(No Model.)

J. DARLING, W. G. BLOW & J. DARLING, Jr.

NEEDLE THREADER.

No. 457,474. Patented Aug. 11, 1891.

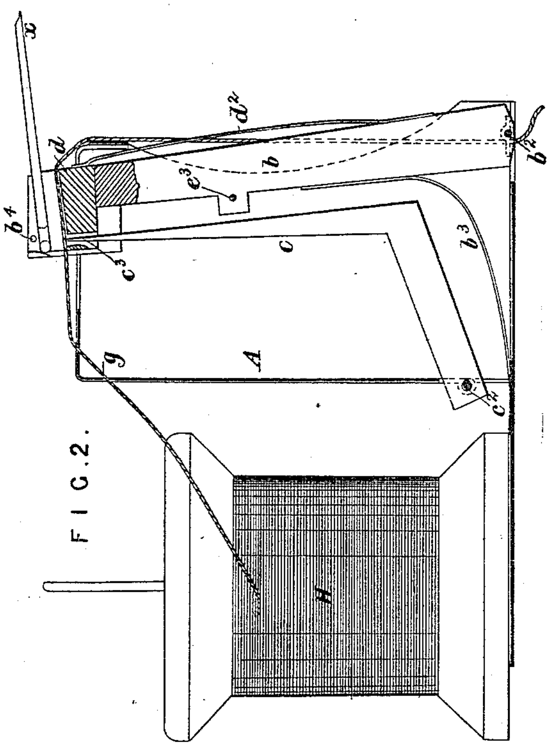

FIG. 2.

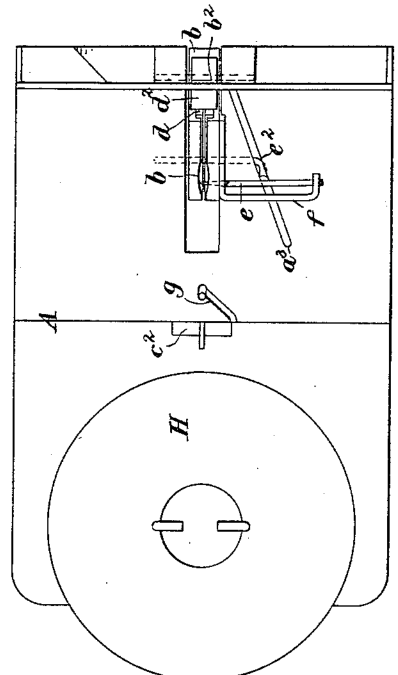

FIG. 5.

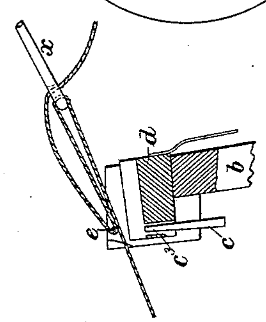

FIG. 4.

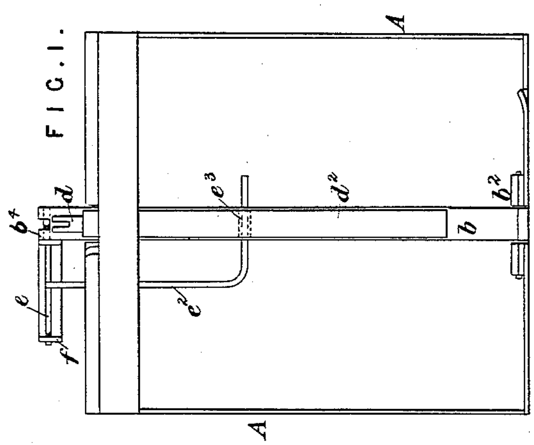

FIG. 1.

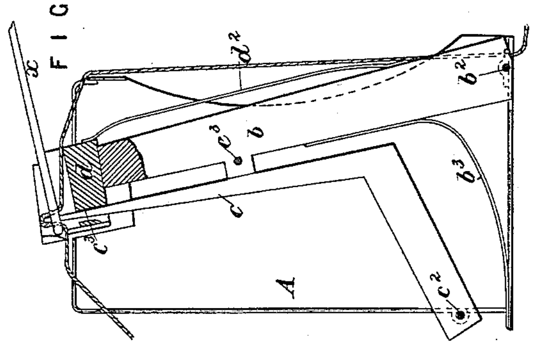

FIG. 3.

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UNITED STATES PATENT OFFICE.

JOHN DARLING, OF GLASGOW, SCOTLAND, WALTER G. BLOW, OF CARDIFF, ENGLAND, AND JOHN DARLING, JR., OF GLASGOW, SCOTLAND.

NEEDLE-THREADER.

SPECIFICATION forming part of Letters Patent No. 457,474, dated August 11, 1891.

Application filed June 20, 1891. Serial No. 396,918. (No model.)

