

No. 697,498.

Patented Apr. 15, 1902.

R. KRAUS.

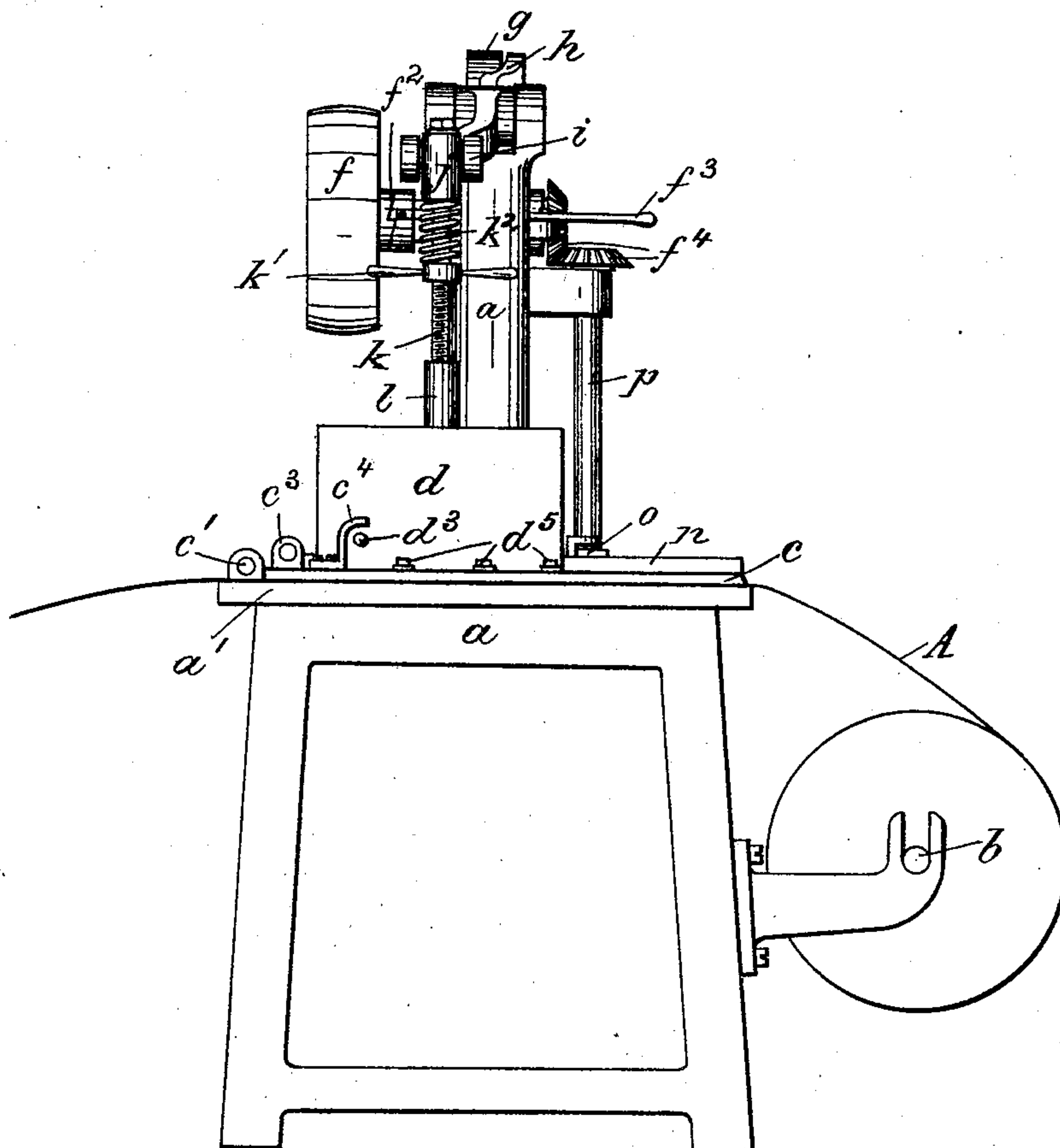
MACHINE FOR FORMING PLASTIC PATTERNS ON WALL PAPER.

(Application filed Feb. 6, 1902.)

(No Model.)

3 Sheets—Sheet 1.

FIG. 1.



