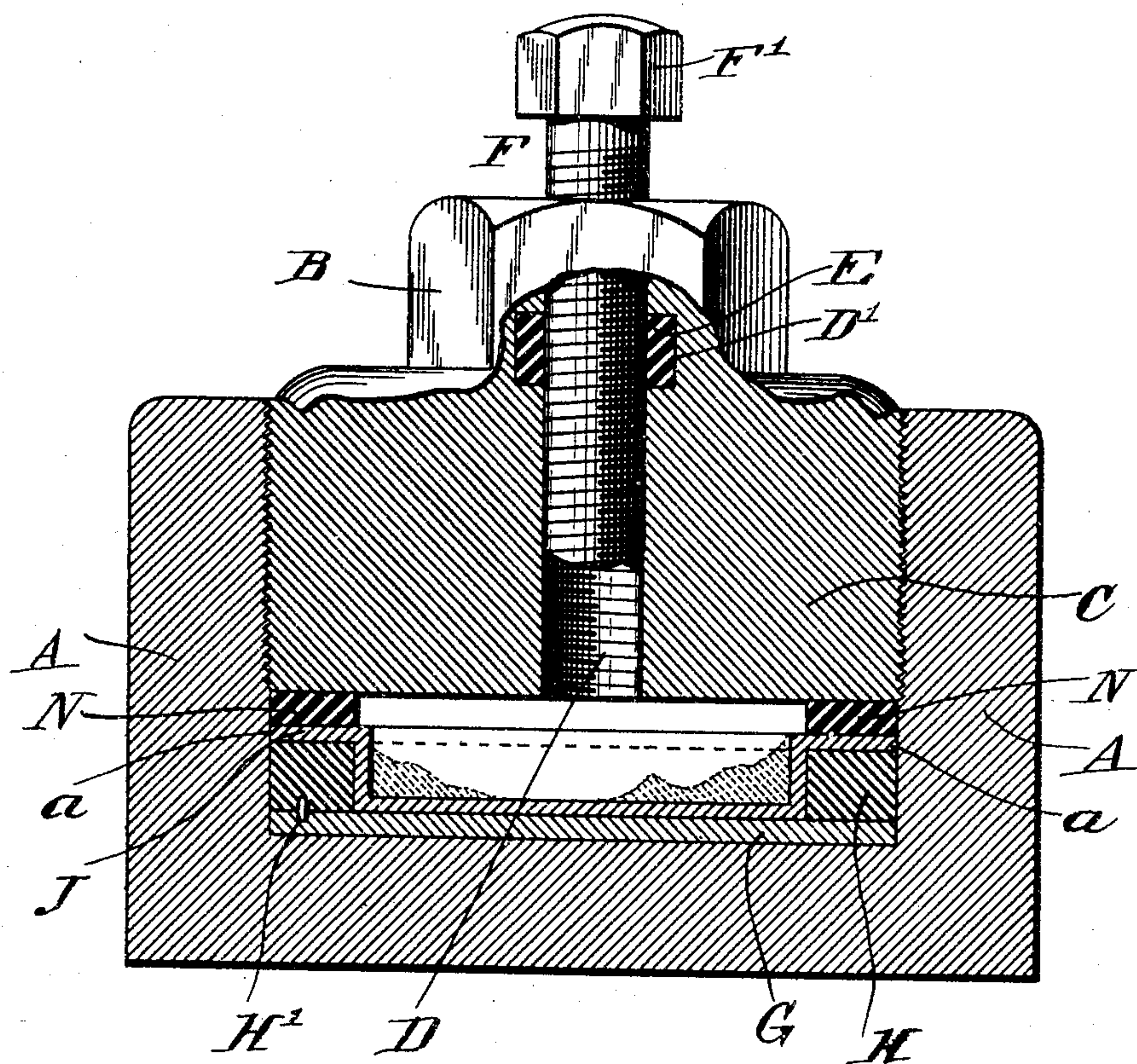


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J. W. NELSON.
HYDRAULIC EMBOSSING MACHINE.
APPLICATION FILED MAR. 22, 1904.



Witnesses
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UNITED STATES PATENT OFFICE.

JAMES W. NELSON, OF NEW YORK, N. Y., ASSIGNOR TO WILLIAM M. DUDGEON, OF NEW YORK, N. Y., EXECUTOR OF RICHARD DUDGEON, DECEASED.

HYDRAULIC EMBOSSING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 779,664, dated January 10, 1905.

Application filed March 22, 1904. Serial No. 199,500.

To all whom it may concern:

Be it known that I, JAMES W. NELSON, a citizen of the United States, residing in the city of New York, borough of Brooklyn, county of Kings, State of New York, have invented certain new and useful Improvements in Hydraulic Embossing-Machines, of which the following is a specification.

