No. 640,063. Patented Dec. 26, 1899.

E. E. WINKLEY.

SOLE LAYING MACHINE.

(Application filed May 9, 1898.)

(No Model.)

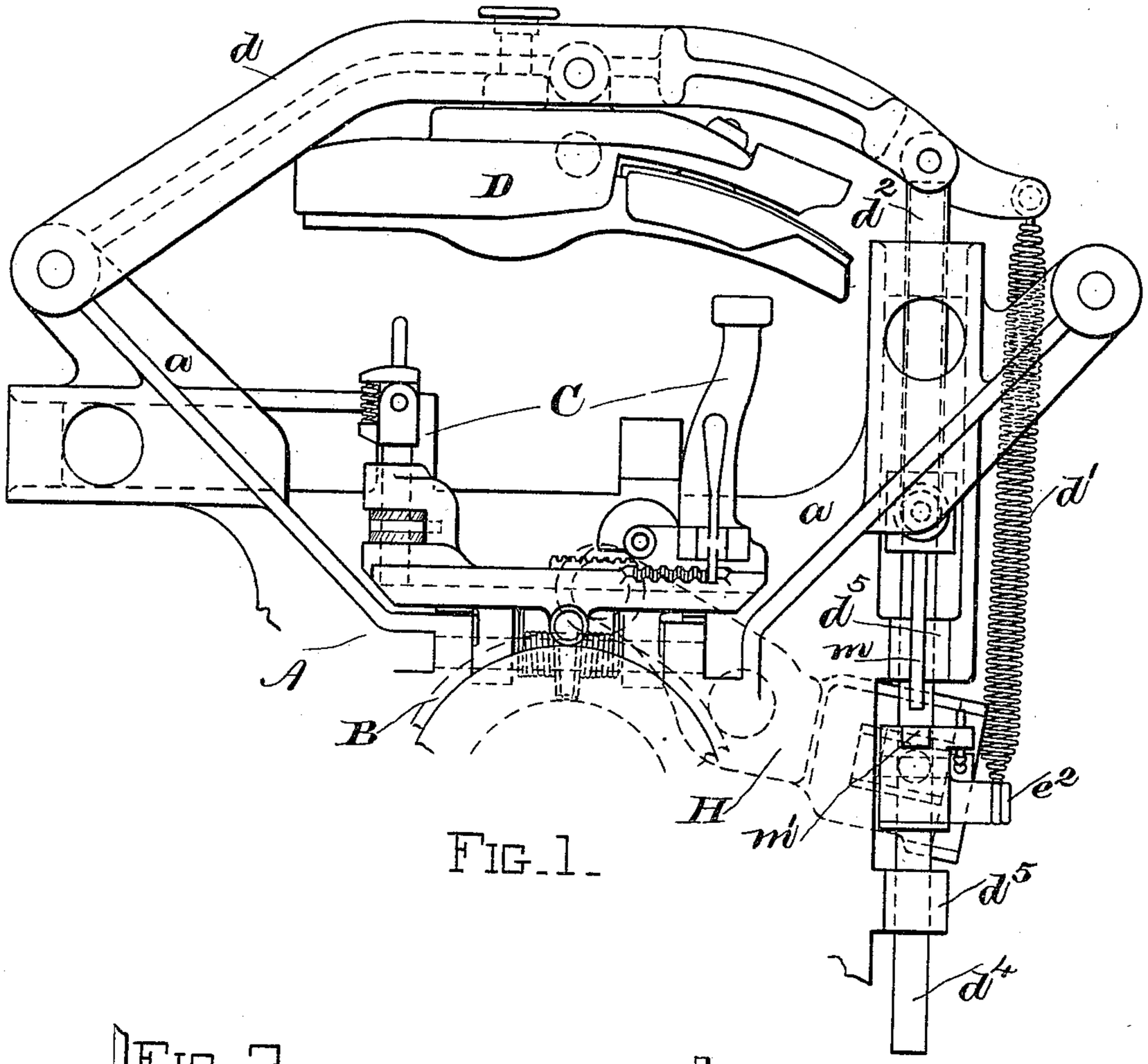

FIG. 1.

