June 13, 1933. W. ORNSTEEN 1,913,611

HEEL HOLDER

Filed April 15, 1931

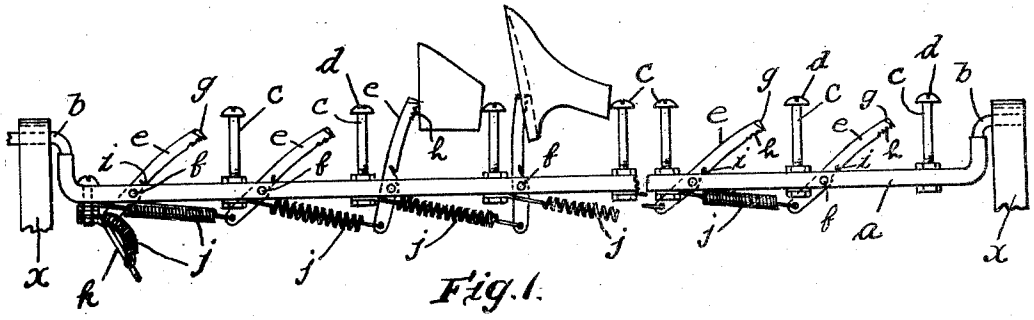


Fig. 1.

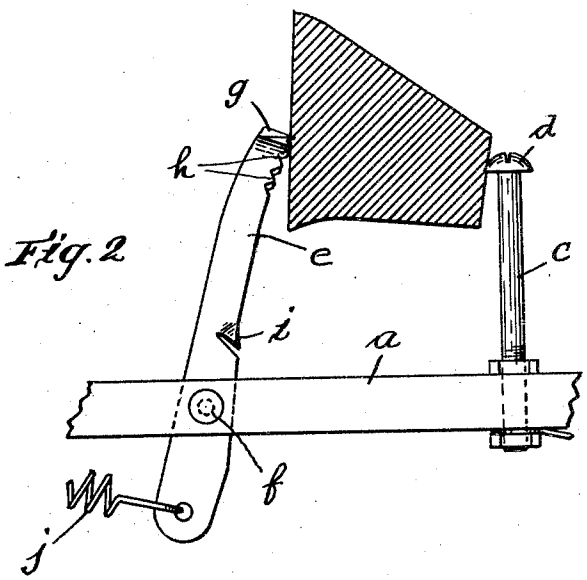


Fig. 2

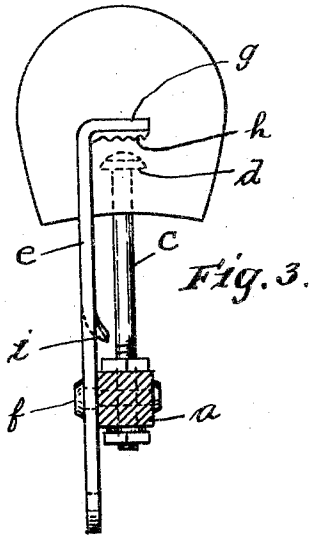


Fig. 3.

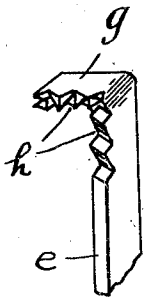


Fig. 4.

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UNITED STATES PATENT OFFICE

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HEEL HOLDER

Application filed April 15, 1931. Serial No. 530,176.

This invention relates to devices for holding the heels of shoes while being coated with lacquer by a spraying operation in the apparatus disclosed in my pending application filed February 10, 1931. Serial No. 514,777.

In the apparatus of said application a series of heel holding rods are rotatably mounted in a rotatably movable holder and are carried successively into a position to be operated on, said rods being provided with means whereby heels of various heights and shapes may be quickly placed in position on each rod and held in a row, so that they may be successively operated upon and may then be removed with equal facility.

While the particular heel-holding means disclosed in said application is effective, it has been found to lack durability, particularly in that the flat heel-engaging spring arms employed were likely to become weakened, or broken after a comparatively short period of use.

The objects of the present invention are to provide a form of heel-holding means which is particularly adapted for use in the connection above referred to, in that it is adapted to hold heels of widely varying heights and shapes in position to be operated on while held in said apparatus, and will enable the heels to be quickly placed in position to be operated on and removed, and which is of simple construction, so that holding devices for a large number of heels may be produced at relatively small expense, and is sufficiently durable to enable them to be used for long periods without repair.

I accomplish these objects by means of the construction hereinafter described and illustrated in the accompanying drawing, in which:—

Fig. 1 is a side elevation of a heel holder embodying the invention.

Fig. 2 is a similar view of single holder unit on an enlarged scale.

Fig. 3 is an end elevation thereof and

Fig. 4 is a detail view of one of the holder members.