To all whom it may concern:

Be it known that we, JOHN DARLING, engineer, residing at 64 Albert Road, Crosshill, Glasgow, in the county of Renfew, Scotland, WALTER GEORGE BLOW, gentleman, residing at Cardiff, Wales, England, and JOHN DARLING, Jr., warehouseman, residing at 64 Albert Road, Crosshill, Glasgow, Scotland, subjects of the Queen of Great Britain, have invented a certain Improved Needle-Threader, of which the following is a specification.

The invention relates to an improved needle-threader, and has for its object to provide a device which will readily pass sewing-thread through the eyes of ordinary hand-sewing needles.

According to this invention, when the needle is pushed into the apparatus a bar or the like pushes a loop of thread through the eye of the needle, and then a retaining device retains the thread while the needle is withdrawn, so that the needle when withdrawn is threaded.

We will describe the invention with reference to the accompanying drawings, premising that we do not limit ourselves to the precise details which are illustrated.

Figure 1 is a front elevation. Fig. 2 is a longitudinal section showing the normal position. Fig. 3 is a longitudinal section showing the loop of thread pushed through the eye of the needle. Fig. 4 shows the position when the needle is withdrawn after threading, and Fig. 5 is a plan.

A is a frame-work of suitable material—such, for example, as metal—to the front part of the base-plate of which is pivoted a vertical arm or lever *b*, centered at b^2 and pressed outward by a spring b^3, the upper end of the said lever working in a slot formed in the top of the frame-work A. To the rear of the base-plate is centered or hinged at c^2 the needle-threading bar *c*, which extends upward, the point c^3 thereof being inserted in a small slotted piece *d*, fitting so as to be capable of a slight sliding movement in a slot in the upper end of the lever *b*. Above this slotted piece is a hole b^4 in the lever *b*, in which slides the thread-retaining device consisting of the pin *e*, supported in the bracket *f*, attached to the said lever *b*.

At some convenient part of the back of the frame-work A a small hole or holes *g* is or are formed for the thread to pass through from a reel or bobbin H, the thread being then passed into the slot in the top of the vertical lever *b*. When it is desired to thread the needle, its eye end is pushed to the end of the groove in the top of the vertical lever *b* and presses or pushes in the upper end of the said lever, which turns on its center at b^2, this motion forcing the needle-threading bar *c* to also turn on its center c^2 and its upper end c^3 to rise in the slotted piece *d* in the vertical lever *b*, and in its upward movement the upper end of the said needle-threading bar *c* pushes the thread in the form of a loop through the eye of the needle, as shown in Fig. 3. The piece *d* is pressed upon by a spring d^2, which allows of the slight sliding movement of the said piece necessary to allow the upper end of the bar *c* to pass through the eyes of various descriptions of needles. As soon as the thread is pushed through the eye of the needle and as the vertical lever *b* returns under the action of the spring b^3 the thread-retainer *e* comes into position to pass through the loop formed. This is effected by means of a diagonal slot a^3, formed in the top of the frame-work A, in which engages the bar e^2, secured to the pin *e* and sliding in a hole e^3 in the lever *b*, so that when the vertical lever *b* is being pressed back by the sewing-needle this slot causes the pin *e* to be withdrawn to allow the upper end of the needle-threading bar *c* to pass up with a loop of the thread, and as the vertical lever *b* returns the said diagonal slot a^3 causes the pin *e* to move inward to engage with the loop of thread formed and hold the thread, so that when the needle is withdrawn, as shown in Fig. 4, it is threaded.

In the figures *x* represents the needles.

A needle-threader constructed as described may be made as a separate device, as shown; or it may be fixed to a lady's work box or table or be combined with a needle or cotton case.

Having now particularly described and ascertained the nature of the said invention and in what manner the same is to be performed, we declare that what we claim is—

1. The combination of the lever having a suitable aperture for the introduction of a

needle and adapted to be moved thereby, and a threader-bar working in a slot in said lever and receiving motion therefrom, so that when the latter is moved in one direction the threader will advance to thrust a thread through the eye of the needle, substantially as described.

2. The combination of a lever having a suitable aperture for the introduction of a needle, a threader-bar arranged to receive a forward thrust from said lever when the latter is moved in the proper direction and having its operative end guided in a slot of said lever transverse to the needle-aperture, and a retaining-pin for catching the loop of thread thrust through the eye of the needle, substantially as described.

3. The combination of the lever having a suitable needle-aperture, a threader-bar guided in and actuated by said lever so as to receive a forward thrust when the lever is pushed back, and an oscillating pin also actuated by said lever so as to advance across the needle-aperture and retain the loop of thread when the threader-bar retreats, substantially as described.

4. The combination of the lever, the head-piece adapted to receive the needle and capable of sliding on said lever, and the threader-bar guided in said adjustable head-piece and reciprocated therein by the motions of said lever, substantially as described.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

JOHN DARLING.
W. G. BLOW.
JOHN DARLING, JR.

Witnesses to the signatures of John Darling and Walter George Blow:

CHAS. MILLS,
WM. COSTIN,
Both of 47 *Lincoln's Inn Fields, London.*

Witnesses to the signature of John Darling, Jr.:

GEORGE ROBERTSON,
WILLIAM NELSON,
Both of 84 *Miller Street, Glasgow.*