

No. 765,573.

PATENTED JULY 19, 1904.

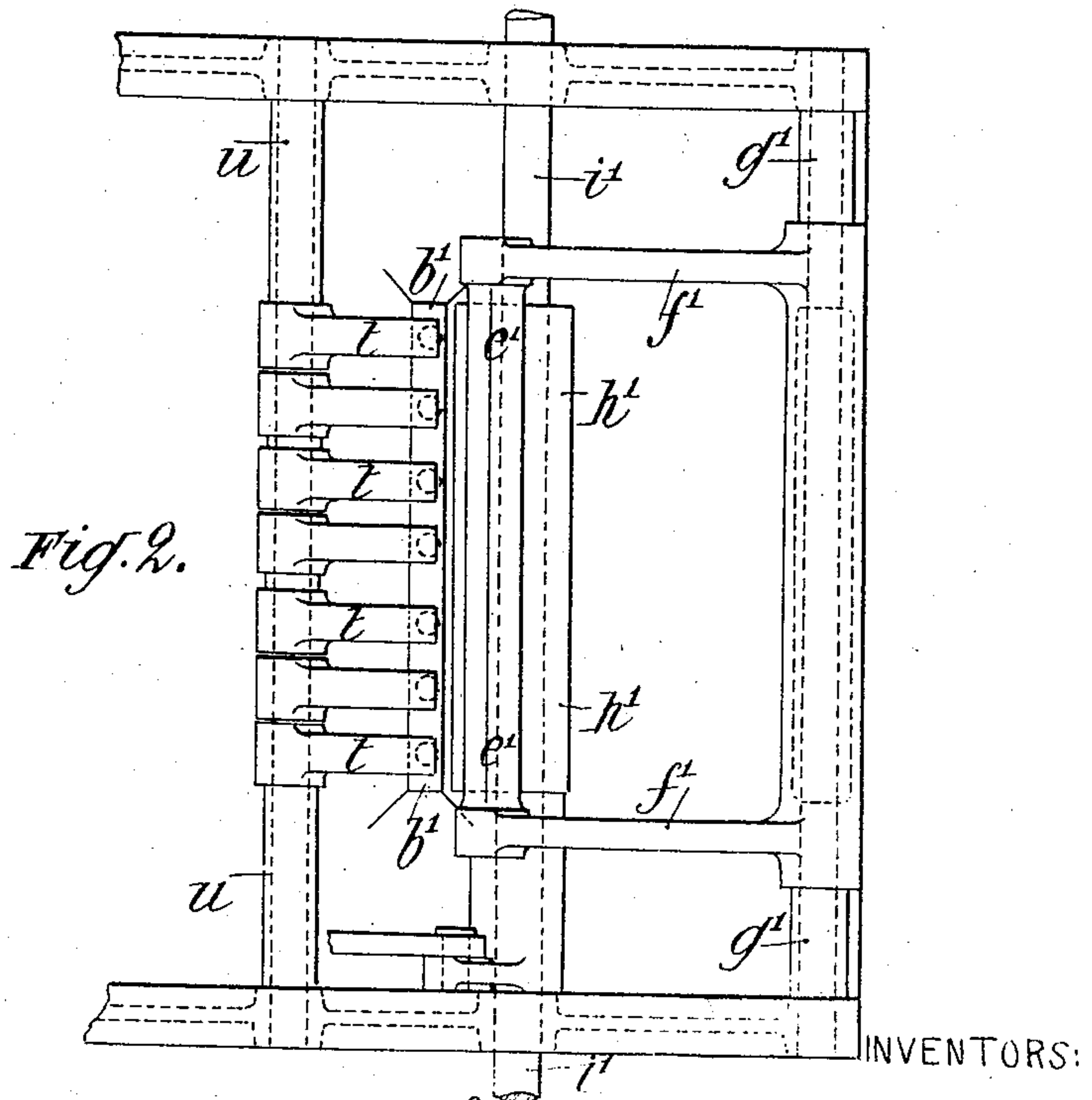
