

No. 692,473.

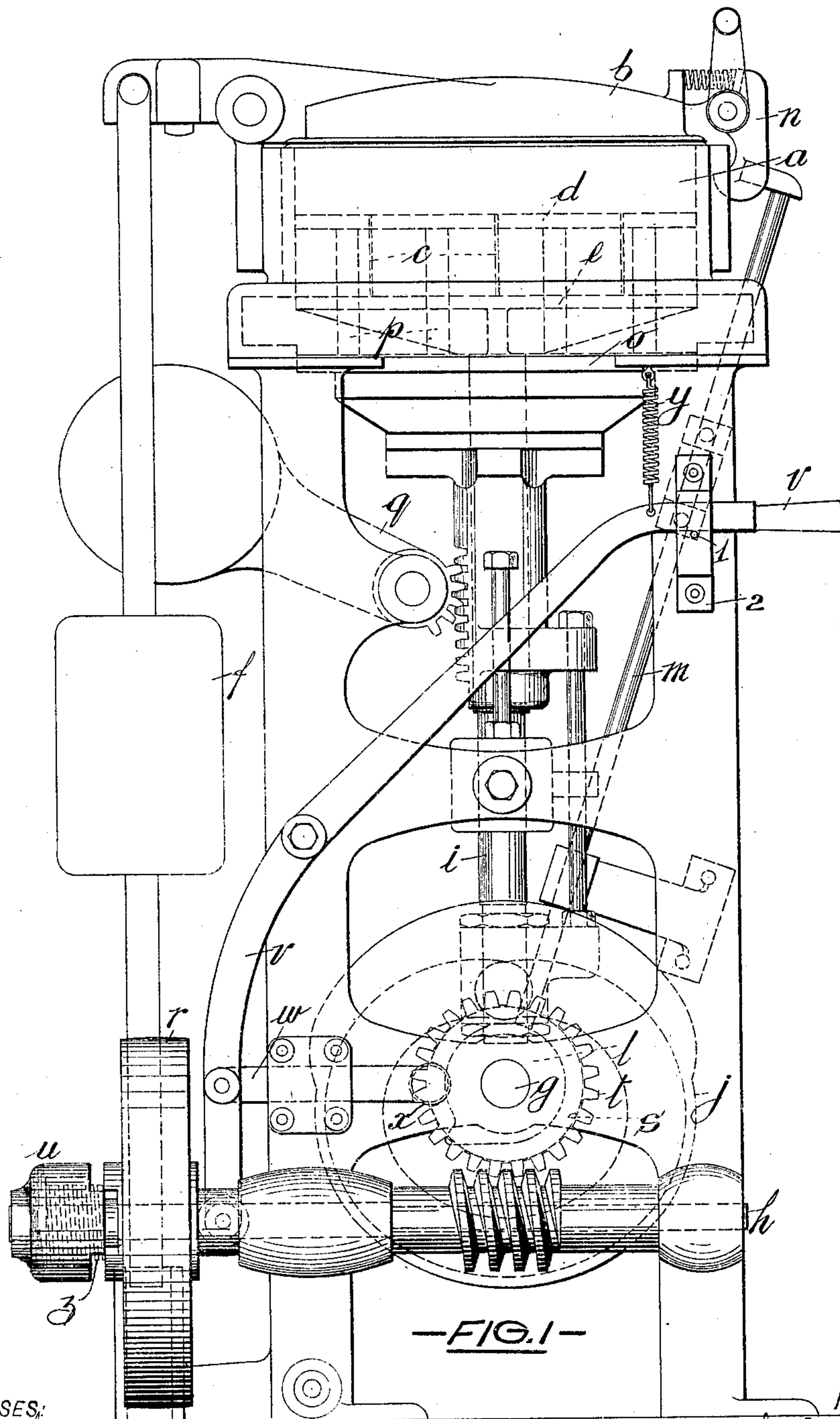
Patented Feb. 4, 1902.

J. E. & C. E. POINTON.
MACHINE FOR DIVIDING DOUGH.

(Application filed Apr. 30, 1901.)

(No Model.)

