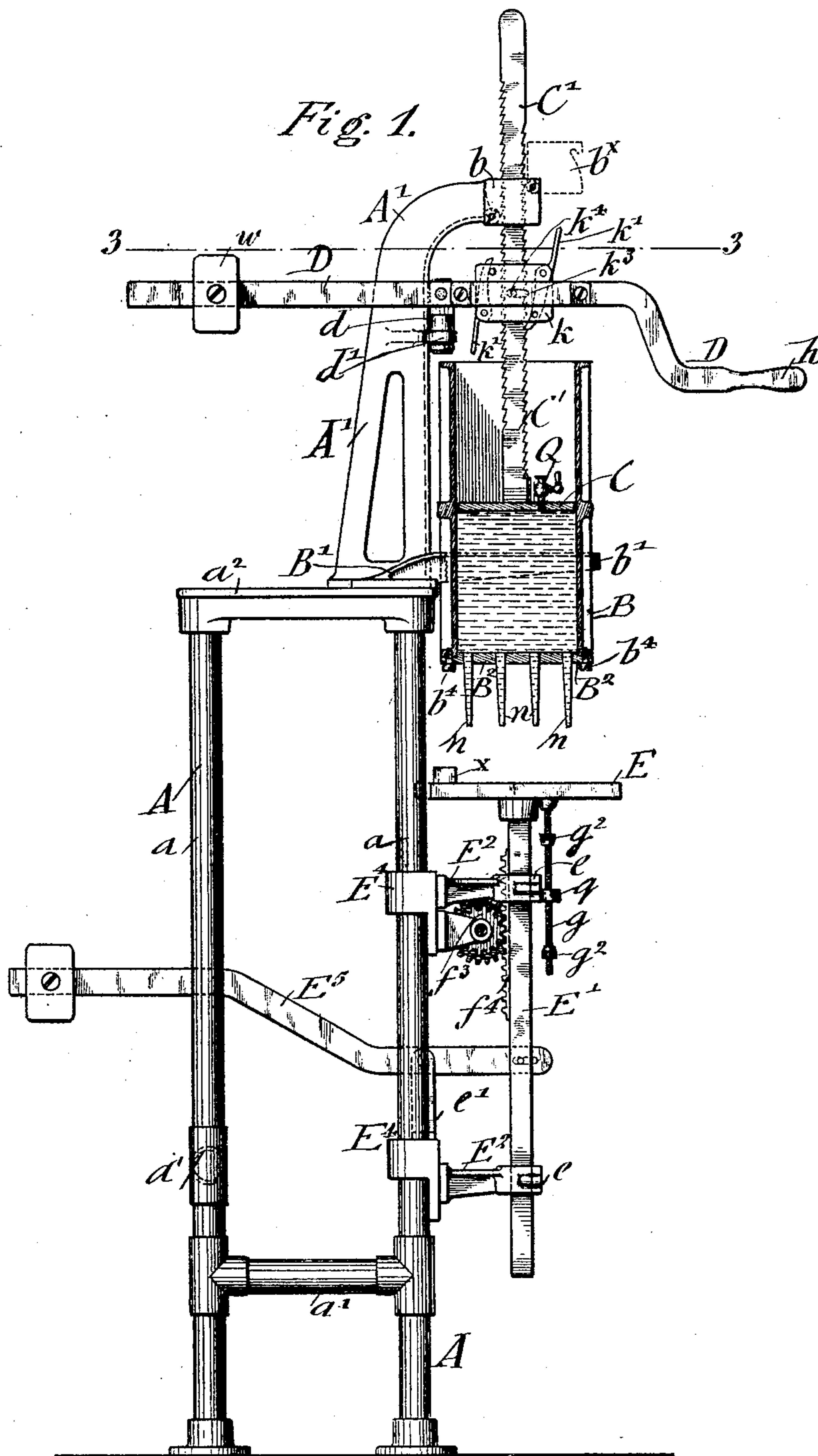


P. KNORPP.

MACHINE FOR MAKING CONFECTIONERY.

APPLICATION FILED JUNE 21, 1904. RENEWED APR. 22, 1905.

