

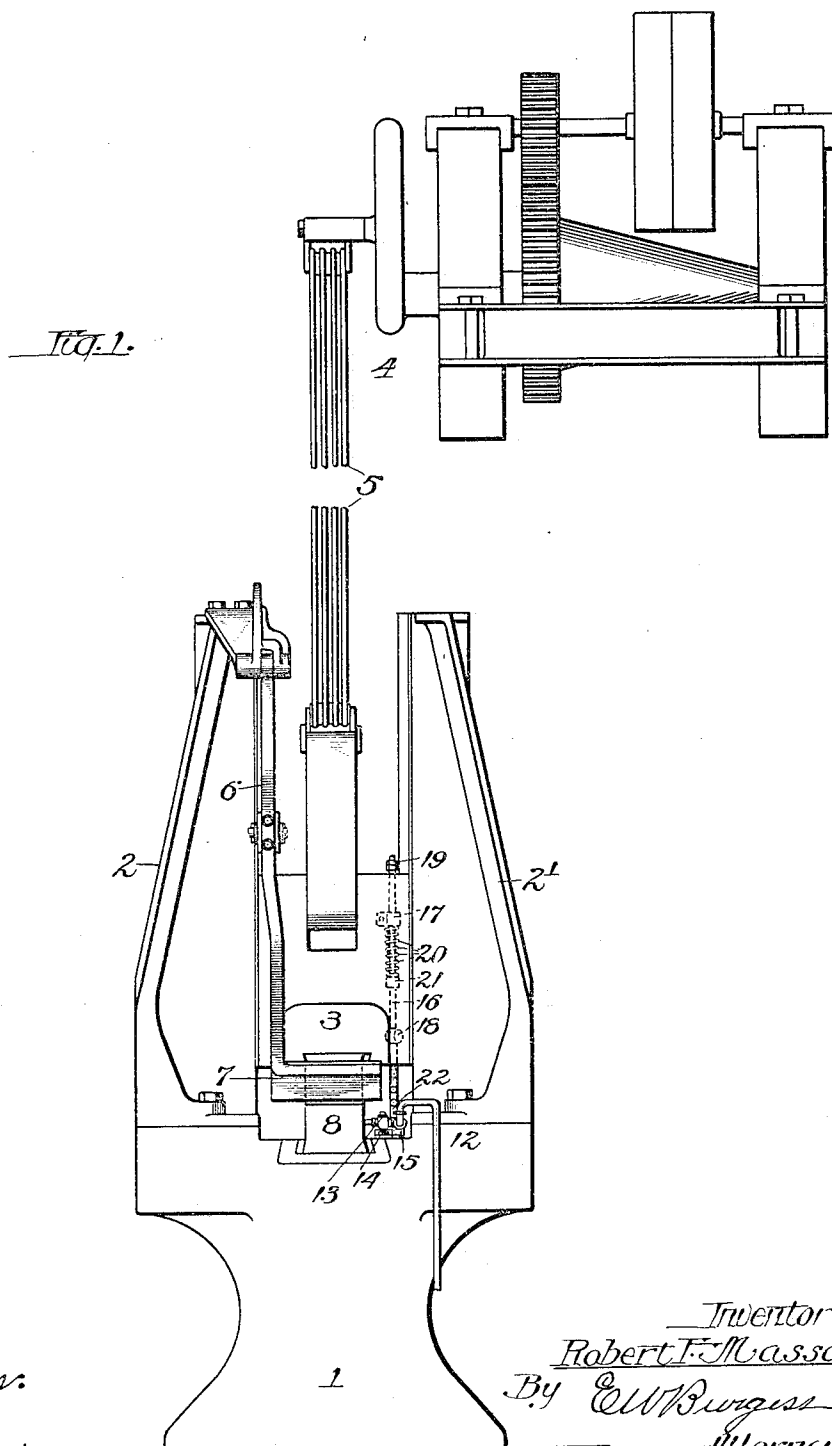
No. 787,339.

PATENTED APR. 11, 1905.

R. F. MASSA.
ATTACHMENT FOR DROP HAMMERS.

APPLICATION FILED OCT. 22, 1904.

2 SHEETS—SHEET 1.



Witnesses:

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J. W. Hoffmeister.