3 Sheets—Sheet 1.



—FIG. 1—

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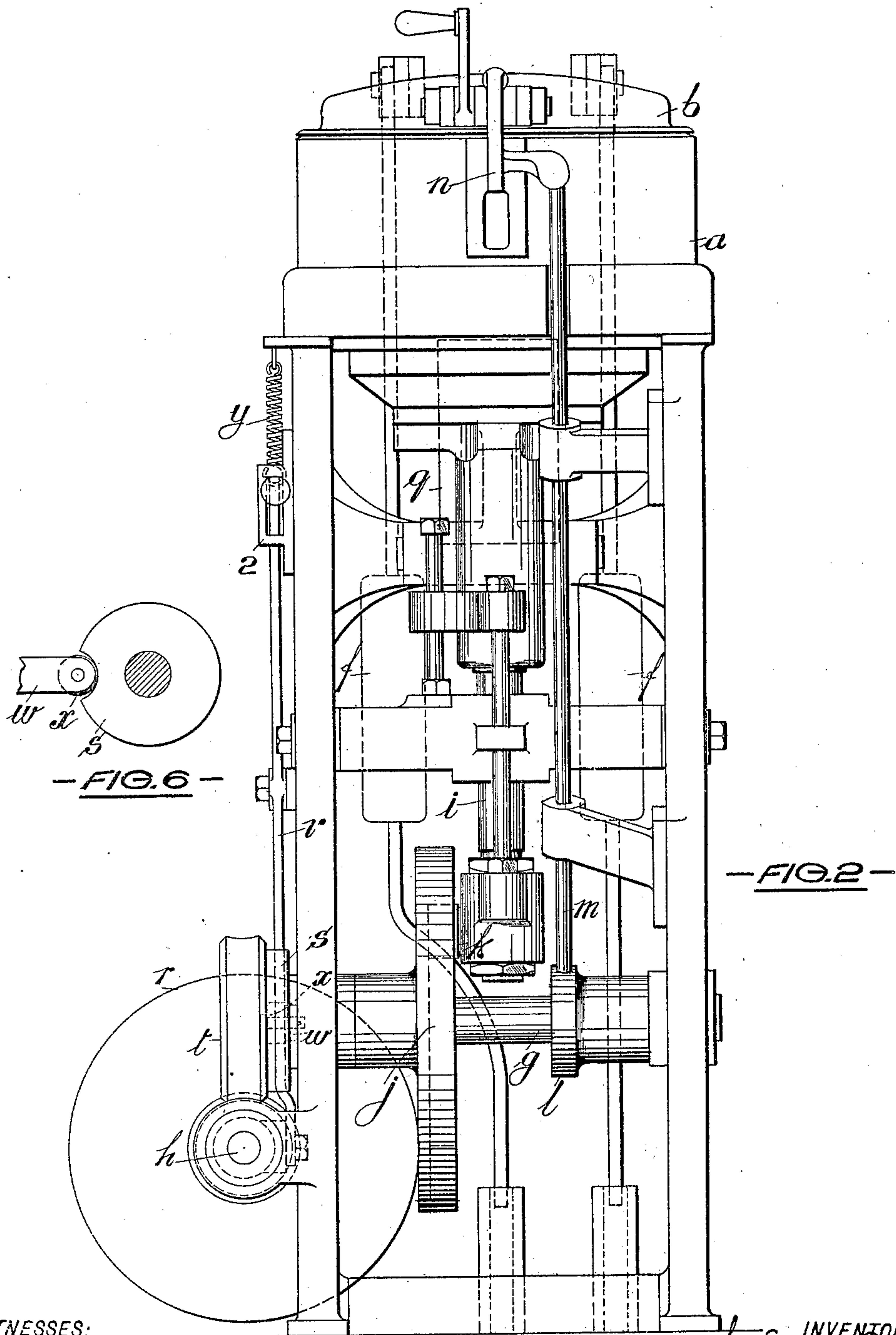
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3 Sheets—Sheet 2.



