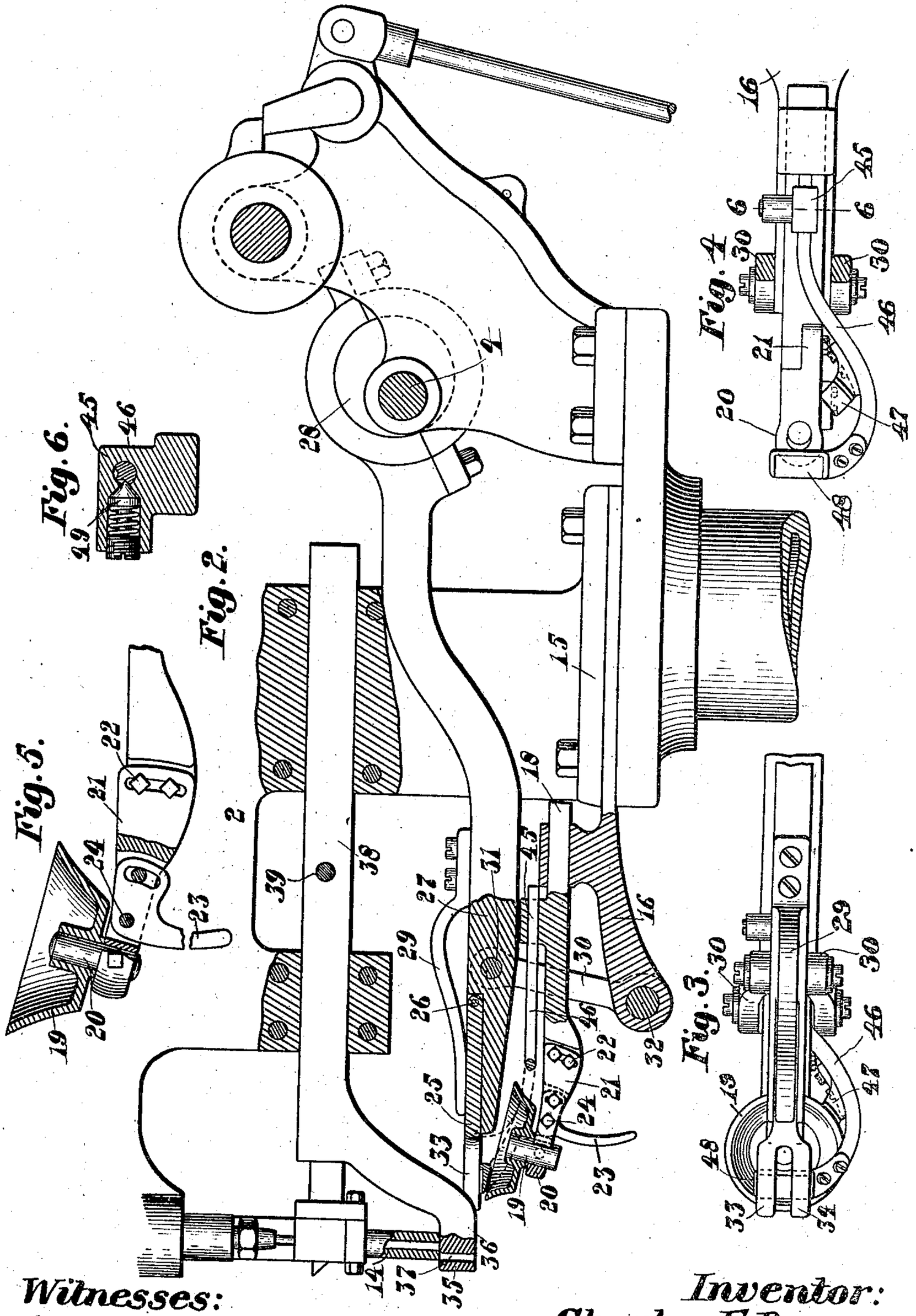
No. 881,441. PATENTED MAR. 10, 1908.

C. F. PYM.

HEEL SEAT LASTER.

APPLICATION FILED AUG. 1, 1906.

2 SHEETS—SHEET 2.



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2 SH

Fig. 1.