Witnesses:

Arthur L. Lutz
Edward R. Ruy

Inventor:

Rudolf Kraus
by his attorneys
Poeder & Briesew

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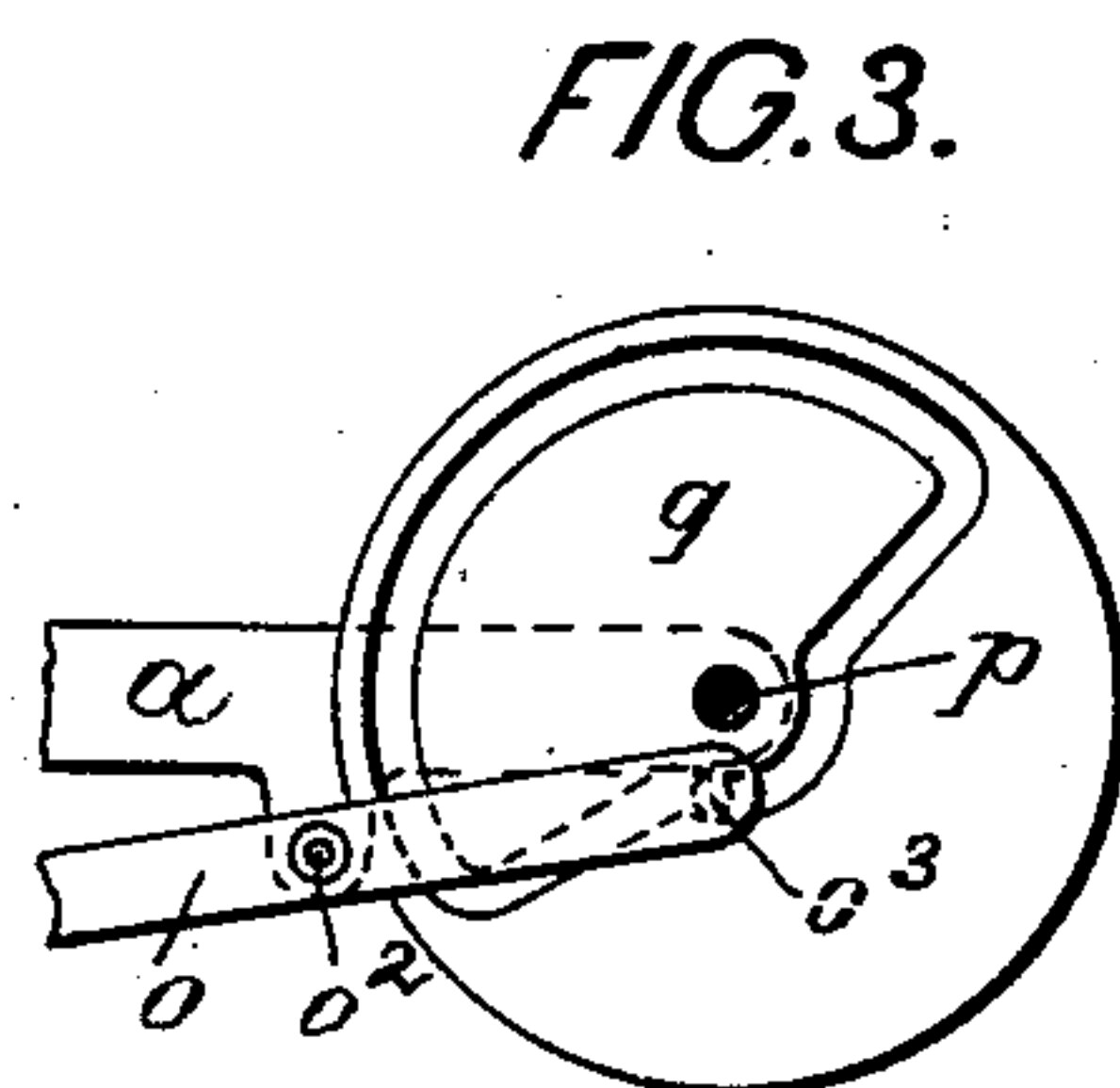
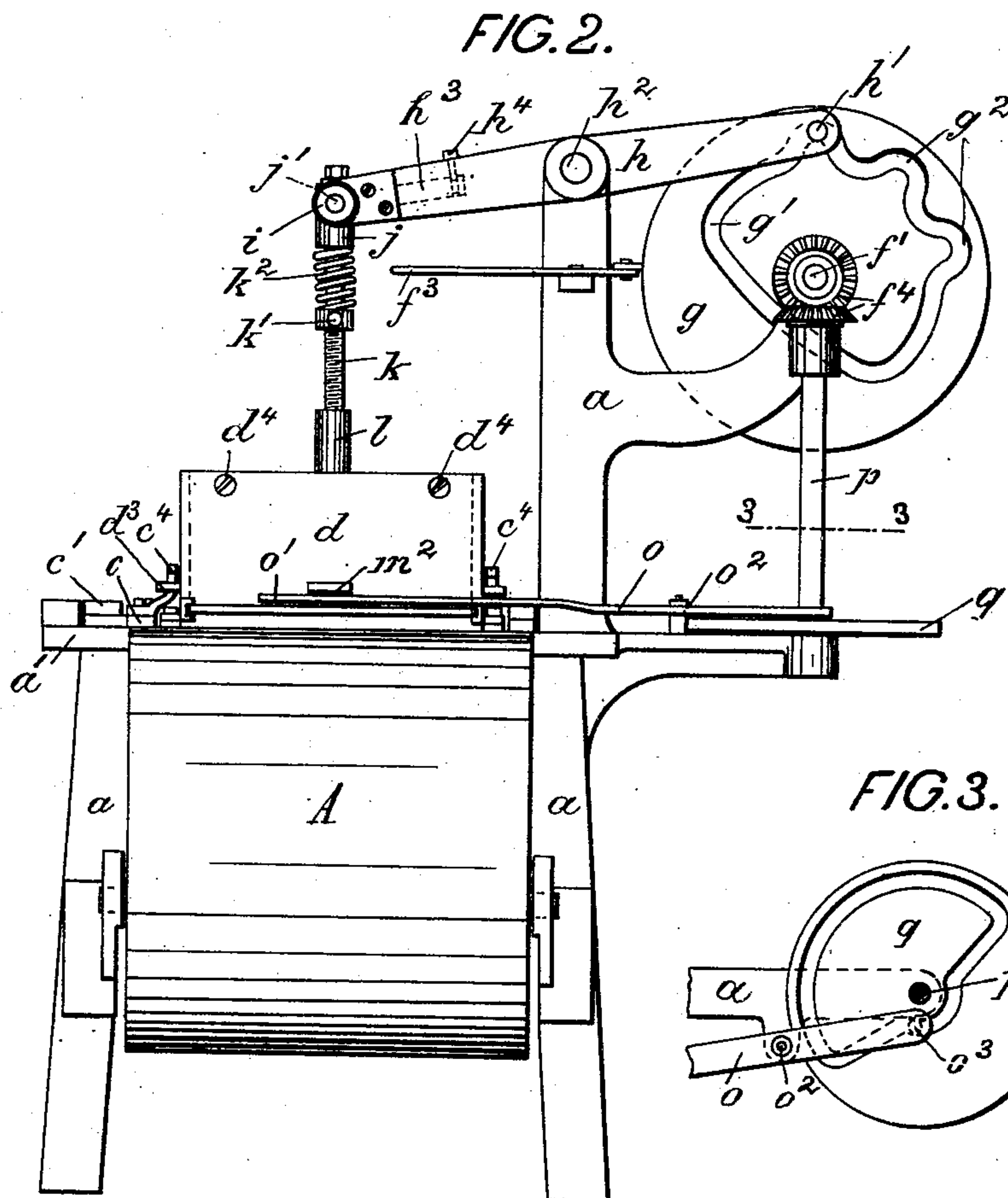
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3 Sheets—Sheet 2.



