

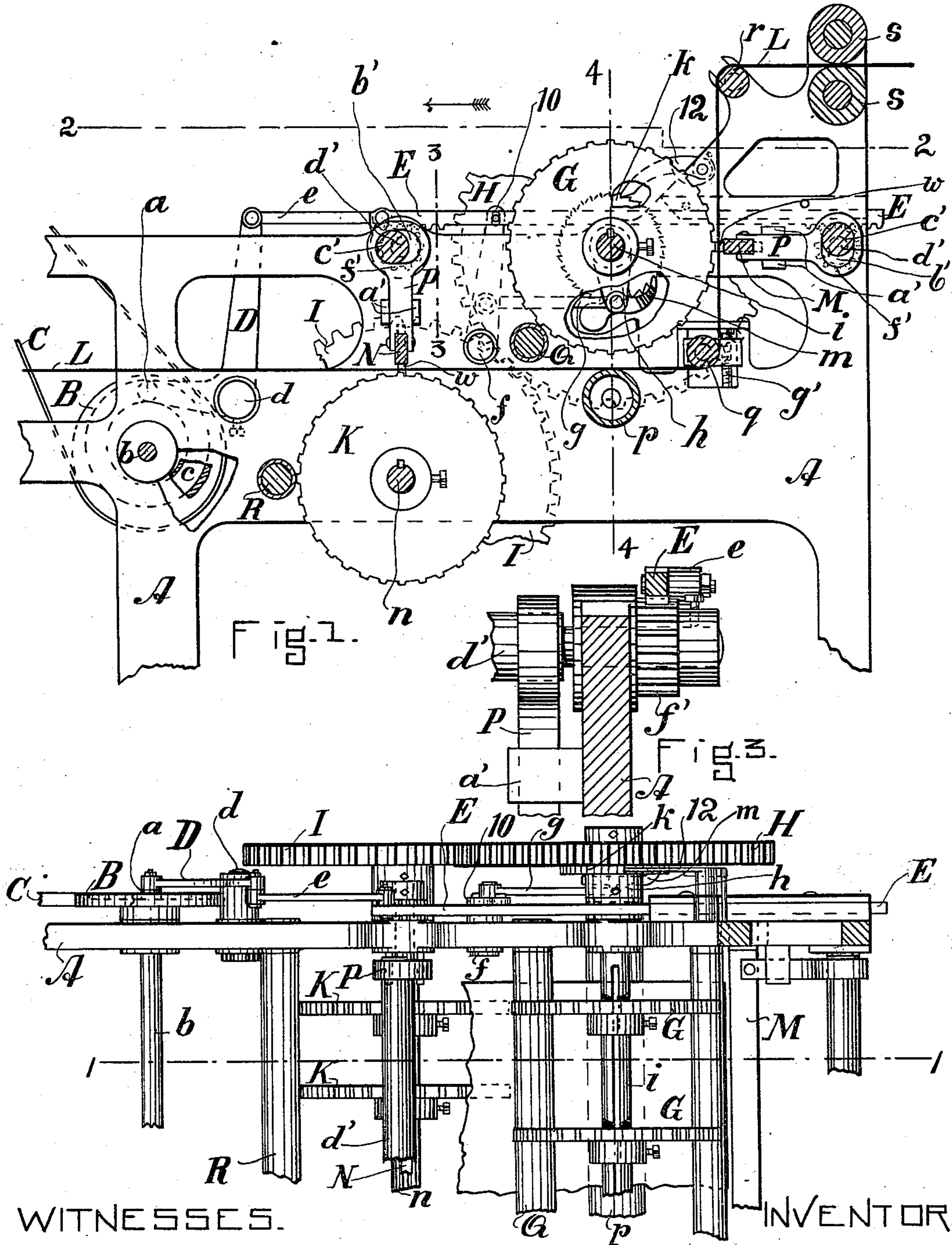
(No Model.)

2 Sheets—Sheet 1.

F. MEISEL.  
NUMBERING MACHINE.

No. 542,368.

Patented July 9, 1895.



WITNESSES.

Harry H. Aikew  
S. v. Mertschinsky.