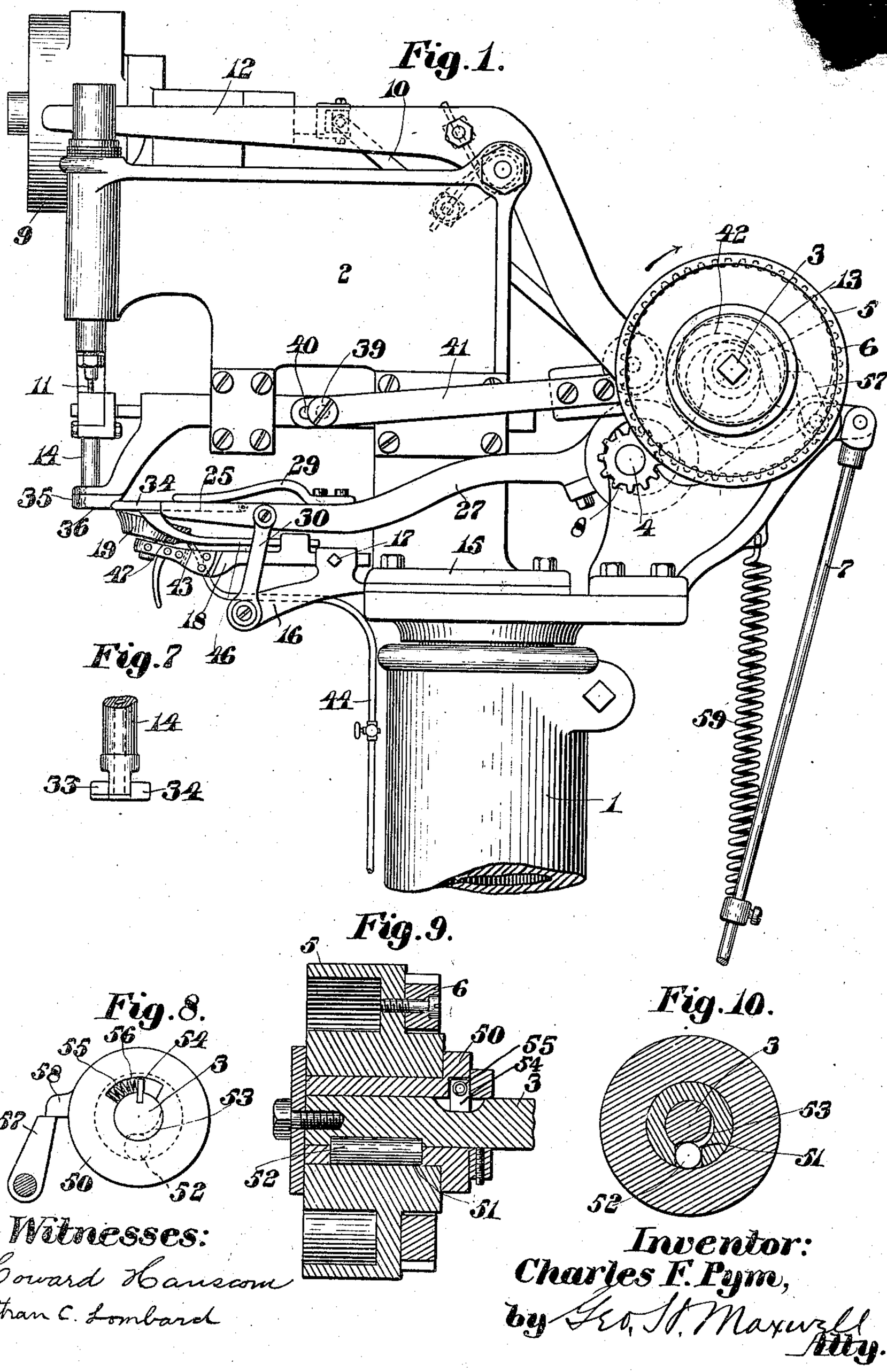

Fig. 7

Fig. 9.

Fig. 8.

Fig. 10.

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UNITED STATES PATENT OFFICE.

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HEEL-SEAT LASTER.

No. 881,441. Specification of Letters Patent. Patented March 10, 1908.

Application filed August 1, 1906. Serial No. 328,689.

To all whom it may concern:

Be it known that I, CHARLES F. PYM, a citizen of Canada, residing at Essex, in the Province of Ontario, Canada, have invented an Improvement in Heel-Seat Lasters, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

My invention is a lasting machine, which, although capable of general use, is particularly intended for lasting heel seats.