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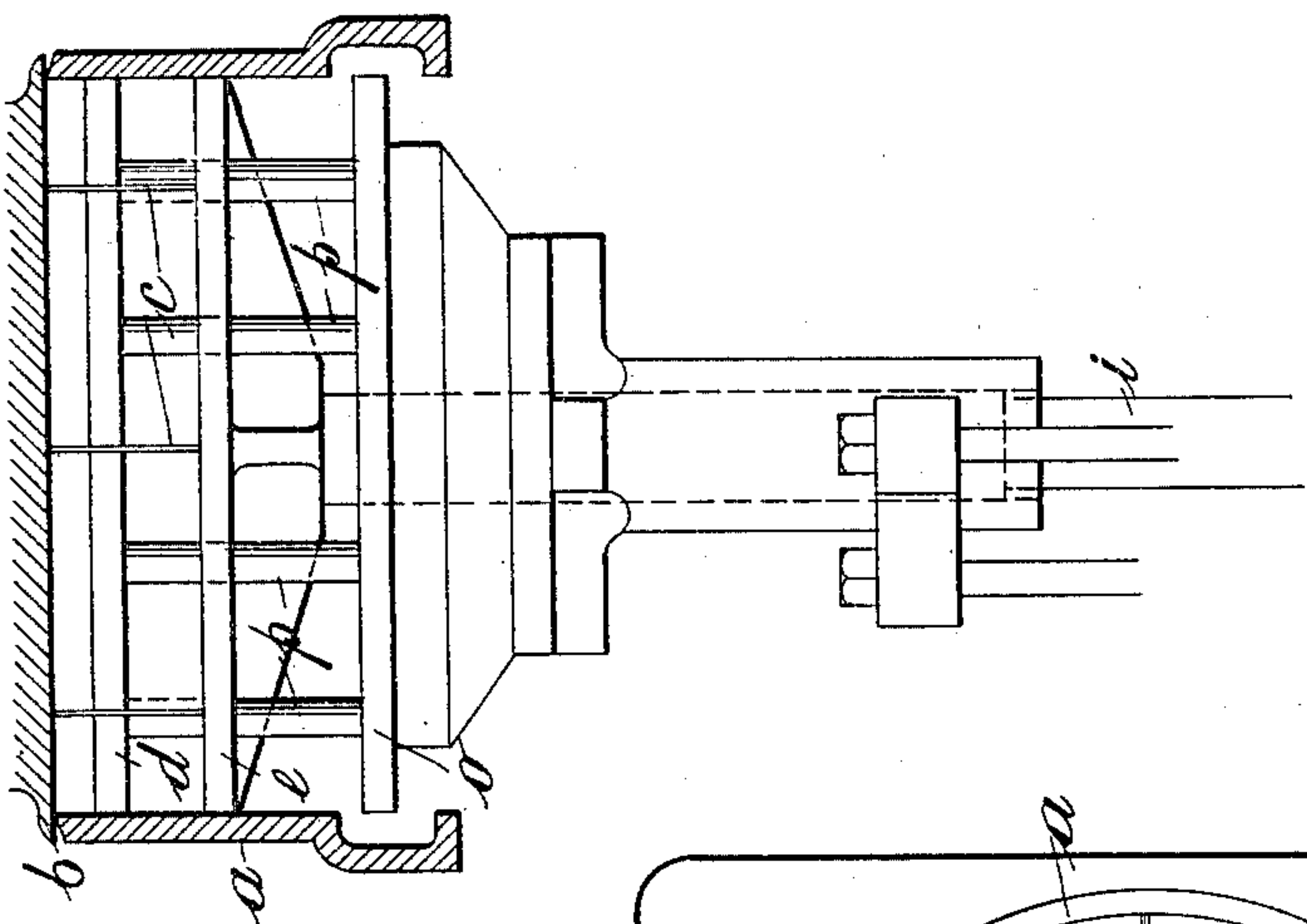
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