

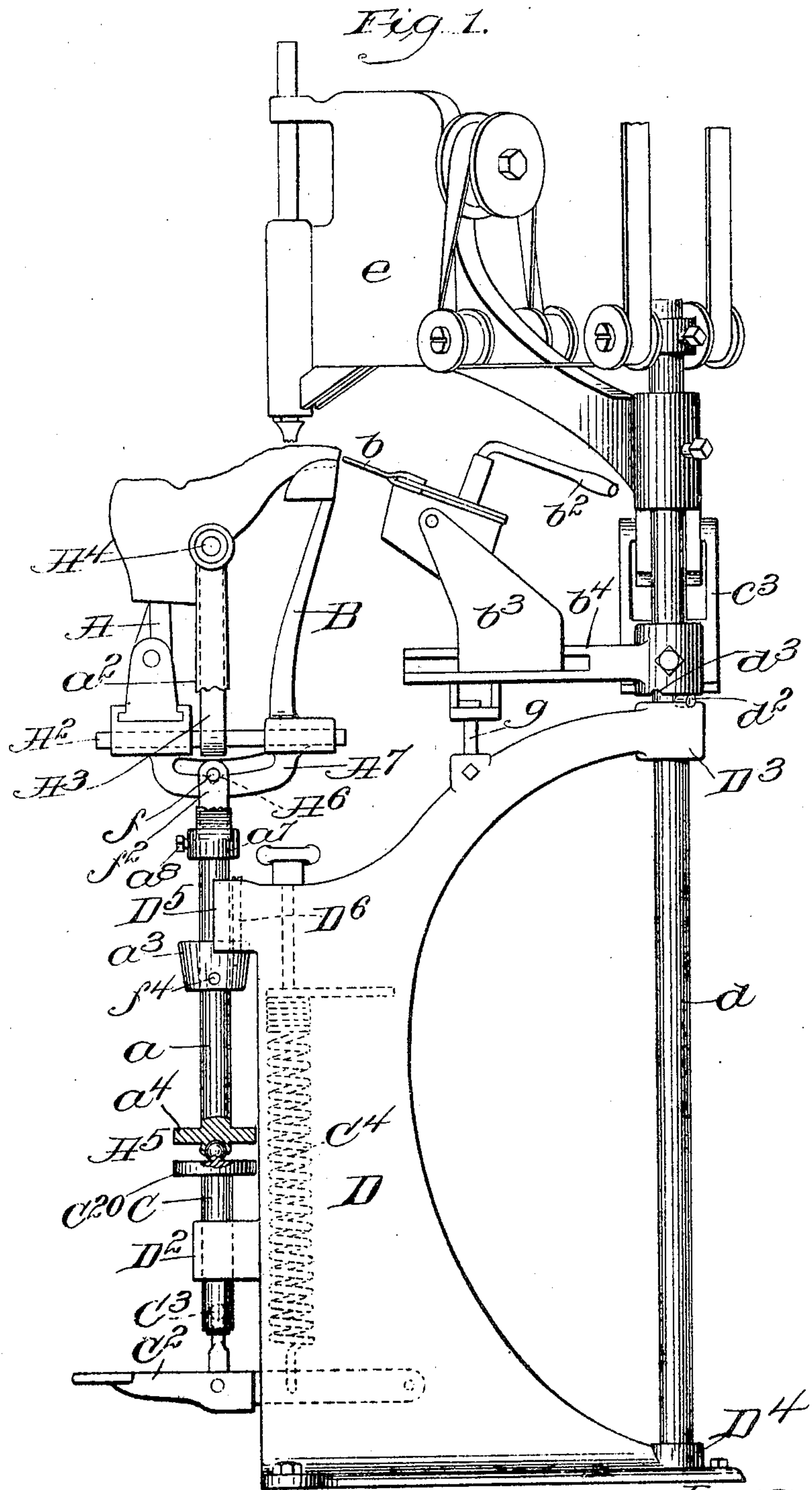
No. 798,343.

PATENTED AUG. 29, 1905.

T. E. P. HODGSON.
LASTING MACHINE.

APPLICATION FILED JULY 23, 1903.

2 SHEETS—SHEET 1.



Witnesses:
Jas. Maloney.
Nancy P. Ford.

Inventor:
Thomas E. P. Hodgson,
by J. Paul & H. J. Lawrence
Attys.