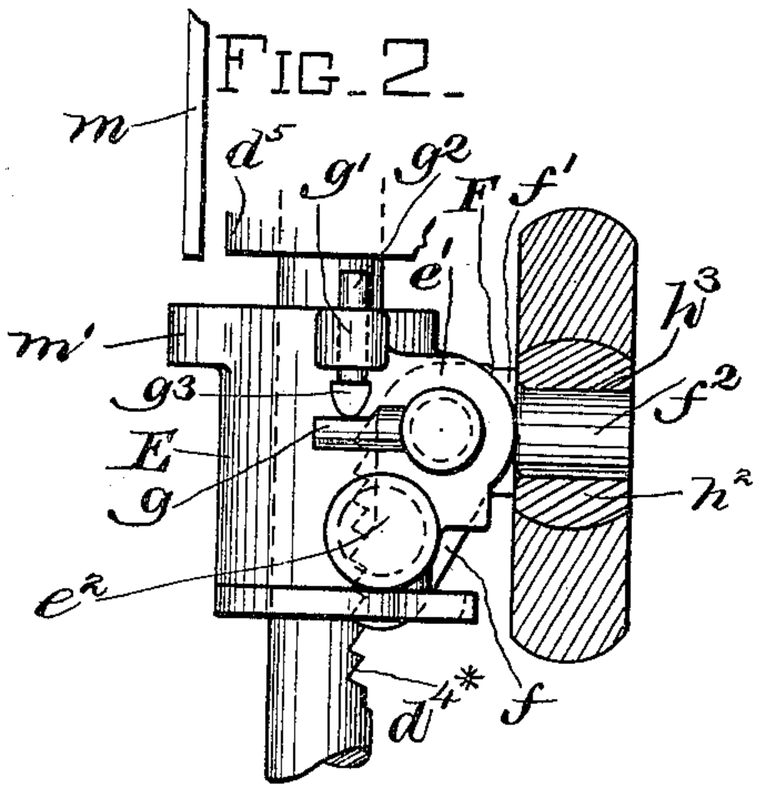

FIG. 2.

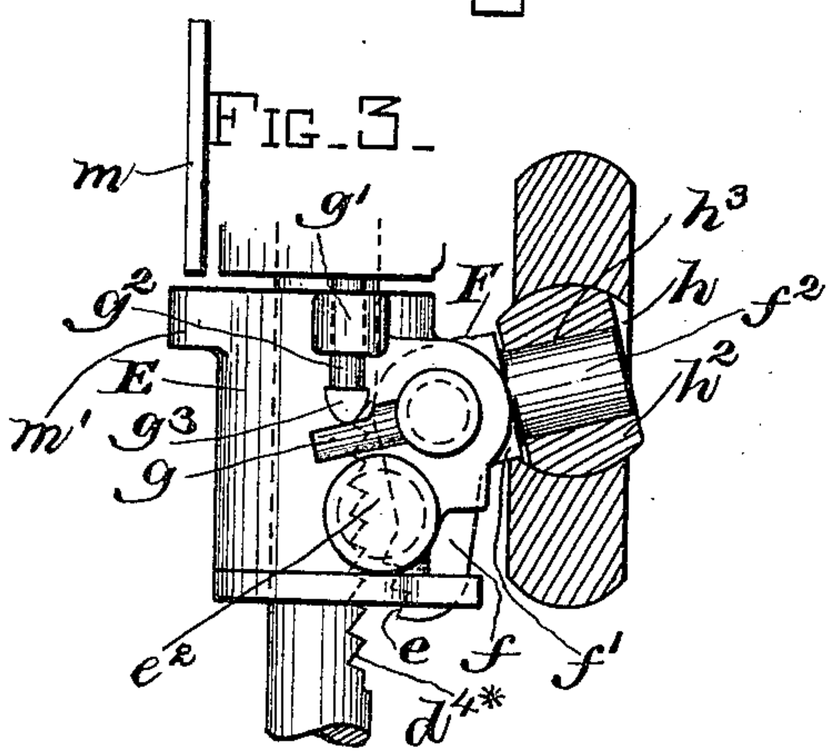

FIG. 3.

