W. L. CLOUSE.

BOLT HEADING MACHINE.

APPLICATION FILED JULY 25, 1914.

1,263,309.

Patented Apr. 16, 1918.

2 SHEETS—SHEET 1.

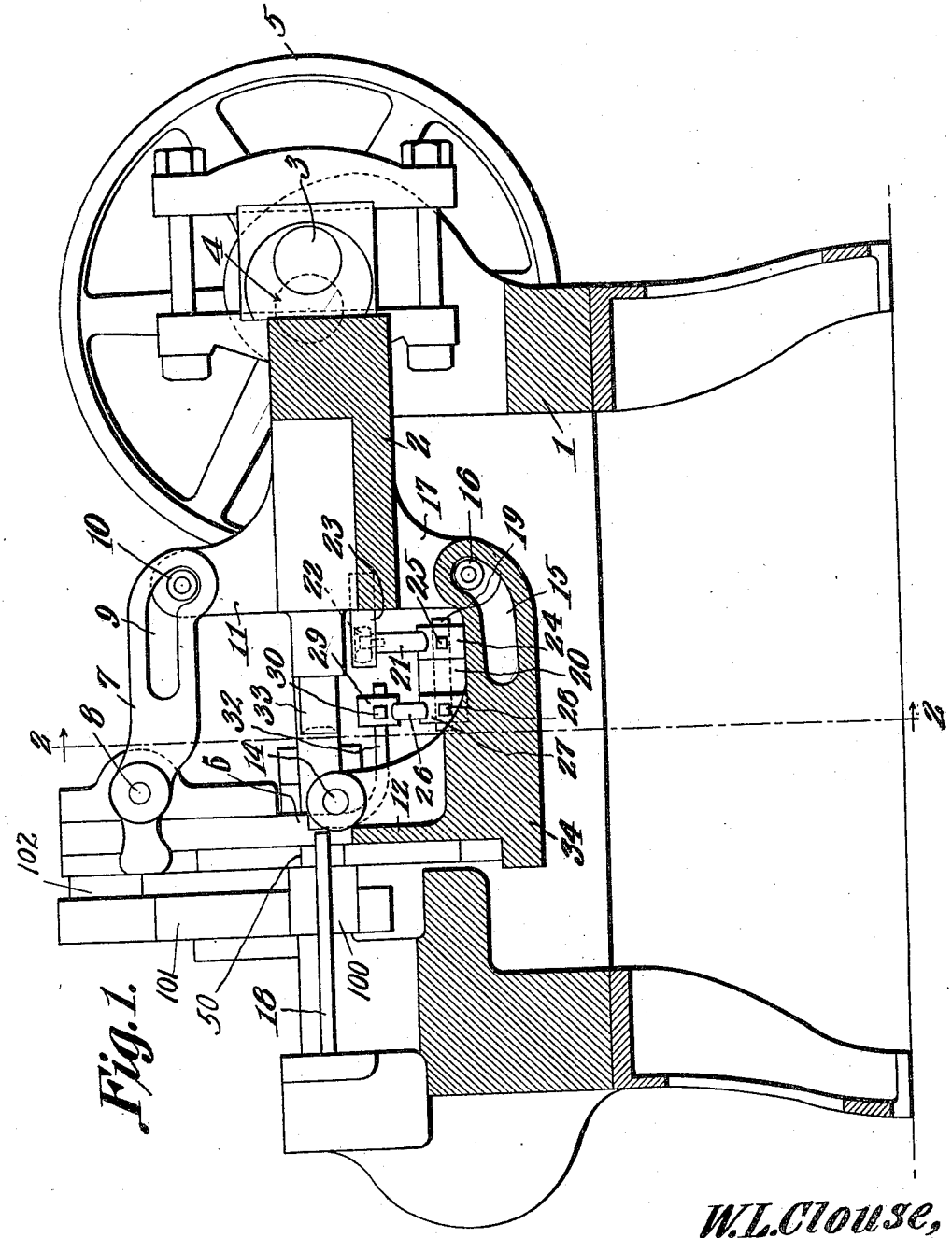


Fig. 1.

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2 SHEETS—SHEET 2.

Fig. 3.

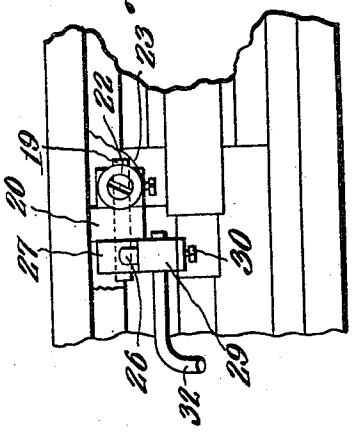


Fig. 4.