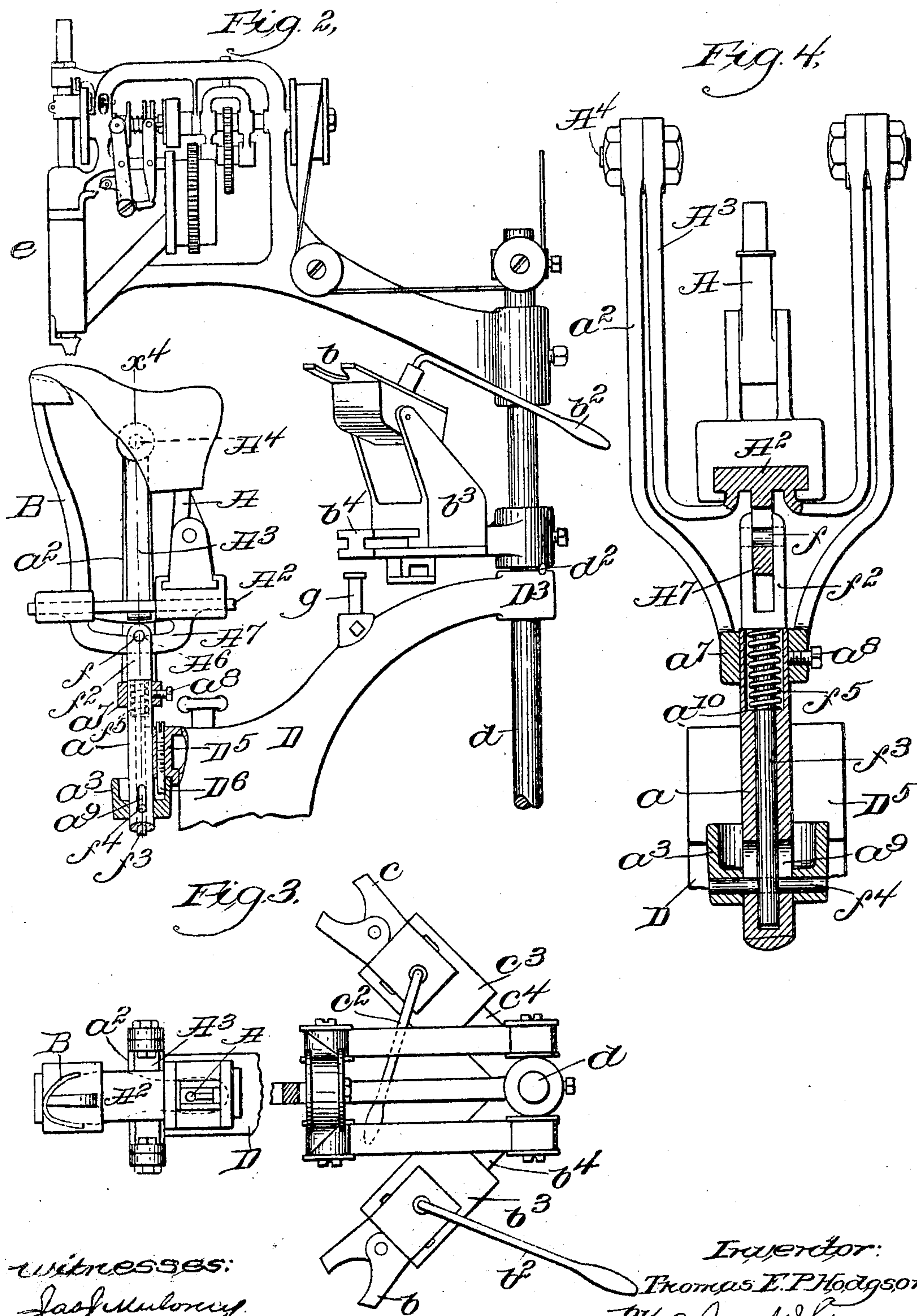
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2 SHEETS—SHEET 2.



witnesses:
Jacob Muloney
Nancy P. Ford

Inventor:
Thomas E. P. Hodgson,
by J. P. and J. S. Siverman,
Attys.

UNITED STATES PATENT OFFICE.

THOMAS E. P. HODGSON, OF KETTERING, ENGLAND, ASSIGNOR TO FRANK
W. HOMAN, OF SWAMPSCOTT, MASSACHUSETTS.

LASTING-MACHINE.

No. 798,343.

Specification of Letters Patent.

Patented Aug. 29, 1905.

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To all whom it may concern:

Be it known that I, THOMAS E. P. HODGSON, of Kettering, England, have invented an Improvement in Lasting-Machines, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

The present invention relates to a lasting-machine and is embodied in a machine in which the edges of the upper are mechanically wiped over into place and subsequently secured to the last by fastening devices, such as tacks, the machine embodying the invention being provided with wipers to coöperate with the edges of the upper in the preliminary operation and an automatic tack-driver for fastening the edges thus turned over to the sole of the last.