3 SHEETS—SHEET 1.



Witnesses  
Henry J. Lubkier.  
The Doctor

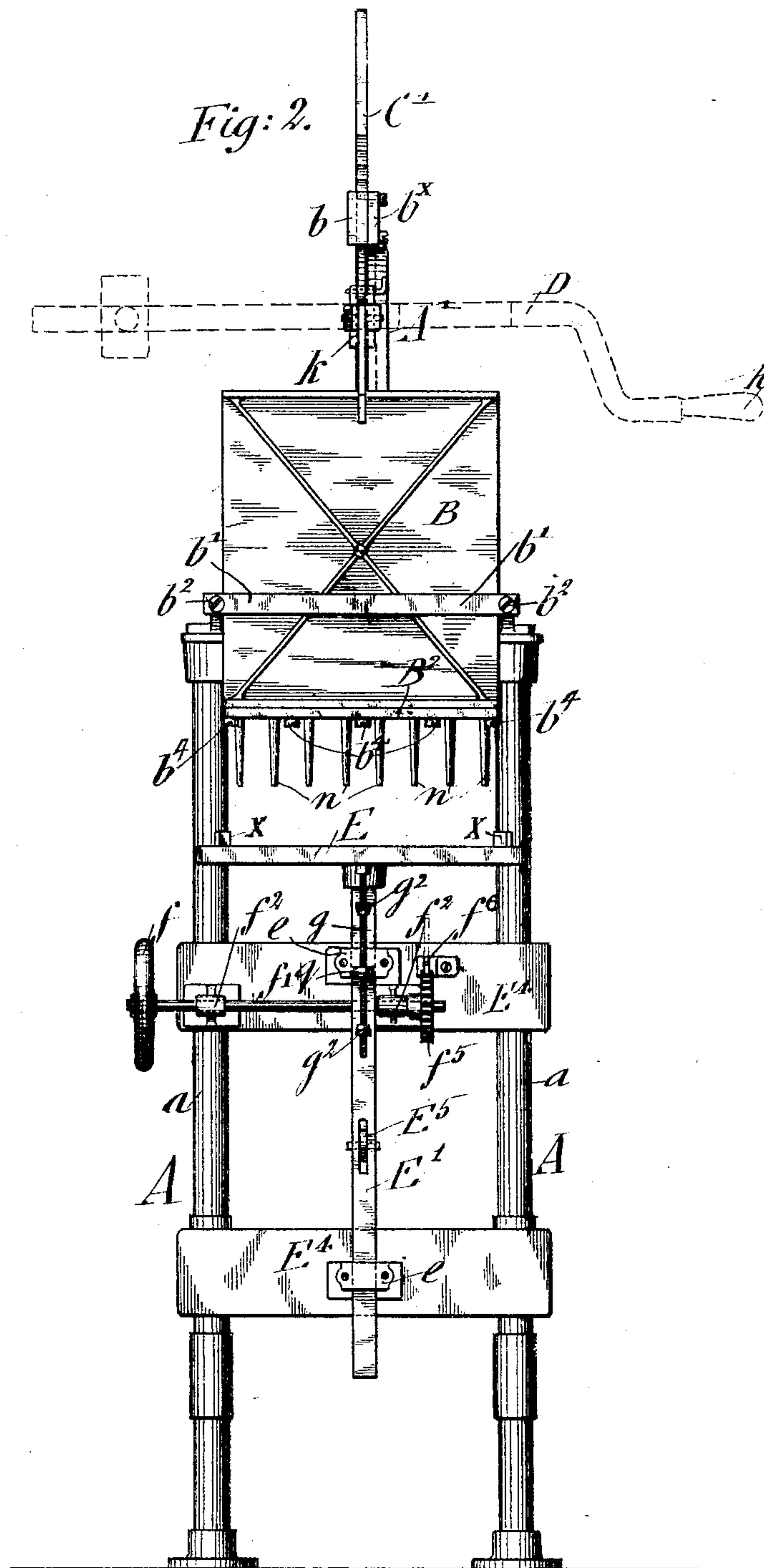
Inventor  
Philip Knorr  
By his Attorneys  
Gruenke & Viles

P. KNORPP.

MACHINE FOR MAKING CONFECTIONERY.

APPLICATION FILED JUNE 21, 1904. RENEWED APR. 22, 1905.

3 SHEETS—SHEET 2.



Witnesses  
*Henry J. Suhrker.*  
*W. E. Rockwell*

Inventor  
*Philip Knorpp*  
 By his Attorneys *Gruen & Viles*

No. 803,293.

PATENTED OCT. 31, 1905.

P. KNORPP.

MACHINE FOR MAKING CONFECTIONERY.

APPLICATION FILED JUNE 21, 1904. RENEWED APR. 22, 1905.

3 SHEETS—SHEET 3.

Fig. 3.

