

(No Model.)

F. MUTIMER.
BOLT HEADING MACHINE.

No. 420,915.

Patented Feb. 4, 1890.

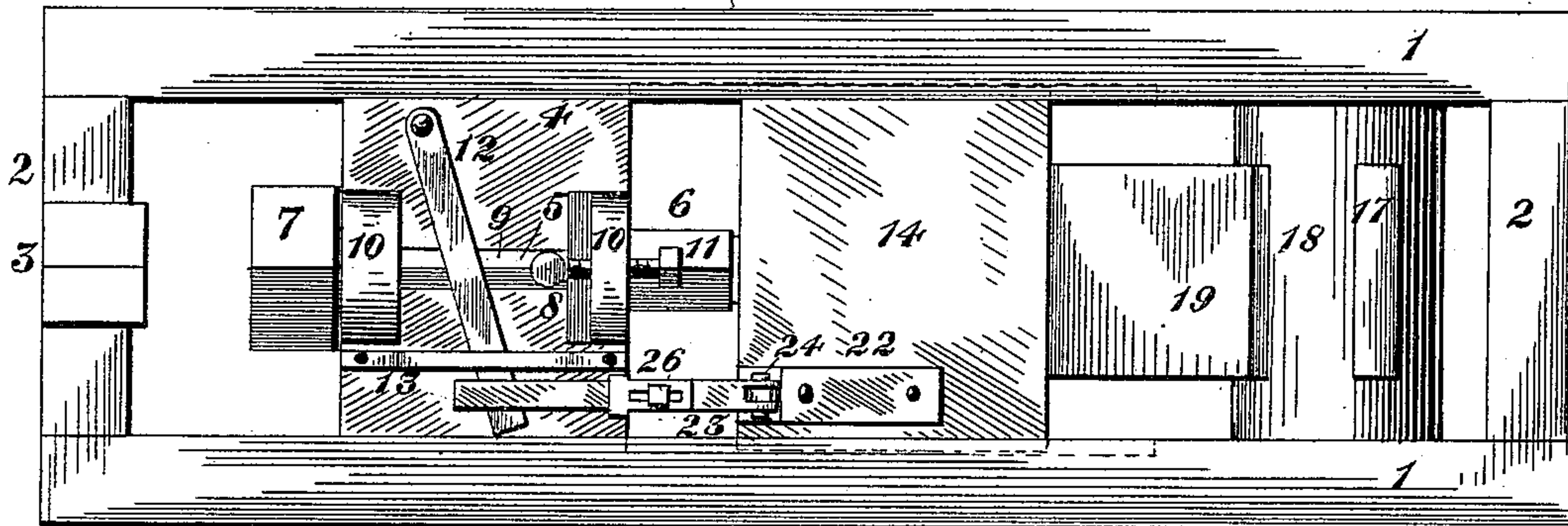


Fig. 1.

