



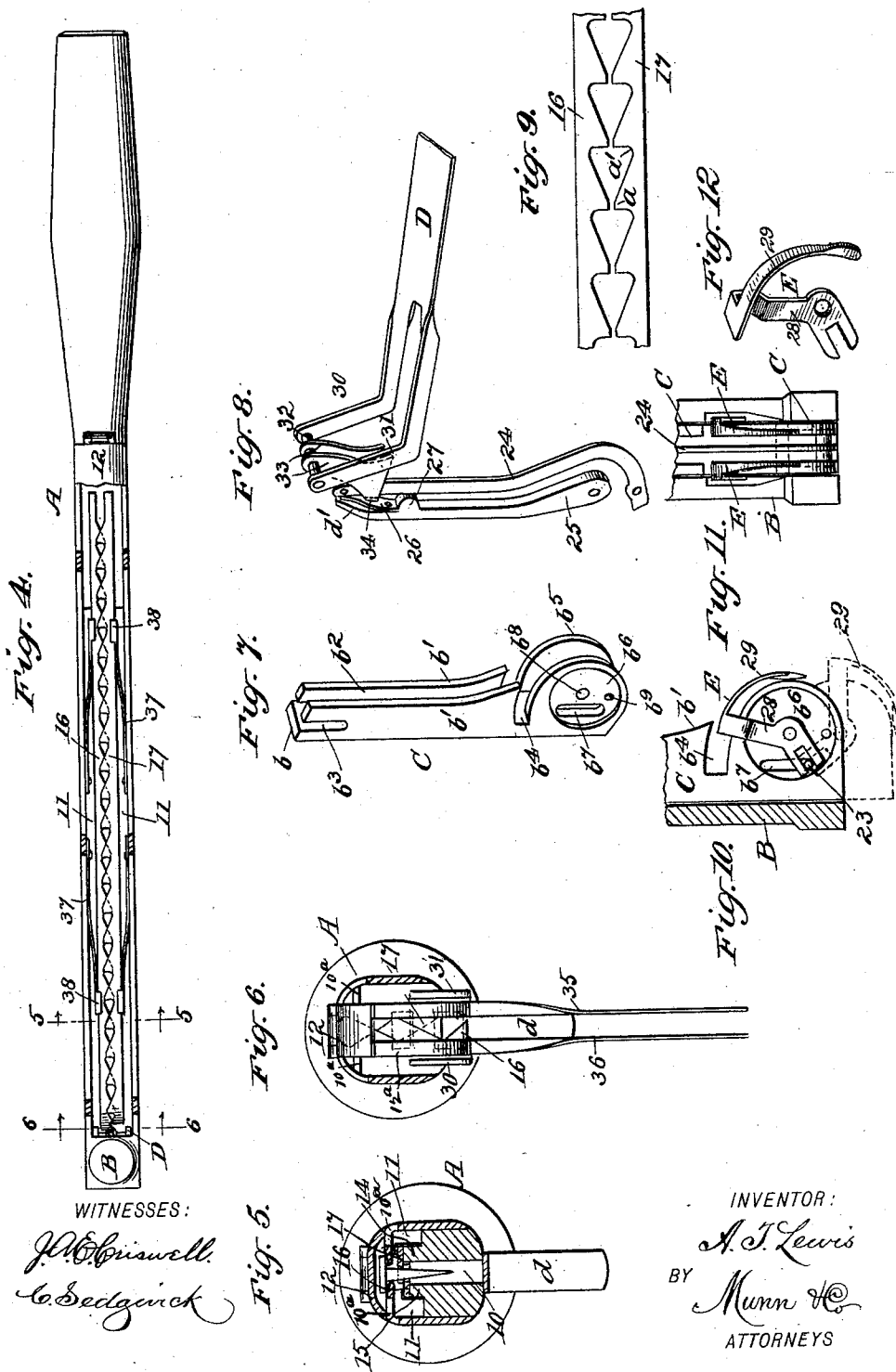
(No Model.)