This invention relates to improvements in hydraulic embossing-machines such as are used for embossing or shaping metal.

The object of my invention is to provide a new and improved machine of this kind which is simple in construction, can easily be opened and closed for receiving the article to be shaped and embossed, and is effective and reliable in use and can be used for various thicknesses of metal.

In the accompanying drawing a vertical transverse sectional view of my embossing-machine is shown.

The same is constructed with a heavy metal chamber A, which is provided with an internal thread extending from its top opening down to within a short distance, about one-third of the internal height, from the bottom and into which screw-threaded opening a block C can be screwed, which serves for closing the opening in the block A. This block C is provided on its upper end with a polygonal head B, on which a key or some other implement can be applied for turning the block C while screwing it into and out of the opening into the main body. This closing-block C is provided with a vertical screw-threaded hole D, provided near its upper end with an annular cavity D' for receiving a packing-ring E. A screw-bolt F is screwed from the top of the block C into the threaded hole D and is provided at its upper end with a head F' for applying a key or other implement for turning said screw while screwing it into and out of the hole D.

In the bottom of the opening in the main body of the press the pattern or die for the article to be shaped is placed, as shown in the drawing in full lines. This die is composed of a bottom plate G and a ring H, resting thereon, and the plate and ring are connected by pins H' or analogous contrivances, the pat-

tern or die shown serving for pressing a circular metal plate in such a manner that it is provided with a projecting flat annular rim part a.

In case any other shape is to be produced or embossed the die must be shaped correspondingly—for example, as shown in dotted lines in the figure—the die being solid up to the dotted lines, as also indicated by dotted cross-hatching. The metal disk J, to be embossed and which has the same diameter as the internal diameter of the plain lower part of the cavity or recess in the main body A, is placed upon the die-ring H with its edge part resting upon the top of the ring or the corresponding parts of any other die, as in all dies the rim portions can be made flat or horizontal in the form of a flat annular surface.

Upon the metal J to be embossed a packing-ring N is placed at the rim portion, which packing-ring is of such height that when the block C is screwed down in the main body A its bottom contacts with the top of this packing-ring N, and thereby when the block C is screwed home the packing-ring N is pressed firmly upon the rim part of the sheet metal J, which in turn is pressed upon the flat annular rim part of the die. A greater or less quantity of liquid is poured into the cavity or recess in the main body, and then the screw F is screwed in the threaded hole. By turning down this screw a certain pressure is produced in the liquid in the cavity of the main body, and as all walls of this cavity are unyielding, with the exception of the metal J above the die, this metal is pressed down by the hydraulic pressure in the recess or cavity until the under surface of the metal J is in absolute contact with the die and has assumed perfectly the shape of the die.

The packing-ring N prevents the sheet metal J from being displaced while being subjected to pressure and at the same time prevents the leakage of the liquid under pressure through the joint between the inner surface of the recess or cavity in the main body A and the outer threaded surface of the block C, and the packing-ring E prevents the escape of the liquid under pressure through the screw-hole into which the screw F is screwed.

This press can be made large or small for objects of various sizes, is portable, can be readily handled, requires no machinery, and the pressure can be increased so gradually as
5 not to tear, rupture, wrinkle, or otherwise injuriously affect the sheet metal under treatment.

Having described my invention, what I claim as new, and desire to secure by Letters
10 Patent, is—

1. In a hydraulic embossing-machine, the combination with a recessed main body, which has an internal screw-thread, of a block which can be screwed into said threaded opening, a
15 die for supporting the metal to be embossed, and which die rests on the bottom of the opening in the main body, a packing-ring to rest upon said metal resting upon the die and which ring is to be compressed upon said metal by
20 the threaded block and means for creating pressure within the closed block, substantially as set forth.

2. In a hydraulic embossing-machine, the combination with a recessed main body, which
25 has an internal screw-thread, of a block which can be screwed into said threaded opening,

which block has a screw-threaded hole having an annular recess, a packing in said annular recess, and a screw in said threaded hole, a die
30 for the metal to be embossed, and a packing-ring to rest on said metal, substantially as set forth.

3. In a hydraulic embossing-machine, the combination with a recessed main body, which has an internal screw-thread, of a block which
35 can be screwed into said threaded opening, a die in the bottom of the recess in the main body, which die has a flat annular rim for supporting the rim part of the metal to be embossed, a packing-ring to rest on the rim part
40 of the metal to be embossed, which packing-ring is to be pressed upon the metal to be embossed, by the screw-threaded block, screwed into the main body, substantially as set forth.

In testimony whereof I have signed my
45 name to this specification in the presence of two subscribing witnesses.

JAMES W. NELSON.

Witnesses:

OSCAR F. GUNZ,
SOPHIE M. BAEDER.