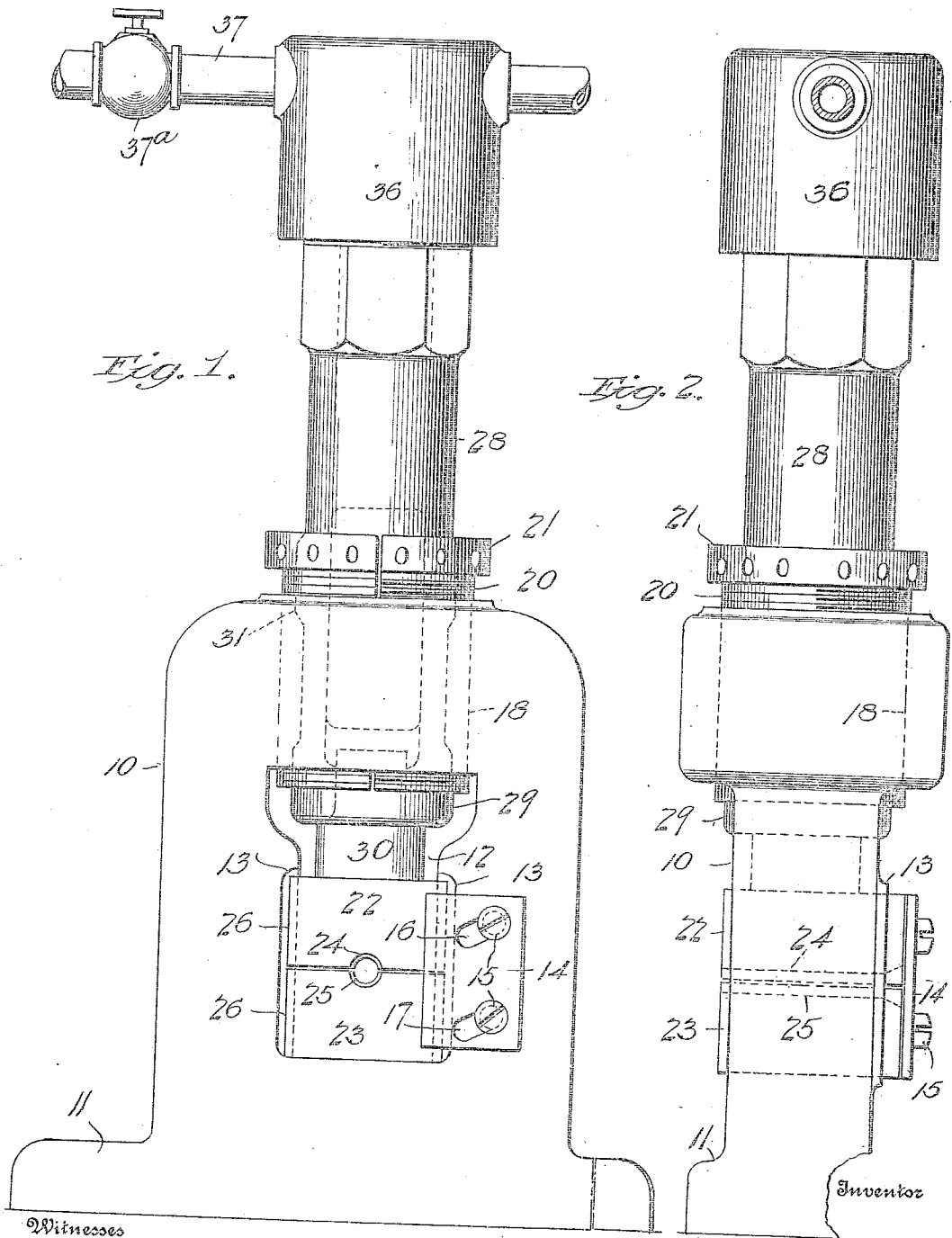


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MACHINE FOR WIRE WORKING, NEEDLE POINTING, OR THE LIKE.
APPLICATION FILED MAY 11, 1908.

953,741.

Patented Apr. 5, 1910.

