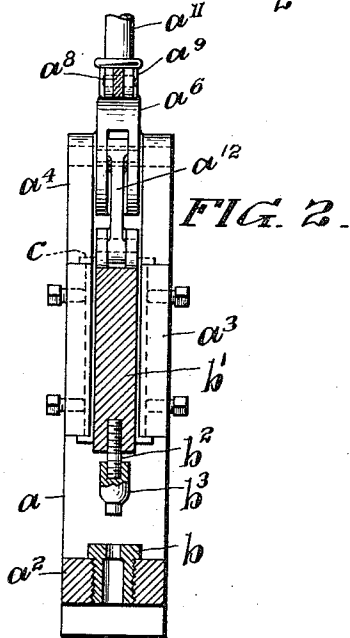
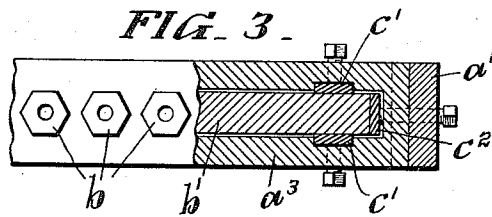


1,060,772.



Thomas M. Smith
Helen H. Miller.



COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

MICHAEL J. LENIHAN, OF PHILADELPHIA, PENNSYLVANIA.

METAL-WORKER'S PERFORATING-MACHINE.

1,060,772.

Specification of Letters Patent.

Patented May 6, 1913.

Application filed December 5, 1912. Serial No. 735,009.

To all whom it may concern:

Be it known that I, MICHAEL J. LENIHAN, a citizen of the United States, residing at the city of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Metal-Workers' Perforating-Machines, of which the following is a specification.

My invention has relation to a portable machine for series perforating of metal, such as roofing sheets, sheets for piping, and furnace drums or the like; and in such connection it relates to the particular constructive arrangement of the machine operable either right or left handed, for the defined purposes.

The nature, scope and characteristic features of my invention will be more fully understood from the following description taken in connection with the accompanying drawings forming part hereof, in which—

Figure 1, is a front elevational view of a portable metal worker's perforating machine, embodying main features of my said invention. Fig. 2, is a vertical sectional view through the machine, on the line 2—2, of Fig. 1; and Fig. 3, is a view partly in top or plan and in section, on the line 3—3, of Fig. 1, showing the vertically operating plunger-head for male dies of the machine, and the side and end means for maintaining the said die-holder in true alining relation to the standard through which it is manually raised and lowered.

Referring to the drawings a and a^1 , are end standards carrying at the lower portion a bottom plate a , provided with a series of detachable perforated female dies b . The said standard in the upper portion has secured thereto a housing a^2 , for a plunger-head b^1 , to which is detachably secured a series of threaded shanks b^2 , for detachably securing male dies b^3 , thereto, as clearly illustrated in Fig. 2. The housing a^3 , near each end is provided with bearings a^4 and a^5 , for rotary reciprocating members a^6 and a^7 , connected by a movable link a^8 , with each other, as clearly illustrated in Fig. 1, and both of said members are provided with

sockets a^9 and a^{10} , for an operating lever-rod a^{11} , the said rotary members a^6 and a^7 , being connected eccentrically by means of links a^{12} and a^{13} , with the respective end portions of the plunger-head b^1 , to thereby permit of the raising and lowering manually of the series of male dies into contact with the female dies of the machine, for forming by a single action, a series of perforations in a metal sheet inserted between the two sets of movable and fixed dies respectively, of the machine, as will be readily and fully understood from Fig. 1, of the drawings. The plunger-head b^1 , slidable up and down in the housing a^3 on the sides and ends of the same is provided with threaded take-up devices c , c^1 and c^2 , for maintaining the plunger-head at all times in true alining condition, in the manipulations of said device. This is desirable that the line of holes formed by the dies will always be of uniform size and in true alining relation with respect to each other.

The machine can be operated either right handed or left handed by simply removing the operating rod a^{11} , from the socket a^9 , to the socket a^{10} , and manipulating the plunger-head b^1 , then in the direction as indicated by the arrow in Fig. 1.

Having thus described the nature and objects of my invention, what I claim as new and desire to secure by Letters Patent is:—

In a machine of the character described, a series of male dies secured to a plunger-head and operable vertically up and down against a series of complemental female dies, the plunger-head of said dies supportingly held by means of links connected with supported rotary members coupled to each other and an operating rod detachably connected with either of said rotary members, for reciprocating the same, substantially as and for the purposes described.

In witness whereof, I have hereunto set my signature in the presence of the two subscribing witnesses hereto.

MICHAEL J. LENIHAN.

Witnesses:

THOMAS M. SMITH,
HELEN F. MILLER.