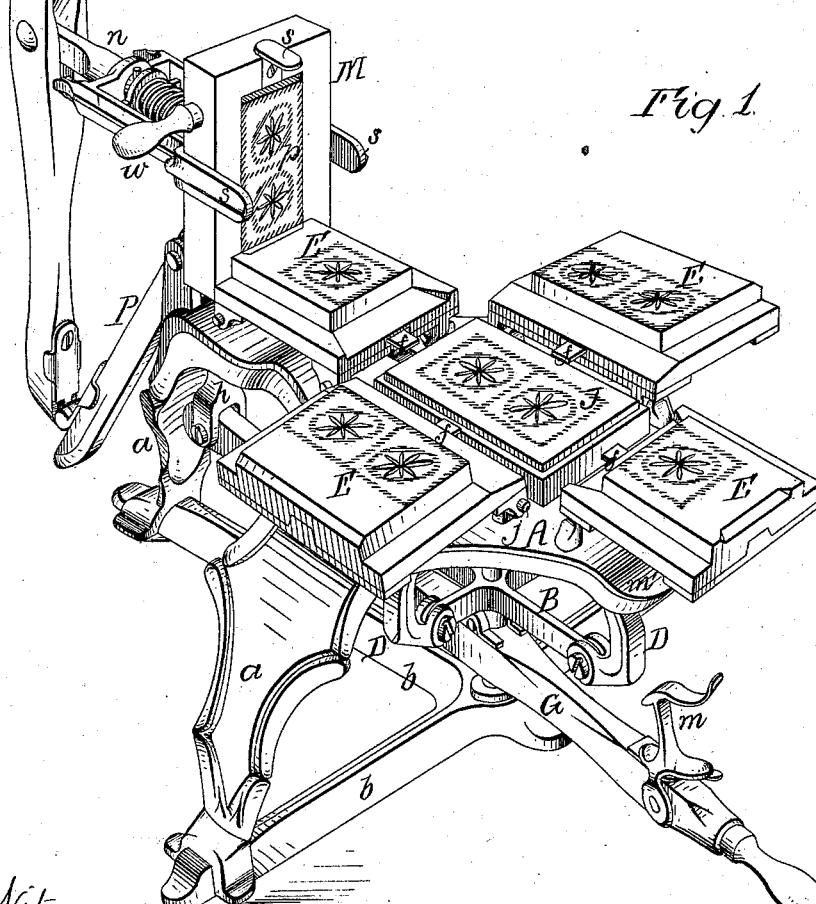
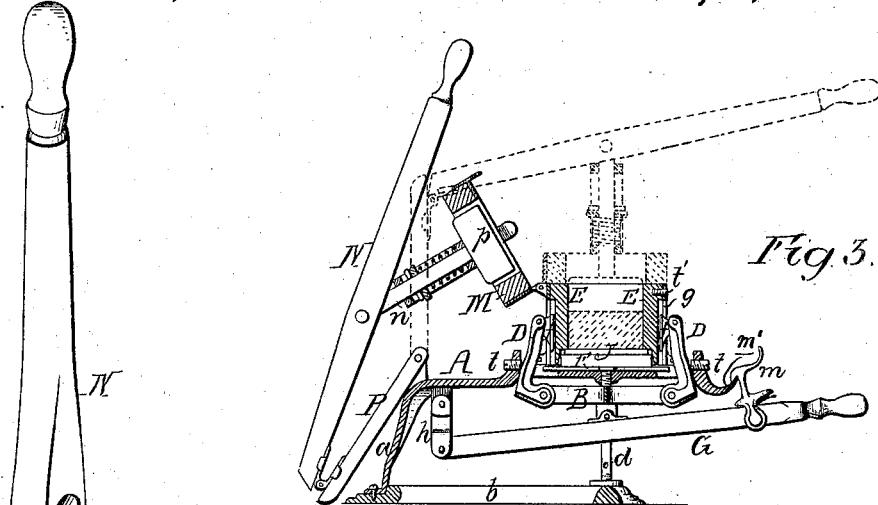


2 Sheets—Sheet 1.

B. R. RAPP.

Machine for Pressing and Molding Plastic Material.
No. 217,405. Patented July 8, 1879.