Witnesses:

Arthur L. Lundy,
Edward Ray

Inventor:

Rudolf Kraus
by his attorneys
Roeder & Briesew

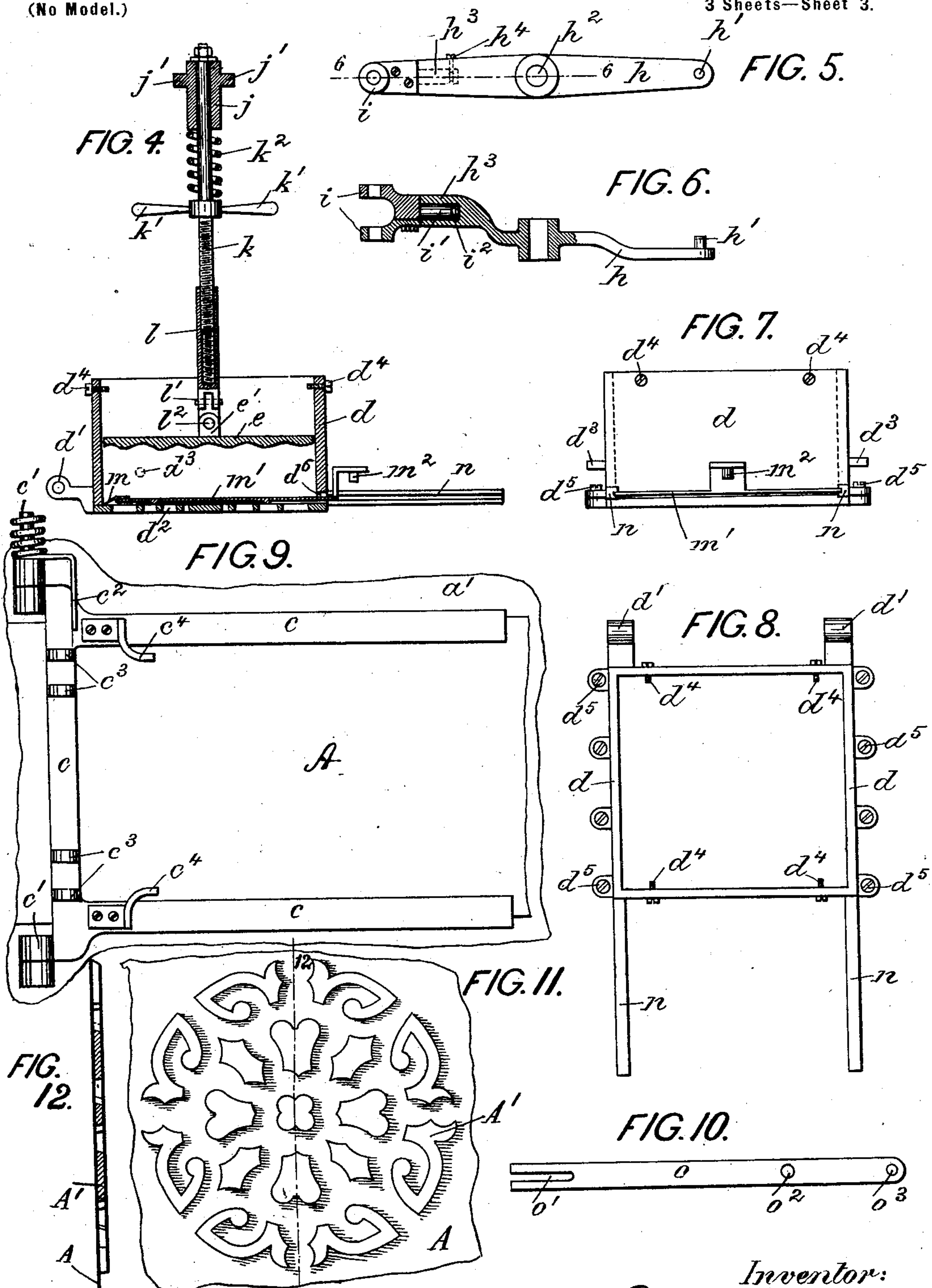
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(No Model.)

3 Sheets—Sheet 3.



Witnesses:
Arthur Lutz
Edward Ray

Inventor:
Rudolf Kraus
by his attorneys
Boeder & Breen

UNITED STATES PATENT OFFICE.

RUDOLF KRAUS, OF NEW YORK, N. Y., ASSIGNOR OF ONE-HALF TO CHARLES KRAUS, OF NEW YORK, N. Y.

MACHINE FOR FORMING PLASTIC PATTERNS ON WALL-PAPER.

SPECIFICATION forming part of Letters Patent No. 697,498, dated April 15, 1902.

Application filed February 6, 1902. Serial No. 92,790. (No model.)