The machine embodying the invention is herein shown as provided with heel and toe wipers and a tacking device, which parts are arranged to be consecutively brought to the necessary operative positions, combined with a jack for the last, the jack and the tacker being so arranged that one of the said parts can be moved to any position relative to the other which may be necessary for the proper driving of tacks along the edge of the last, the surface of which is of course not level.

It is immaterial so far as relates to the invention which one of the parts last named is provided with the variable movement; but, as herein shown, the lasting-post is arranged to be moved relatively to the tacker after the said tacker has been brought to a certain predetermined position, so that the last can be moved with relation to the tacker in such a way that any part of the sole can be brought to a position in which the nose of the tacker is substantially perpendicular thereto. It is necessary, however, that the last should be held substantially stationary during the wiping operation, except for such vertical movement as may be needed to bring the surface of the last into the proper position with relation to the wipers. As a practical matter, moreover, different sets of wipers are commonly used for the heel and toe, respectively, and the jack-post may therefore be arranged to be capable of rotary movement, so that it can be turned to bring the heel and toe of the last consecutively into such a position as to be operated upon by the heel and toe wipers,

respectively, which for convenience are arranged to be moved consecutively to a common operating position.

In the embodiment of the invention chosen as an illustration thereof the wipers and the tacker are mounted upon a movable support, preferably a vertical rod capable of being oscillated, the two sets of wipers and the tacker being supported upon extensions projecting radially from said rod, the tacker being preferably interposed between the two sets of wipers, so that after one end of the upper has been operated upon the support may be swung part way to bring the tacker into position, while a further movement in the same direction will bring the other set of wipers into position, after which the support may be swung back part way to again bring the tacker into a position to fasten the edges of the upper. The said support is provided with retaining or locking devices to hold it substantially stationary during the several operations, and it is essential also that the last should be held stationary, except for a slight vertical movement, and, as herein shown, the said last is provided with retaining devices, which thus hold it, the said retaining devices, however, being capable of being disconnected during the tacking operation.

For convenience in construction the supporting-post for the jack is depressible against the stress of a spring, so that it normally stands in a position to coöperate with the wipers without, however, being rigidly so fixed as not to yield vertically, if necessary.

The machine may conveniently be so arranged that the downward movement of the last beyond a certain limit may be utilized in disengaging the jack-post from its retaining devices, so that the said post and the jack and the last supported thereon may be moved to any and all positions necessary to bring the different portions of the surface of the last where tacks are to be driven to such a position that the nose of the tacker will be substantially at a right angle thereto, so that the tacks will be driven in straight. To secure the jack-post to the treadle or other actuating device which may be used to depress the same, a universal joint is utilized, and means are provided for preventing a movement of the jack-post on said joint beyond certain limits, so that the post will not fall over if released by the operator. In addition to said univer-

sal joint the jack may be connected to the said post in such a way as to admit of an oscillating or swinging movement thereof, which is also prevented during the wiping operation by suitable retaining devices, so that the surface of the last can be moved to any position whatever which may be necessary with relation to the tacker.

Figure 1 is a side elevation, partly in section, of a machine embodying the invention, showing the last in position to be operated upon by the toe-wipers. Fig. 2 is a similar side elevation showing the last in a position to be operated upon by the heel-wipers while the tacker has been moved to a position to drive tacks along the edge of the last near the toe portion thereof where the upper has already been wiped in. Fig. 3 is a horizontal section, mainly in plan, showing the parts in the position shown in Fig. 2; and Fig. 4 is an enlarged section taken on line x^4 , Fig. 2, the jack-supporting arms being shown in elevation.

The jack A and the toe-support B, which may be of any suitable or usual construction, are supported by a depressible post or member C, which is shown as having a bearing in a lug D² in the main frame D of the machine and provided with a treadle C², connected with the member C by means of a ball-and-socket joint C³, the said treadle being normally held upward by means of a spring C⁴, which serves to hold the last yieldingly in its normal position. The jack A and toe-rest B are mounted on a support A², which in turn is held by the members A³ of a supporting-yoke, which members are pivotally connected at A⁴ with a corresponding yoke a^2 at the end of the post a , which is connected with the member C by a universal joint A⁵, the parts of which will be hereinafter more specifically described.

The post a in the construction shown is rotatable, as well as depressible, so that the last can be turned from the position shown in Fig. 1 to that shown in Fig. 2, whereby the heel and toe can be alternately presented to the heel and toe wipers, respectively, which wipers may conveniently be mounted at the back of the machine.

