W. L. CLOUSE.

DIE SLIDE OPERATING MECHANISM.

APPLICATION FILED OCT. 21, 1918.

1,366,360. Patented Jan. 25, 1921.

Fig. 1.

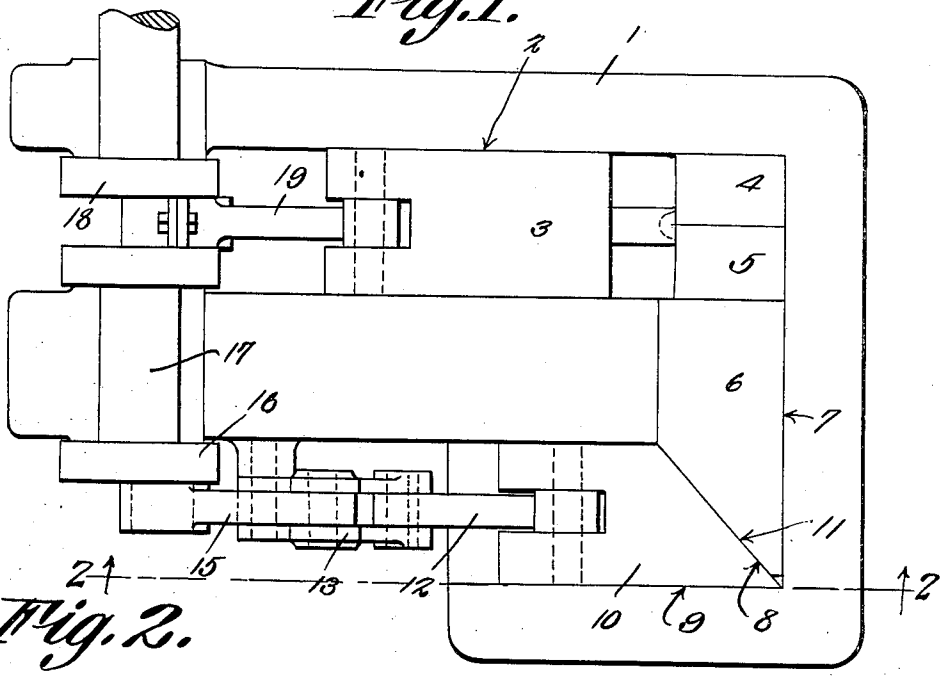


Fig. 2.

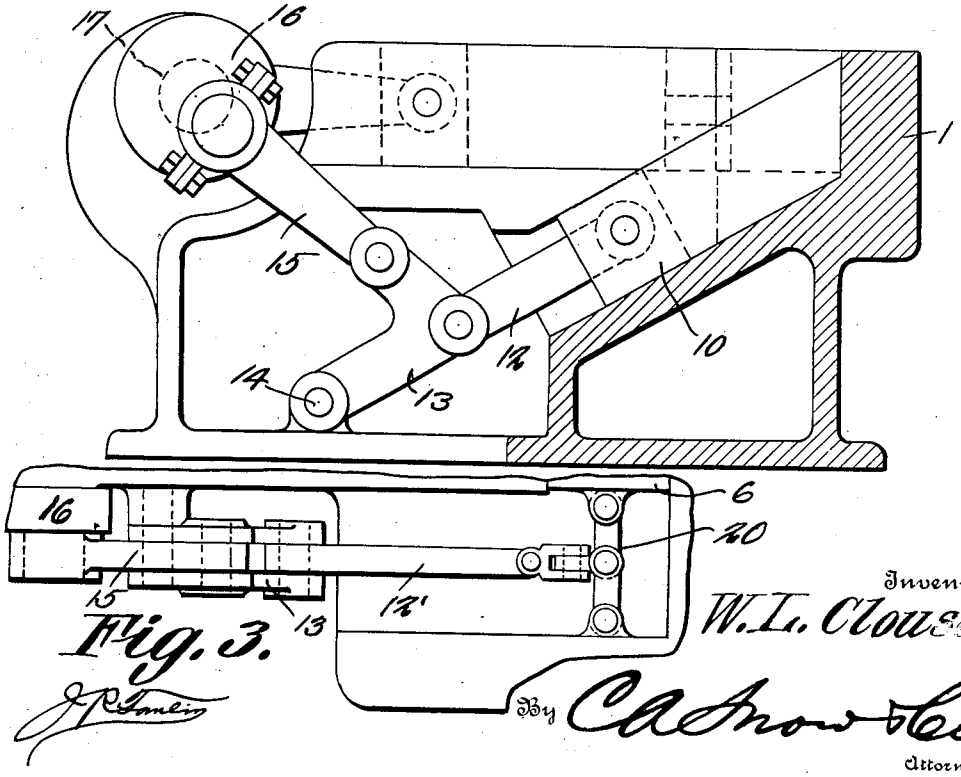


Fig. 3.