To all whom it may concern:

Be it known that I, RUDOLF KRAUS, a citizen of the United States, and a resident of New York city, borough of Queens, county of Queens, and State of New York, have invented certain new and useful Improvements in Machines for Forming Plastic Patterns on Wall-Paper, of which the following is a specification.

10 This invention relates to a machine for providing wall-paper with patterns in relief, such patterns being composed of a plastic mass which is molded and secured to the paper by pressure. By my machine the manufacture
15 of this durable class of wall-paper is facilitated, so that unskilled labor may be employed, and the output is increased.

In the accompanying drawings, Figure 1 is a front elevation of my improved machine;
20 Fig. 2, a side elevation; Fig. 3, a section of part of the machine on line 3 3, Fig. 2; Fig. 4, a vertical longitudinal section of the mold-box and plunger; Fig. 5, a detail side view of the lever *h*; Fig. 6, a section on line 6 6, Fig.
25 5, partly in plan; Fig. 7, a side elevation of the mold-box; Fig. 8, a plan of the same with the cutter removed; Fig. 9, a plan of the paper-clamp; Fig. 10, a detail plan of lever *o*; Fig. 11, a face view of the wall-paper ornamented by the machine; and Fig. 12, a section on line 12 12, Fig. 11.

The letter *a* represents the frame of the machine, that supports the work-table *a'*. Over this table is fed by hand or otherwise from
35 delivery-reel *b* the wall-paper *A*, to which the relief-patterns are to be applied. This paper is adapted to be held firmly upon the table by a frame or clamp *c*, Fig. 9, which is hinged to the table at *c'* and is held down by a spring-finger *c²*.

To the clamp *c* is pivoted, by means of lugs *d'* *c³*, a mold-box *d*, the base *d²* of which is removably secured by screws *d⁵* and constitutes a pattern plate or die. This plate is perforated to form any pattern desired, the edges
45 of the perforations being beveled to prevent binding. A pin *d³* on each side of mold-box *d* is adapted to engage a projection or hook *c⁴* on frame *c*, so that the mold-box will take

the frame along after having been partly 50 raised.

Within the mold-box *d* is free to reciprocate a plunger *e*, having, preferably, a corrugated lower surface and adapted to engage stops or pins *d⁴*, projecting inwardly at the 55 top of the mold-box. The plunger *e* is reciprocated from the power-pulley *f* in the following manner: The pulley *f* is coupled to a shaft *f'* by a clutch *f²*, that opens automatically at each complete rotation of shaft *f'*, so that the 60 machine is arrested. The clutch *f²* is adapted to be closed by a hand-lever *f³*. Upon the shaft *f'* is mounted a cam *g*, the groove *g'* of which is engaged by a pin *h'* on one end of a two-arm lever *h*, turning on fulcrum *h²* of frame *a*. The 65 other end of lever *h* is provided with a tubular socket *h³*, in which is free to turn the pin *i'* of a forked bearing *i*, which is held against withdrawal by a set-screw *h⁴* and groove *i²*. In the bearing *i* is hung, by means of trunnions *j'*, a 70 tubular sleeve *j*, through which passes loosely a bolt *k*, having a threaded lower end. This end engages a threaded sleeve *l*, which is connected by a universal joint *l' l²* to a lug *e'* of plunger *e*. In order to set the plunger so that 75 it always bears upon the surface of the constantly-changing quantity of plastic material in the mold-box, the bolt *k* may be rotated by hand-lever *k'* so as to be screwed into or out of the sleeve *l*. Between the hand-lever *k'* and 80 the sleeve *j* is interposed a spring *k²*, which permits the plunger to yield under excessive pressure. It will be seen that the bearing *i*, in conjunction with the sleeve *j*, constitutes a universal joint between the lever *h* and the 85 bolt *k*. The groove *g'* of cam *g* is so shaped that at each downstroke the plunger is caused to tamp the plastic mass successively for a number of times, this tamping action being effected by the outwardly-projecting cam- 90 groove sections *g²*. In this way the plastic mass is pressed forcibly through the pattern-plate *d²* and against the paper *A*.