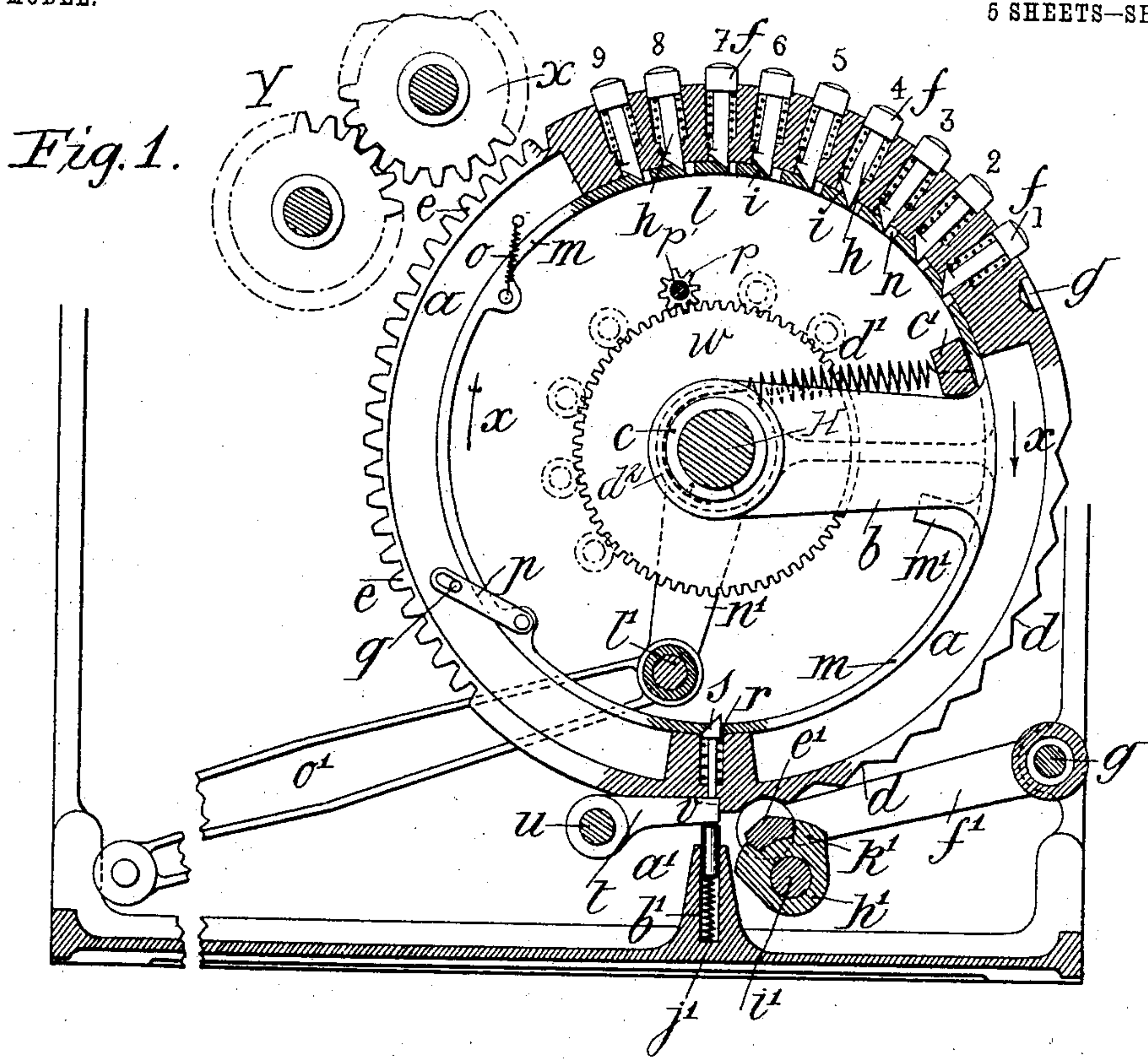
J. FRYDMANE & L. CHAMBON.