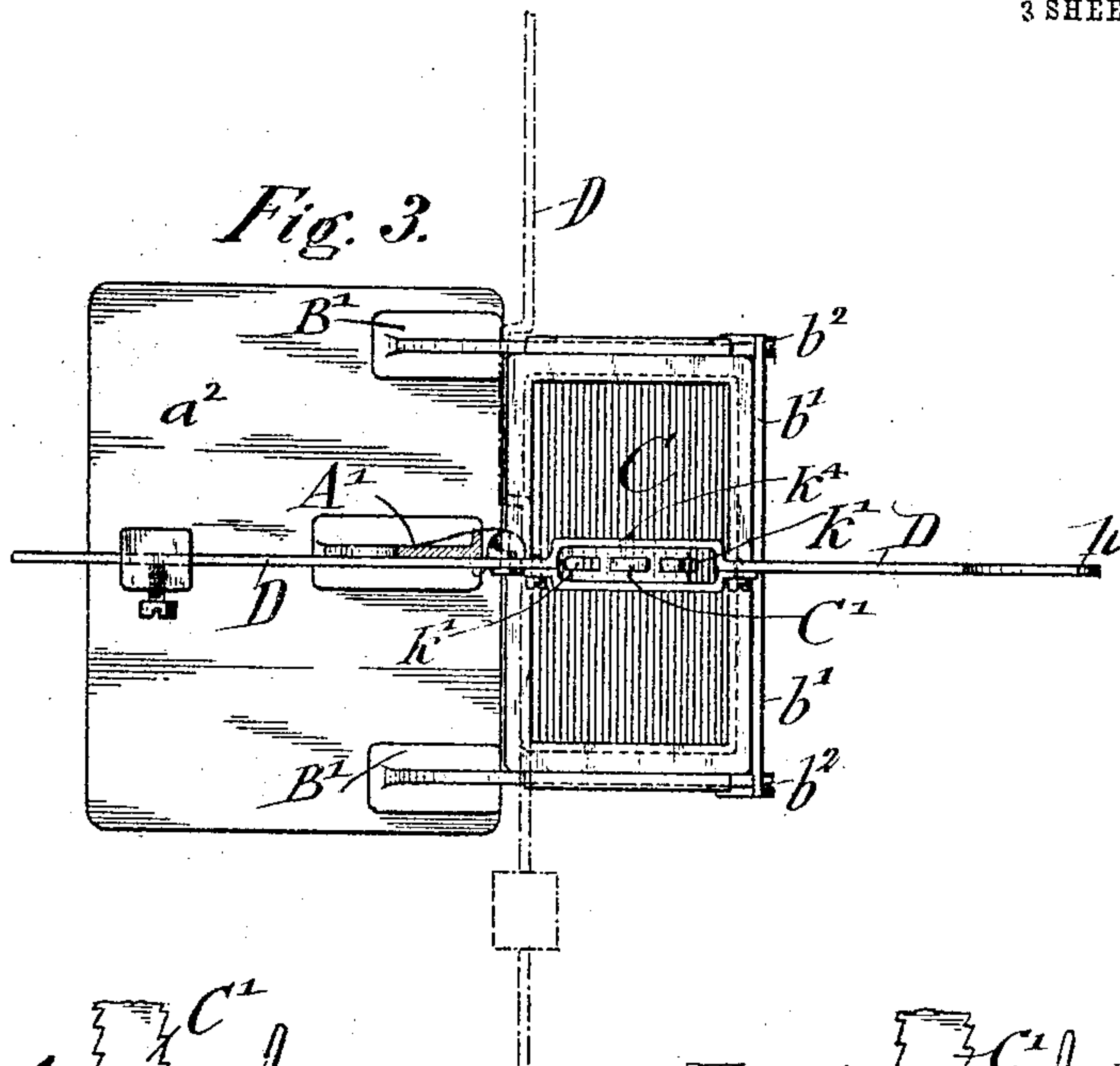


Fig. 4.

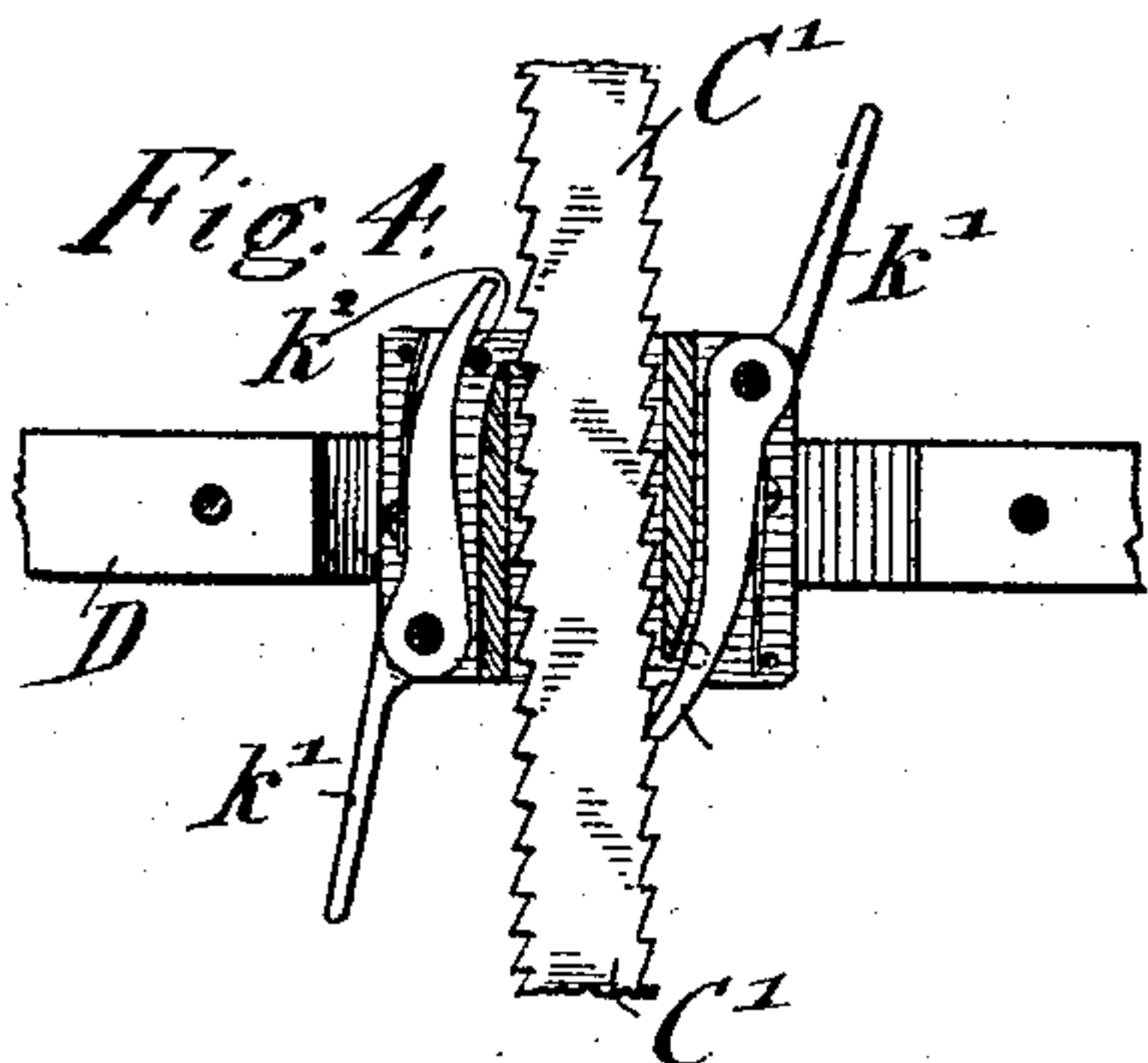


Fig. 5.