Inventor

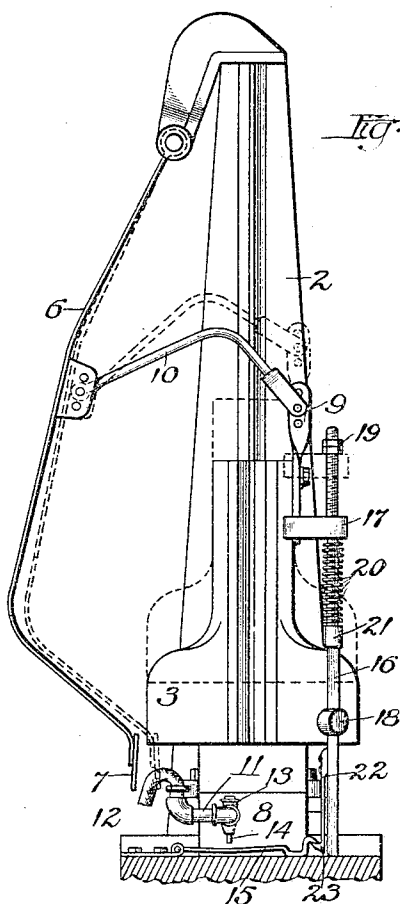
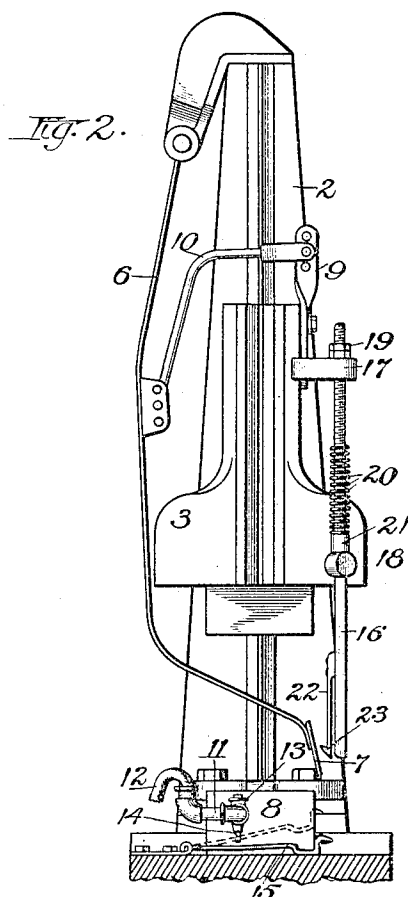
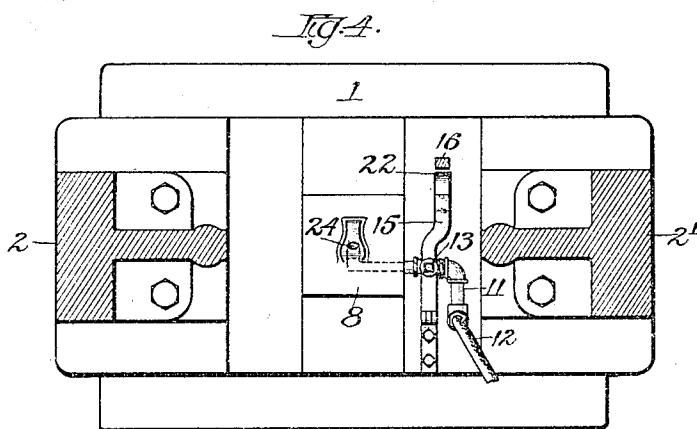
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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

ROBERT FALCONER MASSA, OF CHICAGO, ILLINOIS.

ATTACHMENT FOR DROP-HAMMERS.

SPECIFICATION forming part of Letters Patent No. 787,339, dated April 11, 1905.

Application filed October 22, 1904. Serial No. 229,539.

To all whom it may concern:

Be it known that I, ROBERT FALCONER MASSA, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Attachments for Drop-Hammers, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof.

My invention relates to drop-hammers, and particularly to tools of that class used to straighten or re-form articles placed upon the anvil by the hand of the operator and then struck by the descending hammer.

The object of the invention is to provide improved means for ejecting the article being operated upon after the hammer has descended and while it is being raised to its suspended position.

It consists of the mechanism illustrated by the drawings and more particularly described in the specification.

In the drawings, Figure 1 represents a front elevation of a common form of drop-hammer with the ejecting device attached. Fig. 2 is a side elevation, partly in section, of Fig. 1, showing the hammer in its suspended position. Fig. 3 is the same as Fig. 2, with the hammer down; and Fig. 4 is a cross-section of Fig. 1 above the anvil.

Like numerals represent like parts throughout the various views.

1 represents the base of the machine, and 2 and 2' are the side standards, forming guides for the hammer 3.

4 is the usual driving-jack, connected to the hammer 3 by means of the lifting-ropes 5.

The foregoing may be any of the preferred forms of drop-hammer construction and forms no part of my invention.

Near the upper end of one of the guide-standards there is pivoted a depending arm 6, having at its lower end a wiper 7, arranged to swing a short distance above the anvil-die 8, that is adapted to receive the article being operated upon. Secured to the hammer 3 is a strap 9, and a link 10 connects the strap with the depending arm 6.

