

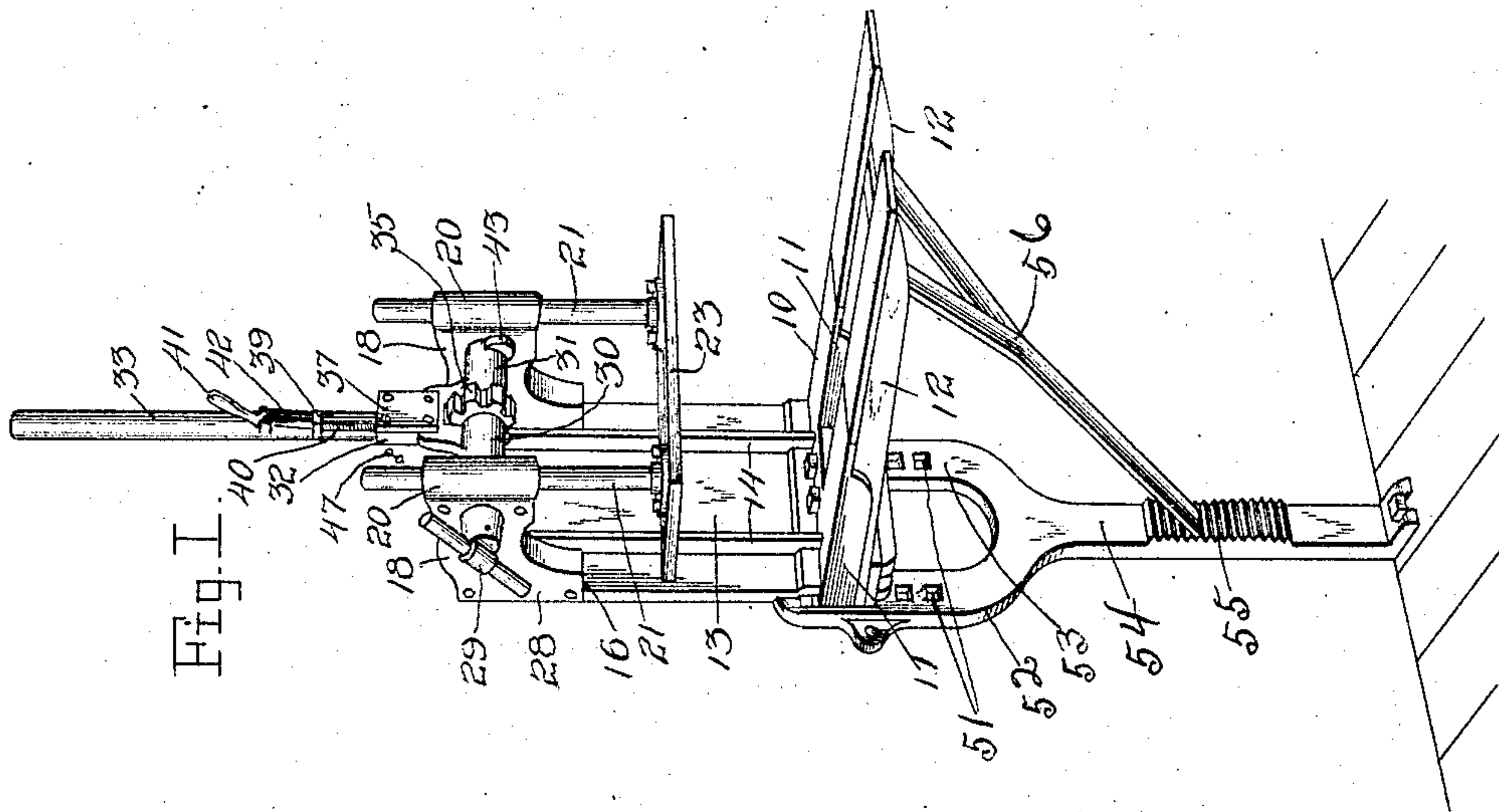
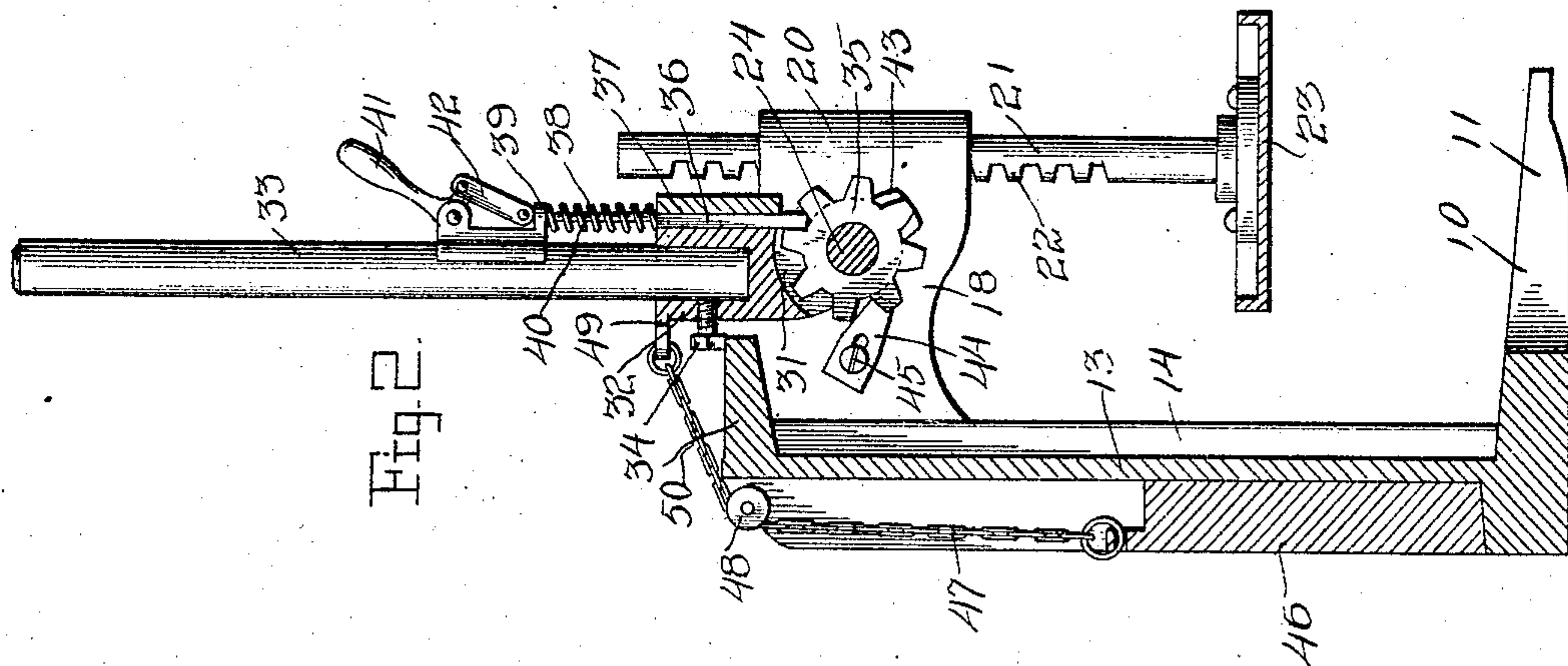
No. 785,567.