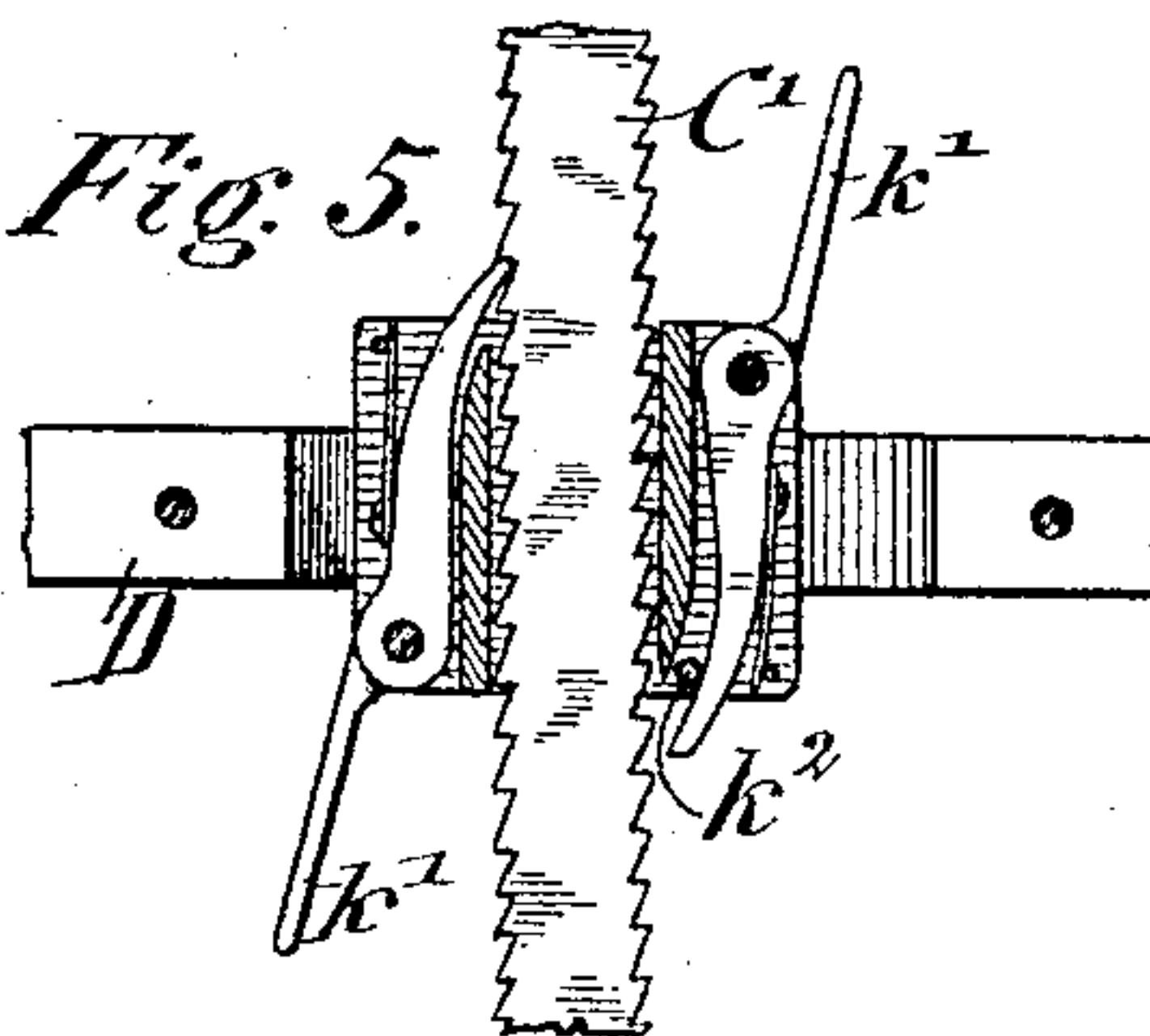


Fig. 6.

