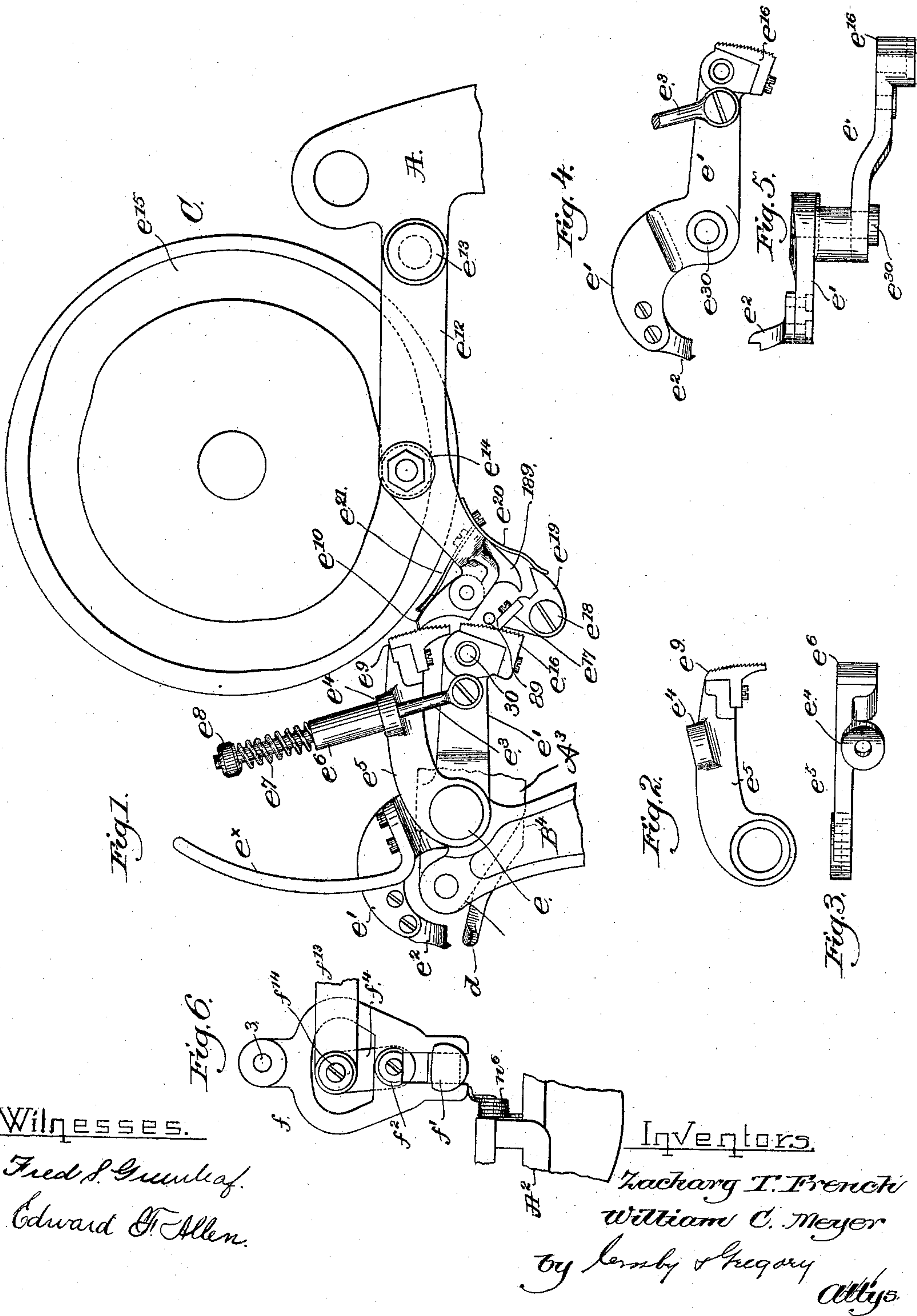


(No Model.)