COMPOSING DISK FOR CASH REGISTERS OR ADDING MACHINES.

APPLICATION FILED MAR. 10, 1904.

NO MODEL.

5 SHEETS—SHEET 1.



WITNESSES:

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5 SHEETS—SHEET 2.

Fig. 3.

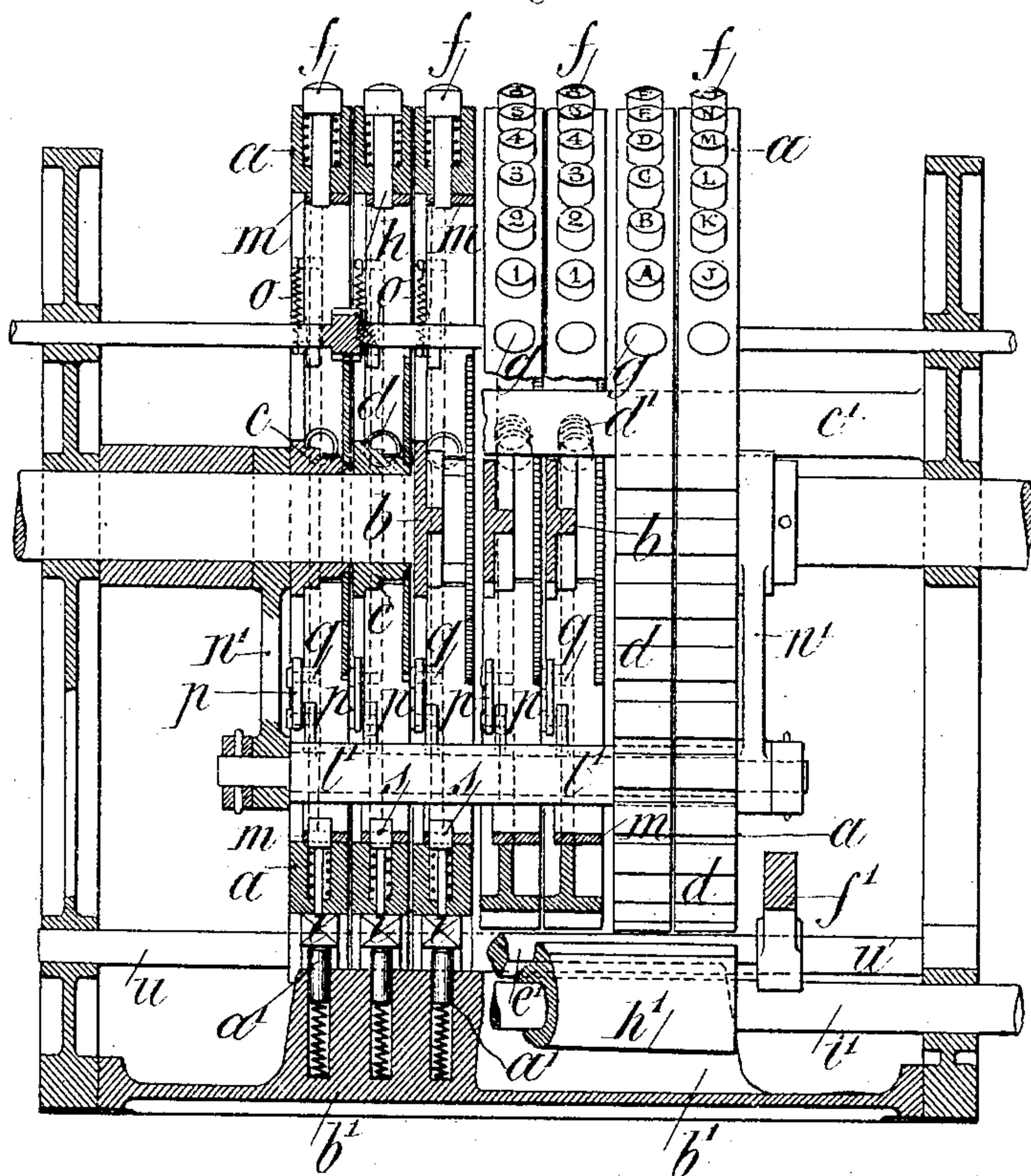


Fig. 4.

