

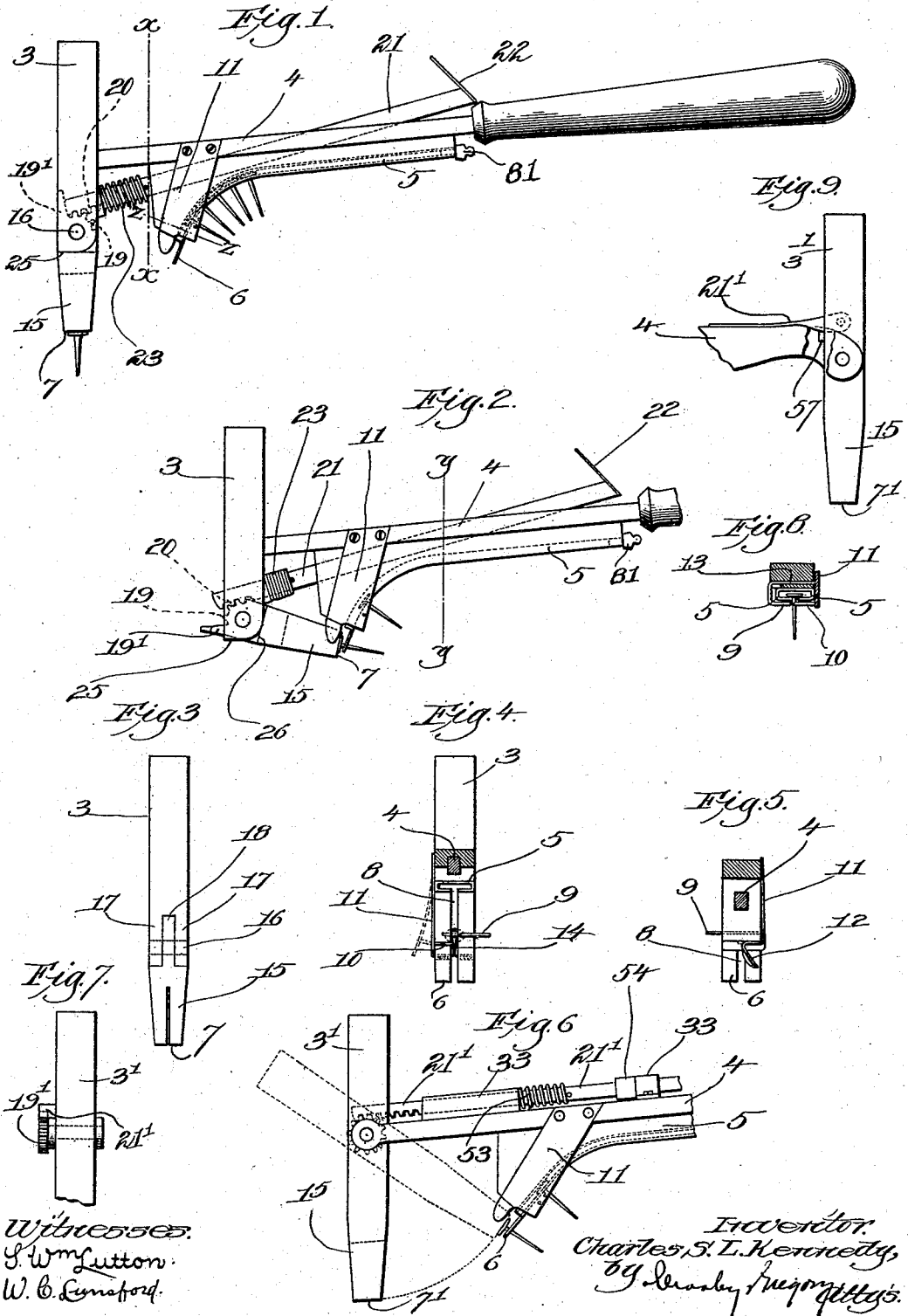
No. 743,519.

PATENTED NOV. 10, 1903.

C. S. L. KENNEDY.
TACK HAMMER.

APPLICATION FILED FEB. 9, 1903.

NO MODEL.



Witnesses:
S. Wm Sutton.
W. C. Lymford.

Inventor:
Charles S. L. Kennedy,
by Lewis A. [unclear]

UNITED STATES PATENT OFFICE.

CHARLES S. L. KENNEDY, OF NORTH EASTON, MASSACHUSETTS.