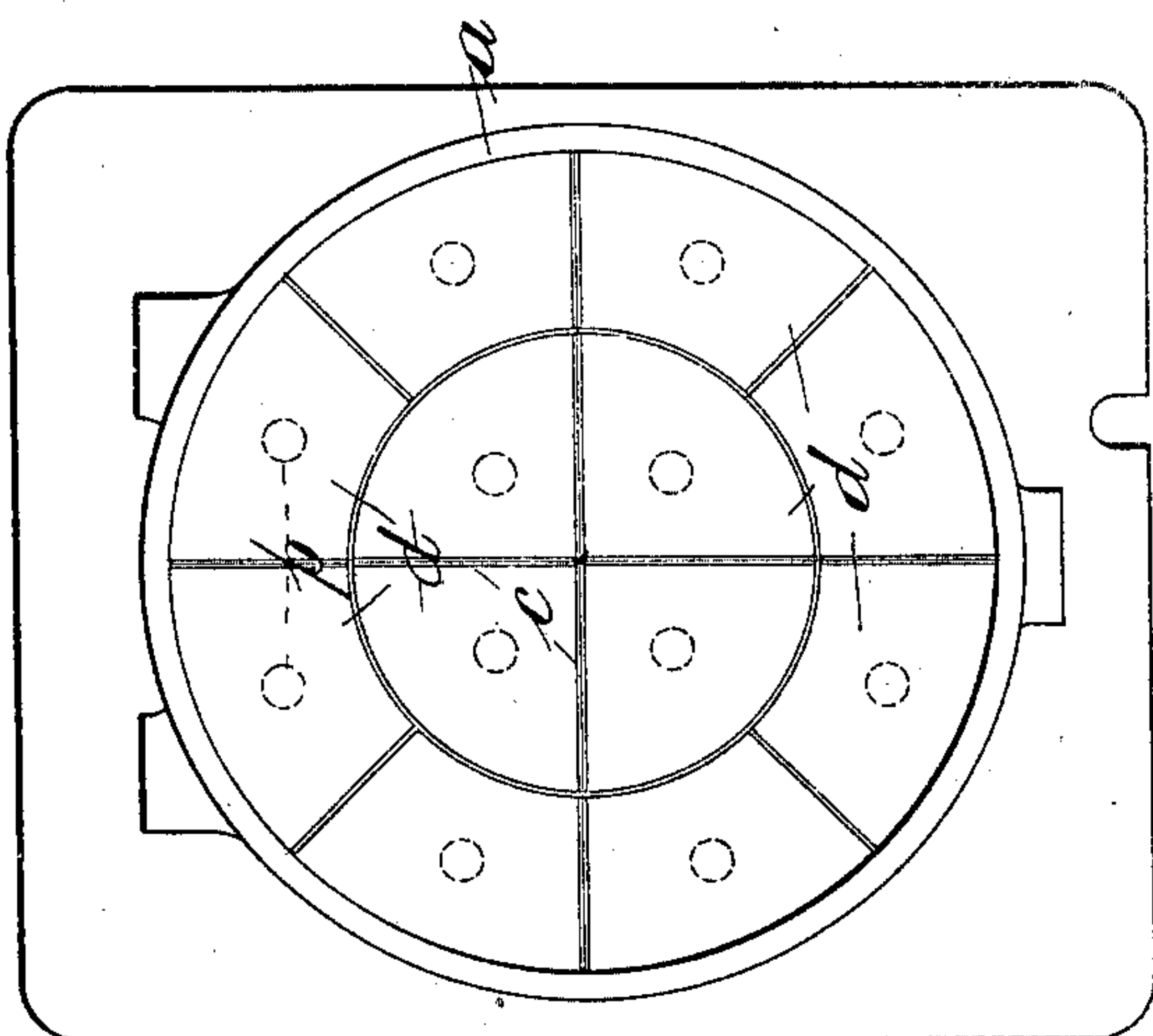
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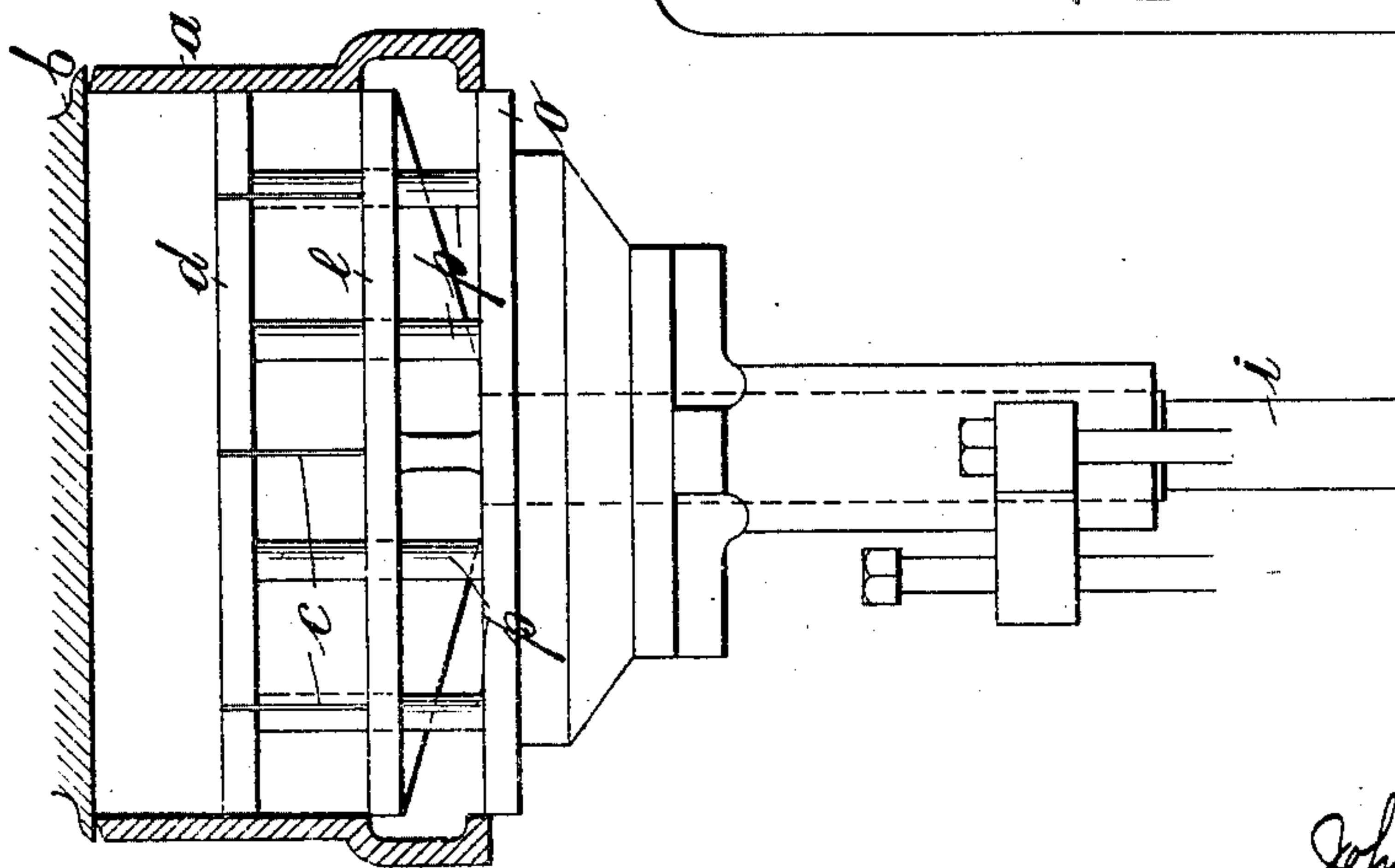
3 Sheets—Sheet 3.