PATENTED MAR. 21, 1905.

G. J. OTTO.
MOLDING PRESS.

APPLICATION FILED AUG. 17, 1904.

2 SHEETS—SHEET 1.



Witnesses
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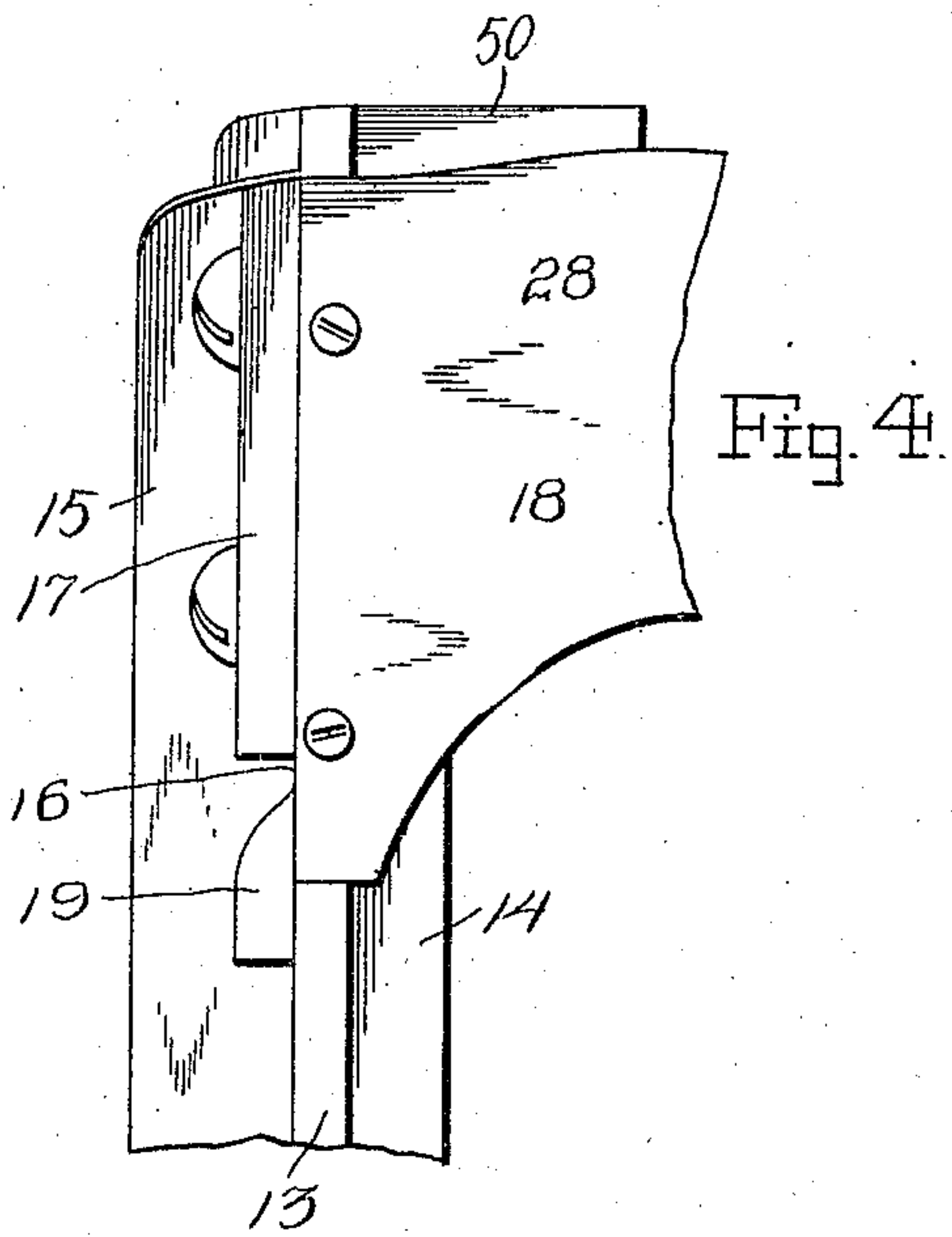
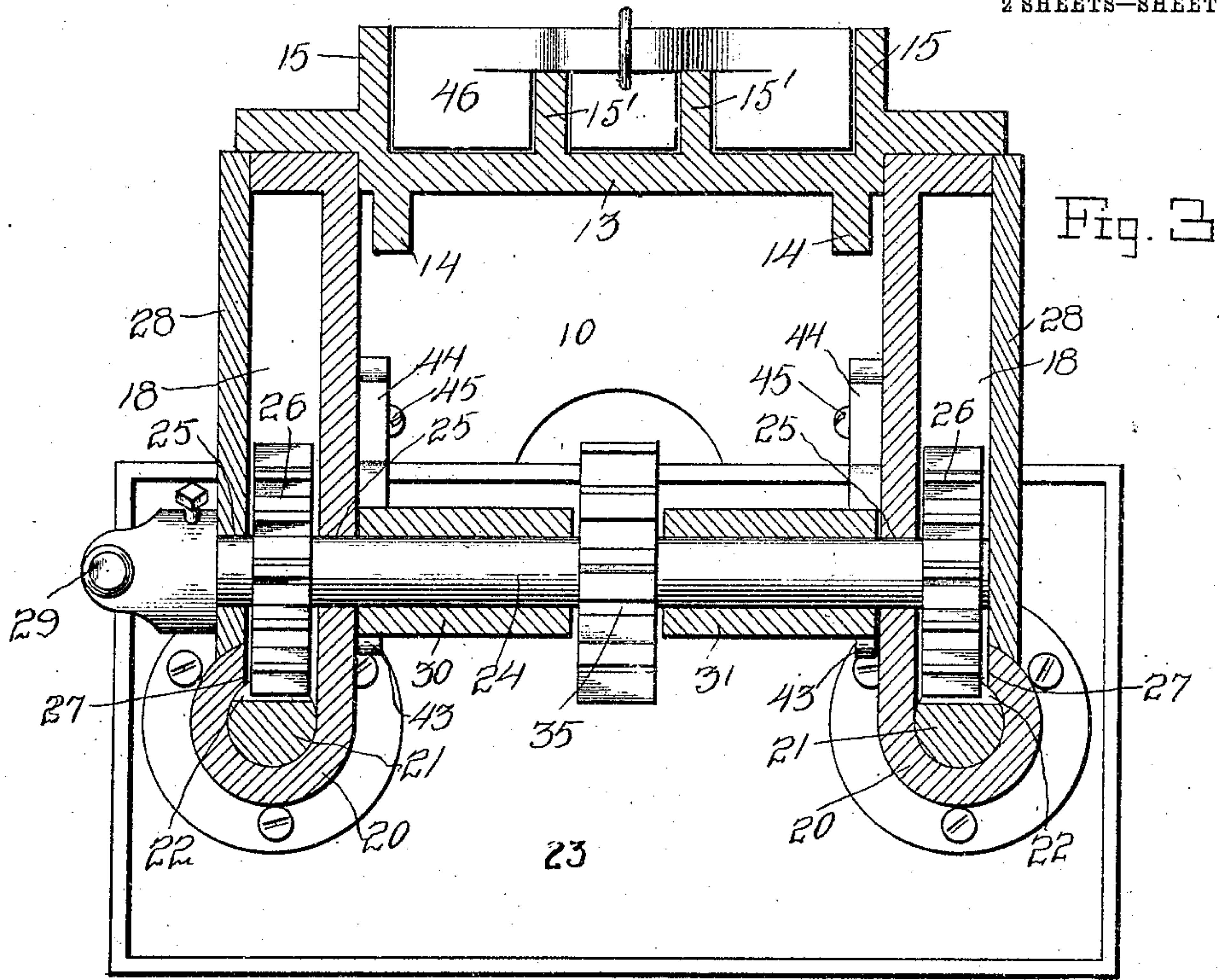
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UNITED STATES PATENT OFFICE.

