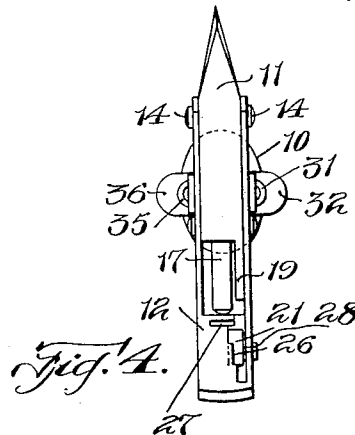
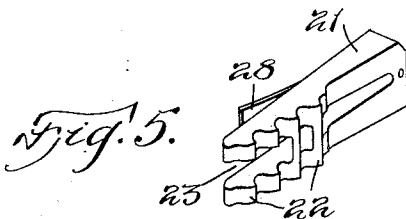
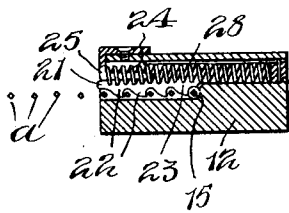
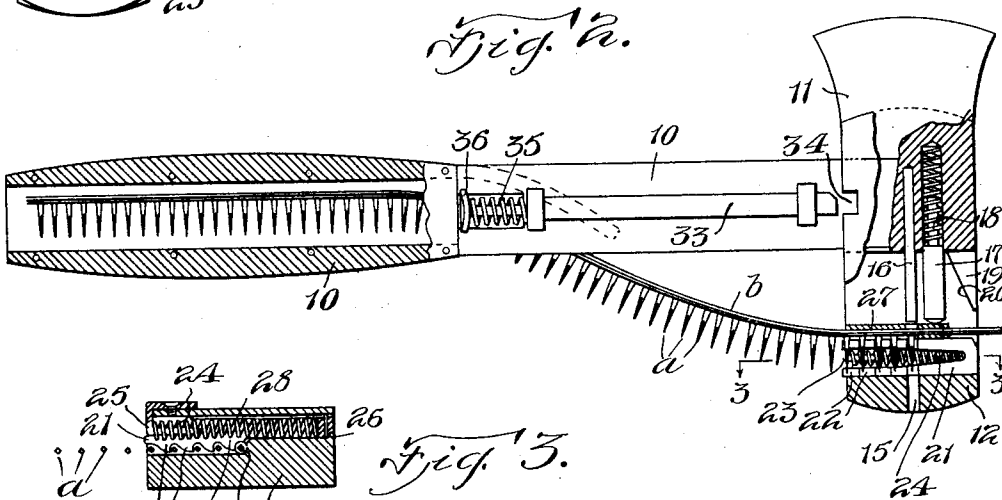
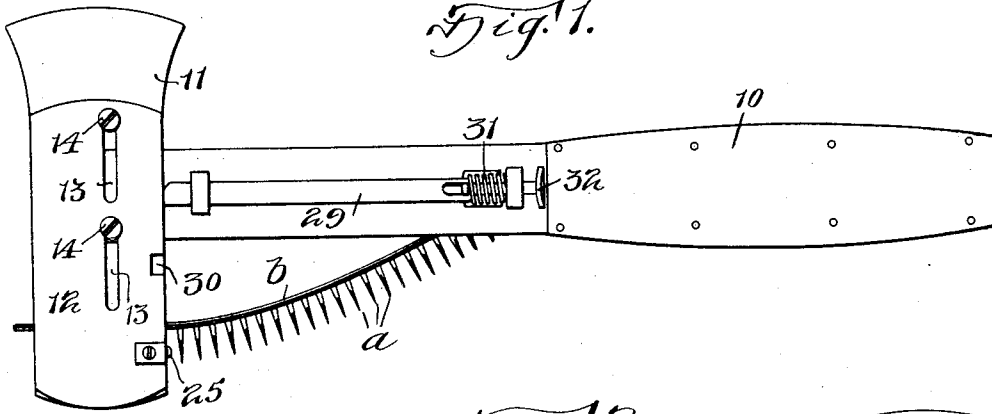


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 AUTOMATIC HAMMER.
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1,162,677.

