

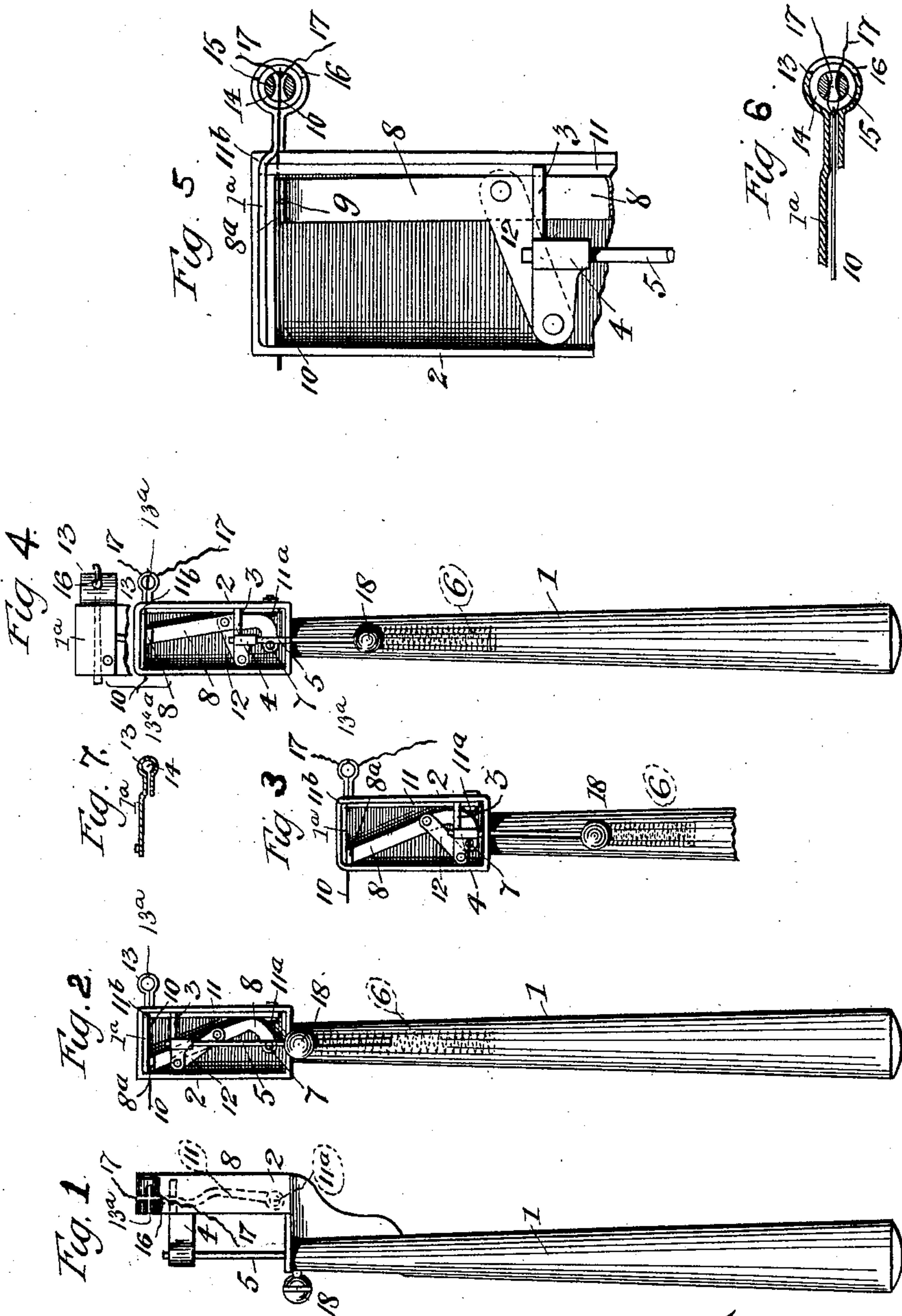
No. 633,080.

Patented Sept. 12, 1899.

J. DARLING.  
NEEDLE THREADER.

(Application filed Oct. 1, 1898.)

(No Model.)



Witnesses:  
Edw. K. Allen  
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attys.



# UNITED STATES PATENT OFFICE.

JOHN DARLING, OF GALLOWFLATS, SCOTLAND, ASSIGNOR TO THE GEM  
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## NEEDLE-THREADER.

SPECIFICATION forming part of Letters Patent No. 633,080, dated September 12, 1899.