GEORGE J. OTTO, OF ROCHESTER, NEW YORK.

MOLDING-PRESS.

SPECIFICATION forming part of Letters Patent No. 785,567, dated March 21, 1905.

Application filed August 17, 1904. Serial No. 221,226.

To all whom it may concern:

Be it known that I, GEORGE J. OTTO, a citizen of the United States, residing at Rochester, in the county of Monroe, State of New York, have invented certain new and useful Improvements in Molding-Presses; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to mold-presses; and it has for its object to provide a press which may be operated with a minimum expenditure of energy and in which the presser-plate may be easily and quickly adjusted roughly prior to operation of the press-lever, the parts being so disposed that equal pressure at all points of the presser-plate will be insured, and the presser-plate may be operated without requiring the operator to change his position at the front of the press.

A further object of the invention is to provide a press which may be adjusted to stop the presser-plate at different elevations above the table, so that the same degree of compression may be secured in several flasks.

Other objects and advantages of the invention will be understood from the following description.

In the drawings forming a portion of this specification, and in which like numerals of reference indicate similar parts in the several views, Figure 1 is a perspective view showing a press with the presser-plate in raised position. Fig. 2 is a vertical section through the press in the plane of the operating-lever at right angles to the presser-shaft. Fig. 3 is a horizontal section in the plane of the presser-shaft. Fig. 4 is a side elevation of the upper portion of the frame of the press, showing the manner of attachment of a bracket.

Referring now to the drawings, the present press comprises a table 10, having pairs of depending flanges 11 on its under face, which are designed to receive between them the sills 12 of a supporting-skid, hereinafter described. From the rear side of the table 10 rises an upright 13 in the form of a plate, having ribs 14 on its front face extending vertically and corresponding vertical ribs 15 on its rear face,

there being also additional ribs 15' on the rear face, which extend vertically of the face between the ribs 15, these several ribs serving to strengthen the structure, as will be understood, while the ribs on the rear face of the plate serve also as guides for a counterbalancing-weight, hereinafter described.

In the specific embodiment of the invention illustrated herein the side edges of the upright are notched at 16, and the side portions of the upright above these notches and exterior to the rear flange are offset rearwardly, the offset portions being illustrated at 17. The front faces of the offset portions 17 are in the same plane with the rear faces of the portions therebelow.

