

No. 748,415.

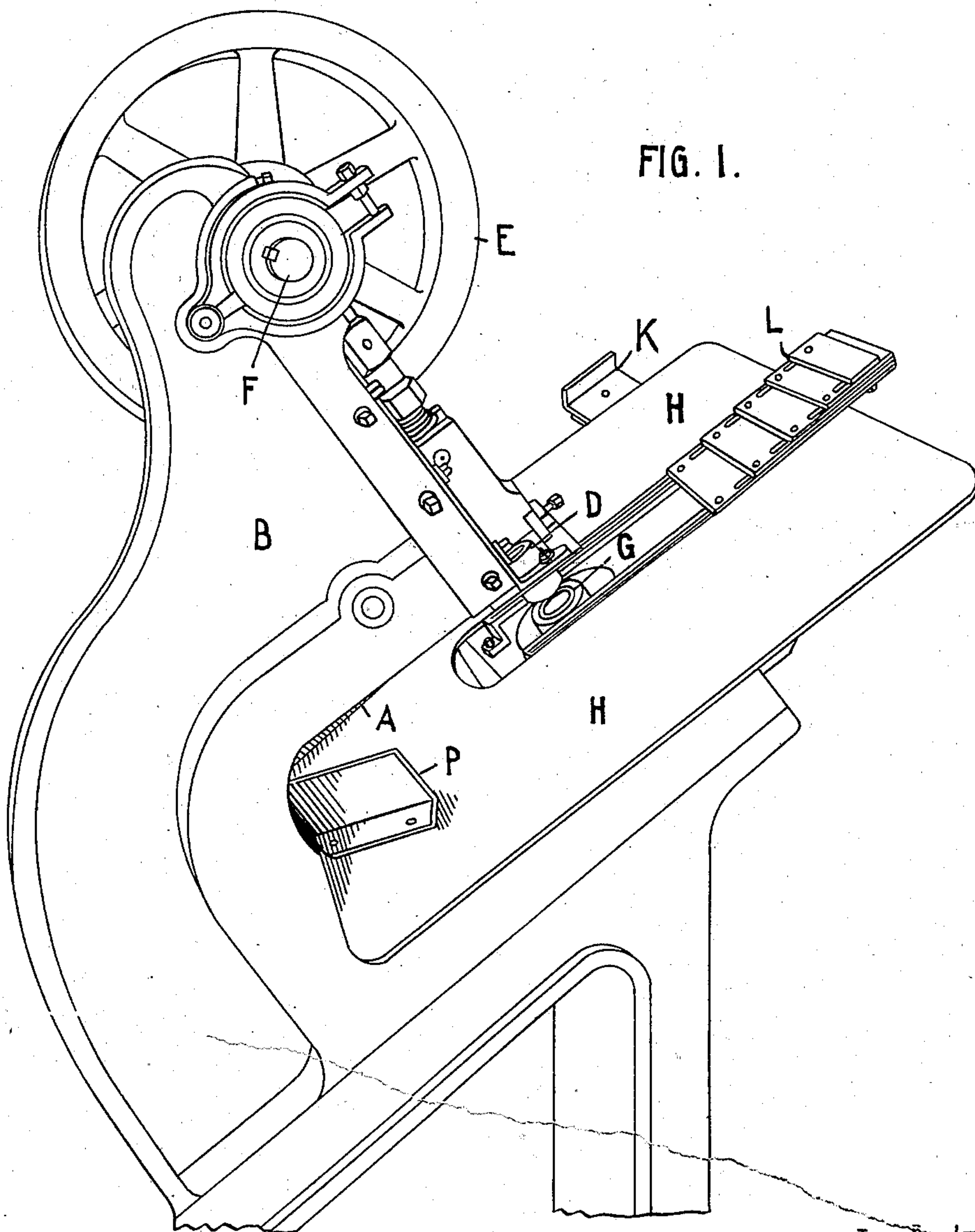
PATENTED DEC. 29, 1903.