Patented Nov. 30, 1915.



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AUTOMATIC HAMMER.

1,162,677.

Specification of Letters Patent.

Patented Nov. 30, 1915.

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To all whom it may concern:

Be it known that I, CLARENCE S. BODEN, a citizen of the United States, and a resident of San Francisco, in the county of San Francisco and State of California, have invented certain new and useful Improvements in Automatic Hammers, of which the following is a specification.

This invention relates to hand tools of the magazine type, although the articles delivered by the tool are carried by a strip and not in a box or holder.

The invention has particular reference to tools for supplying and driving tacks or nails or equivalent fastenings one at a time.

The principal object of the invention is to provide an automatic hammer which is adapted to be operated in the ordinary swinging manner of a hammer or hatchet, the head of the tool having means for feeding the fastenings automatically and driving them one at a time, whereby the tool may be used for shingling, carpet laying, lathing, loose tacking in shoe factories, and all similar purposes.

Further objects of the invention are to provide certain improvements in hand operated tools of the character mentioned, as will be hereinafter explained.

To these ends the invention consists in the construction and combination of parts substantially as hereinafter described and claimed.

Of the accompanying drawings which form a part of this specification, Figure 1 is a side elevation of a tool constructed according to my invention; Fig. 2 is a view from the other side, partly broken out and in section; Fig. 3 represents a section on line 3—3 of Fig. 2; Fig. 4 is an end view from the left of Fig. 1; Fig. 5 is a perspective view of the feeding pawl.

Similar reference characters indicate the same or similar parts in all the figures.

A suitably shaped handle 10 having a longitudinal passage-way for the strip of fastenings as hereinafter described, has rigidly carried by one end thereof a portion of the tool head. This rigid portion 11 is preferably formed as a hatchet.

Movably connected with the rigid part 11 of the head of the stripper 12 which has side pieces or plates that overlap the side faces of the rigid part 11, said overlapping portions having slots 13 through which guiding

screws 14 pass into the part 11. The stripper 12 is provided with a substantially central aperture 15 through which the fastenings are driven.

It may be mentioned here that I do not limit myself to the use of particular styles or shapes of tacks or nails, since such will be suited to the particular use to which the tool is to be applied and of course the passage-ways for the fastenings will be shaped to accord with such fastenings. For the purpose of brevity of description and not of limitation, the fastenings will be hereinafter referred to as nails.

Secured to the rigid portion 11 of the head is a driver 16, the lower end of said driver being in alinement with the aperture 15. Slidably mounted in the said rigid portion 11 is a plunger 17 which is projected by means of a suitable spring 18. The lower end of said plunger bears against a suitable shoulder or ledge provided therefor on the movable part 12 of the head, the said spring 18 and plunger 17 serving to normally hold the two members of the head in the relative positions shown in Figs. 1 and 2.

The rigid portion 11 of the head is provided with a projection or lug 19 which has an inclined face 20, the latter constituting a cam to actuate the feeding pawl in one direction as presently described.

Mounted to reciprocate in a transverse opening in the member 12, which forms a part of the head, is a pawl 21, said pawl having one side face provided with a series of vertical teeth 22 adapted to engage a plurality of the nails *a* carried by a strip *b*, the rear end of said strip being retained in the longitudinal passage of the handle 10 until said strip has been so used that it is comparatively short.

The pawl 21 is formed with a channel 23 extending longitudinally of the pawl, and a spring 24 is located in said channel and bears against one end of said channel, the other end of said spring being held by a lug 25 that is suitably secured to the movable member 12 of the head. Said spring acts to normally hold the pawl against a suitable stop 26. Extending transversely of the movable member 12, and above the guide way for the pawl, is a transverse aperture 27 to serve as a guide for the strip *b*, said strip guide being open along a portion of its under side to permit the nails *a* to reach a po-

sition where they will be in alinement with the driver 16.