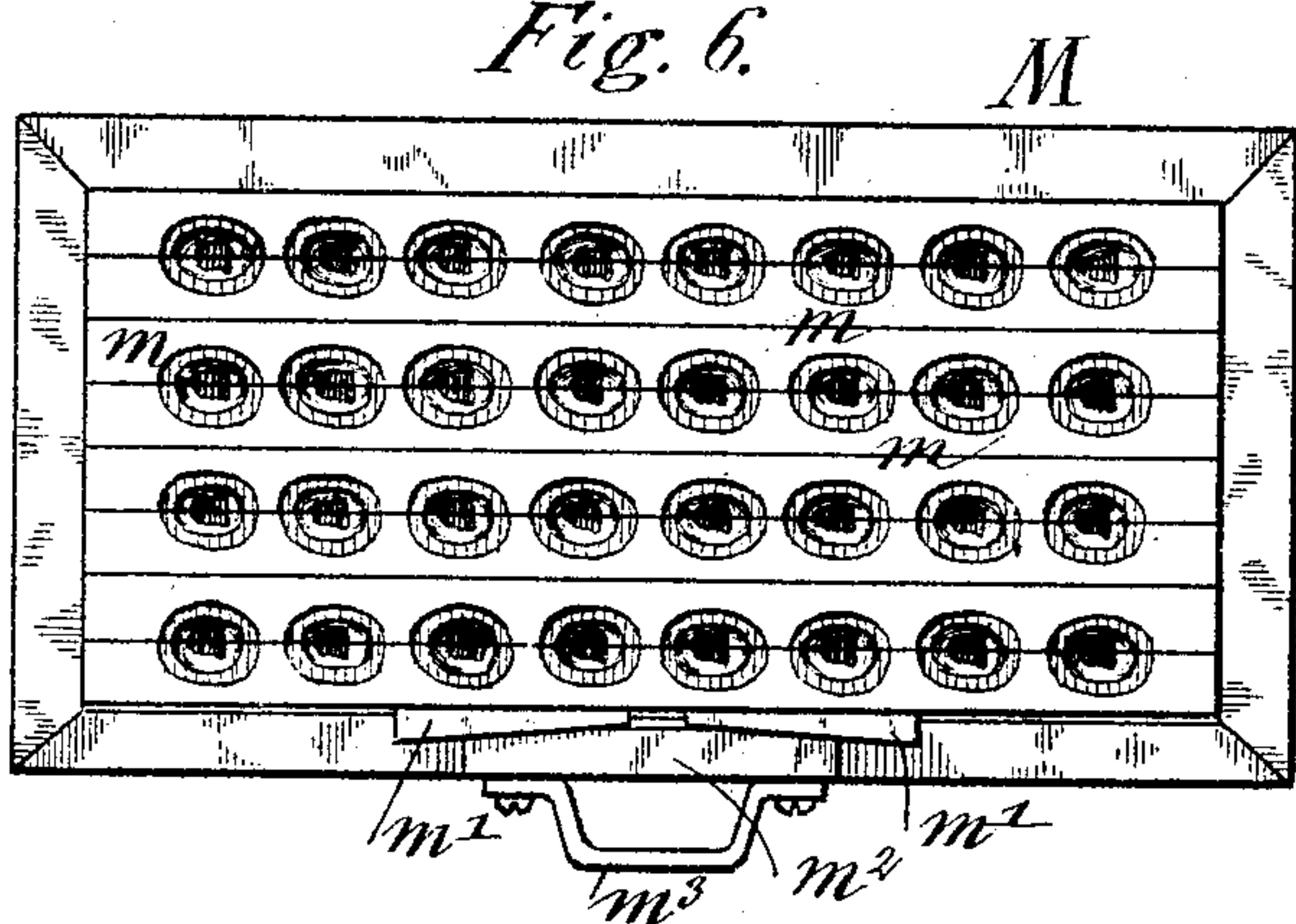
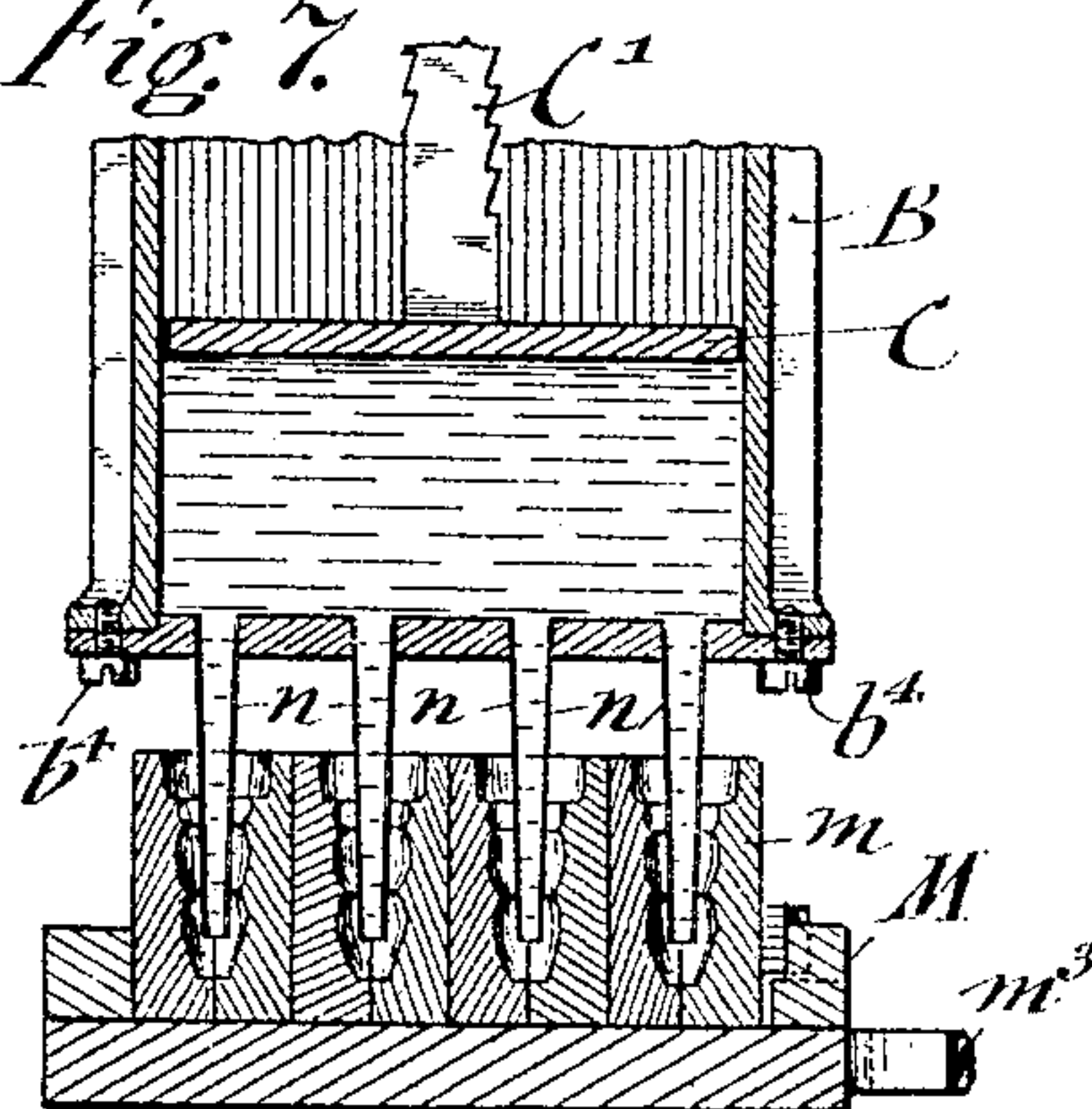


Fig. 7.



Witnesses  
Henry J. Luchier.  
W. Coetner

Inventor  
Philip Knorpp  
By his Attorneys  
Gruenke & Viles



# UNITED STATES PATENT OFFICE.

PHILIP KNORPP, OF NEW YORK, N. Y.

## MACHINE FOR MAKING CONFECTIONERY.

No. 803,293.

Specification of Letters Patent.