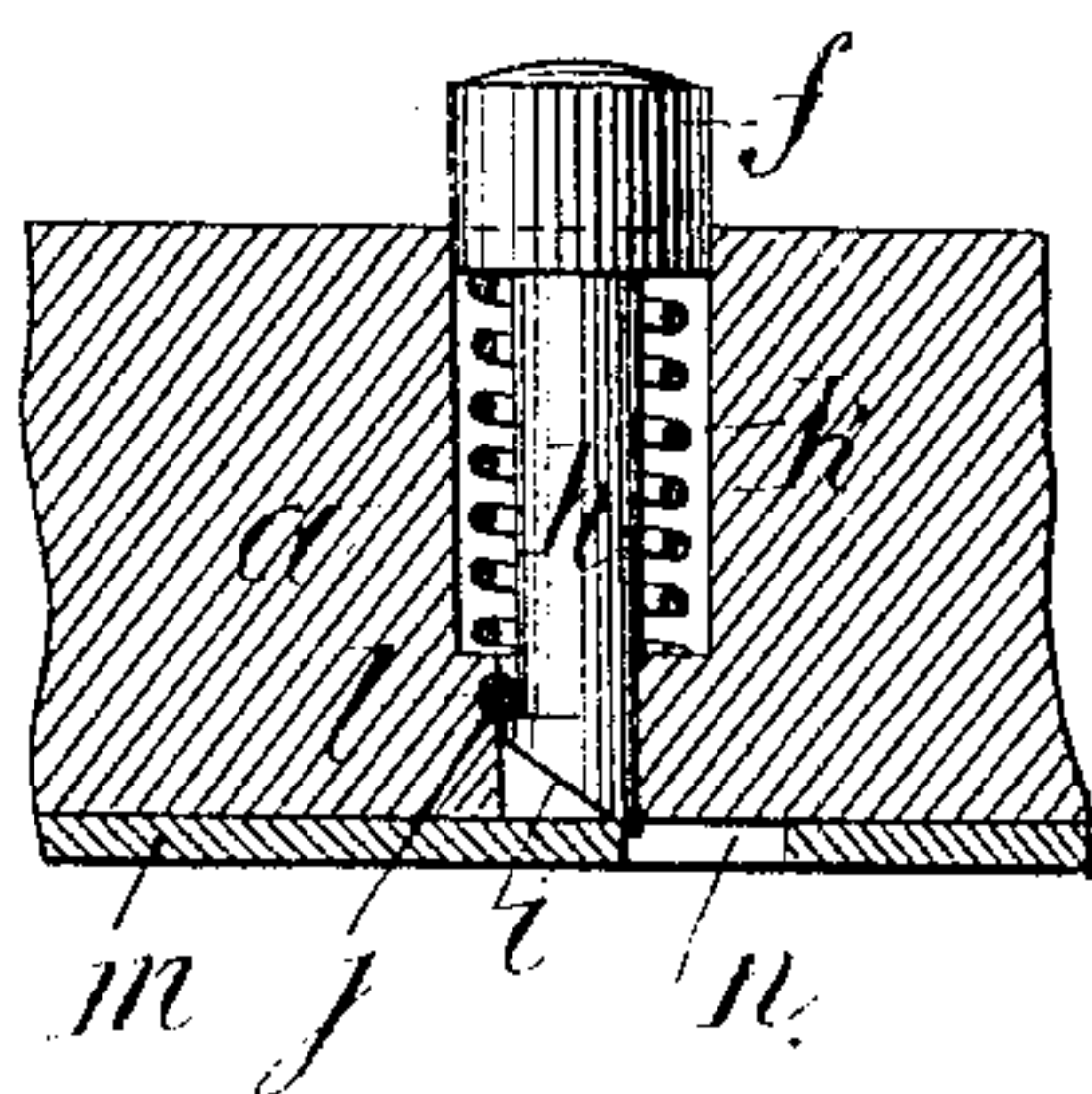
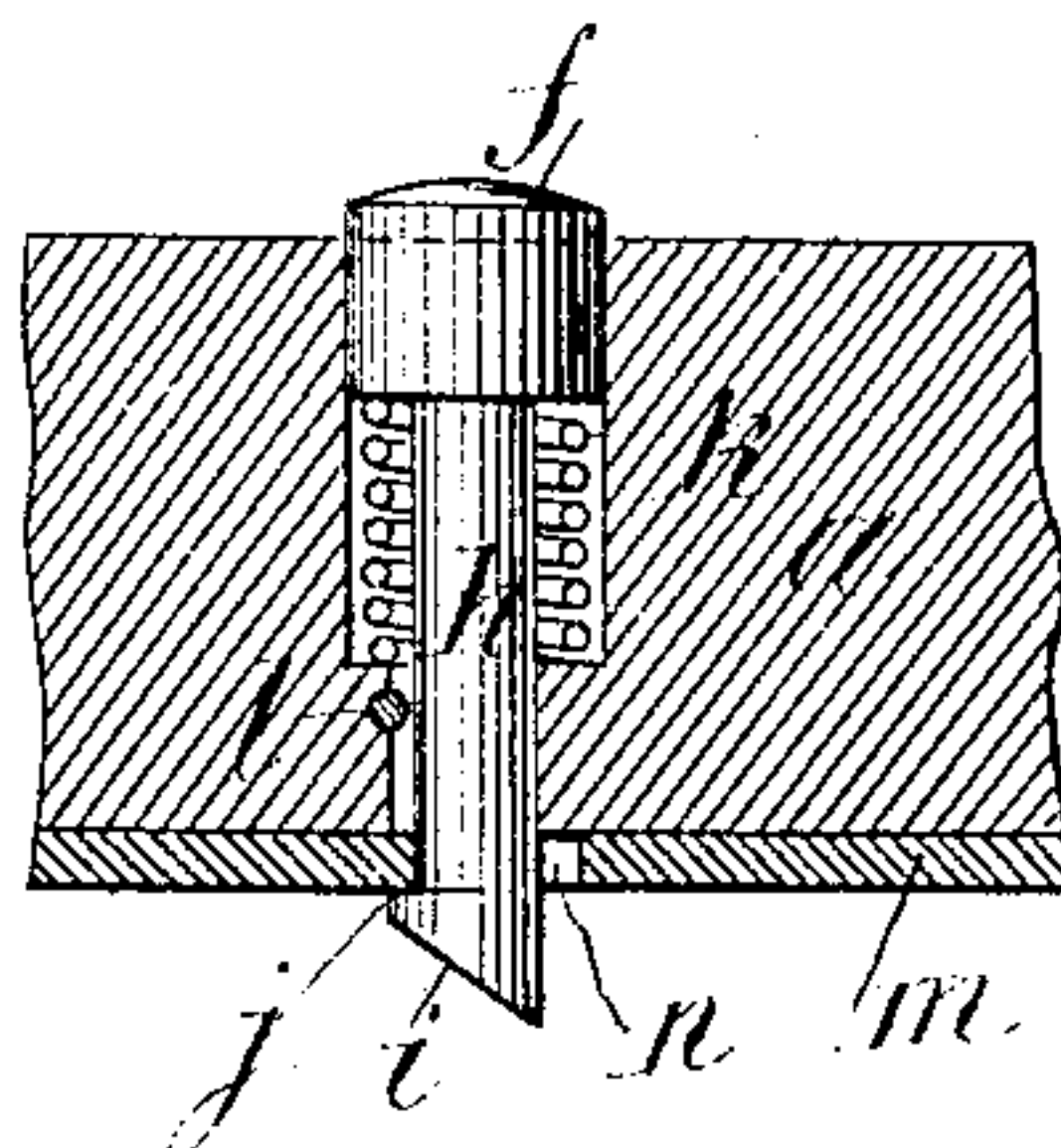