2 Sheets—Sheet 2.

A. T. LEWIS.  
MAGAZINE TACK HAMMER.

No. 472,374.

Patented Apr. 5, 1892.



# UNITED STATES PATENT OFFICE.

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## MAGAZINE TACK-HAMMER.

SPECIFICATION forming part of Letters Patent No. 472,374, dated April 5, 1892.

Application filed March 11, 1891. Serial No. 384,531. (No model.)

*To all whom it may concern:*

Be it known that I, ANDREW T. LEWIS, of East Portland, in the county of Multnomah and State of Oregon, have invented a new and Improved Magazine Tack-Hammer, of which the following is a full, clear, and exact description.

My invention relates to a magazine tack-hammer, and has for its object to provide a hammer with a magazine capable of holding a number of tacks, and mechanism for feeding the tacks one by one to a striking-face of the hammer, and also to provide mechanism for releasing the tack the moment it is introduced into the surface in which it is to be driven.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures and letters of reference indicate corresponding parts in all the views.

Figure 1 is a central longitudinal section through the hammer, the parts being in their normal position. Fig. 2 is a side elevation of the hammer, partly in section, illustrating a tack held in position to be driven. Fig. 3 is a bottom plan view of one striking-surface of the hammer-head. Fig. 4 is a plan view of the hammer, a portion of the cover being broken away, and likewise the flanges adapted to support the tacks in the magazine of the hammer. Fig. 5 is a transverse section on the line 5 5 of Fig. 4. Fig. 6 is a similar section on the line 6 6 of Fig. 4. Figs. 7 and 8 are perspective detail views of the mechanism contained in the hammer-head and a portion of the mechanism for operating the same. Fig. 9 is a plan view of a portion of the magazine-rack. Fig. 10 is a partial vertical enlarged section of one end of the hammer-head. Fig. 11 is a front elevation of the part illustrated in Fig. 10, and Fig. 12 is a perspective view of one of the guide-arms detached.

A handle A has an attached head B, the hammer and its head being essentially T-shaped. The handle A is provided with a vertical longitudinal slot 10, which extends through from the top to the lower face, and in the

upper face of the slotted surface of the handle a longitudinal channel 11 is formed at each side of the slot by recessing the upper outer side surface of the handle, and side plates attached to the handle are bent inward to form horizontal flanges 10<sup>a</sup>, as best illustrated in Fig. 5. The heads of the tacks to be used are adapted to rest upon these flanges, and their body portions extend downward into the slot 10, this portion of the handle being constructed to constitute a tack-magazine, as is best illustrated in Fig. 5. The slot 10 of the handle and likewise the channels 11 are preferably covered by a cap-plate 12, forming a cover for the magazine and hinged at one end to the solid end of the handle, as shown in Fig. 1, which cap is usually provided at its upper end with downwardly-curved spaced spring extension-plates 12<sup>a</sup>, as illustrated in Fig. 6. The slot 10 virtually intersects a longitudinal chamber 13, produced in the head of the hammer and extending from a point preferably near the center, through one end surface thereof, the remaining portion of the hammer-head being solid.

By producing the channels 11 in the handle two longitudinal shoulders 14 and 15 are formed, the shoulder 14 being of greater height than the shoulder 15, and upon the upper faces of the shoulders racks 16 and 17 are located, the opposed faces of the said racks being provided with a series of teeth *a*, alternating with a series of recesses *a'*. As one shoulder is higher than the other, one rack extends over the other, and the inner side surfaces of the racks are in engagement, as shown in Fig. 5. The rack 16, which is the lower one, is stationary—that is, it is incapable of movement longitudinally of the handle. The rack 17, however, is capable of such movement, and this is brought about through a connection with a lever D, fulcrumed in the lower portion of the slot 10 near the solid section of the handle, as illustrated in Fig. 1, the connection being effected through the medium of an arm 18, curved upward from the lever, and a link 19. The lever from its fulcrum is carried downward, forming a handle-section *d*, to which the arm 18 is secured, and the said handle is normally pressed downward by a spring 20 bearing against the inner face

thereof, the said spring being attached to the solid portion of the handle. Both of the racks 16 and 17 are curved downward at the end of the handle, the curved end of the movable rack being of spring metal, and the stationary rack 16 is of greater length than the movable rack. Ordinarily the difference in length between the two racks is that of a tooth, as illustrated in Fig. 6. The racks 16 and 17 are located beneath the handle-flanges 10<sup>a</sup>.