Patented Oct. 31, 1905.

Application filed June 21, 1904. Renewed April 22, 1905. Serial No. 256,995.

*To all whom it may concern:*

Be it known that I, PHILIP KNORPP, a citizen of the United States, residing in New York, borough of Brooklyn, in the State of New York, have invented certain new and useful Improvements in Machines for Making Confectionery, of which the following is a specification.

In the machine for making confectionery for which I was granted Letters Patent No. 454,278, dated June 16, 1891, the articles of confectionery were deposited from a paste receptacle or receiver having a perforated bottom onto a sheet of paper which was fed forward below the paste-receptacle and supported on a vertically-reciprocating platform operated simultaneously with the forward feeding of the paper for receiving the next quantity of confectionery. The machine was confined to articles that are pressed through the perforations in the bottom of the paste-receptacle. It has since been found that a machine of this type can also be employed for making cheap confectionery articles in molds and producing them in large quantity, for which purpose the construction of the machine referred to had to be changed in several details, relating mainly to the removal of the follower by which the paste is forced from the paste-receptacle into the molds and in the simplified construction of the vertically-reciprocating table on which the molds are supported and raised up to the delivery-nozzles of the paste-receptacle and lowered away from the same for removing the molds; and the invention consists in the mechanism for raising the follower clear out of the paste-receptacle and swinging it, with its supporting counter-balanced lever, sidewise of the receptacle for conveniently filling the latter.

The invention consists, secondly, in the construction of the interchangeable bottom for the paste-receptacle with its paste-delivery nozzles; thirdly, in the mechanism for raising and lowering and arresting the motion of the platform on which the molds are supported, and, lastly, in certain details of construction and combinations of parts which will be fully described hereinafter and finally pointed out in the claims.

In the accompanying drawings, Figure 1 represents a side elevation of my improved machine for making confectionery, partly in section through the paste-receptacle and follower of the same. Fig. 2 is a front elevation of the machine. Fig. 3 is a plan view,

partly in horizontal section, on line 3 3, Fig. 1. Figs. 4 and 5 are detail sections of the mechanism for lowering the follower into the paste-receptacle and raising the same out of the paste-receptacle. Fig. 6 is a plan view of the mold drawn on a larger scale; and Fig. 7 is a vertical transverse section through the paste-receptacle and mold, showing the latter in position for filling.

Similar letters of reference indicate corresponding parts.

Referring to the drawings, A designates the lower main portion or standard of the supporting-frame of my improved machine for making confectionery, said main portion consisting of four upright pillars *a*, which are connected by side and rear braces *a'* and by a top plate *a''*. To the top plate *a''* is attached a central upright standard *A'*, which is curved forward at its upper end and provided with an oblong guide-piece *b* for the vertically-guided follower-rod *C'*, said guide-piece being provided with a pivoted plate *b'*, by means of which the follower-rod may be removed from the guide-piece. The follower-rod *C'* carries at its lower end the follower *C*, which is made, preferably, of rectangular shape and guided in the paste-receptacle *B*, that is similarly shaped and of suitable size to receive a large quantity of sugar or other paste from which the confectionery is to be made. The paste-receptacle *B* is supported on horizontal brackets *B'*, which are cast integral with the top plate *a''* or attached thereto in any suitable manner, the bracket-frame embracing the receptacle *B* and forming a firm support for the same, in connection with a transverse front bar *b'*, which is attached by fastening-screws *b''* to the front end of the brackets *B'*. By removing the front bar *b'* the receptacle can be readily removed from the supporting-brackets *B'* for cleaning or repairs. To the lower end of the paste-receptacle *B* is attached, by means of fastening-screws *b'''*, a perforated bottom *B''*, which is provided with as many nozzles *n* inserted into the bottom perforations as there are articles to be made at one and the same time. Each size of articles requires a separate bottom and nozzles, so that articles of different sizes and shapes can be readily made in the machine by simply attaching to the lower end of the paste-receptacle the bottom suited to the articles to be made. The follower *C* is preferably provided with a valved vent-pipe, so that when the follower is inserted into the filled paste-recep-



tacle the air can readily escape from the same before the work is commenced. The valved vent-pipe Q is then closed when the air has escaped from the space between the follower C and the paste in the receptacle. Motion is imparted to the follower C by a fulcrumed and counterbalanced lever D, which is provided with a handle  $h$  at one end and a weight  $w$  near its opposite end. The fulcrum-pin  $d$  is swiveled in a perforated ear  $d'$  of the standard A', the lever D being extended sidewise of the standard A', so that it can be swung from its normal position shown in full lines in Figs. 1 and 3 into a position shown in dotted lines in Figs. 2 and 3. The follower-rod is provided with teeth at its front and rear edges, the front teeth being inclined in upward direction, as shown, while the rear teeth are inclined in downward direction, and said rod is guided in a keeper  $k$  on the lever D, spring-actuated pawls  $k'$  being fulcrumed to the upper front and lower rear corners of said keeper.

Either the front or rear pawl is forced into engagement with the teeth on the follower-rod C' by its spring by removing the transverse retaining-pin  $k^2$ , which is inserted into holes of the keeper, one near the lower end of the front pawl and the other in the upper end of the rear pawl, as shown in Figs. 4 and 5. When the follower is to be lowered, the retaining-pin  $k^2$  of the front pawl is removed, so that the front pawl is placed in engagement with the teeth of the follower, while when the rear pawl is thrown out of engagement with the rear teeth of the follower-rod, as shown in Fig. 4. When the follower is to be raised the front pawl is withdrawn from the front teeth and held in position by inserting the retaining-pin  $k^2$ , as shown in Fig. 5, so as to hold the pawl out of engagement with the front teeth, while the pin of the rear pawl is removed, so that the latter is forced into engagement with the rear teeth. It has been found that the friction between the follower C and the sides of the paste-receptacle B is sufficient to hold the follower-rod in raised position during the brief space of time occupied by the downstroke of the operating-lever, so that when the pawls are properly adjusted the raising of said follower can be readily effected by a series of rapid downward movements alternating with upward movements of any desired rapidity, as is obvious. In this manner either pawl can be placed in engagement with the teeth of the follower-rod C', and thereby the follower C moved in upward or downward direction in the paste-receptacle B by the operating-lever D or lifted out of the paste-receptacle for being moved, with the lever D, into position sidewise of the paste-receptacle, so that the latter can be refilled.