J. W. PATON.
METAL CUTTING AND STAMPING APPARATUS.

APPLICATION FILED FEB. 25, 1903.

NO MODEL.

3 SHEETS—SHEET 1.



Witnesses

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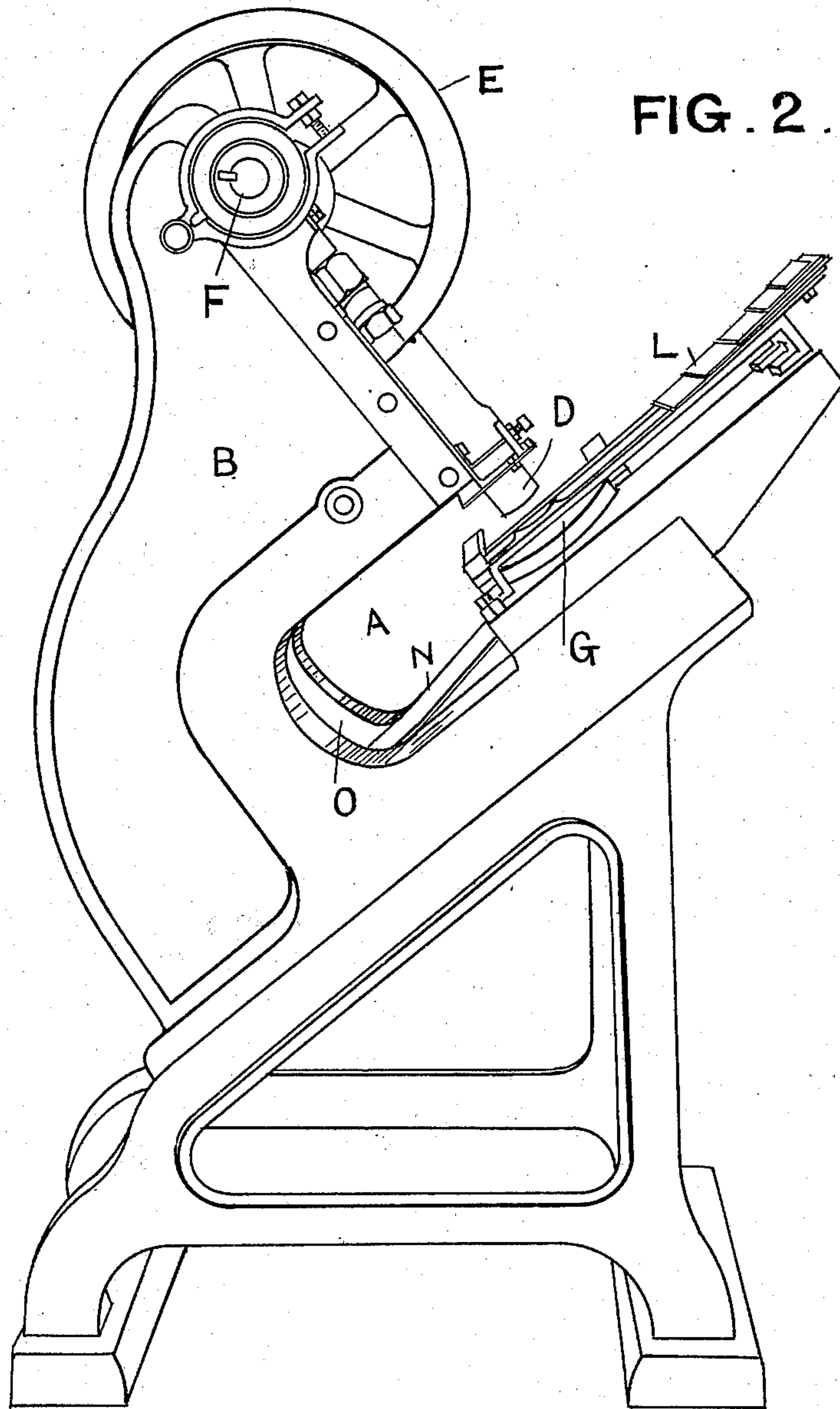


FIG. 2.