In operation when the movable rack is reciprocated at each forward movement thereof a tack will by engagement with one of its teeth be moved forward the distance of one notch in the stationary rack, as the tacks are placed, as hereinafter stated, with their heads resting upon the flanges 10<sup>a</sup>, and the body portions of the tacks extend downward through the recessed portions of the racks into the slot 10 of the handle.

The side of the chamber 13 in the hammer-head facing the handle is longitudinally slotted, the slot extending the full length of the chamber, and within the chamber 13 a follower-block C is located, (illustrated in detail in Fig. 7,) which block consists of a back plate *b* and two parallel flanges *b'*, located one at each side edge of the racks and extending forwardly at a right angle thereto, producing thereby a vertical channel *b*<sup>2</sup>. In each side flange at the top of the follower-block a vertical slot *b*<sup>3</sup> is produced, and near the lower end semicircular transverse slots *b*<sup>4</sup> are formed, the upper slots *b*<sup>3</sup> being in transverse alignment, and also the lower slots *b*<sup>4</sup>. The lower ends of the side flanges *b'* are enlarged and circular, the circle of the enlargement being a continuation of the radius upon which the slots *b*<sup>4</sup> are formed, the enlarged portion of the follower commencing at the base-wall of the said slots. The circular lower portions *b*<sup>5</sup> of the follower have circular depressions *b*<sup>6</sup> produced in their outer side faces, and in said depressed faces aligning vertical slots *b*<sup>7</sup>, central apertures *b*<sup>8</sup>, and lower apertures *b*<sup>9</sup> are formed. The forward edges of the flanges *b'* of the follower-block are concaved from the top down in direction of the semicircular slots *b*<sup>4</sup>.

The follower-block normally fits neatly into the chamber 13 of the hammer-head, which is essentially rectangular in cross-section, and the enlarged circular portions *b*<sup>5</sup> of the follower project outward through the slot in the side wall of the chamber.

A pin 22 is passed diametrically through the chambered portion of the hammer-head, which pin when the follower is in its normal position within the chamber extends through the upper slot *b*<sup>3</sup> of the follower almost in engagement with the base-wall thereof, and the movement of the follower-block in the chamber is limited by passing a pin 23 diametrically through the lower portion of the chambered surface of the hammer-head and through the elongated vertical slot *b*<sup>7</sup> in the follower.

The upper end of a guide-arm 24 is secured in the upper forward portion of the channel *b*<sup>3</sup> of the follower, the contour of the arm corresponding to the forward-edge contour of the follower, and the lower end of the guide-arm is secured in the follower-channel *b*<sup>2</sup> by passing a pin through the aperture *b*<sup>9</sup> of the follower and a suitable aperture in the guide-arm. Thus the guide-arm and the follower are rendered integral to all practical purposes. The thickness of the guide-arm is preferably slightly less than the width of the channel *b*<sup>2</sup>. A trip-arm 25 is also located in the follower-channel, and it practically conforms to the shape of the forward edge of the follower, the lower end of the arm being pivotally attached to the lower portion of the follower by passing a pintle through the apertures *b*<sup>8</sup> of the latter. The upper end of the trip-bar is unattached and rests normally against the pin 22. The extreme upper edge of the trip-arm is forwardly bent, as illustrated at *d'* in Figs. 1 and 8, and the said arm is normally held in engagement with the pin 22 by a spring 26, located at the upper inclined portion and having a bearing against the inner edge of the guide-arm. Below the spring the trip-arm is further provided with a knob or projection 27 upon its outer edge.