Witnesses
R.W. Danner.
Harry Smith

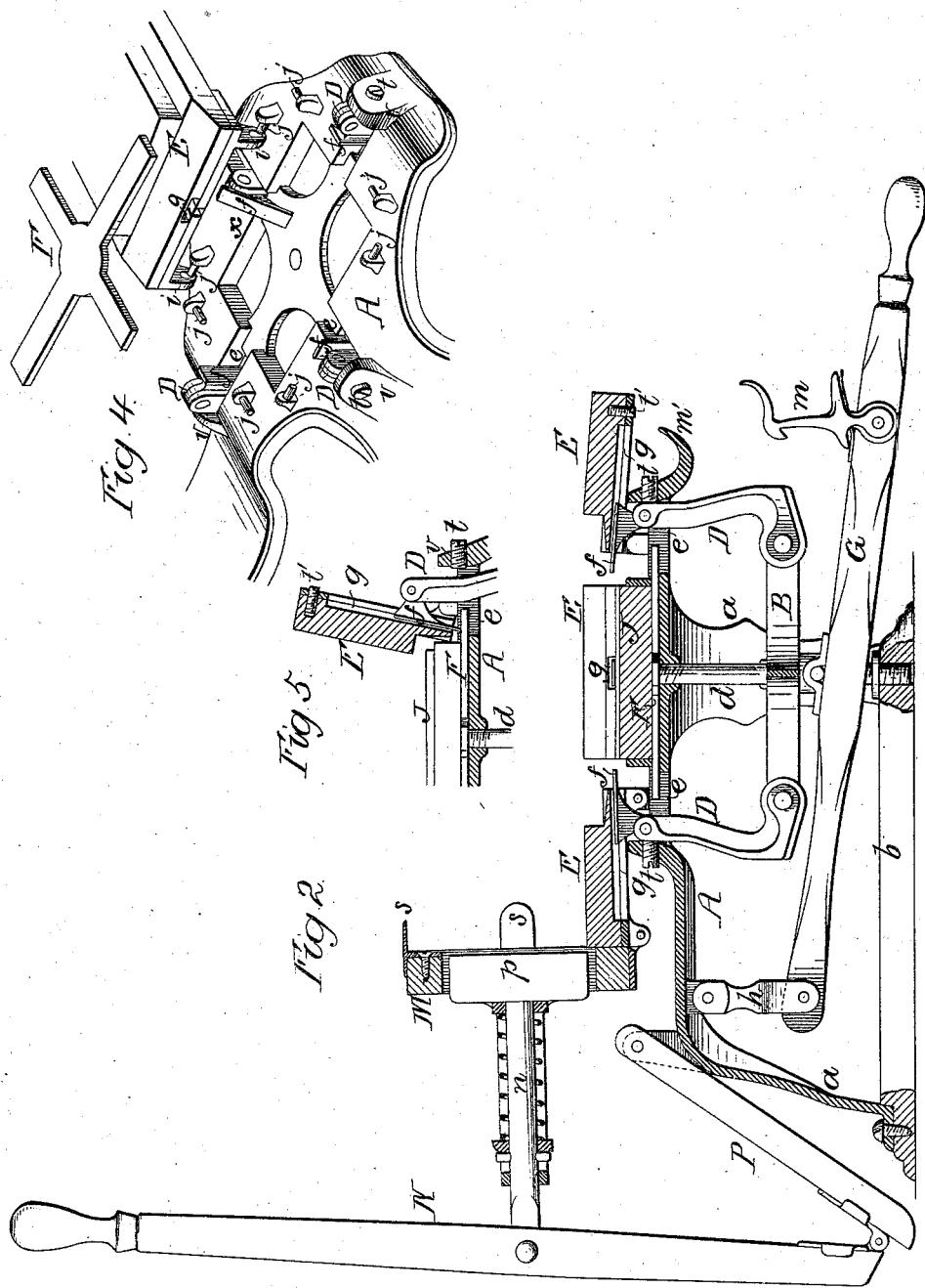
Inventor
Barret R. Rapp
by his Attorneys
Houston and Son

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Harry Smith

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 Barnet R. Rapp
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UNITED STATES PATENT OFFICE.