The pawl 21 is normally held so that its teeth 22 will engage a plurality of the nails, as best shown in Fig. 3, by means of a spring 28, best shown in Fig. 5. This spring 28 yields readily to permit the end of the strip to be inserted to place until the front nail of said strip is in the position indicated in Figs. 2 and 3.

In operation the tool is operated in exactly the same way that any common form of hammer is employed, each blow causing a nail to be detached from the strip and driven through the aperture 15 into whatever surface may be desired, whether through a carpet into the floor, or through laths into ceiling or wall joists or beams. Normally the two members of the head stand in the relative positions indicated in Figs. 1 and 2. When a nail is to be driven or hammered to place, the swinging of the head forcibly toward the place where the nail is to be driven results in the end of the movable member 12 contacting with the surface and stopping while the portion 11 which is rigidly carried by the handle 10 continues to move against the pressure of the spring 18. First the driver 16 punches straight through the strip *b* and drives the nail through the aperture 15, and if the blow be heavy enough the driver 16 fully sets the nail. After the nail has been detached and driven part way through the aperture 15, the inclined edge or cam 20 of the lug 19 rides downwardly across the end of pawl 21 so as to slide said pawl toward the left of Fig. 2 far enough to cause the teeth 22 of the pawl to take a fresh hold of the plurality of nails. The spring 28 yields sufficiently to permit the pawl to swing when the pawl 20 is moving as just described, so that the ends of the teeth will pass over the nails remaining attached to the strip. The fact that the driver 16 has penetrated the nail strip *b* before the pawl 21 begins to move rearwardly to take a fresh hold, prevents such rearward movement of the pawl from causing the nail strip to retreat. In effect therefore the driver 16 acts as a detent to prevent backward movement of the nail strip. As soon as the hammer is raised after having driven a nail, the spring 18 acts to return the two parts of the head to their relative positions illustrated in Fig. 2, and as the cam lug 19 passes away from the pawl 21, the spring 24 acts on the pawl to advance the nail strip ready for another nail-driving operation.

Since it may sometimes be desirable to use the hammer to strike another blow without feeding a nail, I provide means for locking the two members of the head in collapsed condition, with the end of the driver 16 flush with the bottom of the aperture 15.

To this end I provide suitable mechanism, one embodiment of which is illustrated in Fig. 1, wherein a bolt 29 is shown as mounted in suitable guide lugs projecting from the shank of the handle, the end of said bolt being adapted to engage a notch or recess 30 in one of the side plates of the member 12. Said notch or recess 30 is so located that when it receives the end of bolt 29, the two members of the head will be locked in the collapsed position just mentioned. A suitable spring 31 acts to advance the bolt 29, while a thumb piece 32 is provided to enable the bolt to be retracted. With such structure, and with the head expanded as in Fig. 1, the operation of the hammer as hereinbefore described will result in collapsing the two members so as to bring the notch 30 to such position that the bolt 29 is immediately shot into the notch by the spring 31. Then when the hammer head is lifted, the parts remain locked in collapsed positions so that the end of the member 12 can be used as many times as may be desired simply as a hammer. The operator may withdraw the bolt 29 at any time by means of the thumb piece 32, and by holding the bolt withdrawn, the hammer may be operated as long as desired in such manner that a nail will be detached and driven at every blow. When it is desired to use the sharp edge of the member 11 as a hatchet, as when chopping off the end of a lath, it is desirable that the parts shall be so locked that the momentum of the member 12 will not cause a nail to be projected through the aperture 15. To so lock the parts, I may provide the shank of the handle with a bolt structure similar to that just described but on the other side of the handle, as indicated by comparing Figs. 1 and 2. In said Fig. 2 a bolt 33 is shown as mounted in suitable guide lugs, and a notch 34 is formed in the proper side plate of the member 12. In this case, however, the spring 35 that is employed is mounted so as to normally hold the bolt 33 withdrawn. By means of the thumb piece 36, the user may project the bolt into the recess 34, against the force of spring 35 and with the thumb or finger hold said bolt 33 in the notch 34 so long as the tool is being used as a hatchet, it being then impossible for the two members of the head to shift longitudinally relatively to each other.