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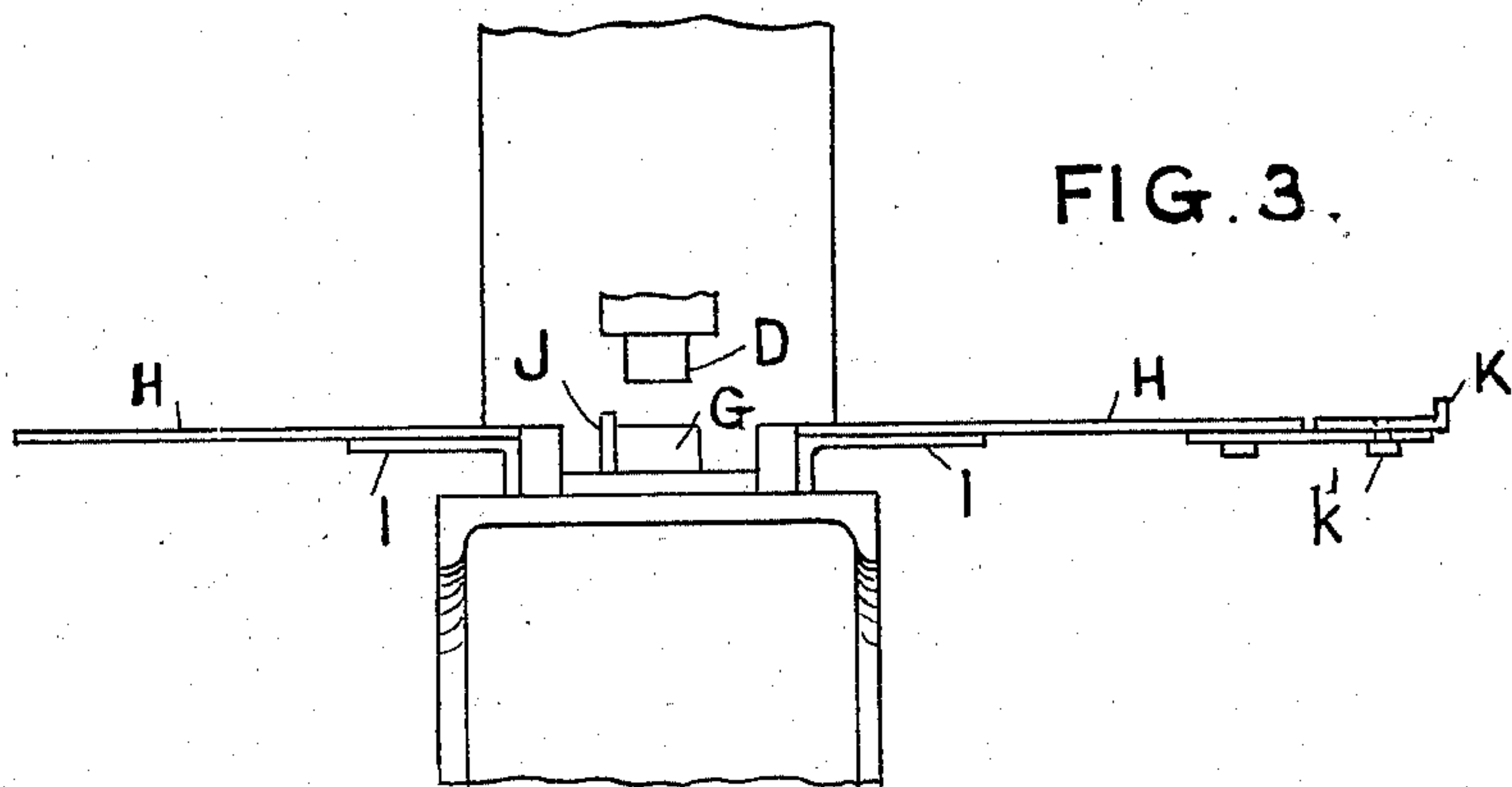


FIG. 3.