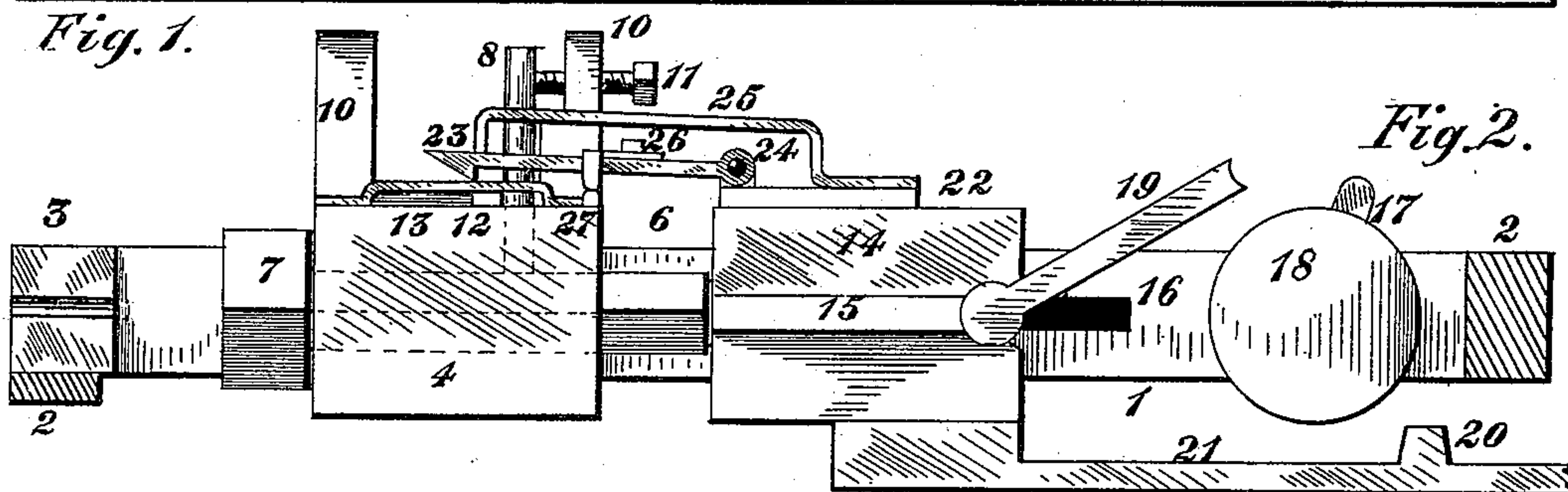


Fig. 2.

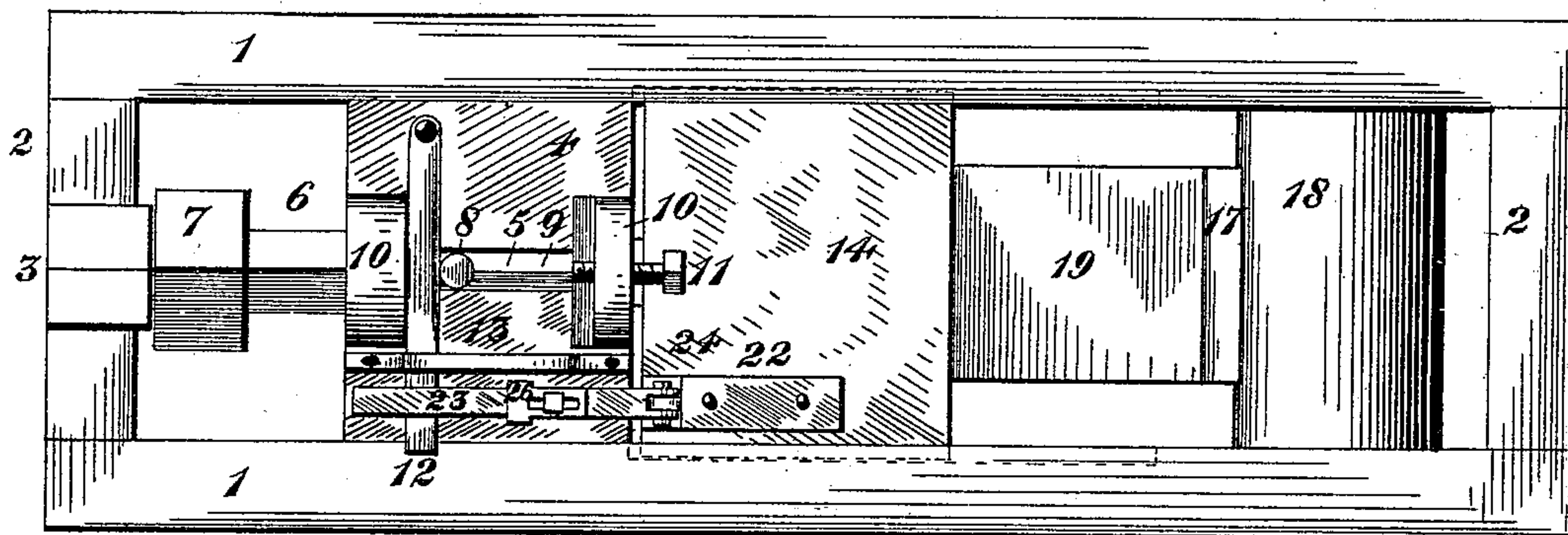


Fig. 3.