TACK-HAMMER.

SPECIFICATION forming part of Letters Patent No. 743,519, dated November 10, 1903.

Application filed February 9, 1903. Serial No. 142,452. (No model.)

To all whom it may concern:

Be it known that I, CHARLES S. L. KENNEDY, a citizen of the United States, residing at North Easton, county of Bristol, State of Massachusetts, have invented an Improvement in Tack-Hammers, of which the following description, in connection with the accompanying drawings, is a specification, like characters on the drawings representing like parts.

This invention relates to that class of tack-hammers which include an automatic tack-feeding mechanism for supplying tacks to the driving-face of the hammer as they are wanted; and it has for its object to provide a novel construction by means of which the tacks are taken singly from the tack-feeding mechanism and carried into position to be driven.

Various types of hammers have heretofore been constructed having a magnetic hammer-head, so that the tack, nail, or the like which is to be driven may be supported from the hammer-head by magnetic attraction and carried by said head to the point where it is to be driven. It also has been proposed to combine with a magnetic hammer-head a tack-feeding mechanism constructed to deliver tacks to said magnetic head.

In my improved form of hammer, which is of the class having a magnetic hammer-head, the delivery end of the trackway of the tack-feeding mechanism is situated some distance above and away from the normal position of the driving-face of the hammer-head, and the hammer-head is so constructed that the magnetized portion thereof is movable from the normal position in which it is during the driving of the tack to a position to register with the tack-feeding mechanism.

In the operation of the hammer the operator, by mechanism hereinafter described, shifts the magnetized portion of the hammer-head into register with the tack-feeding mechanism, and a tack is delivered to said magnetized portion of the hammer-head. The said portion of the hammer-head having the tack held thereto by magnetic attraction is then shifted into its normal or driving position, when the tack may be driven as usual. My hammer, therefore, is one in which the mag-

netic field is shiftable, so that by the shifting movement thereof a tack is carried from the tack-feeding mechanism into position to be driven.

In the drawings, Figure 1 is a side view of one form of my improved hammer. Fig. 2 is a part side view showing the parts in different position. Fig. 3 is an end view of the hammer-head. Fig. 4 is a section on the line *y y*, Fig. 2, looking toward the left. Fig. 5 is a section on the line *x x*, Fig. 1, looking toward the right. Fig. 6 is a view similar to Fig. 2, showing a different embodiment of my invention. Fig. 7 is a partial end view of the hammer-head shown in Fig. 6. Fig. 8 is a section on the line *z z*, Fig. 1; and Fig. 9 shows a modification of my invention.

In Figs. 1 to 4 the hammer-head is designated by 3, it being mounted upon a suitable handle 4 in any usual way. Carried by the handle 4 is a tack-feeding mechanism, which includes a raceway 5, terminating at 6 some distance above and away from the driving-face 7 of the hammer, as best seen in Fig. 1, and also a suitable pick-off, which is constructed to deliver the tacks singly from the raceway. The raceway is so constructed that the shanks or bodies of the tacks or nails hang downwardly and extend through the slot 8 therein.

The pick-off may be of any suitable or usual construction. That herein shown comprises two opposed fingers 9 and 10, which are situated out of line with each other, as best shown in Fig. 4, and which are adapted to reciprocate across the slot 8 in the raceway, and which by such reciprocation operate to deliver the tacks singly, as usual. The said fingers are herein shown as being carried by a resilient member 11, which is secured in any suitable way to the hammer-handle, said member 11 having its end bent to form the cam portion 12, which is adapted to be engaged by the shiftable magnetic portion of the hammer, as will be presently described. The finger 10 projects directly from the resilient member 11, while the finger 9 is formed by the end of a bent arm 13, which is secured to the member 11 and partially encircles the raceway, as shown in Fig. 8.

From the above it will be observed that when the member 11 is swung into its dotted-line position, Fig. 4, by the swinging movement of the magnetic portion of the hammer-head, as will be hereinafter more fully described, the tack 14 which has previously been held in the raceway by the finger 10 will be allowed to drop out of the raceway, while the finger 9 will act as a stop to prevent succeeding tacks from being delivered. The resiliency of the member 11 tends normally to keep the pick-off in the position shown in Fig. 4.