At each side of the press is a forwardly-directed bracket 18, the rear flat face of which is bolted against the corresponding offset portions of the upright, while the bottom of the bracket rests against the lower side of the corresponding notch 16, the bracket having a hook 19, which passes through the notch and engages against the rear face of the upright, so that the free or forward end of the bracket is held securely against upward movement in the operation of the press, as hereinafter described.

At the forward or free ends of the brackets are vertical tubular bearings 20, in which are disposed cylindrical rack-bars 21, the teeth 22 of which are formed on the rear sides thereof, and the lower ends of these rack-bars are firmly secured to a presser-plate 23, disposed with its lower face parallel with the upper face of the table 10, so that as the rack-bars are equally adjusted in their respective bearings the presser-plate will be moved toward or away from the table, but will maintain its parallel relation.

To shift the rack-bars, and therewith the presser-plate, vertically, a presser-shaft 24 is journaled horizontally in bearings 25 in the brackets 18, and pinions 26 are keyed to the end portions of this shaft, these pinions lying and working in the recessed outer faces of the brackets and projecting through the sides of the tubular bearings of the brackets, through slots 27 therein, into engagement with the rack-bars. Cover-plates 28 are removably se-

cured to the outer faces of the brackets, and one end of the presser-shaft projects through the adjacent cover-plate and has a handle 29 fixed thereon, through the medium of which the shaft may be rotated in either direction to adjust the presser-plate quickly to a position from which it may be subsequently actuated by the operating or press lever in the manner hereinafter described.

Mounted loosely upon the presser-shaft and fitted snugly between the inner faces of the brackets 18 is a two-part sleeve including the cylindrical members 30 and 31, which are connected at one side of their mutually-adjacent end portions by the boss or bracket 32, said sleeve sections or members, with the boss or bracket, forming the head of the presser-lever 33, which is engaged in the boss or bracket and projects at right angles to the presser-shaft, the lever being held in the boss or bracket by a set-screw 34 or in any other suitable manner. Upon the presser-shaft between the sleeve members or sections 30 and 31 is fixed a clutch wheel or pinion 35, and in the front face of the boss 32 is a guideway in which is slidably mounted a clutch-bolt 36, which is held in the guide-slot or guideway by the keeper-plate 37, this clutch-bolt being movable in the guideway into and out of engagement with the clutch-wheel, it being understood that when the clutch-bolt is engaged with the clutch-wheel the lever will be locked to the presser-shaft, so that when the lever is drawn, with its upper end, forwardly and downwardly the pinions of the presser-shaft will be rotated to force the rack-bars, and therewith the presser-plate, downwardly. To hold the clutch-bolt normally and yieldably in engaging position, it is provided with a stem 38, which is passed upwardly and through the bracket 39 and is encircled by a helical spring 40, which bears with its ends against the bolt and the adjacent face of the bracket 39. When the lever is to be shifted independently of the presser-shaft, the clutch-bolt is drawn from engagement with the clutch-wheel, and for this purpose an angular lever 41 is pivoted in the upper portion of the bracket 39 and is connected by links 42 with the ends of the stem 38, so that when the free end of the angular lever is pressed against the presser-lever the links are operated to draw the stem, and therewith the clutch-bolt.

In the use of the press the flask is placed upon the table, and the clutch-bolt being disengaged from the clutch-wheel the presser-plate is lowered by manipulation of the handle of the presser-shaft to lower the presser-plate, so that it lies slightly above the flask. The presser-lever being then adjusted to vertical position, the clutch-bolt is reengaged with the clutch-wheel, so that the upper or free end of the presser-lever may be grasped and swung forwardly and downwardly to rotate the presser-shaft, so that its pinions will

force the rack-bars downwardly and correspondingly move the presser-plate to press the contents of the flask, as will be understood. To limit the downward or pressing movement of the pressing-plate, so that too much pressure may not be applied to the flask and different molds may be pressed to the same degree, lugs 43 are formed upon the sleeve-sections forming the head of the presser-lever, these lugs projecting radially, and in the path of rotary movement of these lugs are stop-plates 44, which are slotted to receive clamping-screws 45, passed therethrough and engaged with the brackets 18 for contact by the lugs. By loosening the clamping-screws the stop-plates may be adjusted so as to vary the length of the arc of movement of the presser-shaft, and therewith the length of travel of the presser-plate.