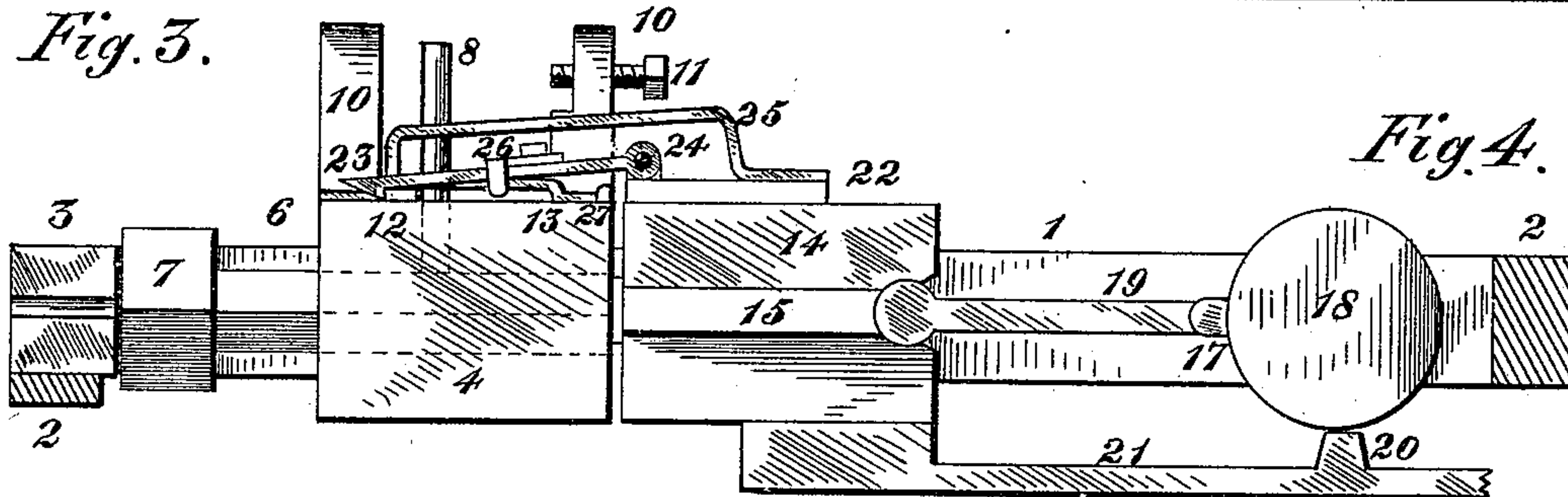


Fig. 4.

Witnesses:
J. S. Clark
E. Behel.

Inventor:
Frederick Mutimer
By A. O. Behel
attys.

UNITED STATES PATENT OFFICE.

FREDERICK MUTIMER, OF ROCKFORD, ILLINOIS, ASSIGNOR OF ONE-HALF
TO THE ROCKFORD BOLT WORKS, OF SAME PLACE.

BOLT-HEADING MACHINE.

SPECIFICATION forming part of Letters Patent No. 420,915, dated February 4, 1890.

Application filed September 26, 1889. Serial No. 325,130. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK MUTIMER, a citizen of the United States, residing at Rockford, in the county of Winnebago and State of Illinois, have invented certain new and useful Improvements in Bolt-Heading Machines, of which the following is a specification.

The object of this invention is to withdraw the heading-tool from its engagement with the head of a newly-formed bolt; and it consists of a reciprocating head for advancing the heading-tool, said head having a hooked-lever connection with the heading-tool, which in its retracting movement carries the heading-tool with it until it is released from the bolt, when it automatically releases its hold.

In the accompanying drawings, Figure 1 is a plan view of a bolt-heading machine embodying my invention, with the parts in their rearward position. Fig. 2 is a partial section and side elevation of the parts in the position shown in Fig. 1. Fig. 3 is a plan view of machine shown at Fig. 1, with the parts in their forward position. Fig. 4 is also a partial section and side elevation of the parts in the position shown at Fig. 3.

The bed of the machine is of the usual construction, and is composed of side bars 1 and end bars 2, cast in one piece or secured together in any suitable manner. The dies 3 for clamping the rod from which the bolts are made are located in the front end of the bed.

I do not deem it necessary to show the mechanism for operating the dies, as it is old, and I do not lay claim to such mechanism.

A suitable distance back of the dies is located a fixed head 4, which forms a guide for the bolt-heading tool 5, which is formed with a square shank 6, and enters a square lengthwise opening through the fixed head. The heading-tool is formed with an enlarged end 7. In the center of its face is formed a recess of the conformation of the head of the bolt which it is desired to make. An arm 8 projects vertically from the shank of the heading-tool and moves in a slot 9 in the fixed head. Ears 10 rise from the fixed head, the rear one of which has an adjusting-screw 11 screw-threaded therein, which regulates the rearward movement of the bolt-heading tool.