As herein shown, Fig. 3, the toe-wipers b and the heel-wipers c , which may be constructed and operated in any suitable or usual way, as by actuating-handles b^2 and c^2 , respectively, are mounted on adjustable slides b^3 and c^3 , which in turn are supported by brackets b^4 and c^4 , which are connected with and project radially from an oscillating post or member d at the back of the machine, the said post being shown as arranged to be turned in bearings D³ and D⁴ in the main frame D, so as to bring either set of wipers into operative position.

Starting the lasting operation—for example, upon the toe portion of the upper, the parts being in the position shown in Fig. 1—

the toe-wipers are manipulated by means of the handle b^2 , thus engaging the edge of the upper at the toe end of the last and folding the same in over the toe portion thereof, the treadle being manipulated if necessary by the operator so as to regulate the position of the last and the pressure of the same against the wipers. At the end of this operation—that is to say, after the upper has been drawn over into place—the post d is turned part way, so as to swing the toe-wipers out of the way and bring the tacker e over the last, as shown in Fig. 2. The post a having been turned half around, the tacker will stand adjacent to the toe of the last, as shown in Fig. 2; but it is obviously necessary that one of the said parts should be moved relatively to the other in order that a line of tacks may be driven along the edge of the last. For this purpose the machine herein shown is provided with means for disengaging the last from the lateral supports therefor which are necessary to keep the last stationary during the wiping operations, and the depression of the post a is utilized for disengaging the retaining devices. As herein shown, the jack-supporting post a is normally guided and supported in a channel formed in a projection D⁵ from the frame D, the said channel, however, extending only part way around the post a and not being depended upon wholly to retain the same in its normal vertical position. The post a , however, is held in said channel by means of a retaining device which is herein shown as a cup-shaped flange a^3 , which is laterally secured to the post a , the said flange fitting a recess in the projection D⁵, against the wall of which it is held by means of a retaining device D⁶, which extends far enough into the interior of the flange to hold the same laterally in place during a considerable depression of the post a . It is obvious, however, that as soon as the edge of the flange passes beyond the end of the retaining device D⁶ there will be nothing to support the post a laterally, so that the said post is free to be tipped in any direction upon the universal joint A⁵. It is not desirable, however, that the said post should be tipped any farther than is necessary to bring all parts of the last under the nose of the tacker, and the said universal joint is therefore shown as provided with flanges a^4 and C²⁰, connected, respectively, with the post a and the member C, the said flange C²⁰ having a ball-shaped projection which fits a socket formed on the flange a^4 , thus constituting a ball-and-socket joint. This construction admits of the movement of the member a in all directions up to a point in which the edges of the flanges come together, thereby preventing any further movement. After the parts have been moved to the position shown in Fig. 2, therefore, if the treadle is depressed far enough to disengage the retaining device a^3 , above described, it will be

seen that the last can be moved by the operator to such positions consecutively as may be required to bring successive portions of the sole of the last under the nose of the tacker, and the tacks may be driven (if the tacker is operated by forcing the nose inward) simply by releasing the treadle. By pushing the treadle farther down after the tacking is completed and forcing the post a back into its retaining-channel it will again be locked upon releasing the treadle. It is desirable, however, in addition to the movement of the last, which is obtained by the use of the universal joint, to obtain an additional movement on account of the longitudinal curvature of the surface of the last, which renders it desirable to swing said last upon a horizontal axis. As herein shown, this is accomplished by mounting the supporting member A^2 for the jack A upon the yoke A^3 , as previously described, the said supporting member A^2 , however, being normally held stationary by a secondary retaining device, which is also arranged to be disengaged by the depression of the treadle.

In the construction herein shown the yoke A^3 is held stationary by means of a pin or transverse member f , which extends across a yoke f^2 , formed at the top of a rod f^3 , and lies in a groove A^6 , formed in the upper surface of a member A^7 , which is connected with and projects below the support A^2 . The yoke a^2 is connected with the post a , as by a collar a^7 and set-screw a^8 , while the transverse pin f is connected with the rod f^3 , which in turn is secured to the cup-shaped flange a^3 , as by means of a transverse pin f^4 , which passes through an elongated slot a^9 in the member a , Figs. 2 and 4. Between the upper portion of the rod f^3 and an annular shoulder a^{10} , formed in the interior of the member a , is introduced a spring f^5 , tending to separate said members, the said spring being held under compression and the pin f held in the slot A^6 by the engagement of the flange a^3 with the upper surface of the recess in the projection D^5 of the frame, so that so long as the said flange is in position the pin f will rest in the slot and prevent the swinging movement of the last. Upon depressing the post a , however, the yoke a^2 and the last-supporting yoke A^3 will be carried downward, while the spring f^5 prevents a corresponding downward movement of the retaining device, so that the member A^7 will pass out of engagement with the pin f as soon as the same is lowered sufficiently.