The ordinary lasting machine operates upon the principle of a straight thrust of the wiper and depends upon the operator's holding the shoe strongly against the wiper to last the heel seat, the wiper having one wipe to each tack, the latter being driven at the forward end of the wiper when the wiper is at the forward end of its stroke. It frequently happens, in using said mechanism, that the nozzle catches the leather or is pinched by the leather forced forward by the crimper mechanism, thereby damaging the leather and in some instances breaking or injuring the nozzle. Accordingly I have provided mechanism which prevents the above results and also prevents the crowding and wrinkling of the leather about the counter which often happens, especially when the shoes are sent to the seat making machine very loose. My invention also provides a yielding rest for the purpose of ironing out the small wrinkles, especially in patent leather, which at present is accomplished by hand after the heel seat is lasted.

I provide a supplemental wiper, which assists the operator in procuring a firmer and tighter seat than can be made with a single wiper, and also prevents injury to the nozzle, etc., as above explained.

Further advantages and constructional details of my invention will be pointed out in the course of the following description, reference being had to the accompanying drawings, in which I have shown a preferred embodiment of the invention.

In the drawings, Figure 1 is a view in side elevation of the essential features of my machine; Fig. 2 is an enlarged detail thereof, parts being shown in section for clearness of illustration; Fig. 3 is a top plan view of the main crimper or wiper and workrest; Fig. 4 is a similar view with the crimper omitted; Figs. 5 and 6 are details to be referred to; Fig. 7 is a detail in front elevation of the nozzle and nozzle protector or supplemental wiper; and Figs. 8, 9 and 10 are details in end elevation, longitudinal section and transverse section of one form of clutch which may be used in my machine.

On a suitable pedestal 1 I mount a casting or head 2 which carries a drive shaft 3 and counter shaft 4, the former provided with a drive pulley 5 and a gear 6 fast together on the shaft 3, see Fig. 9, adapted to be connected to the main shaft by any clutching mechanism operated by a lever 7 and foot treadle not shown, and the counter shaft being provided with a pinion 8 in mesh with said gear 6. The upper part of the machine carries a tacking mechanism of any desired kind, a magazine 9 operated by a usual rotary stirrer rod 10 being shown and the tacks being driven by a hammer rod 11 operated by a lever 12 actuated by a cam 13 fast on the drive shaft 3, said hammer-head operating in a nozzle 14 in the usual manner. It will be understood that I have herein merely enumerated and shown enough of the parts of a tack driver to enable my invention to be understood, the constructional details thereof of not forming a part of my invention.

Secured at 15 to the head of the machine is a bracket 16 in which is adjustably secured at 17 the stem 18 of a workrest 19, herein shown, see Fig. 2, as a hollow rotary support or roller workrest pivoted on a stud 20 in an extension piece 21 adjustably secured to the stem 18 at 22 by bolts and slots so that the angle of the rotary rest may be changed to suit different contours of heels or counters. Secured to the part 21 is a handle or grip 23, which may be adjusted by bolts and slots 24 to suit the convenience of the workman. The purpose of this grip is to enable the operator to grasp the same with the fingers of the hand which he is using to manipulate the shoe, so as to enable him to get a strong leverage or purchase for pulling the shoe tight up against the rest 19. This enables the workman to hold the shoe firmly beneath the wiper so as to get a firm, tight seat.

The wiper consists of a wiping portion 25 pivoted at 26 to a reciprocating arm 27 operated by an eccentric 28 on the counter shaft 4, the wiping portion 25 being held down yieldingly by a strong spring 29 and the movements of the arm 27 being controlled

by links 30 pivoted at 31 to the wiper arm and at 32 to the bracket 16. The result of this arrangement is that the wiping end of the wiper has an orbital movement, moving forward in a lower plane and returning in an upper plane, so that the wiper engages the leather and crushes it down and crimps it smoothly with a powerful downward and forward pressure, yielding upwardly according to the requirements of the fold being made and the character of the leather. The crimping member 25 has two parts 33, 34, separated by a slot, see Figs. 3 and 7, for straddling the supplemental crimper and nozzle protector 35 so that the part 35 and the principal wiper can both operate upon the leather in the same plane. The part 25, however, is relied upon for pushing forward and laying over the leather, especially in the first place, and the part 35 supplements the same with an unyielding heavy pressure, which aids the main wiper in procuring a firmer and tighter heel seat than can be made with a single wiper.

