacks.

The second and fourth jacks in the series shown are of the form shown in Fig. 3.

Similar letters of reference designate similar parts in all the figures.

A is the body of the jack, which is formed of a single piece of thin metal and is provided with a slot J at its upper end to receive the needle B.

C is the knee, which is intended to travel in the cam-groove in the usual manner.

As is well understood in the art, the jacks slide up and down in vertical grooves in the needle-cylinder, while their knees travel in the cam-groove, and it is important that the knees should mutually support each other against lateral motion. To accomplish this and compensate for the space taken up by the divisions between the needle-grooves I bend or crimp the knee of the jacks alternately from side to side, so that the surface of the knee shall have projecting portions on either side extending half way to the next jack. Upon the next jack the bends or crimps are reversed, so that those on adjacent sides

of the jacks shall meet, thus giving the jacks mutual lateral support. These bends or crimps can be readily produced by dies, which can be used to strike up the metal of the knees into the desired form.

Referring to the drawings, D indicates the crimp nearest to the body of the jack, and E that extending to the edge of the knee. In the series in Figs. 2 and 4 the crimp D in the first jack on the left is thrown to the right, and the corresponding crimp in the second jack of the series is thrown to the left, and so on alternately, and the crimps E alternate in the same manner, as shown.

A reference to Fig. 4 will show that at the bend of the crimp E the metal of the series of jackets presents a solid line of support upon the line *xx*, so that the series of jacks will sustain great pressure or resistance without bending or losing their proper crimps. By this method I secure a very strong and durable jack made of a single piece of metal, which can be readily formed by dies and which entirely dispenses with the use of solder or rivets, and economizes the metal used to form the jacks.

In Fig. 3 the upper portion of the jack is shown reduced in width from F to C to allow for the tilting or forward play of the top of the jack toward the cam-cylinder during the descent of the bent needle. The bend in the needle descending past the upper edge of the needle-cylinder tilts the needle and jack forward, and this reduced width of the jack allows for this movement.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. A needle jack composed of a single piece of metal, and having a knee integral therewith and formed from the same thickness of metal as the body of the jack, and provided with vertical crimps alternating on opposite sides of the knee, substantially as and for the purposes set forth.

2. A series of needle jacks provided with knees formed from the same thickness of metal as the bodies of the jacks, said knees being provided with vertical bends or crimps

alternating to opposite sides of the knees, the direction of such bends or crimps being reversed in every alternate knee, substantially as and for the purposes set forth.

- 5 3. A needle jack composed of a single piece of metal, having a knee integral with the body thereof, provided with crimps D and E, the

upper portion of the body of such jack being uniformly reduced in width from F to C substantially as and for the purposes set forth.
JOSEPH J. ADGATE.

Witnesses:

WM. D. NEILLEY,
HERBERT J. HINDES.