Z. T. FRENCH & W. C. MEYER.
SOLE SEWING MACHINE.

No. 474,774.

Patented May 10, 1892.



Witnesses.

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UNITED STATES PATENT OFFICE.

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SOLE-SEWING MACHINE.

SPECIFICATION forming part of Letters Patent No. 474,774, dated May 10, 1892.

Original application filed October 4, 1890, Serial No. 367,066. Divided and this application filed March 10, 1891. Serial No. 384,407. (No model.)

To all whom it may concern:

Be it known that we, ZACHARY T. FRENCH and WILLIAM C. MEYER, both of Boston, county of Suffolk, State of Massachusetts, have
5 invented an Improvement in Sole-Sewing Machines, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

10 This invention is an improvement on that described in United States Letters Patent No. 412,703, dated October 8, 1889.

In the patent referred to the stock is shown as resting upon a movable work-support, the
15 position of which is varied according to the thickness of the stock; but herein the work-support is stationary and the stock is acted upon by a presser-foot, the pressure of which on the stock is variable in extent, as required.

20 One part of this invention consists, essentially, in a work-support, a presser-foot, a lever to which it is secured, and a toothed dog attached thereto, combined with a lever and its attached pawl to keep the presser-foot on
25 the work at the proper time, as will be described.

Other features of invention will be hereinafter described, and made subject of claims at the end of this specification.

30 Figure 1 in elevation shows a sufficient portion of a sole-sewing machine to enable our invention to be understood; Figs. 2 to 6, details of the presser-foot mechanism.

In the present invention (this application
35 being, by requirement of the Patent Office, a divisional case from our application, Serial No. 367,066, filed October 4, 1890) we have not considered it necessary to fully show the frame-work and other parts, as the same are
40 fully shown in the said application, and in this description we shall employ letters the same as used in the said application to better enable this invention to be understood.

Referring to the drawings, Fig. 1, A³ shows
45 part of the regular frame-work A. The part A³ has the rigid work-support *d* connected to it in suitable manner, and has a stud *e*, on which is mounted loosely an elbow-shaped lever *e'*, the lever being shown detached in

Figs. 4 and 5. The front end of lever *e'* carries the presser-foot *e²*, while to its rear end is
50 jointed the link *e³*, extended loosely up through a lug *e⁴* of an arm *e⁵*, mounted loosely upon a boss *e³⁰* (see Figs. 4 and 5) of the lever *e'*, the link *e³* above the said lug receiving upon it a
55 washer *e⁶*, acted upon by a spiral spring *e⁷*, adjustable as to its force by a nut *e⁸*, screwed upon a threaded part of the said link. The rear end of the arm *e⁵* is provided with a ratchet-toothed dog *e⁹*, which is engaged at
60 times by one or more pawls *e¹⁰*, varying, preferably, in length to thus provide in usual manner for finer adjustments, said pawls being pivoted upon a lever *e¹²*, having its ful-
65 crum on a stud *e¹³*, and provided with a roller or other stud *e¹⁴*, which enters a groove *e¹⁵* (see Fig. 1) in the right-hand side of the cam C. The inner end of the lever *e'* is also provided with a ratchet-toothed dog, as *e¹⁶*, (see
70 Figs. 1 and 4,) which dog is engaged by a pawl *e¹⁷*, mounted loosely upon a stud *e¹⁸*, connected with the rigid projection A³ of the frame-work, the said pawl having a rearward extension *e¹⁹*, which is normally acted upon by a spring *e²⁰*,
75 carried by the lever *e¹²*, which spring normally keeps the said pawl in engagement with the dog *e¹⁶*. The pawls *e¹⁰* are likewise acted upon by a suitable spring *e²¹*, which normally keeps them in engagement with the
80 ratchet-toothed dog *e⁹*. The normal pressure of the presser-foot upon the stock may be increased or decreased, according to the character of the stock by the rotation of the nut
85 *e⁸*. The rear end of the lever *e'* has a transverse hole 30, in which is fitted to slide longitudinally a pin 3, which, as provided for in said application, is extended horizontally
90 from a frame *f*, slotted at its lower end to embrace and be guided by a rock-shaft *f'*, (see Fig. 6,) the said frame and the parts co-
operating with it to automatically control the supply of thread, according to the thickness
95 of stock between the presser-foot and work-support *d*, being fully shown and described in the said application. The lever *e'* has connected to it a hand-lever *e^x*, by which the presser-foot may be lifted when it is desired to remove or replace work upon the work-