WITNESSES.

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UNITED STATES PATENT OFFICE.

ERASTUS E. WINKLEY, OF LYNN, MASSACHUSETTS.

SOLE-LAYING MACHINE.

SPECIFICATION forming part of Letters Patent No. 640,063, dated December 26, 1899.

Application filed May 9, 1898. Serial No. 680,131. (No model.)

To all whom it may concern:

Be it known that I, ERASTUS E. WINKLEY, a citizen of the United States, residing at Lynn, in the county of Essex and State of Massachusetts, have invented certain new and useful Improvements in Sole-Laying Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The present invention relates to sole-machines, and more particularly to certain improvements of the pressure-securing mechanism of the sole-laying machine disclosed in Letters Patent of the United States No. 557,744, issued the 7th day of April, 1896, and in my pending application for Letters Patent of the United States, filed the 26th day of May, 1897, Serial No. 658,222. In the machine as disclosed in said patent the pressure of the form on the shoe-sole is secured by a rod which is connected to one end of the lever which carries the form and by a pressure-securing lever which is arranged to be connected to said rod to exert a pull thereon when applying pressure. In the machine of my pending application referred to the connection between the lever and rod is secured by means of a pivoted locking-pawl having a serrated end which is thrown in engagement with serrations on the rod, whereby as the pressure-securing lever is rocked on its fulcrum to draw on the rod to force the form in contact with the shoe-sole the pivoted pawl will engage the rod and exert a pull thereon, thus applying pressure to the form. In said construction the pivoted pawl is rocked in one direction to engage the rod by the rocking of the pressure-securing lever, and said pawl is rocked in the opposite direction to remove its serrated portion from engagement with the rod to permit a free sliding movement of the rod with relation to the pawl and its supporting-sleeve by a spring. It is desirable, to secure the best results, that the rocking of the locking-pawl should be positively produced in both directions in order that it may engage and disengage the rod with certainty at the proper times and that there should be no liability of the pawl remaining in contact with the rod when it should be removed therefrom.

The object of the present invention, therefore, is to secure the positive release of the rod by the locking-pawl at the proper times to permit the raising of the pressing-form and prevent all liability of damage to the machine by the failure of the pawl to release such rod.

To the above end the present invention consists of the devices and combination of devices which will be hereinafter described and claimed.

The present invention is illustrated in the accompanying drawings, in which—

Figure 1 is a front elevation of a portion of the machine disclosed in the patent and application referred to, showing my present invention as applied thereto. Figs. 2 and 3 show in side elevation portions of my improved pressure mechanism, showing the operation of the pawl-releasing mechanism.

Similar letters of reference show like parts in the several views.

In the drawings, *a a* represent two of the arms of the spider-frame A, which carries the forms and jacks and other working parts of the machine, and B represents a cam supported upon a stationary frame on which the spider A is mounted.

D represents the pressing-form, mounted upon the actuating-lever *d*, and C represents the shoe-supporting jack and the parts of the machine so far described may be and conveniently are similar to corresponding parts of the machine disclosed in the patent and application hereinbefore referred to. The jack C, however, is shown as substantially of the construction disclosed in a later patent issued to me on the 23d day of March, 1897, No. 579,205.

In the machine of the drawings one end of the lever *d* is connected with a spring *d'*, whereby said lever is drawn toward the jack C to seat the form D on the shoe-sole. The lever *d*, adjacent to the point of connection of the spring *d'*, is connected by a link d^2 with the reciprocating pressure-securing rod d^4, the said rod d^4 being guided and held in position by suitable bearings d^5 on the spider-frame A.

The pressure-securing rod d^4 is provided with a series of teeth or notches d^{4*} and is surrounded by a sleeve E, the said rod and sleeve being free to have a sliding movement with relation to each other.