Tacks may be fed to the raceway 5 in any suitable way, as by connecting said raceway to a hopper or by feeding the tacks to said raceway by hand. When the tacks are fed to the raceway by hand, I will preferably employ some suitable removable closure 81 for the upper open receiving end of said raceway, which will prevent the tacks from falling out.

I have purposely constructed the delivery mechanism so that the delivery end 6 of the raceway is some distance above the normal position of the driving-face 7 of the hammer-head, so as to prevent the raceway from becoming injured while the nail or tack is being driven, and to carry the tacks from the delivery mechanism into position to be driven. I have provided the hammer-head with a shiftable magnetic portion. In this embodiment of my invention the driving-face 7 of the hammer constitutes the pole or poles of the magnetic portion, and the shifting movement of the magnetic portion carries the face 7 first into position to receive a tack from the raceway and then into position to drive the tack or nail, it being understood that the tack or nail is held to the face 7 by magnetic attraction. In the form of my invention shown in Fig. 1, 15 designates the magnetic portion of the hammer-head, which may be rendered magnetic in any suitable way, and said portion is pivoted or hinged to the main body of the hammer-head, as will be presently described, it being understood that the main portion of the hammer-head is rigidly secured to the handle 4. As shown in Figs. 1 to 3, the main portion of the hammer-head has the ears 17, between which a lug or web 18 on the magnetic portion 15 of the hammer-head is received, the two portions of the hammer-head being united by a suitable pivot-pin 16. By thus pivoting the magnetic portion 15 it may be swung from the position shown in Fig. 1, which is its normal position, to the position shown in Fig. 2, in which latter position the face 7 is brought into register with the delivery end of the tack-feeding mechanism. During this movement the said portion 15 strikes the cam portion 12 of the arm 11 and throws said arm 11 into dotted-line position, Fig. 4, thereby releasing the tack 14 and allowing it to pass off from

the trackway, as above described. As the tack leaves the pick-off it is attracted and held to the face 7 by magnetic attraction, and when subsequently the magnetic portion 15 is swung into position shown in Fig. 1 it carries the tack with it into position to be driven. As one means for thus shifting the position of the magnetized portion 15 I have illustrated the fin 18 as provided with gear-teeth 19, which mesh with gear-teeth 20 on an actuator 21, shown in the form of a bar which extends through a suitable aperture in the handle 4, and the end of which plays between the ears 17. The actuator 21 may be provided with a suitable thumb-piece 22, which is adapted to be engaged by the thumb of the operator.

Any suitable means, such as a spring 23, may be employed for returning the actuator to its normal position or that shown in Fig. 1, this movement of the actuator obviously carrying the magnetized portion 15 into its normal position.

In operating the tack-hammer the operator will first press upon the thumb-piece 22 with his thumb or finger, thereby carrying the parts into the position shown in Fig. 2, this movement operating to release one tack, as above described. When the actuator is released, the spring 23 carries the parts into their normal position, when the tack is ready to be driven. The movement of the hammer-head in delivering its blow is entirely separate from the movement of the magnetized portion toward and from the tack-feeding mechanism, so that to complete the operation of driving the tack the magnetized portion has two distinct movements—first, about its pivot to carry it toward and from the tack-feeding mechanism for the purpose of receiving a tack and carrying it into position for driving and then toward the material into which the tack is to be driven. During this latter movement the hammer-head and the tack-feeding mechanism move together, as the hammer-head has a bodily movement. My hammer, therefore, is one in which the tack-feeding mechanism moves with the hammer-head as the latter is delivering its blow, and the magnetized portion of said head has a separate movement toward and from the tack-feeding mechanism to receive a tack and carry it into position for driving. To prevent the shiftable portion 15 from swinging beyond the position shown in Fig. 1, I will preferably make the joint between the shiftable portion and the main portion of the hammer in the form of a knuckle-joint. As herein shown, the main portion of the hammer has a square shoulder 25, which engages the coacting shoulder 26 on the section 15.

As an additional means to limit the swinging movement of the portion 15 away from the tack-feeding mechanism I have formed the end tooth 19' longer than the rest and

have provided the portion 3 of the hammer-head with a seat against which said tooth or stop 19' rests, as seen in Fig. 1.

The magnetized portion 15 may have a single pole or a plurality of poles at the driving-face of the hammer-head, and the entire end of the hammer-head may be magnetized, or the said end may be made to inclose a magnet. In the embodiment of my invention herein shown the entire end of the hammer-head is magnetized, and it is in the form of a two-pole magnet.