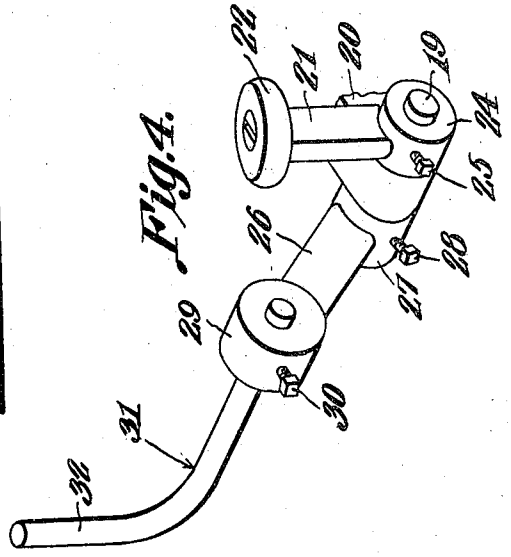
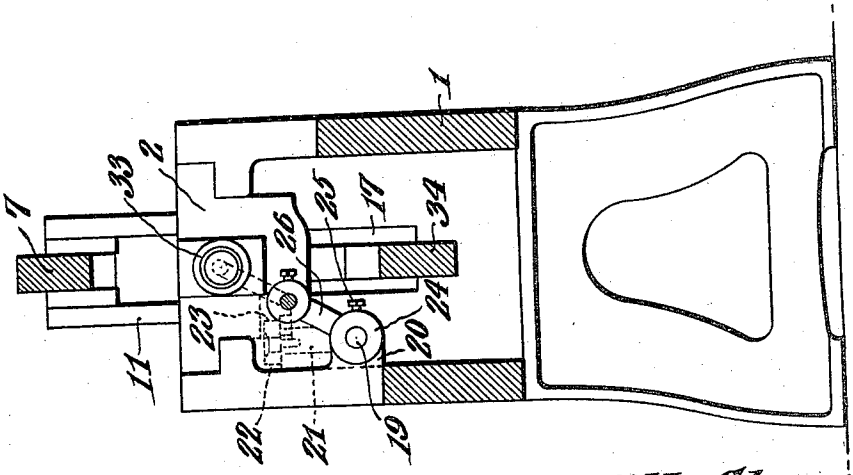


Fig. 2.



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UNITED STATES PATENT OFFICE.

WILLIAM L. CLOUSE, OF TIFFIN, OHIO, ASSIGNOR TO THE NATIONAL MACHINERY COMPANY, OF TIFFIN, OHIO.

BOLT-HEADING MACHINE.

1,263,309. Specification of Letters Patent. Patented Apr. 16, 1918.

Application filed July 25, 1914. Serial No. 853,088.

To all whom it may concern:

Be it known that I, WILLIAM L. CLOUSE, a citizen of the United States, residing at Tiffin, in the county of Seneca and State of Ohio, have invented a new and useful Bolt-Heading Machine, of which the following is a specification.

The device forming the subject matter of this application is a machine of the hammer type, and adapted to be employed for heading bolts, the object of the present invention being the provision of a novel form of stock gage, operating between the upsetting tool on the heading slide, upon the one hand, and the hammers upon the other hand in a bolt heading machine of the hammer type. In order to define the scope of the invention clearly, it is to be understood that machines of this sort have movements in at least five directions, to wit, the vertical movements of the top and bottom hammers, the horizontal movements of the side hammers and the movement of the heading slide or ram. To apply to such a machine, an automatic stock gage, is the broad object of this invention.

In machines of the hammer sort, as hitherto constructed, the position of the bar of stock, longitudinally considered, has been adjusted through the medium of a set screw or the like, which engages the rear or outer end of the bar.

In the present instance, a movable stock gage is provided which, operating between the upsetting tool and the four or more hammers, engages the forward end of the stock bar.

A means is provided whereby the stock gage is actuated to move the same out of the path of the heading tool after the longitudinal movement of the stock has been limited.

The invention aims to provide a novel form of stock gage, adapted as aforesaid to operate in conjunction with the heading slide, between the upsetting tool and the hammers.

With the above and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed can be made within the scope of what is claimed without departing from the spirit of the invention.