The supplemental wiper has a bottom wiping surface 36 and a tack channel or guideway 37 and constitutes also an auxiliary nozzle, normally out of line however with the race-way of the main nozzle 14, as clearly shown in Figs. 1 and 2. It extends in the main casting or head of the machine as clearly shown in Figs. 1 and 2, and is provided with a pin 39 engaged by the slotted end 40 of a link 41 operated by an eccentric 42 on the main shaft 3. The slot 40 permits the supplemental wiper or auxiliary nozzle 35 to have a dwell or period of rest while the tack is being driven. As will be observed, the relative sizes of the gears 6, 8 cause the main wiper to reciprocate rapidly, and I prefer that this movement should be continuous, whereas the movement of the main shaft is intermittent and subject to the control of the operator through the clutch mechanism shown in Figs. 8–10, and which I will presently describe. Before doing so I will refer further to the workrest. In seat making it is essential that great pressure shall be applied because of the heavy counter which has to be broken over and crimped and because of the fact that there are several thicknesses of leather and also because of the rapid curve and shape of the heel, so that, in fact, it has not heretofore been considered practicable to make a nailed heel seat by a machine. Because of this heavy pressure and also as many shoes go to a seat making machine very loose, it results that the leather at the counter is frequently crowded forward and wrinkled and injured by the pressure brought to bear upon the same against the common straight or fixed rest, so that it has been difficult to make a satisfactory seat in this respect. Accordingly to remedy this feature I have provided the rotary rest and for the further purpose of facilitating the work I have provided in the machine itself means for automatically ironing out such small wrinkles as may be present or may be formed, especially in patent leather, and for this purpose I take advantage of the yielding movement of the roller workrest by preferably applying a heating flame from a gas tip 43 at the end of a gas pipe 44, which maintains the rest suitably heated for automatically ironing out all small wrinkles and maintaining the patent leather in the very best condition for easy manipulation and convenient crimping. The heated condition of the workrest not only accomplishes automatically the ironing work, which has hitherto been done by hand after the seat has been lasted, but it renders the patent leather pliable and facilitates the crimping and seat making process.

Patent leather is exceedingly difficult to work without injury as the enamel is frail and the leather backing liable to be tender or brittle, harsh or intractable, and besides, the difficulty of working it is increased by the rapid crimping movement at the heel where so much pressure and manipulation are required as explained above. Accordingly I soften and render pliable the leather at the point being crimped, and the ironing workrest 19 is so shaped that it fits flat against the counter portion of the shoe down along the side and up at the edge next the heel where the rand crease comes and where the crimping and crushing effects of the wipers begin, the top edge of the side ironer or rest 19 holding the leather smooth and preventing wrinkling at the bend of the leather over the heel edge of the last as the crimping and crushing of the counter and upper take place under the rapid movements of the crimping mechanism, and the ironing movement of the heated rest 19 at the same time not only maintaining the leather pliable, but, in cooperation with the simultaneous pushing and rubbing and stretching action of the wiper 25, serving to iron the leather down flat and perfectly smooth over the side and edge as explained.

To facilitate the work, especially in connection with patent and enamel leather, I maintain the leather-contacting parts, *i. e.*, the rotary workrest and the wiper, automatically oiled, and for this purpose I mount at 45 the stem 46 of an oiling device which consists simply of a bent rod to which is secured at 47 and 48 pieces of felt saturated in oil, said pieces being shown in Figs. 3 and 4 as clamped in place by small metal plates. These pieces of oil-soaked felt are in position to rub constantly against the outer surface of the rotary rest 19 and the end surface of the wiper 25. As the oiling is not desirable for some kinds of leather, I have provided means for readily shifting it out of position,

consisting of a spring-impelled plunger or hold 49, see Fig. 6, which bears against notches or dwells formed in the stem 46, as clearly shown in said Fig. 6. If the operator does not need the oiling device he simply lowers the oiling device temporarily out of the way.