2 SHEETS—SHEET 1.



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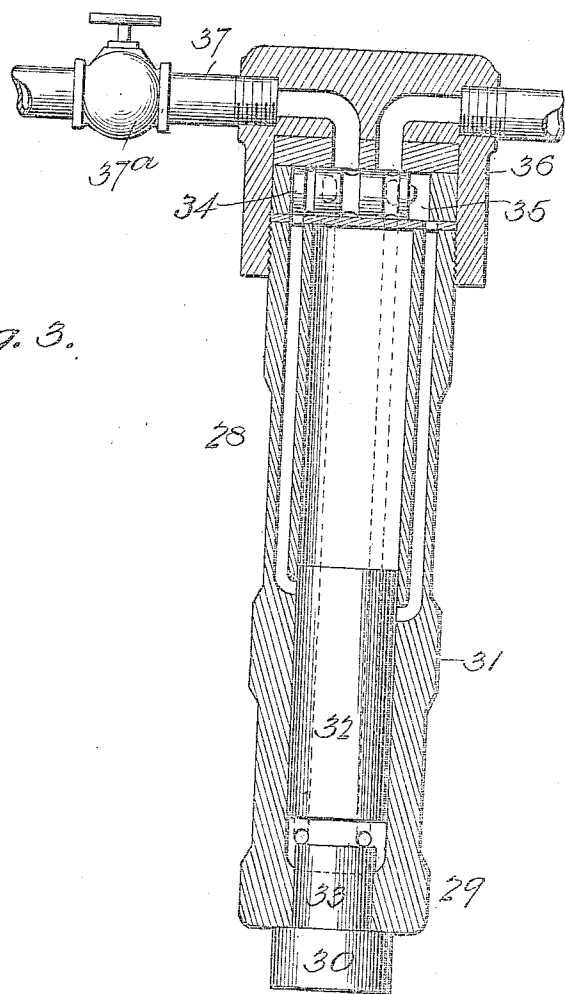


Fig. 3.

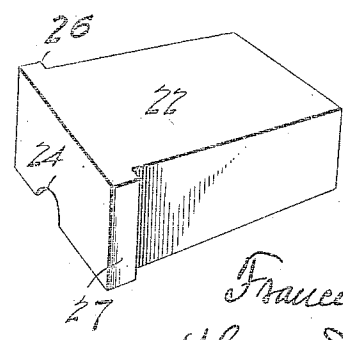


Fig. 4.

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UNITED STATES PATENT OFFICE.

FRANCIS R. EDEN, OF MONTCLAIR, NEW JERSEY.

MACHINE FOR WIRE-WORKING, NEEDLE-POINTING, OR THE LIKE.

953,741.

Specification of Letters Patent.

Patented Apr. 5, 1910.

Application filed May 11, 1908. Serial No. 432,292.

To all whom it may concern:

Be it known that I, FRANCIS R. EDEN, a citizen of the United States, and resident of Montclair, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Machines for Use in Wire-Working, Needle-Pointing, or the Like, of which the following is a specification.

The present invention relates to fluid-pressure operated metal working machines, and has specially in view improvements in machines for use in wire working, needle pointing, or the like, wherein a reciprocating piston imparts a similar movement to a hammer which coöperates with forming dies to shape the material being operated upon.

With the above and many other objects in view the invention contemplates the employment of the usual, or any preferred type of cylinder provided with a controlling valve, reciprocating piston and piston-operated hammer, said cylinder being detachably connected with a die frame in which two die members are mounted and adapted to be acted upon by said hammer to impart the desired shape to the material held between them.

The details of the invention are susceptible to a wide variation in structural arrangement, but a preferred and practical embodiment thereof is shown in the accompanying drawings, in which—

Figure 1 is a front elevation of the hammer motor. Fig. 2 is a side elevation. Fig. 3 is a vertical sectional view through the hammer motor. Fig. 4 is a detail view of a preferred form of die member which is used with the invention.

Like characters designate corresponding parts.

In the preferred embodiment of the invention shown in the accompanying drawings, 10 designates a die frame provided with an enlarged, flat, base 11 and a central die recess 12 which extends laterally through said frame and has an offset shoulder 13 formed around the entrance thereto. At one side of the entrance to said die recess, a retaining plate 14 is slidably connected with the frame through the medium of locking screws 15 which pass through obliquely arranged slots 16—17 formed in the upper and lower portions of said plate. Said retaining plate is so arranged relatively to said die recess that

when slid to its lowered position it will project across the entrance to said die recess, and when in its raised position, it will be clear of said entrance, as will be more fully explained hereinafter.