Inventor

W. L. Clouse

By C. A. Snow & Co.

Attorneys.

UNITED STATES PATENT OFFICE.

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

DIE-SLIDE-OPERATING MECHANISM.

1,366,360. Specification of Letters Patent. Patented Jan. 25, 1921.

Application filed October 21, 1918. Serial No. 259,094.

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 Die-Slide-Operating Mechanism, of which the following is a specification.

This invention relates to bolt heading and forging machines and has for an object to simplify and otherwise improve upon the construction of machines of this character by employing a toggle set for actuating the slide of the movable gripping die of the machine, and which set operates in a plane of movement at an angle to the plane of movement of said slide instead of in the same plane therewith, as has been the practice heretofore.

With the foregoing and other objects in view which will appear as the description proceeds, the invention consists of certain novel details of construction and combinations of parts which will be hereinafter more fully described and pointed out in the claims, it being understood that various changes may be made in the construction and arrangement of the parts without departing from the spirit or sacrificing any of the advantages of the invention as set forth in the appended claims.

In the accompanying drawings the preferred form of the invention has been shown.

In said drawings—

Figure 1 is a plan view of a portion of the machine and showing the present improvements combined therewith.

Fig. 2 is a section on line 2—2, Fig. 1.

Fig. 3 is a plan view of a portion of the machine and showing a slightly modified form.

Referring to the figures by characters of reference, 1 designates a portion of the frame of the machine, the same being provided with a groove or channel 2 in which a heading slide is mounted to operate as shown at 3. A stationary die 4 and a movable die 5 are located at one end of the channel 2 and the die 5 has a slide 6 mounted for transverse movement of the frame within a guide channel 7. One end of the slide 6 is beveled, as shown at 8 and extends across the upper end of an inclined guideway 9 the side walls of which are parallel with the planes occupied by the side walls of the channel 2. A wedge slide 10 is mounted within the guideway 9 and has its forward end beveled, as shown at 11 while its back end is connected, by a link 12, to the intermediate portion of an angle lever 13. This lever is pivotally connected, at its lower end, to the frame 1, as shown at 14, while its upper end is connected to a pitman 15 operated by a crank 16 on the shaft 17 which drives the slide 3, there being a crank 18 and pitman 19 for transmitting motion from said shaft to the slide 3.

From the foregoing it will be apparent that when the slide 10 is forced forward its beveled end 11 will press the slide 6 along its channel so as to force the die 5 toward the die 4. It will be obvious that, instead of using the wedge slide the link 12 can be connected to the middle joint of a toggle interposed between the slide 6 and the end of its channel, thus producing the same action as that already described. This modified structure has been shown in Fig. 3 wherein the supplemental toggle has been shown at 20 with the link 12′ fastened to the middle joint thereof.

By the term "plane of movement," used in the claims, is meant a plane radiating from the axis of rotation of the shaft 17 and along which the heading slide is adapted to reciprocate.

What is claimed is:—

1. In a bolt heading and forging machine the combination with a heading slide and a transversely movable die slide, of a shaft for actuating the heading slide, an angle lever fulcrumed below the plane of movement of the slides, a pitman connection between one end of said lever and the shaft for oscillating the lever, a guideway inclined upwardly toward the path of the transversely movable slide, a wedge slide mounted for reciprocation upon said guideway and into and out of engagement with the transverse removable slide to actuate the same, and a link connection between the wedge slide and the angle lever and cooperating with said lever to form a toggle.

2. In a bolt heading and forging machine the combination with a frame having a longitudinal channel, a transverse channel, and a downwardly inclined guideway communicating with the transverse channel, of a heading slide in the longitudinal channel, a transversely movable slide in the trans-

verse channel, a member in the inclined guideway, an angle lever fulcrumed below and beyond the inclined guideway and below the plane of the channels, a link connecting said angle lever to said member and coöperating with said lever to form a toggle, a shaft for actuating the heading slide and a pitman actuated by the shaft and connected to the angle lever, said member being shiftable by the movement of its link and the angle lever for thrusting the gripping slide along a line extending transversely of the guideway.

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:
ARCH D. GERMAN,
AVERY A. EAKIN.