The lever D is forked at the point of connection with the keeper  $k$ , the forked parallel

portions being provided with slots  $k^3$ , that engage transverse pins  $k^4$  on the keeper  $k$ , so that when the keeper is raised or lowered on the follower-rod C' there is sufficient play for the lever D to adjust itself to the different positions of the keeper on the follower-rod.

When the follower is to be lowered, the front pawl  $k'$  is placed in engagement with the front teeth of the follower-rod and the main lever then lowered, so that a quantity of paste is forced through the discharge-nozzles  $n$  into the molds placed below the same. By the next action of the lever the keeper  $k$  is raised, so that the front pawl  $k'$  passes in front of the same, so that by the next downward motion the follower is pressed downward on the paste until all the paste is forced out through the receptacle, in which case the follower arrives near the bottom of the same, while the lever D arrives near the upper end of the follower-rod C'. It is obvious that the arrangement of the pawls and the teeth of the follower-rod, as shown, may be reversed, if desired.

When it is desired to raise the follower C out of the paste-receptacle B, the front pawl is locked into position so as to clear the front teeth of the follower rod, while the rear pawl is placed in engagement with the rear teeth of the follower-rod by withdrawing its retaining-pin, so that by several successive upward and downward motions of the lever D the rear pawl of the keeper is passed successively into engagement with the rear teeth of the follower-rod, and thereby the same and the follower raised so that the latter clears the paste-receptacle, and the lever D, with the follower-rod and follower, can be swung into sidewise position. Before this is accomplished the pivoted plate  $b^x$  on the guide-piece at the upper end of the standard A' is moved into raised position, as shown in dotted lines in Fig. 1, said plate being pivoted at its upper front corner to the guide-piece  $b$ , while its notched lower end engages a pin on the same. By raising the side plate  $b^x$  the follower-rod can be moved out of the guide-piece  $b$  or retained in the same, when the side plate  $b^x$  is lowered again, so as to restore the guiding action of the follower-rod.

Below the paste-receptacle B is arranged a horizontal table or platform E, that is supported on a vertical guide-rod E', which is guided in sleeves  $e$   $e$  at the front ends of bracket-arms E<sup>2</sup>, that are attached to transverse supporting-plates E<sup>4</sup>, having sleeves engaging the front pillars  $a$ , as shown clearly in Figs. 1 and 2. To the guide-rod E', immediately between the guide-sleeves  $e$   $e$ , is pivoted the slotted front end of a fulcrumed and weighted lever E<sup>5</sup>, which imparts a lifting motion to the platform E, so as to move it in upward direction toward the stationary paste-receptacle. The lever is fulcrumed to a center arm  $e'$  of the lower supporting-plate



E<sup>4</sup>. The platform is raised by means of a  
 hand-wheel  $f$ , which is attached to one end  
 of a shaft  $f'$ , supported in bearings  $f^2$  on the  
 upper supporting-plate E<sup>4</sup>. The shaft  $f'$  car-  
 5 ries near its opposite end a pinion  $f^3$ , which  
 meshes with a rack  $f^4$  on the rear edge of the  
 guide-rod E'. To the end of the shaft  $f'$  op-  
 posite to the hand-wheel  $f$  is keyed a ratchet-  
 wheel  $f^5$ , a collar being inserted between the  
 10 hub of the ratchet-wheel and the hub of the  
 pinion, so as to prevent the shifting of the  
 shaft in lateral direction. The ratchet-wheel  
 $f^5$  is engaged by a gravity check-pawl  $f^6$ ,  
 which is pivoted to ears on the upper sup-  
 15 porting-plate E<sup>4</sup>, so as to lock the platform in  
 position after the same is lifted. When the  
 platform is to be lowered by the hand-wheel  
 and intermediate pinion and rack mechanism,  
 the pawl is lifted out of engagement with the  
 20 ratchet-wheel and returned in the same when-  
 ever the platform is to be held in locked po-  
 sition. To the under side of the platform E  
 is attached a downwardly-extending threaded  
 rod  $g$ , which passes through a perforated ear  
 25  $g$  at the front end of the upper sleeve  $e$ . On  
 the screw-threaded rod  $g$  are placed two ad-  
 justable stops  $g^2$ , which serve for limiting the  
 motion of the platform in upward and down-  
 ward direction, said stops being adjustable, so  
 30 as to arrange for the different distances to  
 which the platform is to be moved in casting  
 the different sizes of articles of confectionery.

The platform E is provided with corner re-  
 cesses, so as to be guided along the front pil-  
 35 lars  $a$ , and with angular stationary or adjust-  
 able stops  $x$ , said stops serving as gages for  
 the frame M of the molds  $m$ , into which the  
 articles of confectionery are to be cast. The  
 frames M are preferably of rectangular shape,  
 40 consisting of a bottom and a raised rim. The  
 molds  $m$  are made of plaster-of-paris, each  
 mold being placed in position in the frame M  
 and locked in the same by means of wedges  
 $m'$ , which are inserted between the inclined  
 45 faces of a front cleat  $m^2$ . The plaster-of-paris  
 molds  $m$  are placed in the bottom of the frame,  
 as shown in Fig. 6. The molds are made in  
 the usual manner of longitudinal sections and  
 provided with a plurality of individual molds,  
 50 a number of sectional molds being supported  
 in the frame M, the bottom of the paste-re-  
 ceptacle being provided with a corresponding  
 number of nozzles  $n$ , so that each individual  
 mold when placed in position on the platform  
 55 E below the receptacle can be supplied with  
 the required quantity of paste by operating  
 the follower C by means of the lever D. The  
 frame M is provided with a handle  $m^3$ , so as  
 to permit its convenient removal from the  
 60 platform as soon as the molds are filled.