Fig. 5.



WITNESSES

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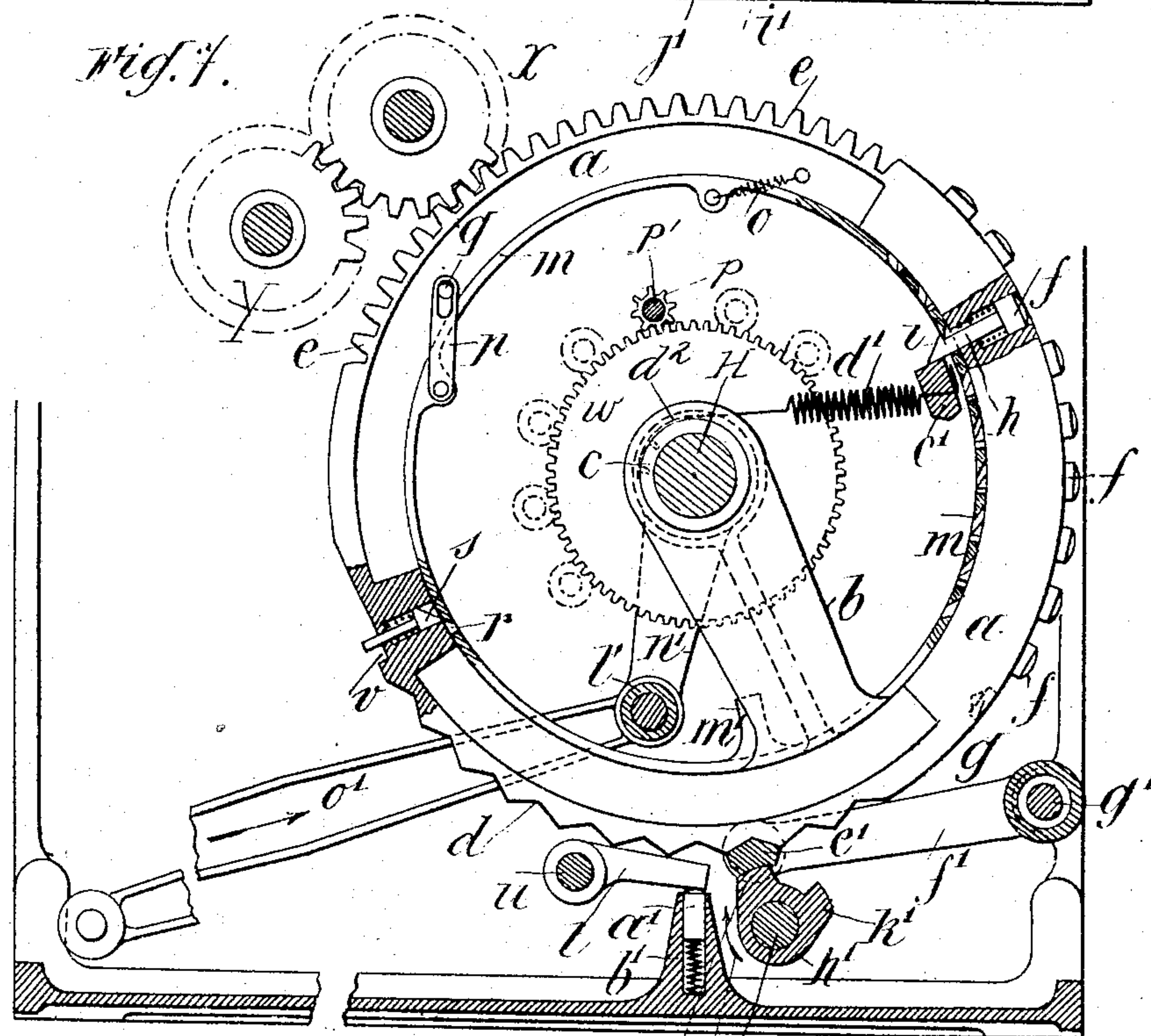
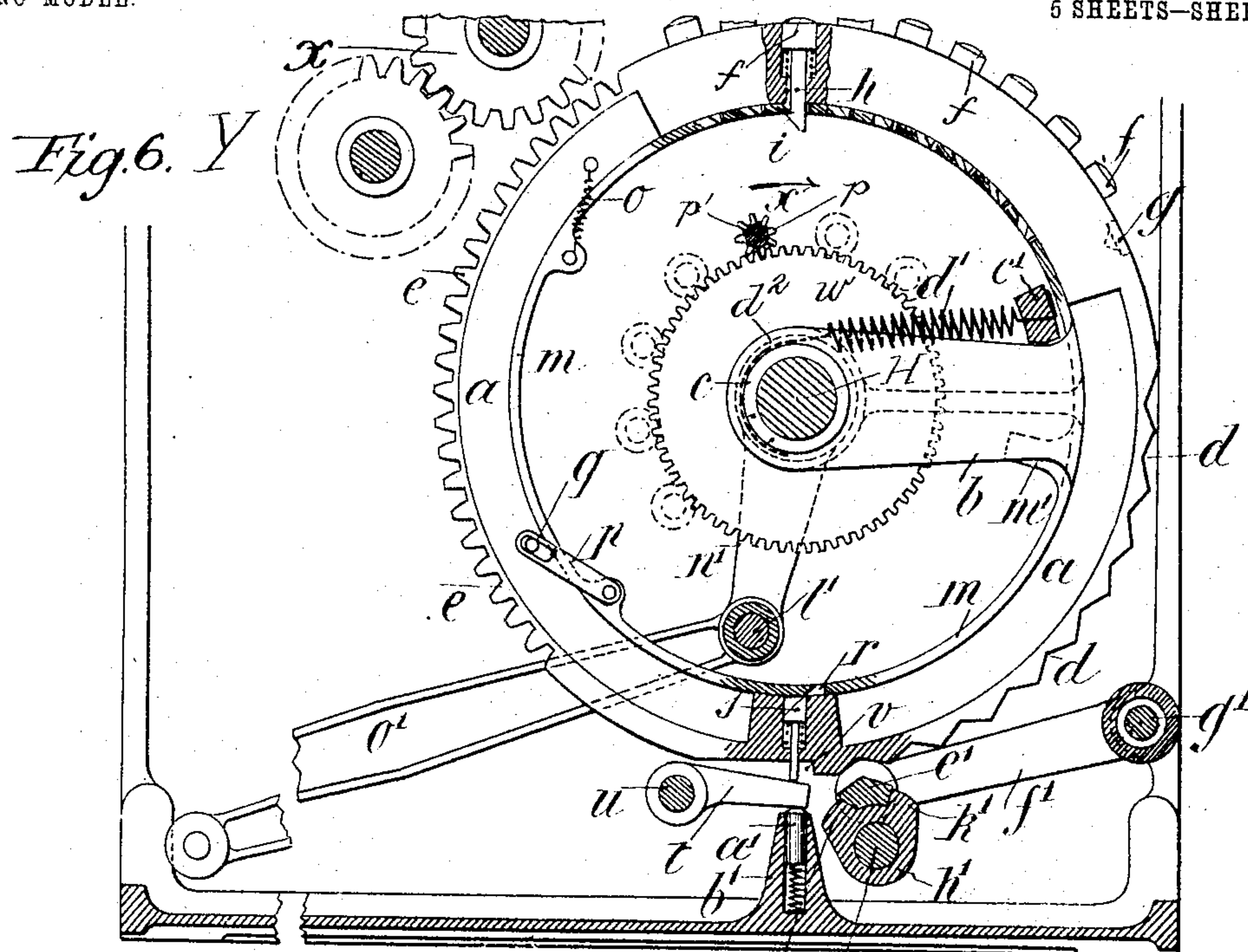
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5 SHEETS—SHEET 3.



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No. 765,573.