In the accompanying drawing:—

Figure 1 shows in longitudinal section, a heading and forging machine embodying the present invention;

Fig. 2 is a cross section on the line 2—2 of Fig. 1;

Fig. 3 is a fragmental top plan depicting the stock gage and attendant parts;

Fig. 4 is a detail perspective of the stock gage and its actuating mechanism.

In the accompanying drawing there is shown a heading and forging machine embodying a frame 1 upon which is mounted to reciprocate the usual heading slide 2, carrying a heading tool 33. The heading slide 2 may be actuated in any desired manner, as by an eccentric 3 on a cross shaft 4 journaled on the frame 1, the shaft 4 being equipped with a wheel 5. A top hammer 6 is mounted to reciprocate on the frame 1 and is actuated by a lever 7 fulcrumed intermediate its ends as shown at 8 upon the frame, the lever 7 having a slot 9 receiving a roller 10 formed on an ear 11 fashioned on the slide 2.

The bottom hammer is shown at 12 and is mounted to reciprocate in the frame of the machine, the hammer 12 constituting a part of a lever 34 fulcrumed intermediate its ends as shown at 14 on the machine frame, the lever being provided with a slot 15 receiving a roller 16 formed on an ear 17 fashioned on the heading slide 2. Two side hammers are embodied in the machine and one of these hammers is shown at 50 in Fig. 1, the side hammers being operated similar to the hammers 6—12.

It is impossible to have the heading tool 33 and any of the hammers 6—12—50 come against the work at the same time, since such an operation would cause the above-mentioned elements to interfere with one another. The hammers move toward the work while the heading tool is in some part of the back stroke. As shown in Fig. 1, the heading tool 33 is on the back stroke and the hammers have been advanced. The work is held by side grippers 100 carried by arms 101 mounted to swing transversely of the frame on frame-carried pivot elements 102. The construction above-described is known in the art and has been delineated to some extent diagrammatically in order not to encumber the disclosure, since the present invention relates to the stock gage.

No novelty is claimed in this application for the elements above referred to, saving in combination with the stock gage hereinafter described and they have been shown and described merely as parts of an operative bolt heading machine having movements in at least five directions.

The stock bar is shown at 18, and is fed in any desired manner toward the heading tool 33.

A shaft 19 extends longitudinally of the machine and is journaled for rotation in a lug 20 projecting from the machine. Any means may be provided for rotating the shaft but, as shown, at one end of the shaft 19 is located an arm 21 carrying a roller 22 lying in the path of a cam 23 on the heading slide 2. If desired, the arm 21 may include a collar 24 surrounding the shaft 19, the collar and the arm being held in place through the medium of a set screw 25. The invention further includes an arm 26 having a collar 27 surrounding the shaft 19, the collar 27 being held in place by means of a set screw 28. At its outer end, the arm 26 terminates in a head 29 carrying a set screw 30 adapted to engage an angular gage 31 terminated in a finger 32.

In practical operation, the stock bar 18 is advanced until it engages the finger 32, and thus longitudinal movement of the stock bar is stopped. When the heading slide reciprocates, the cam 23 thereon, engaging the roller 22 will rotate the shaft 19 through the instrumentality of the arm 21, the finger 32 being moved to one side, out of the path of the tool 33 on the heading slide.

Owing to the presence of the set screw 28, the collar 27 may be rotated on the shaft 19 and may be held in adjusted positions, thus to fix the position of the finger 32. Similarly, the position of the arm 21 and the roller 22 with respect to the cam 23 may be adjusted by rotating the collar 24 on the shaft 19 and holding the collar in adjusted positions through the instrumentality of the set screw 25.

Having thus described the invention, what is claimed is:—

In a bolt heading machine, a frame; a heading slide mounted to reciprocate on the frame; an upsetting tool carried by the heading slide; a cam on the heading slide; a shaft journaled on the frame; arms mounted to swing for adjustment on the shaft to vary the angle between the arms and to adjust one arm with respect to the cam, said arm coacting with the cam to impart rocking movement to the shaft; means for holding the arms in adjusted positions transversely of the shaft; a stock gage including angularly disposed parts, one of said parts of the stock gage being a stock engaging part, and the other of said parts of the stock gage being a supporting part, the supporting part being mounted to rotate for adjustment in the other of said arms, thereby to adjust the position of the stock engaging part independently of the adjustment of said other arm with respect to the shaft; and means for holding the supporting part of the gage in adjusted positions against rotation in said other arm.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

WILLIAM L. CLOUSE.

Witnesses:

AVERY A. EAKIN,

E. A. DIETRICH.

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