As already stated, the clutch mechanism forms no part of my present invention, as any clutch may be used. The clutch shown in detail in Figs. 8, 9 and 10 consists of a flanged sleeve 50 having a recess 51 carrying a roll 52 partly occupying a wedge-shaped recess 53 in the shaft 3, the latter also having a finger 54 engaged by a spring 55 in a recess 56 of said sleeve. Said spring 55 is normally compressed, so that when a dog 57 operated by the rod 7, is suddenly released from engagement with an ear 58 projecting from a flange of said sleeve 50, said spring gives a slight rotary movement to said sleeve, sufficient to carry the roll 52 into wedging engagement between the shallow portion of the shaft recess 53 and the inner surface of the driving pulley 5, thereby causing said pulley to impart to the shaft 2 instant rotary movement. The dog 57 is normally maintained in engagement with the ear 58 so as to keep the main shaft locked against rotation by a spring 59 secured to the rod 7 at one end and to the head of the machine at the other end.

In use, the operator grasps the handle or grip 23 and is thereby aided in holding the counter portion of the shoe hard against the rotary workrest, which is maintained properly heated by the gas flame, and properly oiled by the automatic oilers, and as he turns the shoe slowly around against the rotary workrest, the crimper 25 rapidly and forcibly breaks and crowds over the comparatively stiff projecting edge of the counter and upper, laying and crimping the same firmly, said crimps being further ironed down and held in place by the auxiliary crimper and nozzle 35 as the latter is reciprocated each time the operator desires to have a tack driven. Inasmuch as the auxiliary crimper and nozzle 35 bears directly on the leather with a smooth flat surface in line with the main crimper 25 and also inasmuch as said auxiliary crimper slides back and forth on the leather at proper intervals, it is impossible that the leather should become pinched or that the nozzle should become caught or wedged in any way. There is no projecting point, as with the usual nozzles, to catch, the point of the nozzle being omitted and replaced with the movable auxiliary wiper 35. Also there is no possibility of a tack being dropped improperly, inasmuch as the delivery end 37 of the race-way is shifted out of alinement with the rest of the race-way excepting at those times when a tack is actually being driven. At such times the operator depresses the foot treadle and through the rod 7 and clutch mechanism the supplemental wiper and auxiliary nozzle 35 is reciprocated backward into alinement with the main nozzle 14 and thereupon the tack delivering mechanism and driving mechanism deliver and drive a tack instantly in place while the auxiliary wiper 35 is holding the crimps down flat. The main wiper 25 meanwhile continues rapidly laying and crimping and smoothing the leather so that a perfectly hard flat heel seat results.

It will be understood that I have herein shown the preferred embodiment of my invention, and that many changes in arrangement, location and combination of parts may be resorted to without departing from the spirit and scope of my invention.

The wiper 35 constitutes a wiper-rest or a seat-flattener, especially when used with a feeding jack, such for instance as shown in my Patent No. 755,544, this wiper-rest flattening and spreading the crimps and wrinkles under the force of the jack (or the pressure exerted by the workman, if no jack is used) and thereby makes the work much more even. It also helps the main wiper in its work, as it aids in pushing and pulling the leather over tightly by its forward travel. This makes the machine easier to run. Also it enables the operator to see his work at all times when not driving tacks. Ordinarily I use a usual down-hold in connection with the mechanism shown, but, for the sake of clearness, have omitted showing the same herein. The position of final stopping of the tack channel 37 depends upon the angle of the stop 58 of the clutch with relation to the eccentric 42, so that I can thereby adjust this feature in any way desired.

Having described my invention, what I claim as new and desire to secure by Letters Patent, is,

1. A machine of the kind described, comprising a tack driver and leather crimping and wiping mechanism and operating mechanisms constructed and arranged to rapidly reciprocate the crimping and wiping mechanism a plurality of times to one tack driving movement, combined with means located at the lower end of the tack driver adjacent said crimping mechanism for spanning the gap between the two and preventing the leather from being pinched against the tack driver and for facilitating the smooth movement of the work.

2. A machine of the kind described, comprising tack-driving mechanism including a nozzle, a work rest to engage the vertical side of the shoe and limit the inward movement of the shoe toward the machine, a vertically unyielding wiper immediately and always beneath said nozzle and in position to engage the bottom of the shoe continuously as long as the shoe is in operative position against said work rest, and means to move

said wiper in sliding wiping engagement over the surface of the shoe-upper when so held, said wiper having a race-way arranged to aline with the race-way of the nozzle when moved into tack-driving position, and being movable out of alinement with said race-way at other times.

3. A machine of the kind described, comprising tack driving mechanism including a nozzle, a workrest to position the shoe, a wiper immediately beneath said nozzle and means to move said wiper in sliding engagement with the shoe-upper when the latter is held against said work-rest, said wiper having a race-way arranged to aline with the race-way of the nozzle when moved into tack driving position, and being movable out of alinement with said race-way at other times, and means operating on the leather separately from said wiper a plurality of times to one movement of the wiper to position the leather for being tacked.