Retaining-arms E are pivoted to the sides of the enlarged lower end of the follower. The arms consist of angular body portions 28, which are pivoted upon the outer ends of the pintle pivoting the lower end of the trip-arm 25, and the body-sections are so formed that the major portions thereof readily turn in the depressions *b*<sup>6</sup> in the follower. One end of the body-sections of the retaining-arms is slotted to receive the ends of the pin 23, as shown best in Fig. 10, and the body portions of the retaining-arms at their opposite ends are curved upward and outward, so as to extend over the circular forward edges of the follower, as is best shown in Fig. 11, and to the inwardly-extending ends of the body-sections of the arms downwardly-curved members 29 are secured or are made integral therewith, the said members being concentric with the curved edge surfaces of the enlarged lower portions of the follower.

The lever D from its pivotal point extends within the slot 10 of the handle almost to the outer end thereof, at which point the lever is bifurcated and shaped to form two upwardly and outwardly extending members 30 and 31, one of which members is located at each side of the handle. The members at their upper ends are connected by a pin 32, and upon said pin two downwardly-extending parallel plates 33 are secured, preferably of greater width at their bottoms than at their tops, the said plates being connected at the front and back of their bottom surfaces by transverse bars 34. The connected plates virtually act in the capacity of a dog and will be hereinafter described.

Two spring-arms 35 and 36 are located in

front of the side slot of the head-chamber 13 and extend downward one on each side of the guide-arm 24, fixed to the follower. The spring-arms 35 and 36, however, do not project downward as far as the bottom of the follower, and their upper ends are secured in any suitable or approved manner to the curved lower ends of the handle-flanges 10<sup>a</sup> or are integral therewith.

It is necessary that both of the racks 16 and 17 should have a lateral movement and that when pressed upward from each other they should be returned to their normal position at a given time, and in order to accomplish this result the racks are supported in spring-cushions, which consist of spring-bars 37, secured to the walls of the channels 11 of the handle at one end, as best shown in Fig. 4, the free ends of which spring-bars have clamps or sockets 38 formed thereon, which clamps or sockets embrace the side longitudinal edges of the racks.

In operation the cover 12 is lifted and tacks are placed between the opposed recessed surfaces of the racks 16 and 17, so that their points will extend downward, as shown in Fig. 1, and their heads will rest upon the upper surface of the handle-flanges 10<sup>a</sup>, as shown in Fig. 5. When tacks have been placed in all of the recessed surfaces, the cover 12 may be closed. By pressing down the handle-section *d* of the lever *D* the bifurcated end of the lever is drawn downward, and the forward edge of the dog carried by the bifurcated end of the lever will engage with the head of the last tack, as shown in Fig. 1, and will press the said tack downward between the spring-arms 35 and 36 and the guide-arms 24, the shank of the tack being horizontally located beneath the handle, and as the dog is forced downward its opposite end engages with the knob 27 upon the trip-arm and forces the said arm downward until its inclined surface *d'* is brought to an engagement with the pin 22, whereupon the trip-arm is enabled to drop backward out of the path of the dog and the dog may continue its downward movement. As the dog is carried farther downward it carries the tack with it, and the engagement of the dog with the trip-arm will force the follower vertically downward the length of its slot *b'*, as shown in Fig. 2, and as the follower moves downward by reason of the pin connection between the said follower and the retaining-arms the arms are forced downward also to the position shown in dotted lines, Fig. 10. In the meantime the dog engaging with the tack will have carried it downward below the ends of the springs 35 and 36, and as the retaining-arms are forced downward the dog carries the tack downward with the arms, and when the tack has been forced to the extremity of the retaining-arms the pin 32, to which the dog is attached, will engage with the body-surface of the retaining-arms and the further movement downward of the

