(No Model.)

D. WHITLOCK.

HEEL PRESSING MACHINE.

No. 265,725. Patented Oct. 10, 1882.

Fig. 1.

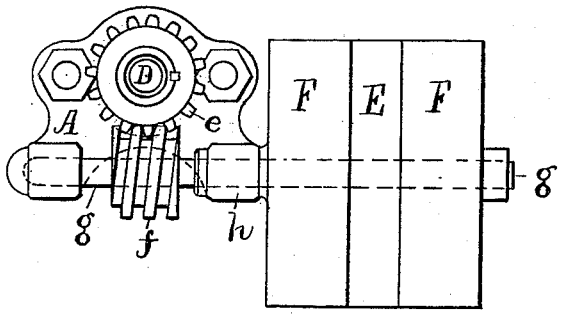


Fig. 2.

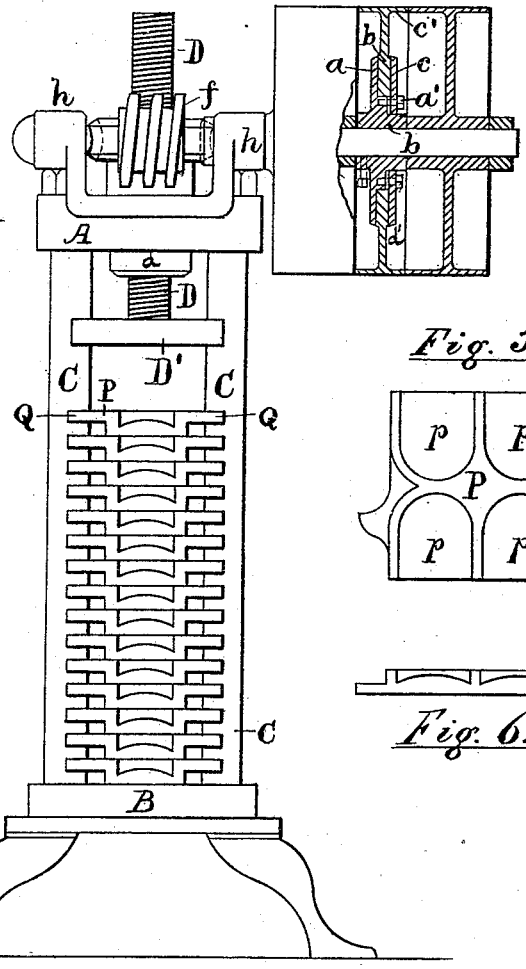


Fig. 3.

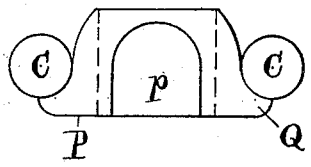


Fig. 4.

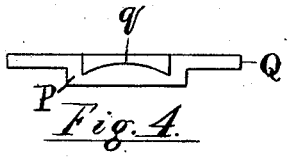


Fig. 5.

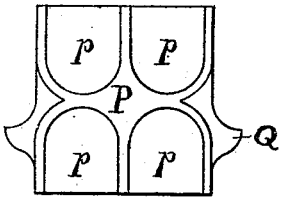
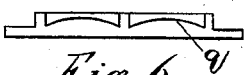


Fig. 6.



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UNITED STATES PATENT OFFICE.

DANIEL WHITLOCK, OF NEWARK, NEW JERSEY.

HEEL-PRESSING MACHINE.

SPECIFICATION forming part of Letters Patent No. 265,725, dated October 10, 1882.

Application filed February 20, 1882. (No model.)

To all whom it may concern:

Be it known that I, D. WHITLOCK, a citizen of the United States, residing in the city of Newark, county of Essex, and State of New Jersey, have invented certain new and useful Improvements in Heel-Pressing Machines, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

This invention consists, first, in means for pressing a large number of boot and shoe heels simultaneously; and it consists in the combination, with a suitable press, of the series of dies, flat upon one side and convex upon the other, piled in the press alternately with single heels.

It also consists in the combination, with a press containing a screw for producing the desired pressure, of a nut secured in a worm-wheel, a worm and shaft for turning the wheel, and a friction pulley or clutch applied to the shaft, for the purpose described above.