The ejecting means consists of an air-pipe 11, supported upon the base 1 through its

connection with the stationary die and connected to a source of supply by means of a hose or other connection 12 and provided with a puppet-valve 13, having a stem 14 projecting therefrom which is adapted to contact with a hinged bar 15, secured to the base 1 below the said pipe. A sliding bar 16 is supported on the hammer 3 by means of the projecting lugs 17 and 18, secured thereto. The bar slides through the lugs, and its downward movement is limited by the nuts 19 at its upper end, and the nuts may be adjusted along the bar to compensate for any difference in thickness of the various dies that may be used and to regulate its tripping action upon the bar 15. A coiled spring 20 surrounds the bar between the lug 17 and a collar 21, secured to the bar, and operates to cushion its movement when the hammer falls, and the bar, coming in contact with the base, is caused to slide in its supports. The bar at its lower end is provided with a plate-spring 22, having a hooked end 23, that engages with the end of the hinged bar 15 and raises the said bar to open the valve through contact with its stem when the hammer is raised, as shown by dotted lines in Fig. 2. The air-pipe 11 communicates with a passage 24, leading beneath the die in the anvil and opening into the bottom thereof, as shown in Fig. 4. The puppet-valve automatically shuts off the air-current, and it remains closed until the hammer falls and brings the hook 23 in contact with the bar 15, which is raised thereby when the hammer has nearly reached its suspended position, and in being raised it comes in contact with the stem of the valve and opens it and allows a blast of air to escape through the pipe and connecting-passage beneath the article to eject it from the die. The hook 23 is only engaged with the bar 15 through a short portion of its upward movement, as shown in Fig. 2. As shown in Fig. 3, the hammer is down and the hook 23 is engaged with the plate-spring 15. As the hammer is raised the bar 16 slides through the lugs 17 and 18 until stopped by the nuts 19, as shown by dotted lines. Then the bar moves with the hammer and opens the valve to release the air-current.

What I claim, and desire to secure by Letters Patent, is—

1. In a tool of the class described, the combination of a movable and a stationary die, an air-conduit adapted to conduct air to the stationary die, and means connected with the hammer for automatically opening and closing said conduit at each stroke of the hammer.

2. In a tool of the class described, the combination of a movable and a stationary die, an air-conduit adapted to conduct air to the stationary die, a self-closing valve in said conduit, and means connected with said movable die for opening said valve.

3. In a tool of the class described, the combination of a movable and a stationary die, an air-pipe connected with the stationary die, said pipe provided with a self-closing valve, a hinged bar adapted to open said valve when moved in one direction, and means connected with the movable die for moving said hinged bar as the movable die is being raised to its suspended position.

4. In a tool of the class described, the combination of a movable and a stationary die, an air-pipe connected with the stationary die, said pipe provided with a self-closing valve, a bar hinged to a fixed part of the machine and adapted to open said valve when moved in one direction, a yielding hook connected with the movable die and arranged to engage with one end of the hinged bar when the movable die is down and to first raise said hinge-bar and then to be disengaged therefrom as said die is moved to its suspended position.

5. In a tool of the class described, the combination of a movable and a stationary die, an air-pipe connected with the stationary die, said pipe provided with a self-closing valve, a bar hinged to a fixed part of the machine and adapted to open said valve when moved in one direction, a sliding bar moving with the movable die supported thereby and portions arranged to contact with said supports to limit its movement, a spring-hook secured to said sliding bar and adapted to engage with one end of the hinged bar when the movable die is down and to first raise said hinge-bar and then to be disengaged therefrom as said die is moved to its suspended position.

6. In a tool of the class described, the combination of a stationary die supported upon the base and provided with an air-duct communicating with a source of supply, a movable die carried by the hammer, a self-closing valve adapted to control said air-supply, means for opening said valve comprising in part an

adjustable bar adapted to slide through supports carried by the hammer and provided with a hooked end and portions arranged to contact with said supports to limit its movement, and a make-and-break connection between the said hooked end of the bar and valve.

7. In a tool of the class described, the combination of a stationary die supported upon the base and provided with an air-duct communicating with a source of supply, a movable die carried by the hammer, a self-closing valve adapted to control said air-supply, means for opening said valve comprising in part an adjustable bar adapted to slide through supports carried by the hammer and provided with a hooked end, a means for cushioning the downward stroke of the bar, and a make-and-break connection between the said hooked end of the bar and valve.

8. In a tool of the class described, the combination of a stationary die supported upon the base and adapted to receive the article to be operated upon, and provided with an air-duct within said die communicating with a source of supply and terminating beneath the article, a movable hammer carrying the other die, and a make-and-break connection in the source of supply and means whereby said make-and-break connection is controlled by the movable hammer.

9. In a tool of the class described, the combination of a stationary die supported upon the base, a movable die carried by the hammer, the stationary die provided with an air-duct communicating with a source of supply, a self-closing valve in said source of supply, a movable hammer and a die carried by said hammer, a bar pivoted on the base and adapted to contact with said valve in a manner to open it when moved in one direction, and means for moving said bar comprising an upright sliding adjustable bar connected with the hammer and controlled thereby, said bar provided with a yielding hook adapted to engage with the valve-opening bar in its downward movement and to first raise said hinge-bar and then to be released therefrom during a portion of its upward movement, and a coiled spring surrounding the sliding bar adapted to cushion its stroke.

In witness whereof I hereto affix my signature in presence of two witnesses.

ROBERT FALCONER MASSA.

Witnesses:

CHAS. H. ROCHEFORT,
T. H. ALFREDS.