4. A machine of the kind described, comprising a main wiper, means for rapidly reciprocating the same, a tack driver, means for intermittingly operating said tack driver, a combined auxiliary nozzle and supplemental wiper, and means for intermittingly operating the latter in unison with said tack driver.

5. A machine of the kind described, comprising an intermittingly operated tack driver containing a nozzle, a horizontally extending, movable supporting member beneath the lower end of the nozzle of said tack driver for holding the crimped leather in position for tacking, and a rapidly moving wiper operating substantially in the same plane as said supporting member for rapidly pushing forward and crimping the leather to be held by said supporting member.

6. A machine of the kind described, comprising an intermittingly operated tack driver, containing a nozzle, a horizontally extending movable supporting member beneath the lower end of the nozzle of said tack driver for holding the crimped leather in position for tacking, and a rapidly moving wiper having a bifurcated forward end for operating at the opposite sides respectively of said supporting member for crimping and laying the leather to be engaged by the latter.

7. In a machine of the kind described, tack-driving mechanism, a wiper for laying over and crimping the projecting leather of the shoe at the bottom of the last to receive a tack, and means for rapidly reciprocating the wiper a plurality of times for a single tack-driving movement, said wiper comprising a reciprocating arm having on its upper side a pivoted wiping member projecting beyond the end of said arm, and provided with a heavy spring normally maintaining said wiping member under heavy downward pressure, and means for guiding the movements of said arm.

8. In a machine of the kind described, means constructed and operating to stretch the upper leather over the edge of a last, ironing means constructed and arranged to iron out the leather at the side of the last transversely to the stretching movement simultaneously with and during the said stretching of the upper leather, and tack driving mechanism arranged to drive tacks in the leather while being held taut.

9. In a machine of the kind described, means constructed and operating to stretch the upper leather over the edge of a last, ironing means constructed and arranged to support the work and to iron out the leather at the side of the last simultaneously as it is being stretched, said ironing movement taking place in a direction transverse to the stretching movement, and tack driving mechanism arranged to drive tacks in the leather while the latter is being held taut.

10. A machine of the kind described, comprising crimping mechanism, a rotary workrest constructed and arranged to support and iron the counter portion of a shoe and shaped to fit down along the side and up at the crimped edge next to the heel, means for reciprocating said crimping mechanism close to said rotary workrest a plurality of times to each tack driving movement, the top edge of the latter holding the leather smooth at the bend over the edge of the last as the crimping and crushing of the counter and upper take place under the rapid movement of the crimping mechanism, and the said shaped rest ironing out said side and edge of the said counter portion of the shoe, and means for intermittingly driving a tack into the work while held against said rest.

11. A machine of the kind described, comprising a tack driver, a rapidly moving wiper constructed and arranged to reciprocate a plurality of times to one tack-driving movement, a shaped rotary workrest close to the path of said wiper, the top edge of the workrest being constructed to hold the leather smooth at the bend over the edge of the last as the crimping and crushing of the counter and upper take place under the rapid movement of the crimping mechanism, and the said shaped rest ironing out said side and edge of the said counter portion of the shoe, and a hand grip immediately adjacent said rest in position to enable the operator to grasp together the work and grip with the same hand for pulling the work hard against the rest and wiping mechanism.

12. A machine of the kind described, comprising tack driving mechanism, crimping mechanism, a rotary workrest immediately adjacent the path of crimping movement of said crimping mechanism having an engaging contour shaped to fit against the edge of the last and thence downwardly flat against the side and constructed and arranged to support

and iron out the counter portion of the shoe as the leather is moved taut by the crimping mechanism, and provision for angularly adjusting said rotary workrest to suit different shapes of counters.

13. A machine of the kind described, comprising tack driving mechanism, crimping mechanism, a rotary workrest immediately adjacent the path of crimping movement of said crimping mechanism, and a hand grip adjacent said rotary workrest in position to enable the operator to grasp the same and also the work with the same hand for pulling the leather hard against the workrest and crimping mechanism, said hand grip containing provision for angularly adjusting it with relation to the workrest.

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

CHARLES F. PYM.

Witnesses:

STELLA KARRER,

AGNES M. KARRER.