In the forms of the invention so far described I have shown the hammer-head as being made in two parts, one of which is magnetized and is pivoted to the other. My invention, however, would not be departed from if the head were made in one piece and were pivoted as an entirety to the handle. In Figs. 6, 7, and 9 I have shown this form of my invention. In said figures the hammer-head 3' is pivoted to the end of the handle 4, and an actuator 21' engages the hammer-head and operates to swing it from the full-line position into the dotted-line position.

The actuator may take various forms without departing from the invention. In Figs. 6 and 7 it is in the form of a rack which plays in suitable guides 33 on the hammer-handle and which engages teeth rigid with the hammer-head. These teeth are shown as being formed on a pinion 19', situated exterior to the head.

A suitable spring 53 operates to return the rack, and consequently the hammer-head, to the full-line position whenever the actuator is released. Any suitable means may be employed to limit this swinging movement of the hammer when it reaches the full-line position—such, for instance, as a stop-collar 54 on the actuator which engages one of the guides 33.

In Fig. 9 I have shown the actuator in the form of a bar or member which is pivoted to the hammer-head. I have also shown a suitable stop 57, against which the hammer-head strikes and which holds it in its position for driving the tack. In both of these forms of the invention the movement of the actuator swings the hammer-head into dotted-line position and carries its face 7' into register with the end 6 of the tack-feeding mechanism. The hammer-head during such movement strikes the cam portion 12 of the arm 11 and operates the pick-off, as above described.

It will be noted that in all the forms of my invention whenever the hammer-head is swung into position to receive a tack from the raceway the plane of the face of the hammer is parallel to the plane of the tack-head as it is delivered from the raceway. The result is that the tack is received by the driving-face in exactly the position which it is to occupy while being driven. This I consider as quite an important feature of my invention, because there

is no danger of the tacks being delivered to the hammer-face in an improper position for driving. I also desire to call attention to the fact that the hammer-head does not stand exactly at right angles to the handle, so that when the hammer-handle stands horizontally the hammer-head will be inclined backwardly slightly. This is important because the inclined position of the hammer-head resists the tendency of the movable portion to swing into the position shown in Fig. 2 when the blow is struck, as would be the case if the hammer-head stood exactly at right angles to the handle or inclined in the opposite direction. With the arrangement shown the blow of the hammer in driving the tack tends rather to hold the movable face of the hammer in the correct position for driving.

Another important feature of my invention is that all of the portion of the hammer-head below the level of the tack-feeding mechanism is entirely free from any attachments or other parts, so that there is no liability of the operative parts of the hammer being injured when the blow is struck.

From the above it will be seen that by employing a hammer-head having a shiftable magnetic portion it is possible to place the delivery end of the tack-feeding mechanism in such a position that it cannot be injured during the operation of driving a tack.

While I have herein shown one form of tack-feeding mechanism and one way in which the tacks are released therefrom, I do not wish to be limited to this construction, as it will be obvious that other forms of tack-feeding mechanism may be employed. I believe, however, that I am the first to provide a tack-hammer having any form of tack-feeding mechanism and a magnetic hammer-head having a movable driving-face normally in inoperative position for receiving tacks from a tack-feeding mechanism and also having means to carry said face toward and from the tack-feeding mechanism. I also believe that I am the first to provide a tack-hammer having a magnetic hammer-head provided with a driving-face at its extremity and a tack-feeding mechanism which is movable with the hammer-head as the latter is delivering its blow, said hammer also having means for giving the magnetic face of the hammer-head a movement toward and from the tack-feeding mechanism to receive a tack therefrom and carry it into position for driving. It will be obvious, therefore, that while I have herein shown two ways of embodying my invention the latter is not limited to the specific construction shown.

In the above description and in the succeeding claims I have used the term "tack" in its broad sense as including what are commonly known as tacks, as well as brads, nails, or any similar fastenings which it is usual to drive with devices of this character.