In the mechanism heretofore used for such purpose, as in Patent No. 14,432, heels of uniform thickness all over have been placed in contact together between dies formed as counterparts of one another; but such means cannot be used for pressing heels to the shape shown herein, and I have therefore devised the apparatus herein described, with which each heel receives the pressure of a separate die upon its opposite faces.

In the drawings, Figure 1 is a plan of a screw-press constructed with a worm-wheel, a worm, and a worm-shaft carrying a friction-pulley and two loose pulleys adapted to receive two belts running in opposite directions. Fig. 2 is a front elevation of the same; Fig. 3, a plan, and Fig. 4 an edge view, of one of the dies used in the press and adapted to receive one heel; and Figs. 5 and 6 are similar views of a die adapted to receive and press four heels at once.

A B are the top and bottom cross-heads of the press. C C are the tie-rods; D, the screw; *d*, the nut; *e*, the worm-wheel; *f*, the worm, and *g* the worm-shaft.

h h are the bearings for the shaft, formed upon the head A, and E is the friction-pulley, adapted to turn the worm and nut in either direction in which it may be driven.

F F are loose pulleys, arranged to carry belts running in opposite directions, either of which may be shifted at pleasure upon the pulley by the usual means.

The friction-pulley rim is formed with a friction-disk, *d'*, bored at its center to fit a hub, *b*, which is secured to the shaft *g*, and carries with it a friction driving-plate, *a*. The disk *d'* is clamped against the plate *a* by means of a ring, *c*, and bolts *a'*, the tightness of the bolts determining the friction between the clamped surfaces, which may be covered with leather, if desired, to increase the adhesion of the driving-plate.

The die shown in Figs. 2 and 3 is a plate made flat upon one side, and with a depression adapted to receive and shape the surface of the heel upon the other side. P is the plate. *p* is the recess, formed with a convex bottom, *q*, to dish out the heel where it fits against the sole of the boot; and Q are ears upon the plate, fitted to the tie-rods C to keep the pile of dies in position. In Fig. 5 four of the recesses are shown formed in one side of the plate and in like manner dies may be used with two, three, or more recesses *p*, as desired.

The apparatus is used as follows: The heels are laid in the recesses *p* and the dies are placed in the press upon one another, as shown in Fig. 2. The belt is then applied to the friction-pulley, and the screw, carrying upon its lower end the platen D', is forced downward until the resistance of the pile causes the pulley E to turn without moving the shaft *g*. The belt is then removed from the pulley and the press allowed to stand until the heels have yielded to the pressure exerted. When this has occurred the screw may be forced down farther by the same pressure, which can never be exceeded, while the bolts *a'* remain set in the same position. When sufficiently pressed the friction-pulley is reversed by the other driving-belt and the dies removed from the press, when the screw is pulled up.

The mechanism above described represents one mode of constructing my improvement; but it is obvious that toothed gearing may be substituted for the pulleys F F and a friction-clutch employed to drive the shaft *g*.

It is also obvious that lever or hydraulic pressure may be employed to press the heels between dies shaped as herein described.

It will be seen from the above that I form heels not having the same thickness all over

by the use of dies which are not counterparts on their adjacent faces, and that I perform the operation upon a number of heels at once by piling them alternately with the dies and subjecting them to suitable pressure, and that I avoid injurious pressure upon the leather by the use of the friction-driver, as herein described. It is also obvious that heels of such section could not be pressed in nests, as described in Patent No. 14,432, above mentioned.

I therefore claim my invention as follows:

1. In a machine for forming boot and shoe heels, the combination, with pressing mechanism, substantially as described, of dies having a flat surface upon one side and a recess with a convex bottom, *q*, upon the opposite side, all arranged and adapted to operate in forming a series of heels at one operation.

2. The combination, in a screw-press, of a screw, a nut, a worm-wheel to rotate the screw or nut, a worm and shaft arranged to drive the worm-wheel, and a friction-pulley, substantially as described, applied to the shaft to transmit a restricted degree of force, substantially as and for the purpose described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

DANIEL WHITLOCK.

Witnesses:

THOS. S. CRANE,

CHAS. C. HERRICK.