In order to separate the molded portion of the plastic mass from the bulk, I provide a 95 reciprocating knife or cutter *m*, secured to a plate *m'*. This plate enters box *d* through slot *d⁶* and is guided beyond the box by rails

n. The plate m' is provided with a pin m^2 , that is engaged by the forked end o' of a lever o , fulcrumed at o^2 to frame a . The lever o receives reciprocating movement from shaft f' by bevel-gear f^4 and shaft p , upon which is mounted cam q . This cam is engaged by a pin o^3 of lever o , so that at each rotation of the cam an intermittent stroke of the knife is effected.

10 The operation is as follows: A length of paper is unrolled from reel b and placed upon table a' . The lever f^3 is manipulated to close clutch f^2 and rotate cam q by shaft f' . The cam will cause the plunger e to descend so as
15 to release screws d^4 and permit mold-box d , as well as clamp c , to descend by gravity, assisted by spring-finger c^2 . Thus the paper will be securely clamped to table a' beneath the pattern-plate d^2 . The knife m is with-
20 drawn by cam q and lever o , and the plastic mass is tamped by the further descent of the plunger, caused by the projecting cam-groove sections q^2 . In this way the mass is pressed forcibly through the pattern-plate and into
25 contact with the paper A . The knife is advanced to separate the molded pattern from the main bulk of the plastic mass and to then form a false bottom within the box above the pattern-plate. The plunger e is raised to tilt
30 box d upon its hinge by engaging stops d^4 and to thus raise the pattern-plate off the paper. During this upward movement the pin m^2 becomes disengaged from lever o , so as to disconnect the knife from its operating
35 mechanism. When the box d has swung up to such an extent that the pins d^3 engage the hooks c^4 , the clamp c will also be raised upon its pivots c' , so as to liberate the paper. When the mold and clamp are completely opened,
40 the clutch f^2 is automatically opened to arrest the machine. The finished section of paper A , provided with the molded ornamentations A' , is now fed to the left for the length of one pattern, and the operation is repeated. If
45 desired, the paper may be covered in part by an adhesive before being fed underneath the mold-box. The finished paper is dried upon racks in the usual manner and is ready for the market.

50 What I claim is—

1. In a machine for forming plastic patterns on wall-paper, the combination of a mold-box with a pattern-plate, a plunger, and means for raising the pattern-plate, substantially as specified.

55 2. In a machine for forming plastic patterns on wall-paper, the combination of a mold-box

with a pattern-plate, a plunger, and means for raising the mold-box and pattern-plate, substantially as specified. 60

3. In a machine for forming plastic patterns on wall-paper, the combination of a paper-clamp with a mold-box, a pattern-plate secured thereto, a plunger within the mold-box, and means for raising the clamp and mold-box, (5 substantially as specified.

4. In a machine for forming plastic patterns on wall-paper, the combination of a mold-box with a pattern-plate, means for raising the pattern-plate, and a knife adapted to be pro- 70 jected into the mold-box, substantially as specified.

5. In a machine for forming plastic patterns on wall-paper, the combination of a mold-box with a pattern-plate secured thereto, a knife 75 adapted to be projected into the mold-box, a paper-clamp, and means for raising said clamp and the pattern-plate, substantially as specified.

6. In a machine for forming plastic patterns 80 on wall-paper, the combination of a hinged mold-box having a pin, with a hinged paper-clamp having a hook adapted to be engaged by said pin, substantially as specified.

7. In a machine for forming plastic patterns 85 on wall-paper, the combination of a cam, with a lever actuated thereby, a screw-bolt, a universal coupling between lever and screw-bolt, a threaded sleeve engaging the screw-bolt, a plunger, and a second universal joint between 90 the threaded sleeve and plunger, substantially as specified.

8. In a machine for forming plastic patterns on wall-paper, the combination of a hinged mold-box with a pattern-plate secured there- 95 to, means for tilting the mold-box, a knife adapted to be projected into the mold-box, a lever for actuating said knife, and means for disengaging the knife from said lever, sub- 100 stantially as specified.

9. In a machine for forming plastic patterns on wall-paper, the combination of a hinged mold-box, with stops projecting into the up- 105 per part of the same, and a plunger which is adapted to engage said stops and tilt the mold-box, substantially as specified.

Signed by me at New York city, county and State of New York, this 5th day of February, 1902.

RUDOLF KRAUS.

Witnesses:

F. V. BRIESEN,
WILLIAM SCHULZ.