BARNET R. RAPP, OF WEST CHESTER, PENNSYLVANIA.

IMPROVEMENT IN MACHINES FOR PRESSING AND MOLDING PLASTIC MATERIAL.

Specification forming part of Letters Patent No. **217,405**, dated July 8, 1879; application filed September 6, 1878.

To all whom it may concern:

Be it known that I, BARNET R. RAPP, of West Chester, Chester county, Pennsylvania, have invented a new and useful Improvement in Machinery for Molding or Pressing Plastic Material, of which the following is a specification.

My invention relates to certain improvements in devices or machines for pressing plastic substances or materials, such as butter, clay, glass, &c.; the main objects of my improvements being to permit the formation of sunken or relief designs upon the sides as well as the top or bottom of the pressed article, to provide for the ready removal of the latter after the pressing operation has been completed, to permit the ready disconnection of parts of the machine for purposes of cleansing or repairs, and to maintain tight joints between the various parts of the body of the press. These objects I attain in the manner which I will now proceed to describe, reference being had to the accompanying drawings, in which—

Figure 1, Sheet 1, is a perspective view of my improved press in an open condition; Fig. 2, Sheet 2, a longitudinal section of the same; Fig. 3, Sheet 1, a longitudinal section of the press closed, the dotted lines representing the same in condition for operating upon a mass of plastic material; and Figs. 4 and 5, Sheet 2, detached views of parts of the machine.

A is the main frame or stand of the machine, having three legs, a, suitably braced at the bottom by means of longitudinal and transverse bars b, which form the base of the stand.

From the under side of the stand A to the base extends a vertical rod, d, on which is arranged to slide a frame or spider, B, having, in the present instance, four arms, to the outer end of each of which is pivoted the lower end of an arm, D, the upper end of which extends through a slot, e, in the stand A, and carries a pivoted block, f. These blocks f are of a T-shaped or angular cross-section, and are adapted to correspondingly-shaped slots g in the rear of plates E, each of the latter being hung by means of lugs i i at its lower end to pins j j, projecting from lugs on the stand A, both pins j projecting in the

same direction, so that when either plate E is freed from the control of its block f said plate E can be moved laterally until detached from the pins j.

In order to prevent the accidental withdrawal of the blocks f from the slots g of the plates E, and yet permit their ready withdrawal when necessary, I use a strip, F, which rests in a central depression in the top of the stand A, and has four arms, the outer ends of which are adapted to the inner ends of the slots e in the stand, and project some distance into said slots, so that when the strip F is in place the inward movement of the upper ends of the arms D to an extent necessary to free the blocks f from the slots g is prevented.

When said strip F is removed, however, as shown in Fig. 4, the block f may be entirely withdrawn from the slot, as shown at x in said figure, and the plate E is then free to be removed laterally, as indicated.

The hub of the spider B has pins adapted to bearings on a lever, G, hung by a link, h, to the under side of the stand A, the vibration of the outer end of this lever serving to impart a vertical reciprocating movement to the spider, and to thereby effect the opening and closing of the press, as described herein-after. The lever is retained in its elevated condition by means of a spring-hook, m, which catches upon the edge of a projection, m', on the stand A, as shown in Fig. 3.

The plates E form the four sides of the body of the press, the bottom of the latter consisting of a detachable block, J, which rests upon the strip F, the under side of the said block J being recessed for the reception of the arms of said strip F.

To the top of one of the said blocks E of the body of the press is pivoted a frame, M, having an upwardly-projecting standard, in which slides and is guided a spring-stem, n, carrying at the lower end a plunger, p, and connected at the upper end to a lever, N, which is hinged at one end to a connecting-rod P, pivoted to lugs on the stand A.