To raise the presser-plate after its depression and while the presser-lever is clutched thereto, a weight 46 is provided and is slidably disposed between the outermost ribs on the back of the upright 11, said weight being grooved to receive the inner ribs. Attached to this weight is a chain 47, which passes over a pulley 48, journaled between the upper ends of the inner rear ribs, the free ends of the chain being connected with a lug 49 on the rear of the head of the presser-lever. Projecting forwardly from the upper end of the upright 11 is a stop-finger 50, against which the head of the lever rests when the lever is in vertical position.

By adjusting the stops on the inner faces of the brackets 18 the length of the arc movement of the presser-lever, and consequently the distance that the presser-plate travels, may be determined, and by disengaging the lever from the presser-shaft and then operating the shaft the presser-plates may be positioned so that each time the presser-plate is operated from one extremity to the other of its movement the presser-plates will be lowered to the same point, so that successive molds may be made with the same compactness.

In practice modifications of the specific construction shown may be made, and any suitable materials and proportions may be used for the various parts, without departing from the spirit of the invention.

The depending flanges of the table are designed to fit against the sides of the sills of a skid, and there is shown in connection with the present press such a skid, wherein the rear ends of the sills are adapted in any suitable way for engagement interchangeably with perforations 51 in the arms 52 and 53 of a yoke-shaped upright, the lower or stem portion 54 of which has a rack 55 formed upon its front face. A forked prop 56 has a knife-edge in its lower end for engagement with the rack, and the upper ends of the forks are pivotally connected to the sills of the skid. This construction permits of vertical adjustment of the

skid, so that the press may be held at different elevations to suit different conditions of operation.

What is claimed is—

5 1. A molding-press comprising a table, a presser-plate, spaced rack-bars connected to the presser-plate and mounted for movement with the presser-plate toward and away from the table, a presser-shaft having pinions engaged with the rack-bars respectively, a
10 presser-lever pivoted upon the presser-shaft between the rack-bars and having a slotted head, a clutch-wheel in said slot fixed to the presser-shaft, a bolt slidably mounted in the
15 head of the lever and disposed to engage the clutch-wheel, means for holding said bolt normally and yieldably in engaging position, and means connected with the lever for holding the latter yieldably with the presser-plate
20 raised.

2. A molding-press comprising a table, a presser-plate, a presser-shaft, connections between the shaft and plate for moving the latter toward and away from the table, a presser-
25 lever, a clutch mechanism between the lever and shaft, means for rotating the shaft independently of the lever, and means for limiting rotary movement of the shaft with the lever.

3. A molding-press comprising a table, a
30 presser-plate, a presser-shaft, connections between the shaft and plate for moving the latter toward and away from the table, a presser-lever, a clutch mechanism between the lever and shaft, means for rotating the shaft inde-
35 pendently of the lever, and means in the path of the lever for limiting rotation of the shaft when connected with the lever.

4. A molding-press comprising a table, a
40 presser-plate, a presser-shaft, connections between the shaft and plate for moving the lat-

ter toward and away from the table, a presser-lever, a clutch mechanism between the lever and shaft, means for rotating the shaft independently of the lever, an adjustable stop in the path of its movement with the presser-
45 plate toward the table, and means for limiting the return of the lever.

5. A molding-press comprising a table, a frame supported from the table and including spaced brackets projecting over the table and
50 having vertical tubular bearings in their free ends, a presser-plate, cylindrical rack-bars connected to the end portions of the presser-plate and slidably engaged in the bearings, said brackets having recesses communicating
55 with the bearings, a presser-shaft journaled in the brackets, pinions fixed upon the shaft and engaged with the racks, a presser-lever having a head comprising spaced sleeve-sections rotatably engaged with the presser-shaft
60 and fitted between the brackets, a clutch-wheel fixed upon the shaft between the sleeve-sections, a clutch-bolt slidably mounted upon the lever for movement into and out of engage-
65 ment with the clutch-wheel, means for holding the bolt normally and yieldably in engaging position, stop-lugs upon the sleeve-sections, stop-plates in the paths of movement of the lugs and slidably mounted upon the brackets, means for holding the plates at different
70 points of their sliding movement, and means for holding the lever normally with the presser-plate in raised position.

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

GEORGE J. OTTO.

Witnesses:

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C. H. JAMESSEN.