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

1. In a tack-hammer, a hammer-head tack-feeding mechanism movable with the hammer-head as the latter is delivering its blow, said hammer-head having a magnetic driving-face at its extremity, and means to move said face toward and from the tack-feeding mechanism to receive a tack therefrom and carry it into position for driving.
2. In a hand tack-hammer, tack-feeding mechanism, a hammer-head a portion of which is magnetized and which is provided with driving-face constructed to drive a tack home, means to hold said driving-face normally in operative position for driving, and means to move said face from its normal driving position toward the tack-feeding mechanism and into position to receive a tack therefrom, said first-named means operating automatically to return the driving-face to its normal operative position.
3. In a tack-hammer, tack-feeding mechanism, a magnetic hammer-head having a movable magnetic portion provided with a driving-face normally in operative position for driving, means to move said face from its operative position for driving into register with the tack-feeding mechanism, whereby a tack is delivered to said face, and automatically-operative means to return said driving-face into position for driving.
4. A tack-hammer, tack-feeding mechanism, a hammer-head having a pivoted magnetized portion provided with a driving-face normally in operative position for driving, and means to turn said magnetized portion about its pivot to carry it from its normal position into register with the tack-feeding mechanism, whereby a tack is delivered thereto, and subsequently to return it into position for driving.
5. In a tack-hammer, tack-feeding mechanism comprising a raceway constructed to support tacks with their points depending, a magnetic hammer-head having its face normally in operative position for driving, but separated from the tack-feeding mechanism and means to move said driving-face from its normal position into position to receive a tack from the raceway and then to return said face to its normal position, the arrangement of parts being such that when the movable portion of the hammer-head is in position to receive a tack from the raceway, the plane of the driving-face of the hammer is parallel to the plane of the tack-head as it is delivered from the raceway.
6. In a tack-hammer, tack-feeding mechanism including a pick-off, a hammer-head having a magnetized portion movable toward and from the tack-feeding mechanism, and means whereby the pick-off is operated by the magnetized portion of the hammer-head during its movement toward the tack-feeding mechanism.
7. In a tack-hammer, tack-feeding mechanism including a raceway, and a pick-off, a hammer-head having a movable magnetized portion, an actuator operating to carry said magnetized portion into register with the delivery end of the raceway, and means whereby the pick-off is operated by the magnetized portion during its movement.
8. In a tack-hammer, tack-feeding mechanism including a raceway and a pick-off at its delivery end, a hammer-head having a pivoted magnetized portion, an actuator to turn the magnetized portion about its pivot, and carry the same into register with the tack-feeding mechanism, and means whereby such movement of the magnetized portion operates the pick-off.
9. In a tack-hammer, tack-feeding mechanism including a raceway and a pick-off, a hammer-head having a pivoted magnetized portion provided with a driving-face, means to turn the magnetized portion about its pivot to bring the driving-face into register with the delivery end of the raceway, and means whereby such movement of the magnetized portion causes the pick-off to be operated.
10. In a tack-hammer, a handle, a magnetic hammer-head provided with a driving-face, means to normally hold said face in operative position for driving, a tack-feeding mechanism carried by the handle and situated above the driving-face when in its operative position, and means to move said driving-face from its normal position into position to receive a tack from the raceway and back to its normal position again.
11. In a tack-hammer, tack-feeding mechanism, a hammer-head having a magnetic driving-face at its extremity, and means to move the latter toward the tack-feeding mechanism to receive a tack therefrom, and from said mechanism to carry the tack into position for driving, the movement of the hammer-head in driving the tack being separate from the movement of said head toward and from the tack-feeding mechanism.
12. In a tack-hammer, tack-feeding mechanism, a magnetic hammer-head having a movable driving-face normally in inoperative position for receiving tacks from the tack-feeding mechanism, and means to carry said face toward and from the tack-feeding mechanism.
13. In a tack-hammer, a handle, tack-feeding mechanism supported thereby, a hammer-head secured to the handle and having a pivoted magnetized portion, and means to move said magnetized portion toward and from the tack-feeding mechanism, the pivoted portion of said hammer-head when in its operative position for driving standing at an inclination to the handle.
14. In a hand tack-hammer, a handle, tack-

feeding mechanism carried thereby, a mag-
netic hammer-head having a magnetized driv-
ing-face, and means to move said face toward
and from the tack-feeding mechanism, said
5 driving-face when in normal position for driv-
ing being situated below the tack-feeding
mechanism and any other operative parts of
the device, whereby the driving end of the
hammer is free from any parts or attachments,
10 the movement of the hammer-head in driving

the tack being separate from the movement
of said head toward and from the tack-feed-
ing mechanism.

In testimony whereof I have signed my
name to this specification in the presence of 15
two subscribing witnesses.

CHARLES S. L. KENNEDY.

Witnesses:

LOUIS C. SMITH,
GEO. W. GREGORY.