bifurcated end of the lever will be impossible. The lever *D* is then released before any stroke is made with the hammer and tack in position, and the spring 20 acts to restore the lever to its normal position, as in Fig. 1. The dog is carried back and under the tack which has taken the same position the tack at the end of the follower had before the downward movement of the lever. The dog is enabled to sink back at this point when the follower is out, as in Fig. 2. When the follower is back in normal position, the dog is pressed forward by the trip-arm upon pin 22, and is in position for pressing tacks out, as before. The spring 26 presses the trip-arm at its curved end against pin 22 and holds the follower firmly out, as in Fig. 2, and the spring 26 also acts to hold the follower in position, as in Fig. 1. The tack, as in Fig. 2, is now held in position to be driven into the floor, wall, or other surface, with the exception that the lever *D* is in position, as in Fig. 1. A hard stroke may be made, or a stroke sufficient to drive all parts back into position, as in Fig. 1, and the moment the tack is thus introduced the force of the blow restores the parts in the hammer-head to their normal position, thus freeing the tack-head from engagement with the follower and the retaining-arms. The hammer is then used for driving, as an ordinary hammer.

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

1. A tack-hammer provided with a magazine, tack-supports and tack-feed racks within the magazine, and a mechanism, substantially as described, for reciprocating one of the racks, as and for the purpose set forth.

2. In a tack-hammer, the combination, with a handle provided with a magazine and a chambered head, of tack-receiving racks located in the magazine, one of which is capable of longitudinal movement, both of the racks being curved downward to the chamber in the head, as and for the purpose set forth.

3. In a tack-hammer, the combination, with a handle provided with a magazine and a head provided with a chamber communicating with a magazine, of tack-receiving racks located in the magazine and curved downward at one end in direction of the hammer-head chamber, spring-cushions located at the sides of the racks, and a lever connected with one of the racks, whereby the said rack is given a longitudinal movement, as and for the purpose specified.

4. In a tack-hammer, the combination, with a handle provided with a magazine, a head having a chamber therein communicating with the magazine and a follower-block located within the head-chamber and having a limited downward movement, a guide-arm attached to one edge of the follower, and spring-arms attached to the handle at each side of the guide-arm, of tack-receiving racks located within the magazine of the handle, both capa-

ble of side movement and having their ends curved downward, one of said racks being provided with a spring-section at its curved end, springs bearing against the edges of the racks, and a lever connected with one of the racks and adapted to impart thereto end movement, as and for the purpose specified.

5. In a tack-hammer, the combination, with a handle provided with a magazine, a head having a chamber therein communicating with the magazine, a follower-block located in the chamber of the head, having a limited downward movement, a guide-arm attached to the edge of the follower facing the handle, spring-arms projected downward from the handle in front of the guide-arm, and a trip-arm having a pivotal connection with the follower at its lower end and located within the follower, of tack-receiving racks located in the magazine of the handle, both racks being capable of side movement and having one end curved downward and one capable of a longitudinal movement, one of said racks having a spring-section at its curved end, springs bearing against the sides of the racks, a spring-pressed lever, a connection between the lever and one of the racks, whereby the said rack is moved lengthwise, and a dog connected with the lever, adapted for engagement with the trip-arm and also with the lowermost tack located in the rack, as and for the purpose specified.

6. In a tack-hammer, the combination, with

a handle provided with a magazine, a head having a chamber therein communicating with the magazine, a follower-block located in the chamber of the head, having a limited downward movement, a guide-arm attached to the edge of the follower facing the handle, spring-arms projected downward from the handle in front of the guide-arm, and a trip-arm having a pivotal connection with the follower at its lower end and located within the follower, of tack-receiving racks located in the magazine of the handle, both racks being capable of side movement and having one end curved downward between the spring-arms and the guide-arm of the follower, springs bearing against the sides of the racks, a spring-pressed lever, a connection between the lever and one of the racks, whereby the said rack is moved lengthwise, a dog connected with the lever, adapted for engagement with the trip-arm and also with the lowermost tack located in the rack, and spring retaining arms pivoted to the lower portion of the follower, the said arms being adapted upon the downward movement of the follower to extend beneath it a slight distance from its lower surface, as and for the purpose set forth.

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Witnesses:

F. L. KEENAN,  
R. P. CHAMBERS.