support. The sole or other thing to be stitched is placed upon the work-support and the presser-foot is allowed to descend upon the work, it being kept upon the work by a force measured by the spring n^6 , (see Fig. 3,) one end of which bears against the lower end of the frame f . In this condition the pawls e^{10} and e^{17} engage, respectively, the dogs e^9 and e^{16} and the lever e^{12} is moved, causing the pawl e^{10} , engaging the dog e^9 , to turn the arm e^5 about its pivot, causing the lug e^4 , acting on the washer e^6 , to lift the presser-foot e^2 , the spring e^7 at such time yielding, so as to hold the stock firmly but with a yielding pressure, thus lifting the rod e^3 and the rear end of the lever e' , carrying the presser-foot, it then resting on the stock, and as the rear end of the presser-carrying lever e' is raised the pawl e^{17} engages the dog e^{16} and holds the presser-foot down firmly against the stock, which is thus depressed to the stitch-making point. The stock being clamped, the awl rises and perforates the stock. After the awl is through and well into the stock and before it commences to feed the stock the lever e^{12} is moved so that one end thereof strikes the extension e^{19} of the pawl e^{17} , thus releasing the latter from the dog e^{16} , the lever at the same time releasing the pawl e^{10} from the dog e^9 . This leaves the presser bearing upon the stock by a force due only to the spring n^6 , and at this time the feed takes place in usual manner by a horizontal movement of the feed-slide. While the awl is being retracted, the needle comes down and enters the hole made in the stock by the awl and the awl and presser-foot are moved back again to the right, and when back the pressure is again put onto the presser-foot through the lever e' by the pawls, as before described.

We have described the stud e , on which the lever e' turns, as carried by the feed-slide B^4 ; but this invention is not limited to placing the said stud e in any particular part of the machine, and it will be obvious that the self-

adapting feature of the presser-foot, due to its rising and falling movement, may be fully operative, even if the stud e did not move longitudinally with the feed-slide.

We do not claim a sliding presser-bar having a presser-foot when the said presser-bar has loosely jointed to it a lever having segmental teeth, which are acted upon by a pawl carried by a lever, the said pawl causing the depression of the presser-bar and presser-foot.

We claim—

1. The work-support, stud e , the presser-foot lever e' , mounted thereon, the presser-foot e^2 , rigidly and firmly attached to one end of the said lever, and a toothed dog, as e^{16} , attached to the other end of the said lever, combined with a locking-pawl e^{17} , mounted on a stationary stud and adapted to engage the said dog and lock the presser-foot in the position in which it may be left after having been forced down upon the material preparatory to making a stitch, substantially as described.

2. The work-support, the presser-foot, the lever to which it is secured, a toothed dog attached thereto, pawl e^{17} , combined with the loosely-mounted arm e^5 , having a toothed dog, the rod e^3 , and spring e^7 , and with the lever e^{12} and pawl e^{10} , substantially as described.

3. The work-support, the presser-foot, a lever to which it is attached, and a connected rod, and a spring combined with an arm, as e^5 , mounted to turn independently of the lever carrying the presser-foot and having a lug to be acted upon by the said spring, and dogs e^9 and e^{16} and pawls to engage them, substantially as described.

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

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WILLIAM C. MEYER.

Witnesses:

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