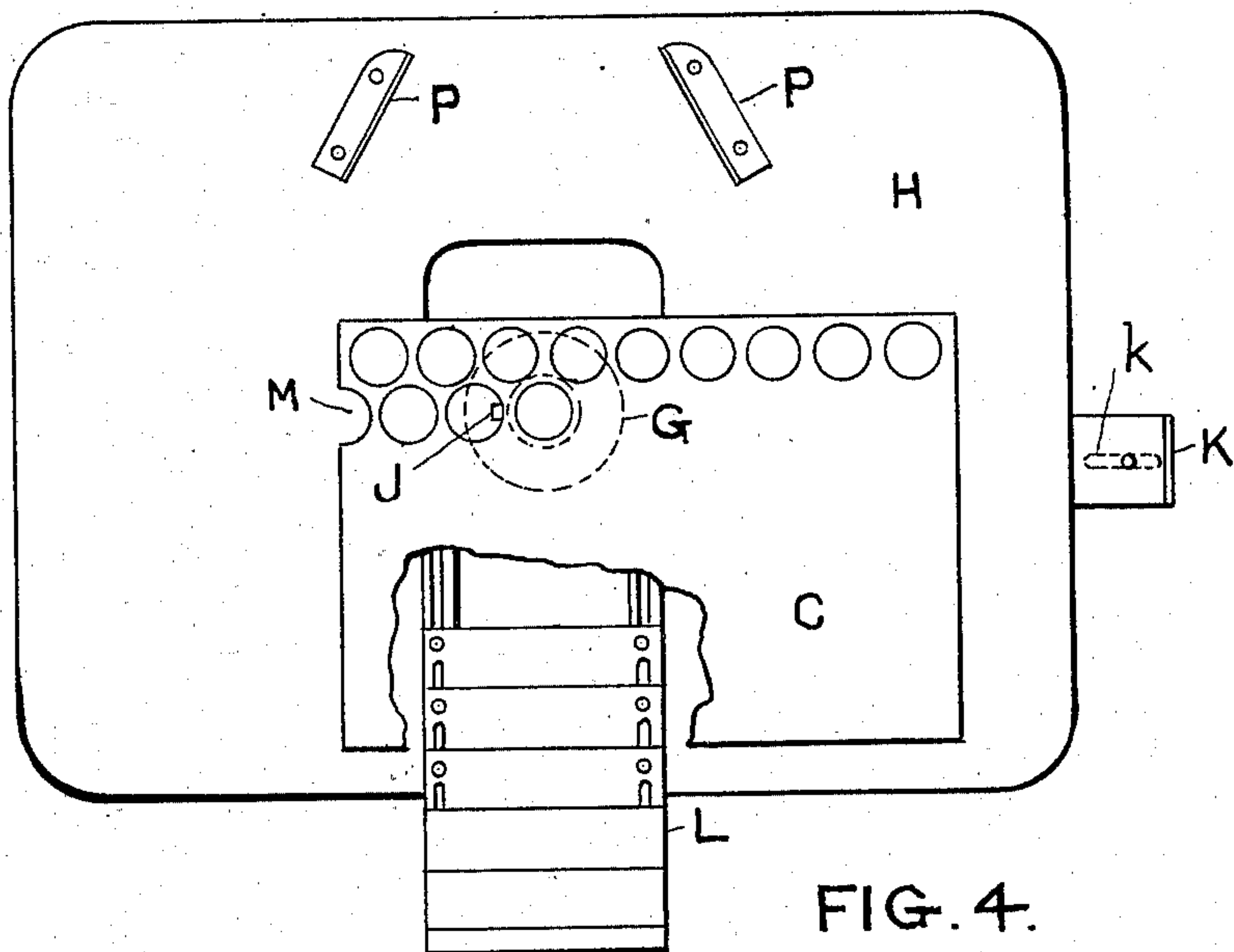


FIG. 4.