Application filed October 1, 1898. Serial No. 692,426. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN DARLING, engineer, a subject of the Queen of Great Britain and Ireland, and a resident of Gallowflats, Rutherglen, in the county of Lanark, Scotland, have invented certain new and useful Improvements in Needle-Threaders, (for which I have obtained a patent in Great Britain, No. 6,170, bearing date the 14th day of March, 1898,) of which the following is a specification.

My invention relates to improvements in needle-threaders especially intended for threading sewing-machine needles.

In order that my invention may be fully understood, I will proceed to describe it with reference to the accompanying drawings, in which—

Figure 1 is a side elevation of my improved needle-threader. Fig. 2 is a front elevation of the same. Fig. 3 is also a front elevation showing the first stage of the threading operation. Fig. 4 is a similar view in second stage of the threading operation and also showing an end view of the device in connection therewith. Fig. 5 is an enlarged view of the case, showing the threader after having passed through the eye of the needle and caught the thread. Fig. 6 is an enlarged fragmental view showing the needle-threader. Fig. 7 is a detail transverse section showing the passage for the threader.

In carrying out my invention I provide a holder 1, of any convenient shape and size, secured to the upper end of which there is a case 2, which may be in one piece with the holder or connected to it in any convenient manner. In this case 2 there is a cross-bar 3, to which there is connected or in one piece with it and lying at right angles to it an arm 4, which is mounted on the outer end of a small rod or stem 5, working in the center of the holder and carried by a spiral spring 6, and to which also there is connected a small ball or knob 18, whereby the threader is operated. The cross-bar 3 slides at one end on a swinging bent-wire spring rod or cam 11, one end, 11<sup>a</sup>, of which is connected to the side of the case 2, while the other end, 11<sup>b</sup>, is connected to the pivoted outer end 1<sup>a</sup> of the case, so as to vibrate therewith. Toward the in-

ner end of the case 2 there is centered at 7 one end of a bent lever 8, the other or outer end having a lip-piece 8<sup>a</sup>, to which there is fixed a little pivot-pin 9, by which the threader 10 is connected therewith and is held in position. The threader is supported on the lip-piece, while the ends of the threader extend through the sides of the case. The lever 8 is connected to the other end of the cross-bar 3 by means of the link 12. On one side of the case and forming part of the pivoted outer end of the case there is a projecting sleeve piece or plate 13 so formed or shaped that it not only acts as a guide for the threader passing transversely therethrough, but the ends form a round hole or recess 14, into which the needle 15 to be threaded passes, as will be hereinafter more fully explained. On the outer end of the projecting sleeve piece or plate 13 there is a transverse slit or cut-out 16, in which the thread 17 is placed.

13<sup>a</sup> is a longitudinal slot in the sleeve-piece 13, through which the threader works to seize the thread.

The mode of threading the needle is as follows: The thread 17 is placed across the sleeve-piece in line with the slit 16, and the sliding rod 5, carrying the cross-bar 3, is pulled down by means of the little ball or knob 18 and this through the bend on the vibrating spring wire or cam 11 slightly moves the projecting piece 13. The point of the needle 15 is then passed down through the hole or recess 14 in the sleeve-piece until it protrudes about one-sixth of an inch or so. The ball or knob is then released and the machine gradually drawn away from the needle, when by the action of the spring 6 the bar 3 is moved, and it being connected to the lever 8 by means of the link 12, which turns on its pivot, causes the threader 10 to move along until it passes through the eye of the needle and comes in front of the thread 17. The cross-bar 3 still continues to move, when by the bend on the spring-wire 11 the projecting piece 13 returns to its normal position and the threader grips the thread. The cross-bar 3, still moving the lever 8 by the action of the link 12, is slightly drawn back, and with it the threader, and the thread, when they return through the eye of

the needle, and the needle becomes automatically threaded. In releasing the thread the knob or ball is simply pulled down, when it becomes disengaged.

5 Of course it is to be understood that slight variations in detail of construction of the machine might be made without deviating from the principle of my invention.

10 Having thus described my invention, the following is what I claim as new therein and desire to secure by Letters Patent:

15 A needle-threader comprising a holder, a case, a sliding rod having an arm carrying a cross-bar, the pivoted outer end of the case having a sleeve-piece formed with a longitudinal slot and with a transverse slit, a vibrat-

ing spring rod or cam, connecting the outer end of the case with the cross-bar, the lever, the link connecting the lever with the cross-bar, the threader mounted on the lever and 20 working through the sleeve-piece, and means whereby the sliding rod is reciprocated to operate the threader; substantially as described.

In testimony whereof I have signed my 25 name to this specification in the presence of two witnesses.

JOHN DARLING.

Witnesses:

JOHN LIDDLE,

EDITH MARY EDMONDSTONE.