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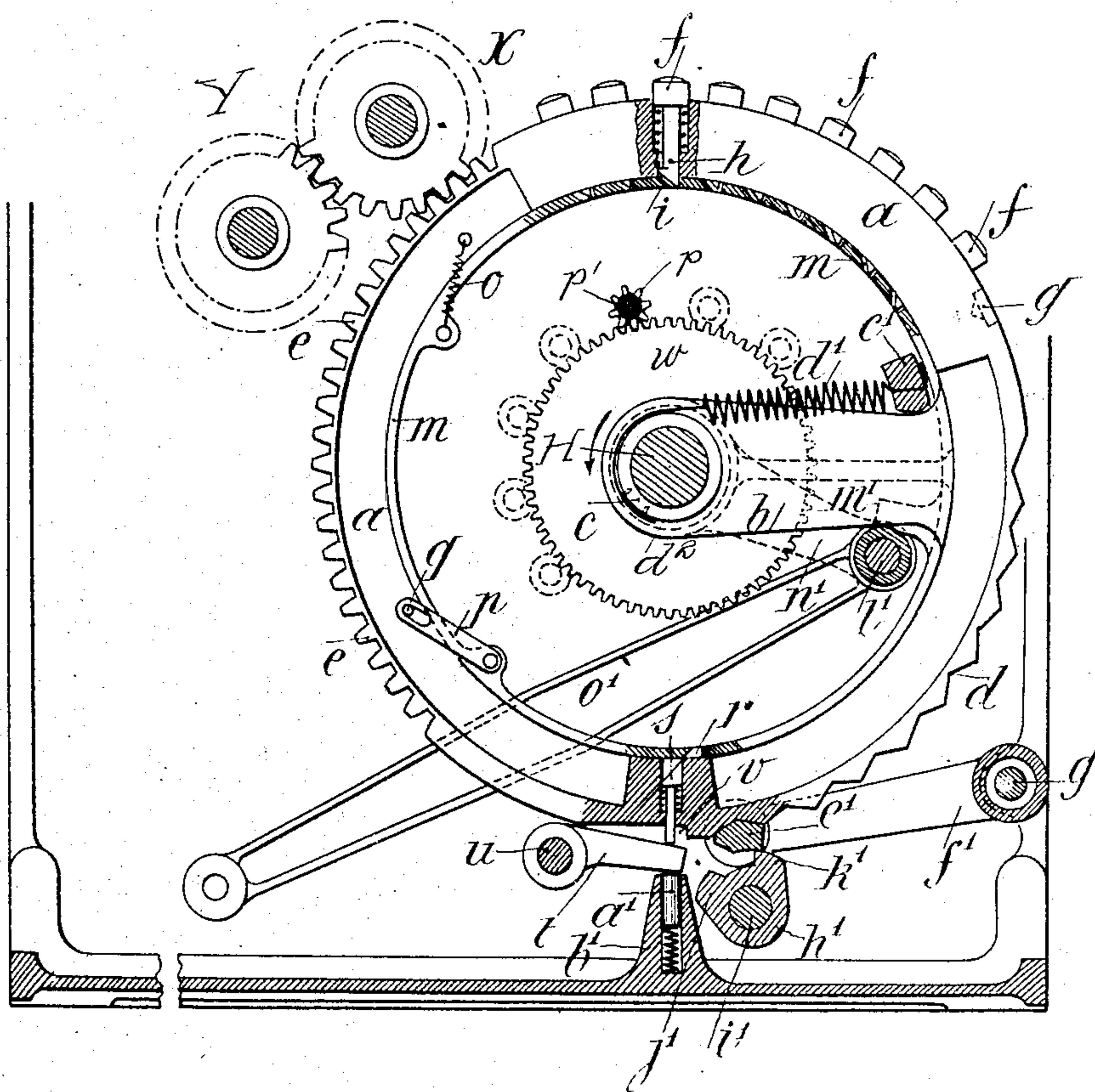
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5 SHEETS—SHEET 4.

Fig. 8.



WITNESSES

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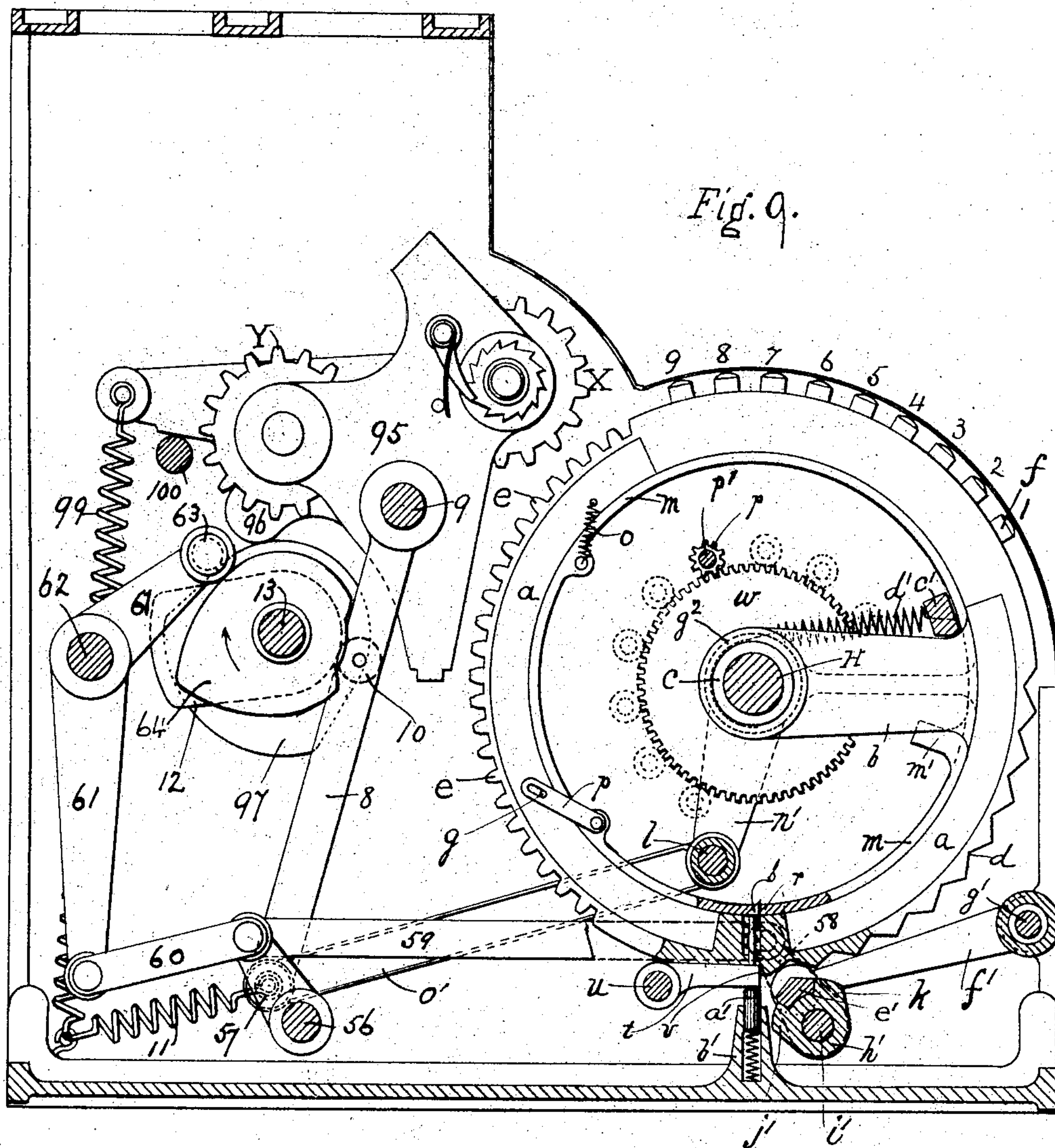
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NO MODEL.