The machine is operated as follows: For  
 filling the paste-receptacle B the follower C  
 is removed by lifting the lever D after the  
 pawls have been placed in proper position  
 65 with regard to the teeth of the follower-rod.

The lever D is removed with the follower side-  
 wise of the receptacle, so that the same can  
 be filled with the paste. The follower is then  
 returned with the lever into position in the  
 paste-receptacle and the mold-frame with a  
 70 number of molds placed on the platform and  
 raised to such an extent that the delivery-  
 nozzles extend centrally into the molds, as  
 shown in Fig. 7, with their lower ends near  
 the lower ends of the hollow spaces in the  
 75 molds. The operator then imparts by his  
 right hand pressure on the lever D and the fol-  
 lower C while he turns with his left hand and  
 the hand-wheel  $f$ , so as to gradually lower the  
 platform E and the molds supported thereon  
 80 until the lower end of the nozzles  $n$  is in line  
 with the top surface of the molds  $m$ , the gradual  
 pressure on the follower C and the slow with-  
 drawal of the molds by the lowering of the  
 platform producing the gradual filling of the  
 85 molds with paste. The small projecting por-  
 tions of the paste on the top surface of the  
 molds are removed by a knife or scraper. The  
 molds are then removed from the platform  
 and the next set of molds placed on the same.  
 90 The platform is then raised again by turning  
 the hand-wheel in opposite direction until the  
 nozzles arrive near the lower ends of the cav-  
 ities in the molds, when again the pressure is  
 imparted by the lever D to the follower, so  
 95 as to fill the molds simultaneously with the  
 lowering of the platform and molds. The ex-  
 tent of motion of the platform E is controlled  
 by stops on its guide-rods, so that the oper-  
 ator knows when the molds arrive at their  
 100 proper relative position to the delivery-noz-  
 zles. To prevent the lowering of the plat-  
 form while the full molds are being removed  
 and empty molds placed in position thereon,  
 the pawl is dropped into the ratchet-wheel,  
 105 so that the platform is locked in position.  
 When the platform is raised again by the  
 hand-wheel, the pawl is lifted into raised po-  
 sition, as shown in dotted lines in Fig. 2,  
 so as to permit the upward motion of the plat-  
 110 form.

My improved machine can also be used  
 for ornamenting articles—such as crackers,  
 Christmas-tree ornaments, and the like—in  
 115 which case the bottoms of the receptacle are  
 not provided with nozzles, but with perfo-  
 rated ornaments adapted to the size and shape  
 of the articles, which are supported on trays  
 and placed against the gages of the platform  
 in the same manner as the mold-frames, the  
 120 paste then being pressed through the holes  
 forming the ornament in the paste-receptacle  
 directly onto the article to be ornamented.  
 A large variety of articles can be made in  
 large quantities by the improved machine in  
 125 a short time.

Having thus described my invention, I claim  
 as new and desire to secure by Letters Patent—

1. In a machine for making confectionery, a  
 supporting-standard provided with a guide, a  
 130



paste-receptacle, a follower movable in the latter and provided with a follower-rod movable in said guide, means for permitting the lateral removal of said follower-rod from said guide, and a follower-operating lever swiveled to said standard and having means for engaging said follower-rod.

2. In a machine for making confectionery, the combination of a paste-receptacle, a follower in the same, a follower-rod attached to said follower, a lever connected to said follower-rod for operating said follower, a swivel-pin to which said lever is fulcrumed, and a supporting-standard for said lever provided with a guide-piece at its upper end and with a pivoted side plate for permitting the removal and replacing of the follower-rod in the guide-piece.

3. In a machine for making confectionery, the combination of a paste-receptacle, a follower in the same, a rod for said follower provided with two sets of oppositely-disposed rack-teeth, a fulcrumed and weighted lever for operating said follower, a sleeve supported on said lever and provided with oppositely-disposed spring-actuated pawls, and means for locking either of the pawls into or out of engagement with the correspondingly-disposed rack-teeth of said follower-rod.

4. In a machine for making confectionery, a paste-receptacle, a follower movable in the same, a follower-rod provided with two sets of oppositely-disposed rack-teeth, a follower-

operating lever, a sleeve carried by said lever and having spring-actuated pawls for engagement with said sets of rack-teeth, and removable pins carried by said sleeve for locking either of said pawls in inoperative position.

5. In a machine for making confectionery, the combination of a vertically-reciprocating platform, a vertical guide-rod attached to said platform, means for counterbalancing said platform, a rack on said guide-rod, a shaft provided with a pinion meshing with said rack, a pawl-and-ratchet mechanism for locking or releasing said shaft, stationary guide-sleeves for said guide-rod, a perforated ear on the upper guide-sleeve, and a rod depending from said platform, said rod being slidable in said perforated ear, and having adjustable stops for engagement therewith.

6. In a machine for making confectionery, a suitable support, a vertically-movable platform, means for guiding and counterbalancing the latter, a perforated ear fixed to said support, a vertical threaded rod attached to said platform and movable in said ear, and threaded stops engaging said threaded rod at either side of said perforated ear.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

PHILIP KNORPP.

Witnesses:

PAUL GOEPEL,

HENRY J. SUHRBIER.