The frame M has at each side and at one end a projecting plate, s, these plates, when the press is closed, bearing upon the outer edges of three sides of the body of the press at and near the top, and thus serving to effect-

ually confine the sides of said body together at this point. The pressure of the ends of the plates E against each other and against the sides and ends of the block J may be governed by adjusting set-screws *t*, which project through lugs *v* at the outer ends of the slots *e* in the stand A, and bear against the outer sides of the arms D as the latter are elevated to close the sides of the press. For the same reason, the plates E carry set-screws *t'*, which are acted upon by the plates *s* of the frame M, and the rod *d* is threaded at the ends, so that by turning said rod an upward pressure may be imparted to the block J.

The operation of the apparatus is as follows: The parts being in the position shown in Figs. 1 and 2, the outer end of the lever G is first elevated, so as to cause an upward movement of the spider B and its arms D. These arms act on the plates E through the medium of the pivoted blocks *f*, and cause said plates to turn upward upon the pivot-pins *j*, so that when the spring-hook *m* catches upon the projection *n'* the parts will be in the position shown in Fig. 3, the plates E forming the four sides of the box-like body of the press, of which the block J is the bottom. The lump of butter or other plastic material is now deposited in the interior of the press, and the frame M then brought forward by manipulating the handle *w* of the same until said frame rests upon the top of the plates E, the retaining-plates *s* bearing on the outside of said plates.

The outer end of the lever N is then depressed, so as to force the plunger *p* down on the plastic mass in the press, as shown by dotted lines, Fig. 3, and when the pressing operation has been completed the lever N is released, the spring which acts on the rod *n* serving to restore the plunger to its former position within the frame M. The latter is then thrown back, the spring-catch *m* released, and the lever G depressed, carrying with it the spider B and arms D. This movement causes the blocks *f* to slide down the slots *g* until the lower ends of the blocks strike the ends of the arms of the strip F, when the result of the further downward movement of the arms D will be to cause the plates E to turn on their pivots *j* and swing outward and downward, so as to leave the pressed mass resting on the block J, from which it is removed prior to a repetition of the operation.

By the above-described machine, facilities are afforded for pressing masses of plastic material, so as to form sunken designs or characters in relief upon the sides as well as the top and bottom of the pressed mass. Moreover, the mass, after being pressed, is entirely exposed, so that it may be removed without

risk of disturbing or impairing said designs. Owing to the method of hinging and connecting the various parts of the machine, also, the latter can be readily taken apart for cleansing or repairs, and as readily put together when such operations are completed, while the set-screws *t t'* afford the means for so regulating the pressure imparted to the plates E that tight joints may always be maintained between the ends of said plates and the block J, irrespective of the wear of the plates when made entirely of metal, or the expansion and contraction of said plates when made of or faced with wood.

Although I have shown and described the use of four plates, E, forming a rectangular or box-like press, a greater or less number of plates, forming a press of any desired shape, may be used, if desired; and instead of all of the side plates of the press having designs sunken or formed in relief upon them, a portion only of said plates may be so constructed, and these plates only may be hinged, the plain plates being fixed.

I do not desire to claim, broadly, a press the body of which is composed of plates pivoted at one edge, so as to swing outward and expose the pressed mass, as such a press is shown in the patent of G. M. Cooper, No. 31,784, March 26, 1861; but

I claim as my invention—

1. The combination of the pivoted plates E, having slots *g*, open at the bottom, with the operating-arms D, having pivoted blocks *f*, adapted to the slots *g*, as described.

2. The combination of the slotted stand A, the pivoted plates E, the operating-arms D and their pivoted blocks *f*, and the detachable strip F, as specified.

3. The arms D, connected to the plates E, and provided with the set-screws *t*, as set forth.

4. The combination of the stand A, the pivoted plates E, the frame M, the plunger *p* and its rod *n*, the lever N, and the rod P, as set forth.

5. The combination of the frame M, having plates *s*, with the blocks E, having set-screws *t'*, as specified.

6. The combination of the frame A, the block J, controlled by a threaded rod, *d*, and the side plates, E, of the press, resting upon the block J and forming a joint therewith, as set forth.

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

BARNET R. RAPP.

Witnesses:

W.M. G. RUHL,
DAVID JONES.