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UNITED STATES PATENT OFFICE.

JAMES WALLACE PATON, OF LIVERPOOL, ENGLAND.

METAL CUTTING AND STAMPING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 748,415, dated December 29, 1903.

Application filed February 25, 1903. Serial No. 144,994. (No model.)

To all whom it may concern:

Be it known that I, JAMES WALLACE PATON, a subject of the King of Great Britain, residing in Liverpool, in the county of Lancaster, England, have invented certain new and useful Improvements in Metal Cutting and Stamping Apparatus, of which the following is a specification.

Hitherto in making metallic boxes for holding metal-polish and other substances it has been usual to first cut the metal into strips about the same width as the diameter of the metal blanks required and then cut out the circular blanks from these by dies in a power-press and stamp them into box shape. This has entailed a waste of material, besides waste of time in first cutting the metal into strips; and my present invention is designed to avoid these defects and to cheapen the cost of production.

In the accompanying drawings, Figure 1 is a perspective view of the machine looked at diagonally from above; Fig. 2, a side view; Fig. 3, a front view of the table and dies separated from the machine; Fig. 4, a plan view thereof.

I make the press with an embayment A in the standard B deep enough to receive the sheet C, of tin-plate or other material. This enables me to stamp several rows of blanks out of a single whole sheet instead of first cutting the sheet into strips and then stamping them. These rows of blanks are cut from the sheet so as to alternate with the blanks cut from the adjacent rows. By this means one or more additional rows of blanks may be cut from each whole sheet, little or no metal is wasted, and the greatest economy effected.

D is the top die of the press; E, the fly-wheel; F, the shaft that works the top die; G, the bottom die of the press. At each side of this bottom die and at rear I provide wings or extension-pieces H, on which each sheet C as it has to be cut is placed flat, so as to have the blanks cut out of it. The wings or extensions H can be made of metal, wood, or mill-board or any other suitable material and secured to the press by brackets I, so as to be practically level with the top of the bottom die G. They can be permanently or re-

movably secured or hinged, so that they can fall down when desired. The table H thus formed constitutes a support for the metal sheet C, which latter as it has blanks cut out of it becomes so weak and flimsy that it would in manipulating it quickly get buckled up unless this support is provided. These wings or extensions H therefore form a very important part of the invention, as I have proved that it is impracticable to cut blanks out of a thin whole sheet without the addition of this table. To enable blanks to be cut out of the sheet at equidistant intervals apart, I provide a fixed gage or stop J, so arranged as to form an abutment for the edge of each hole in the sheet to abut against as the blank are stamped therefrom. The sheet C is fed along the table step by step as each blank is cut out, the stop abutting against the edge of the preceding hole, thus constituting a gage which insures the blanks being cut out of the sheet at equidistant intervals. It also forms a gage for each edge of the sheet when stamping out the first blank in one set of rows and for the edge of the hole M resulting from the first blank (a half one) being stamped out in the case of alternate rows. The table at one edge is provided with an adjustable gage K, against which one edge of the sheet C abuts when starting to cut out the first blank in each alternate row, the cutting out at equidistant intervals of the succeeding blanks being insured by the fixed claw or abutment J. The gage is adjustable by means of the slot *k*, and the gage is clamped or locked in the required position by means of the screwed pin *k'*.

L is a stepped gage for insuring the rows of blanks being cut out of the sheet C at equidistant intervals apart. This stepped gage consists of a series of plates one above the other, forming a succession of steps corresponding in number to the rows of blanks to be cut, these steps being adjustable by slots and locked in position by screws.