In the machine disclosed in my said application a series of heel-holders are rotatably mounted in a carrier, each holder being arranged for manual rotation while the heels held thereby are operated on. As the present invention relates only to the heel-holding means employed in connection with the carrier, the disclosure is accordingly limited thereto.

As shown in the drawing, each heel-holder comprises a straight rod *a* of rigid metal, having off set, axially aligned end portions *b*, which are journaled in the carrier X.

A series of rigid posts *c* are mounted at suitable intervals in the rod *a* in perpendicular relation thereto and in positions in which they are intersected by the axial line of the end portions *b*, so that said posts, rod and its end portions are all located in the same plane, and each rod is provided with a transversely projecting head *d* having a narrow face, or edge which extends perpendicularly to the plane of the posts, so that a flat surface may be engaged therewith at various angles. A lever *e* of flat metal, is mounted on one side of rod *a* by a pivot *f* adjacent each post to swing in a plane which is parallel to, and closely adjacent the plane of the posts *c*, said pivots being arranged to provide each lever with a long and a short arm, the long arms being of slightly greater length than the posts *c*, and being so arranged that the end portions thereof swing towards and from the heads of the corresponding posts. The long arm of each lever is provided with a right angularly bent end portion *g*, which extends over the rod, or in front of its corresponding post, and the edge of said end portion and the adjacent edge portion of the arm is provided with a series of teeth or corrugations *h*. The corrugated edges of the end portions *g* thus extend in parallelism with the edges of the heads *d* on the posts and are also arranged to permit engagement with a plane or flat surface at various angles. Each long arm is also provided with a laterally projecting lug *i*, which is arranged to engage the top side of the rod and to limit the swinging movement of the arm towards its post at a position in which the arm extends obliquely towards the head *d* and is at a distance therefrom which is slightly less than the height

of the lowest heel which is to be held therebetween.

A coil spring *j* is connected at one end to each short arm of each lever *e* and at its opposite end to the rod *a*, in position to swing the long arm thereof towards its corresponding post, each spring *j* being so arranged, and of such length that it is under substantial tension while holding the stop lug *i* in engagement with the rod, and being adapted to permit the lever to which it is connected to be swung back from this position until its end portion *g* is directly over the next adjacent post.

In placing a heel in position on the holder, the long arm of a lever is swung away from its corresponding post until the distance therebetween exceeds the height of the heel, then the tread face end of the heel is engaged with the edge of the head of the post while its breast side is held facing the rod *a* and then the end portion of the lever is permitted to engage the base end of the heel, so that the heel will be clamped between the lever and post, as shown Figs. 1 and 2, in which position the operation of spraying a coating of lacquer on the sides of the heel, and on its breast surface, if necessary, may be advantageously performed.

The above described arrangement is such that heels varying widely in height may be clamped between each lever and its post, as indicated in Fig. 1, the practical limits being from a height slightly greater than the minimum distance from the end portion *g* to the edge of the head *d* to the distance between the heads of adjacent posts, and these limits may be made to correspond to the lowest and to the highest heels which are to be operated on. The angular formation of the end portion of the long arm of the lever together with the corrugated engaging face with which this portion is provided acts to hold the heel securely against rotation while held between the lever and the post by the actuating spring. Also the formation of the heel engaging edges of the heads *d* and end portions *g* permit engagement of the end faces of the heel at various angles, so that the heel is securely held in position regardless of its height and of the relative inclinations of its end faces.

As the heel-holding lever at one end of the rod *a* must be in close proximity to the angularly bent portion at the end of the rod, a somewhat modified construction is necessary.

As shown in Fig. 1 the short arm of the lever *e* at the left end of the rod is provided with an extension arm *k* to the end of which one end of a spring *j* is attached, the opposite end thereof being attached to the rod *a* as previously described.

With the above described construction, heels of varying heights may be quickly placed in position and removed, and, when in position, will be held with sufficient security for the purpose and in a position which permits the side and breast surfaces to be coated effectively by a spraying operation.

I claim:

A heel holder comprising a support having a rigid post projecting therefrom, said post having a head at its end projecting to one side thereof and provided with a narrow face extending in right angular relation thereto and arranged for engagement with an end face of a heel at various inclinations, an arm pivotally mounted on said support at a suitable distance from said post to swing to and from the same about an axis extending in approximate parallelism to the face of the post, the end portion of said arm having a narrow edge extending in parallelism with said axis and arranged for engagement by an end face of a heel at different inclinations, while the opposite end face of the heel is engaged with the face of said post, and a spring arranged to hold said end portion of said arm in proximity to said post and to permit separation thereof according to the height of the heel.

In testimony whereof, I have signed my name to this specification.

WILLIAM ORNSTEEN.