An arm 12 has a pivotal connection with the upper face of the fixed head, and extends crosswise thereof, its free end passing under a guide-bar 13, which prevents an upward displacement of the arm.

A movable head 14 has guideways 15, that enter grooves 16 in the side bars of the bed. This head is forced forward by a feather 17 on the shaft 18 at the proper time engaging the free end of the arm 19, having a pivotal connection with the rear end of the movable head. After the feather has reached the position shown in Fig. 3 it will release its hold upon the arm 19 and will engage the stud 20 on the arm 21, connected to the under side of the movable head, causing the movable head to move backward to its normal or standing position.

I lay no claim to the mechanism for rotating the shaft 18, or for holding the arm 19 elevated in a yielding manner, and therefore deem it unnecessary to illustrate or further describe it in this application.

Upon the upper face of the movable head is located a support 22, to which is pivoted a catch-arm 23 by a pin 24 passing through the ears of the respective parts. The free end of the arm 23 is in hook form, and reaches over onto the fixed head.

When the parts are in the position shown at Figs. 1 and 2 and a heated rod held by the dies, the movable head will be forced forward, its forward end coming in contact with the shank portion of the heading-tool, thereby forcing it forward in contact with the heated end of the rod forming the head of the bolt. In the forward movement of the heading-tool the vertical arm 8 will move the pivoted arm 12 forward. The movable head carries the catch-arm 23 forward until its hooked end passes over the arm 12. The spring 25, in this instance secured to the movable head, serves to prevent the catch-arm flying up after it has become disengaged from the pivoted arm 12. After the head has been formed on the bolt the movable head will be retracted, as before described, and in moving backward the catch-arm carries the pivoted arm 12, which in turn engages the vertical arm 8 of the bolt-heading tool, forcing it rearward and disengaging it from the head

of the newly-formed bolt. The catch-arm is disengaged from the pivoted arm 12 by a detent 26, adjustably secured to the arm, coming in contact with a stop 27, rising from the fixed head, thus raising the hooked end of the catch-arm free from its engagement with the pivoted arm. By the adjustment of the detent with relation to the catch-arm the pivoted arm may be drawn backward more or less before the catch releases its hold upon it.

A spring is usually employed to move the bolt-heading tool to its extreme rearward position after it has been disengaged from the head of the bolt.

This invention is especially adapted for use in forming square heads on bolts when the tendency of the head is to stick in the recess formed in the heading-tool.

In Figs. 1 and 3 I omitted to show the spring 25, as it would hide the parts lying beneath it.

I claim as my invention—

1. In a bolt-heading machine, the combination of suitable dies holding the rod forming the bolt, a bolt-heading tool, a head movable independent of the tool, and a connection between the head and tool, whereby the tool is disengaged from the head of a newly-formed bolt, substantially as set forth.

2. In a bolt-heading machine, the combination of suitable dies for holding the rod forming the bolt, a bolt-heading tool, a movable head for forcing the tool toward the dies, means for retracting said tool, and a catch-arm engaging said retracting means and secured to the movable head, whereby the tool will be withdrawn from its engagement with the head of the bolt at the same time the head is retracting, substantially as set forth.

3. In a bolt-heading machine, the combination of suitable dies holding the rod forming the bolt, a bolt-heading tool, a movable head forcing the tool toward the dies, and a catch-arm connected with the head and engaging the tool, withdrawing it from its engagement with the head of the bolt, substantially as set forth.

4. In a bolt-heading machine, the combination of suitable dies holding the rod forming the bolt, a bolt-heading tool, a movable head forcing the tool toward the dies, a pivoted lever, and a catch-lever connected with the head and engaging the pivoted lever, said parts operating to withdraw the tool from its engagement with the head of a bolt, substantially as set forth.

5. In a bolt-heading machine, the combination of suitable dies holding the rod forming the bolt, a bolt-heading tool, a movable head forcing the tool toward the dies, a pivoted lever engaging the tool, a catch-lever connected with the head and engaging the pivoted lever, and a detent for releasing it therefrom, substantially as set forth.

6. In a bolt-heading machine, the combination of suitable dies holding the rod forming the bolt, a bolt-heading tool, a movable head forcing the tool toward the dies, a pivoted lever engaging the tool, a spring-actuated catch-lever connected with the head and engaging the pivoted lever, and a detent for releasing it therefrom, substantially as set forth.

FREDERICK MUTIMER.

Witnesses:

CHARLES R. WISE,
A. O. BEHEL.