The slot A^6 is deep enough to retain the pin f during such slight depression of the jack as may be necessary in the wiping operation, while the slot a^9 is sufficiently long to admit of the disengagement of the slot A^6 from the pin f when the treadle is depressed. The downward movement of the yoke is then transmitted through the pin f to the flange a^3 , so that said flange can be disengaged from

the retaining portion D^5 D^6 to free the last-supporting post, and the spring f^5 will then keep the pin f out of engagement with the slot A^6 , so that the yoke may be swung freely.

In order to retain the tacker in the proper position, the oscillating post d is provided with a retaining-roll d^2 , which rests in a channel formed in the upper surface of the bearing-lug D^3 , the said roll being arranged to enter a channel d^3 in a part which is connected with the post when the tacker is in position. This holds the tacker substantially stationary, but does not prevent a movement thereof by the operator, since the part connected with the post d will rise over the roll d^2 , lifting the post when the post is swung. The weight of the post and of the parts carried thereby afford considerable resistance to the turning movement, so that during the lasting and the tacking operations the wipers and the tackers will stay steady. After the tacking operation on the toe the post d is turned farther to bring the heel-wipers in position, said heel-wipers then being operated as the toe-wipers were previously operated, and the post is then turned back half-way to bring the tacker again into operative position in order to tack the leather along the edge of the heel.

When the toe-wipers b are being operated, the post d is held stationary by means of a stop g , since the pull on the handle b^2 tends to swing the support toward the stop. To hold the support when the heel-wipers c are in use, a locking device of any suitable or usual construction may be employed, coöperating with the stop g , said device not being herein shown, since it forms no part of the present invention.

It is not intended to limit the invention to the specific construction and arrangement herein shown and described, since modifications may be made without departing from the invention, and it is to be understood that the particular type of wiper mechanism and tacker chosen for purposes of illustration are immaterial to and do not enter into the invention.

I claim—

1. In a lasting-machine the combination with wipers; of a tacker; means whereby said wipers and said tacker may be brought consecutively into operative position; a jack for the last; and means whereby the surface of the last and the nose of the tacker can be brought to the necessary consecutive positions to drive a line of tacks along the edge of the last.

2. In a lasting-machine, the combination with the jack and toe-support for the last; of a supporting-post for said jack and toe-support; a treadle to depress said post, a universal joint to connect said treadle and said post; a retaining device for said post constructed to be disconnected therefrom when said post is depressed, whereby said post may be moved in any lateral direction with relation to the treadle; heel and toe wipers; an oscillating

support for said wipers whereby they can be successively brought into position to operate upon the last; and an automatic tacker also mounted on said oscillating support, substantially as described.

3. In a lasting-machine the combination with wipers; of a jack and supporting-post therefor; an automatic tacker movable to a position over the said supporting-post; a retaining device for said supporting-post to hold the same laterally stationary during the wiping operation; means whereby the said supporting-post may be disengaged from the said retaining device; and means whereby said supporting-post is capable of lateral movement in all directions when disengaged, as set forth.

4. In a lasting-machine, the combination with a tacker having a movable support whereby it can be brought into position over the last; of a last-supporting post provided with a cup-shaped flange; a fixed supporting-surface conforming to the outer surface of said flange; and a retaining member to engage the inner surface of said flange, said post being depressible to release said cup-shaped flange from said fixed supporting-surface and said retaining member, substantially as described.

5. In a lasting-machine, the combination with a tacker; of a depressible jack-post provided with a universal joint and a cup-shaped flange; stationary engaging members to cooperate with said flange; and means for limiting the lateral movement of said post when

said cup-shaped flange is disengaged, as set forth.

6. In a lasting-machine, the combination with a swinging support for the last; of a depressible member to which said swinging support is connected; a retaining device for said swinging support; a stationary stop or shoulder for said retaining device; and a spring interposed between said retaining device and said depressible member, whereby said retaining device is maintained in contact with said stop during the downward movement of said depressible member.

7. In a lasting-machine, the combination with the jack; of a swinging support therefor; a depressible member to which said swinging support is connected; a longitudinal slot in said depressible member; a flange-shaped retaining device surrounding said depressible member and provided with a pin extending through said slot; a rod connected with said pin and having a transverse member arranged to detachably engage with the jack member; a spring interposed between said rod and said depressible member; and a portion of the frame of the machine to engage said flange, substantially as and for the purpose described.

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

THOMAS E. P. HODGSON.

Witnesses:

HENRY J. LIVERMORE,
NANCY P. FORD.