5 SHEETS—SHEET 5.



WITNESSES

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UNITED STATES PATENT OFFICE.

JULES FRYDMANE AND LOUIS CHAMBON, OF PARIS, FRANCE.

COMPOSING-DISK FOR CASH-REGISTERS OR ADDING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 765,573, dated July 19, 1904.

Application filed March 10, 1904. Serial No. 197,583. (No model.)

To all whom it may concern:

Be it known that we, JULES FRYDMANE and LOUIS CHAMBON, citizens of the Republic of France, residing in Paris, France, have invented Improvements in the Composing-Wheels of Cash-Registers, of which the following is a specification.

This invention relates to that class of cash-registers in which a number of composing-wheels are rotated upon a shaft to control the extent of operation of certain registering-wheels, such as shown in the United States Letters Patent to Frydmane, No. 738,670, dated September 8, 1903.

The main object of the invention is to provide means whereby the disks will be automatically rotated to their proper composing positions upon the mere depression of a key of the composing-wheel, thereby increasing the rapidity and ease with which one may operate the register.

In the accompanying drawings we have shown so much of a cash-register as is necessary to illustrate our improvements, in which drawings—

Figure 1 is a sectional side elevation of part of a register with portions in section in the position which the composing-wheel will occupy before operation. Fig. 2 is a plan of the locking means for holding the composing-wheels in position. Fig. 3 is a front elevation of the composing-wheel with the wheels broken away to various extents to show their internal construction. Fig. 4 is an enlarged detail of a key in the position of Fig. 1. Fig. 5 is a view similar to Fig. 4, but with the key depressed. Fig. 6 is a view similar to Fig. 1 with a key depressed just before the wheel is automatically turned on its shaft. Fig. 7 is a view similar to Figs. 1 and 6 after the wheel has been rotated and locked, showing the registering-wheels meshing with the gear of the composing-wheel; and Fig. 8 is a view similar to Figs. 1, 6, and 7 after the composing-wheels have been returned to initial position, but before the registering-wheels have left the gear of the composing-wheel. Fig. 9 is a view similar to Fig. 1, but showing the operating cam-shaft, counting-wheels, and frame therefor.

As shown in Figs. 1 and 3 of this application, a horizontal shaft H, extending through the side framing of the cash-register, carries a number of composing-wheels *a*, each of which is provided with a single spoke or arm *b*. This arm *b* is freely rotatable on the horizontal shaft H and is provided with a collar or drum *d*². A transverse bar *c*¹, forming a stop, passes through all the wheels, against which stop the arms abut when in the position shown in Fig. 1. The periphery of each wheel *a* is divided into three portions, one portion having a toothed rack *e*, adapted to engage with gear-wheels X Y of a counting mechanism and which mechanism at proper times is caused to engage with said rack, as described in said prior patent. A number of keys *f* occupy a second portion of the wheel's periphery, while the third portion is provided with notches *d*. A pawl *e*¹ on a lever *f*¹, freely pivoted at *g*¹, is adapted to lock or permit the rotation of the composing-wheels at certain times. A rock-shaft *i*¹, with a cam *h*¹, having projections *j*¹ and *k*¹, serves to control the pawl *e*¹. A lever *o*¹, pivoted to a rod *l*¹, which is loosely pivoted on the horizontal shaft H, is adapted when operated to throw all the wheels into position beneath the stop *c*¹. Fast with each composing-wheel is a gear-wheel *w*, engaging a pinion *p* on a shaft *p*¹, which shaft is connected to printing-wheels, as described and illustrated in the aforesaid patent, but not fully shown in this application.

As shown in Fig. 9 of the drawings, 13 is the operating cam-shaft, provided with cams 64, 12, and 97, while 95 is an oscillating frame freely pivoted on the shaft 9. It carries the counting-wheels X Y and a projection 96, adapted to be engaged by the cam 97. A stop 100 limits the motion of the frame 95, while a spring 99 tends always to bring it back and hold it in the position shown in Fig. 9. On the shaft 9 there is freely pivoted a lever 8, provided with a roller 10 and adapted to be actuated by the cam 12 of the cam-shaft 13. This lever at its lower end is connected to the composing-wheel returning-levers *n*¹ by a link *o*¹, both levers and link being held in the position of Fig. 9 by a spring 11. To control the rock-shaft *h*¹, we secure a lever 58 to it, con-

5 nected by a link 59 to a similar lever 57, pivoted on a shaft 56. To the link 59 is secured a link 60, pivoted to one end of a lever 61 upon a shaft 62, this lever carrying a roller 63 on its free end, which is operated by the cam 64.

The parts hereinbefore described as found in the patent hereinbefore mentioned when not provided with our improvements operate as follows: A salesman when wishing to indicate a sale moves all the keys which are to be manipulated to a transverse position on a line substantially that of the stop c' . Then by the usual operating-handle, cam-shaft 13, and mechanism illustrated in Fig. 9 and shown in the prior patent hereinbefore referred to the rock-shaft h' is rotated by cam 64, lever 61, links 60 59, and lever 58 to cause the pawl e' to lock the wheels in this adjusted position. The cam 97 then causes the frame 95 to be oscillated to bring the wheels $X Y$ of the counting mechanism to engage with the rack e . The gears w have in the meantime placed their corresponding numbering-wheels in position for printing, as described in said prior patent. After printing the cam 64 and its connecting mechanism release the rock-shaft h' and pawl e' momentarily, during which momentary release the lever o' returns all composing-wheels to their initial positions by means of the cams 12 and operating-lever 8, thereby revolving the counting-wheels $X Y$ a distance corresponding to their positions with relation to the rack e . After the wheels are returned to the initial position, Fig. 8, the pawl e' is again caused to grip the notches d until further motion of the cam 97 and frame 95 moves the counting-wheels $X Y$ out of contact with the rack e , Fig. 1.