—FIG. 4—



—FIG. 5—



—FIG. 3—

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UNITED STATES PATENT OFFICE.

JOHN EDWARD POINTON AND CHARLES E. POINTON, OF WELLINGTON, ENGLAND, ASSIGNORS TO LEWIS & POINTON'S PANIFICATION, LIMITED, OF WELLINGTON, ENGLAND, A REGISTERED COMPANY.

MACHINE FOR DIVIDING DOUGH.

SPECIFICATION forming part of Letters Patent No. 692,473, dated February 4, 1902.

Application filed April 30, 1901. Serial No. 58,155. (No model.)

To all whom it may concern:

Be it known that we, JOHN EDWARD POINTON and CHARLES E. POINTON, subjects of the King of Great Britain and Ireland, and residents of "Daily Bread" Engineering Works, Wellington, county of Salop, England, have invented certain new and useful Improvements in Machines for Dividing Dough and other Plastic Material, (for which we have filed an application in Great Britain, No. 19,998, bearing date November 7, 1900,) of which the following is a specification.

This invention consists of improvements relating to machines for dividing a known quantity of dough or other plastic material into a number of portions of uniform weight to form rolls, buns, or the like.

The object of our invention is to provide in a convenient and effective manner for the operation of such machines by the aid of mechanical power, thereby facilitating and expediting the performance of the complete working cycle of the machine and insuring a continuance of such cycles in rapid succession.

Referring to the three accompanying sheets of explanatory drawings, Figure 1 is a side elevation, and Fig. 2 a front or end elevation, of a dough-dividing machine of the type known as a "bun-divider," having our improvements applied thereto. Figs. 3 and 4 illustrate the interior fittings of the top box or receiver in different working positions, while Fig. 5 is a plan of the top box or receiver with the lid removed. Fig. 6 is an elevation showing separately the gapped disk for controlling the release or disconnection of the driving-pulley clutch.

The same reference characters in the different views indicate the same parts.

The machine as illustrated has a cylindrical top box or receiver *a*, (provided with a counterweighted hinged lid or cover *b*,) into which the weighed mass of dough is placed, and with dividing-knives, as *c*, and independent division press-plates *d*, arranged for a piston-like reciprocation within the said box or receiver. The reciprocation of the piston press-head or platen *e*, carrying the verti-