A central, vertically arranged opening 18 is formed through the upper portion of said frame, the lower portion of which communicates with the die recess 12. Said opening 18 is interiorly threaded, for engagement with a threaded and longitudinally split-spring coupling sleeve 20, which carries an adjusting nut 21 at its outer end which projects beyond the upper portion of the frame.

In the example of the preferred form of the invention shown in the drawings, the die members used in connection therewith are especially adapted to pointing wire, needles, and the like, the same consisting of upper and lower members 22—23, the contacting faces of which are each provided with a tapering groove 24—25, and the outer faces of each are provided with a flange 26—27, which, when the dies are in operative position in the die recess, contact with the offset shoulder 13 formed at the entrance thereto and prevent the said die members passing too far into, or through, the said recess.

From the description as thus set forth it will be understood that when it is desired to place the dies in position in the frame, or when it is desired to remove them from the frame, the retaining plate is moved to its raised position, where it will not obstruct the entrance to the die recess, whereupon access thereto may be freely had. And, when said plate is in its lower position, the dies will be retained in the die recess thereby, as the plate projects across the outer ends of both die members.

It is preferred to associate the improved form of die frame and details thereof with a fluid-pressure operated hammer of the conventional type comprising a cylinder 28 the lower end 29 of which projects into the vertical recess of the frame and carries a hammer 30 which normally rests upon the upper surface of the upper die member. And to assure a rigid connection between the said frame and said cylinder, the barrel portion of the latter is provided with an annular shoulder 31 with which the split and threaded spring coupling 20 and its nut engages. The hammer 30 in the cylinder is

acted upon in the usual manner by a reciprocating piston 32 which strikes against the stem 33 thereof, the reciprocation of said piston being controlled through the controlling valve 34 which reciprocates across the valve chamber 35 in the cylinder head 36, and alternately opens and closes the usual inlet and outlet ports which communicate with the source of fluid pressure power, interior of the cylinder, and outlet therefrom, in the usual manner. And, preferably the pipe connection 37 with the said source of fluid pressure supply is provided with a manually operable controlling valve 37^a to regulate the operations of the motor.

It will be understood from the foregoing description that the reciprocation of the piston will cause the hammer to impart a sharp blow to the upper die member, causing the latter to be forced down onto the lower die member with the result that the shape of the groove formed therethrough will be imparted to the material held between them. And, that through the described form of the dies and the shoulder at the entrance to the die recess, and the slidably mounted locking plate, the said dies will be at all times held in a position where they can be acted upon by the hammer to effectively impart the desired shape to the material.

Another distinctive feature of the invention is in the form of split spring coupling between the cylinder and the die frame, whereby it is possible to adjust the relative position of said cylinder to the frame, said relative adjustment being obtained through the threaded portions of the frame and the said split spring coupling, and the binding connection between the upper portion of the coupling and the lower shouldered portion of the cylinder barrel.

Claims.

1. In a machine of the character described, the combination with a frame having a transversely disposed die-receiving recess and a longitudinal hammer-receiving recess communicating with the die-receiving recess, of dies located in the die-receiving re-

cess, and a hammer for operating the dies having a cylinder secured in the hammer-receiving recess and projecting above the frame, said hammer being supported by said frame.

2. In a machine of the character described, the combination with a frame having a transversely disposed die-receiving recess and a longitudinal hammer-receiving recess communicating with the die-receiving recess, of dies located in the die-receiving recess, a hammer for operating the dies including a cylinder having a portion located in the hammer-receiving recess and projecting above the frame, said cylinder being provided with an annular enlargement in the hammer-receiving recess, and a split retaining sleeve threaded into said recess and bearing against the enlargement.

3. In a machine of the character described, the combination with a frame having a die-receiving recess therethrough, of dies detachably located in the recess and having stop flanges that bear against one side of the frame to prevent their passage through the recess, a retaining plate slidably mounted on said side of the frame and movable to a position over the dies, and means for relatively moving the dies.

4. In a machine of the character described, the combination with a frame having a die-receiving recess and a longitudinal recess communicating with the die-receiving recess, of a hammer head located in the latter recess and movable into engagement with the dies placed in the former recess, and a hammer including a cylinder that fits in the longitudinal recess and retains the hammer head therein, and a piston operating in the cylinder and engaging the hammer to actuate it.

Signed at New York city in the county of New York and State of New York this 28th day of April A. D. 1908.

FRANCIS R. EDEN.

Witnesses:

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