The main object of this invention, as hereinbefore stated, is to cause the composing-wheels d to automatically secure their proper rotary adjusted positions not by being rotated by the attendant, as hereinbefore described with reference to the prior patent, but automatically upon the mere depression of a key. To accomplish this, the inner periphery of each composing-wheel is provided with a cylindrical drum m , which is linked to the wheel a at q by a slotted link p and is held normally in the position of Fig. 1 by a spring o . This drum is provided with apertures n , corresponding in position with the keys of the wheel, and it has an inwardly-projecting stud m' and a locking-aperture r .

55 The keys f are depressible against springs k , their shanks h having inclined lower surfaces i and a shoulder j . Within the wheel a is a stop l to prevent the removal of the key. (See Figs. 4 and 5.)

60 To each drum d^2 of the composing-wheels one end of a spring d' is secured, its other end being fastened to the stop c' . The inwardly-projecting stud m' is in the path of the rod l' . The aperture r when in initial position is opposite a spring-pressed plunger s in the com-

posing-wheel a , immediately beneath which is a plunger a' , mounted in a lug b' , attached to the frame. A pawl t on a shaft u intervenes between these two plungers, and a notch v on the wheel a is provided to permit the pawl t to prevent the rotation of the wheel a when the plunger s is projected through its aperture r , as shown in Fig. 1.

The operation of the device with the herein described and illustrated improvements is as follows: Suppose key 7 to be depressed, Fig. 6. Its inclined face would move the drum m counter clockwise, thus forcing plunger s downwardly, lowering the pawl t , and thus releasing the composing-wheel, which will immediately be drawn into the position of Fig. 7 by the spring d' until stopped with the depressed key f against the transverse bar c' . When all the keys have been depressed and the wheels drawn into position of Fig. 7, the operating mechanism is brought into action to first lock the wheels a by means of the cam h' and pawl e' , as before described, and then to actuate the printing and counting mechanisms, and, as pointed out in the prior patent, the lever o' and bar l' are projected; but in this case instead of abutting directly against the wheel a the rod l' strikes the projections m' , whereby the drums are rotated counter-clockwise, first releasing the keys f , which spring out of the apertures n , and then as the link p has been brought into the position of Fig. 7 rotating both wheel and drum together until they occupy the positions shown in Fig. 8, with the arms b against the lower surface of the transverse stop-rod c' . Then as the lever o' and rod l' are withdrawn from the stud m' the spring o moves the drum m clockwise within the wheel a , thus bringing the aperture r back over the plunger s , which springs therethrough, allowing the spring-pressed plunger a' in the base of the machine to lift the detaining-pawl t to again lock the wheel against motion until a future depression of a key of the wheel takes place.

We claim as our invention—

1. A rotary composing-wheel for a cash-register, with a number of depressible keys in said wheel and means to automatically rotate said wheel different distances according to which key is depressed.

2. A rotary composing-wheel for a cash-register, with a number of depressible keys in said wheel and means to automatically rotate said wheel different distances according to which key is depressed, in combination with a locking means adapted to release said wheel after the operation of a key.

3. A rotary composing-wheel for a cash-register, with a number of depressible keys in said wheel and means to automatically rotate said wheel different distances according to which key is depressed, in combination with a locking means adapted to release said wheel after the operation of a key, means to return

the wheel to initial position, and means operated by such return of the wheel to release the depressed key and operate said locking means, to lock said wheel.

5 4. A rotary composing-wheel for a cash-register, a drum within said wheel rotating therewith and having an independent motion, a number of depressible keys in said wheel, adapted to secure said independent motion of
10 the drum, a locking means adapted to be released by said independent motion of the drum and a spring to automatically rotate drum and wheel upon such release of the locking mechanism.

15 5. A rotary composing-wheel for cash-registers, having a number of depressible keys, a locking device, a drum movable with, and independently of said wheel, said drum having apertures for the engagement of said keys,
20 a spring adapted to rotate said wheel in one direction, said locking device being adapted to be released upon the depression of a key, a lever for returning the drum and wheel to initial position and means for independently rotating
25 said drum to automatically throw said locking device into locking position upon the return of said wheel and drum.

30 6. A composing-wheel for cash-registers mounted on a shaft, a spring adapted to rotate it, a locking device to prevent its rotation, a number of keys on the wheel, a drum having apertures adjacent to said keys, a link connecting the drum and wheel, a spring adapted to hold said drum in certain position with relation to said wheel, said keys adapted upon
35 depression to rotate said drum against the action of said spring, a stud on said drum, and a lever adapted to abut against said stud to

move said drum in the same direction in which the keys move it, said drum being so connected with the locking device that upon motion
40 in the direction imparted to it by the keys and lever it will be unlocked and remain so, until the movement of the drum to initial position by the spring between drum and wheel is
45 caused to lock said wheel.

7. A rotary composing-wheel for a cash-register, depressible keys in the wheel, a transverse stop-rod, a spring between the rod and wheel, a locking-plunger in the wheel, a drum
50 mounted within the wheel, a spring and a slotted link connecting the wheel and drum, the drum having apertures adjacent to the keys and one adjacent to the locking-plunger, and a stud on the drum, in combination with the
55 frame, and a locking device controlled by aforesaid locking-plunger, adapted to lock said wheel with relation to the frame.

8. In a cash-register, the combination of an apertured drum, a composing-wheel having
60 depressible keys, each provided with a spring and a shank having an inclined surface adapted to be passed through the aperture of the drum to move the drum within the wheel, a locking device adapted to be released by said
65 movement of the drum and a spring to rotarily move the drum and wheel upon such release.

In testimony whereof we have signed our names to this specification in the presence of
70 two subscribing witnesses.

JULES FRYDMANE.
LOUIS CHAMBON.

Witnesses:

LÉON CRANCKEN,
HANSON C. COXE.