In commencing to cut the first row of blanks the sheet is placed between the dies D and G, with its outer edge abutting against the fixed claw or abutment J and another edge abutting against one of the steps of the stepped gage L. The first blank in the row

is then stamped out and the sheet C fed along longitudinally, so that the claw J comes against the edge of the hole from which the first blank has been stamped. The sheet is
 5 now in position for the second blank in the row to be stamped out, and the operation is repeated again and again until the opposite end of the sheet C is reached. In the case of each alternate row one edge of the sheet
 10 is placed against the gage K, that is fitted to the table H, and another edge of the sheet against the succeeding step of the gage L. The gage K is so adjusted as to set the sheet in such a position that the first blank cut out
 15 is a half-blank, (shown at M,) the spacing of the other blanks cut out of the row being effected by the claw or abutment J. This insures that the row of holes from which the blanks are cut alternate with the holes of the
 20 preceding row, and so on until the entire sheet has blanks stamped out. The abutment J provides for the cutting out of the blanks at equidistant intervals in a longitudinal direction, and the stepped gage insures
 25 each row of blanks being cut out at equidistant intervals in a transverse direction. As each blank is cut off it falls by gravitation rearwardly through the space between the bottom die and the rear part of the table and
 30 down the sloping surface N through an opening O in the standard into a receptacle at the rear of the machine provided for the purpose. The table H slopes toward the rear, and if any blanks should happen to get on the table
 35 they slide down between the guides P and so are guided to the opening O, through which they pass to the receiving-receptacle. The invention is applicable to existing presses, the size of the table at rear being in such
 40 case limited in size to the depth of the embayment.

As herein shown, the stepped gage L has a series of plates made adjustable for adaptation to cutting blanks of different sizes on the
 45 same machine; but obviously this adjustability is not essential to the invention if only blanks of the one size are to be cut by the stepped gage. Hence I do not limit my invention to this specific feature of construction.

50 I declare that what I claim is—

1. A metal cutting and stamping apparatus, having dies for cutting portions from a sheet, and a stepped gage for the edge of the sheet, said gage having means for adjusting

and regulating the width of the steps, substantially as and for the purpose set forth. 55

2. In metal cutting and stamping apparatus, the combination therewith of wings or extension-pieces located at each side and at rear of the bottom die, to form a table on which
 60 the metal sheet is supported, a fixed abutment located in proximity to said die, for insuring cutting out at equidistant intervals longitudinally of the blanks from the sheet, and for the edge of the sheet to abut against
 65 when stamping out the first blank in one set of rows, an adjustable gage supported by the table, so placed as to insure that in the case of alternate rows the first blank cut out is a half-blank, whereby the succeeding blanks
 70 cut from the sheet, alternate with the blanks cut from adjacent rows, and a stepped gage for insuring the alternating rows being stamped at equidistant intervals transversely.

3. In a metal cutting and stamping apparatus, the combination therewith of wings or extension-pieces located at each side of the bottom die so as to form a table on which the metal sheet from which the blanks are cut is supported, and a stepped gage consisting of
 80 a series of adjustable plates one above the other forming a succession of steps, corresponding in number to the rows of blanks to be cut, so arranged as to insure each row of blanks being cut from the sheet at equidistant
 85 intervals in a transverse direction.

4. In a metal cutting and stamping apparatus, the combination of an embayment in the standard of the press, deep enough to receive a whole sheet of tin-plate or other material, a delivery-opening in the standard,
 90 wings or extension-pieces located at opposite sides, and at rear, of the bottom die, sloping toward the said opening, a space between the bottom die and the rear part of the table
 95 through which the blanks are fed to the delivery-opening, and converging guides on top of said rear part of table whereby if any blanks get on the table, they are guided by the said guides to the delivery-opening. 100

In witness whereof I have hereunto signed my name, this 10th day of February, 1903, in the presence of two subscribing witnesses.

JAMES WALLACE PATON.

Witnesses:

G. C. DYMOND,
 F. P. EVANS.