cally-projecting division-knives *c*, and the release of the lid-catch at the end of each cycle (to permit of its opening under the action of the counterweights *f*) are effected automatically from the one shaft *g*, preferably arranged at the lower part of the machine and driven by worm-gearing from the belt-driven first-motion shaft *h*, arranged adjacent thereto. The driving connection between the worm-wheel shaft and the stem *i*, projecting centrally from the under side of the piston press-head or platen *e*, is formed by a grooved and balanced cam *j*, mounted upon the shaft and engaging with a roller *k*, mounted directly on the lower end of the stem *i*. On the worm-wheel shaft *g* we also mount a face-cam *l* to wipe against the lower end of the lid-catch-releasing rod *m*, the upper end of the said rod being made to abut against the lever-like spring-catch *n*, mounted upon the lid and shaped and arranged to engage beneath a projection from the top box or receiver, as illustrated. The face or periphery of the cam *l* is so shaped that at the proper time in each cycle of operations it will act upon and project the rod *m* a sufficient distance to release the catch *n*, and thus enable the lid *b* to open under the action of its counterweights *f*.

The compression piston-head or platen *o*, to which the aforesaid independent division base-plates *d* are connected by rods or stems *p*, has a projecting rack-sleeve formed or secured with it which engages in the usual manner with the counterweighted lever *q*, by which it is normally held at its uppermost position, being depressed only by the descent of the head or platen *e* on the stem *i*, which it fits freely.

To automatically stop the machine after each complete reciprocation of the dividing-knives *c*, we provide a clutch (preferably such as is hereinafter described) between the worm-shaft *h* and its driving-pulley *r* and arrange for the connection of the parts of the same by hand and for their disconnection by a spring or springs whose action is controlled by a gapped disk *s*, which is preferably formed as a part of the worm-wheel *t*. One

part of the clutch is formed on the face of a spring-containing box or casing *u*, fixed to the shaft *h*, while the other and corresponding part is formed on the adjacent face of the boss of the pulley *r*, which is free to slide upon the shaft under the action of the operating-lever *v*. The upper end of the said lever is formed as a handle, while near its lower end is connected the link *w*, carrying the roller *x*, which engages with the gap in the disk *s*. In the position shown in the drawings the machine is at rest, the roller *x* being in engagement with the gap in the disk *s* and the clutch disconnected by the springs *y* and *z*, respectively, the spring *y* acting upon the lever *v*, as shown, and the spring *z* (arranged within the casing *u*) upon the clutch-face of the pulley *r*; but upon moving the lever *v* against the action of the said springs the roller *x* is withdrawn from the gap in the disk *s* and the respective clutch parts connected together. The machine will thus be set in motion and will continue to work until on the completion of a revolution of the disk *s* the gap in the same is again brought into alignment with the roller *x*, when the springs will force the latter into the said gap, and thereby disconnect the clutch. We thus provide a positive automatic stoppage of the machine after each cycle of operations or each complete revolution of the shaft *g* to enable the operator to recharge the top box and close the lid while the mechanism is at rest. After such recharging and closing of the lid the operator himself restarts the machine for another cycle.

To enable the shaft *g* to run continuously instead of automatically stopping on each complete revolution, we simply have to insert a peg through the aperture 1 in the guide-bracket 2 to prevent the return of the lever *v* after its depression for the purpose of withdrawing the aforesaid roller *x* from the gapped disk *s* and for connecting the clutch.

We do not limit ourselves to the particular form and arrangement of clutch hereinbefore

described, but employ other clutch mechanism, which can be readily arranged to act, as and for the purpose described.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In machines for dividing dough and other plastic material, the combination with movable press-heads or platens respectively carrying dividing-knives and press-plates, and a receiver inclosing the said knives and plates and having a counterweighted lid provided with a spring fastening-catch, of means for the automatic intermittent operation of the said knives, plates, and catch, consisting of a continuously-rotating pulley, an automatically-detachable driving connection between the said pulley and the shaft on which it is mounted, and cam-driving connections between the said shaft and the aforesaid parts to be intermittently operated, substantially as described.

2. In machines for dividing dough and other plastic material, the combination consisting of movable press-heads or platens respectively carrying dividing-knives and press-plates, a receiver inclosing the said knives and plates and having a counterweighted lid provided with a spring fastening-catch, a rotatable shaft carrying a gapped worm-wheel, cam-driving connections between the shaft and the said heads or platens and fastening-catch, a worm-shaft gearing with the said worm-wheel shaft and carrying a clutch and loose driving-pulley, and a clutch-operating lever having in connection therewith a link carrying a roller intermittently engaging the gap in the said worm-wheel, substantially as described.

In witness whereof we have hereunto set our hands in presence of two witnesses.

JOHN EDWARD POINTON.

CHARLES E. POINTON.

Witnesses:

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FREDERICK JOHN EDWARDS.