Pivoted in a slot formed in the sleeve E is a pawl F, one arm f of which is provided with teeth or notches e to engage the teeth or notches d^{4*} on the pressure-securing rod d^4, and the other arm f' of the pawl F is provided with a cylindrical portion f^2, which is received in the bearing h^3 of the bearing-block h^2, which is fitted within a recess h, the said block being provided with a pivoted bearing, (not shown,) whereby it is held in the bearing h and free to turn on its fulcrum in said bearing as the lever H is rocked about its fulcrum. The pressure-securing lever H is actuated by the cam B, substantially as shown and described in my said Patent No. 557,744. The pawl F is pivoted at its angle to the sleeve E, preferably by a pin or trunnion supported by the bearings in the ears e', formed on the sleeve E. The spring d' is connected at its lower end to the sleeve E, preferably to the stud e^2, projected therefrom.

As thus described, the machine embodies substantially the construction, organization, and mode of operation of the machine set forth in my patent and pending application referred to, and in the operation of the machine the spring d' acts to depress the lever d and seat the form D on the shoe-sole, and as the spider A is rotated the cam B, acting on the pressure-securing lever H, raises the inner end of said lever and depresses its outer end. Thus by the lever H rocking the pawl F on its fulcrum and throwing the teeth e on the end f of said pawl in engagement with the teeth d^{4*} on the pressure-securing rod d^4, thus exerting a pull on said rod, the form D is forced with considerable pressure against the shoe-sole.

As in the Patent No. 557,744 the lever d when at the point shown in Fig. 1 is raised by a fixed cam (not shown) against the tension of the spring d', thus raising the form D from the shoe-sole, and in order to permit the lever d to be raised the pressure-securing rod d^4 must be released by the pawl F, and in order to insure a positive rocking of the pawl F to remove the teeth e from engagement with the teeth d^{4*} to permit the rod d^4 to slide through the sleeve E, I have in the machine of the drawings provided the following mechanism: To one of the trunions of the pawl F is fixedly secured an arm g. Immediately above said arm on the side of the sleeve E is a bearing g', in which is placed a sliding pin g^2, provided with a head g^3, arranged to engage the arm g, whereby as the spring d' acts to raise the sleeve E as said sleeve approaches the upper bearing d^5, through which the rod d^4 slides, the upper end of the pin g^2 will engage the under surface of such bearing, and as said sleeve E continues to rise the pin g^2, acting on the arm g, will displace said arm, rocking the pawl F on its bearings, thus removing the teeth e from the teeth d^{4*}, freeing the rod d^4, and permitting it to slide upwardly through its bearings as the lever d is raised by the fixed cam hereinbefore referred to.

The machine may be provided with a safety device such as disclosed in the machine of Patent No. 557,744 and which comprises a rod m, which projects below the end of the link d^2 in position to engage the lug m' upon the sleeve E, the function of which is to move said sleeve downwardly along the rod d^4 and prevent the pawl F from gripping the said rod should the machine be put in motion when no shoe is on the jack.

While I have shown the present invention as combined with the machine of the drawings hereinbefore referred to, it is obvious that the form and arrangement of the patented features may be varied without any departure from the present invention, and, further, while I have shown and described a preferred form of the present invention such invention is not limited to the exact details of construction shown, but may be varied in form and arrangement without departing from the principle thereof.

The operation of the machine has been sufficiently described in connection with the foregoing description of its form and arrangement, and further description thereof is deemed unnecessary.

Having described the construction and mode of operation of my invention, I claim as new and desire to secure by Letters Patent of the United States—

In a sole-machine, the combination with a sole-pressing form and a pressure-securing lever to actuate said form, of a rod connected with said form and movably connected with said lever, a locking-pawl arranged to connect said lever and rod while applying pressure, and automatic means to positively actuate said pawl to release the rod when the pressure is released, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

ERASTUS E. WINKLEY.

Witnesses:
T. HART. ANDERSON,
A. E. WHYTE.