It will now be understood that I have provided a tool of hammer type, which can be operated by swinging in the manner of an ordinary hammer, said tool having means which feed nails automatically and drive one at every blow, the tool being adapted for use in every possible location that an ordinary hammer could be employed.

I claim:—

1. In an automatic swing hammer, the

combination of a head, a handle attached to said head and extending laterally therefrom at one side of the head, a driver on said head, nail tape guiding means supported in part by said handle, a stripper connected to said head and constructed and arranged to receive and support the tape with a nail in line with the driver, said stripper having an aperture below the tape in line with the driver, and through which the nails are driven from the tape by the driver, and a feed mechanism to feed the nail tape after a nail has been driven.

2. In an automatic swing hammer, the combination of a head comprising two members movably connected, a laterally extending handle and a driver connected to one of said members, and means carried by the other member for automatically feeding a nail-carrying strip, said feeding means comprising a slidable toothed pawl having a spring for moving it in one direction, and a cam carried by the member having the driver and arranged to contact with said pawl for actuating the pawl in the other direction.

3. In an automatic hammer, the combination of a head comprising two members movably connected, a handle and a driver connected to one of said members, and means carried by the other member for automatically feeding a nail-carrying strip step by step, said strip feeding means comprising a slidably mounted pawl having a plurality of teeth for engaging a series of tacks, a spring for moving the pawl in one direction, and a cam carried by the first-mentioned member of the head for moving the pawl in the other direction.

4. In an automatic swing hammer, a head, a laterally extending handle attached thereto, a driver fixed in said head, a sliding stripper guided in said head and having an aperture alined with said driver, a nail tape guide attached to said stripper and partly supported in said handle, and a feeding mechanism arranged to present the nails in said tape *seriatim* in longitudinal alinement with said driver.

5. In an automatic hammer, a hollow handle having a head attached thereto, a driver

fixed in said head, a sliding stripper guided in said head and having an aperture alined with said driver, a nail tape guide extending from said stripper to said hollow handle, a pawl slidable in said stripper arranged to engage the nails in said tape, and a cam on said head engaging said pawl.

6. In an automatic swing hammer, a head, a laterally extending handle attached thereto, a driver fixed in said head, a sliding stripper guided in said head and having an aperture alined with said driver, a nail tape guide on said stripper, and a nail feed arranged to engage the body of the nails in said tape.

7. In an automatic swing hammer, a head, a laterally extending handle attached thereto, a driver fixed in said head, a sliding stripper guided in said head and having an aperture alined with said driver, a nail tape guide on said stripper extending into said handle, a nail feed arranged to engage a plurality of nails in said tape and means operative during the separating movement of the head and stripper for operating said nail feed.

8. In an automatic hammer, a driver, a stripper movable with respect to said driver, a nail tape guide arranged in coöperative relation with said driver, a nail feed engaging a plurality of nails in said tape arranged to move the successive nails into alinement with said driver, and means operative during the separating movement of said driver and stripper for operating said nail feed.

9. In an automatic swing hammer, a heavy head, a laterally extending handle attached to said head, a driver fixed in said head, a relatively light stripper slidably arranged in said head and having an aperture alined with said driver, a nail tape guide attached to said stripper and partly supported by said handle, and means operative during the separating movement of said head and stripper for advancing the nail tape.

In testimony whereof I have affixed my signature, in presence of two witnesses.

CLARENCE S. BODEN.

Witnesses:

JAS. H. CHURCHILL,
HARRY ALLEN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."