INVENTOR.

Francis Meisel  
by P. F. Teschemacher  
Att'y

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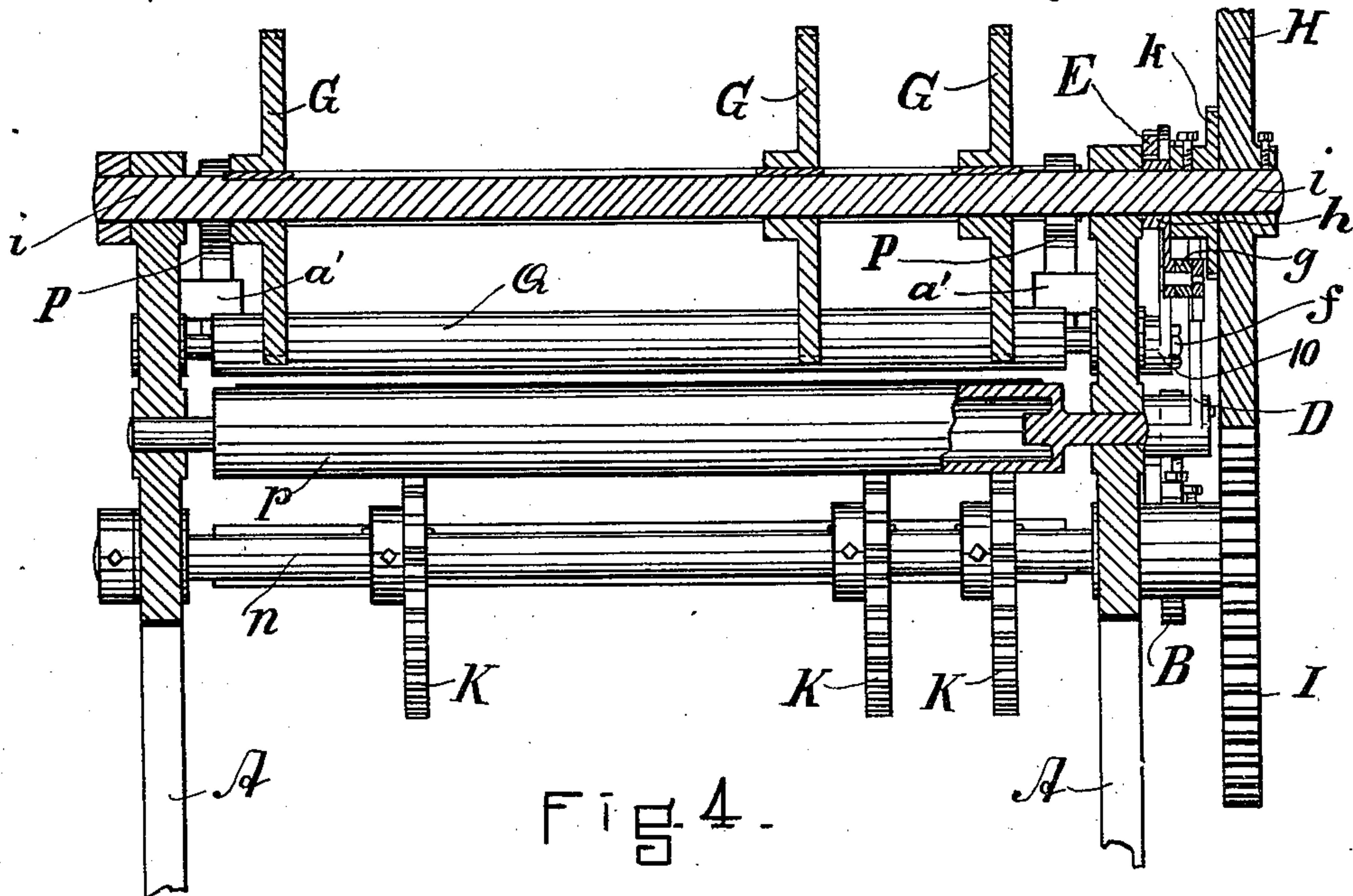


Fig 4.

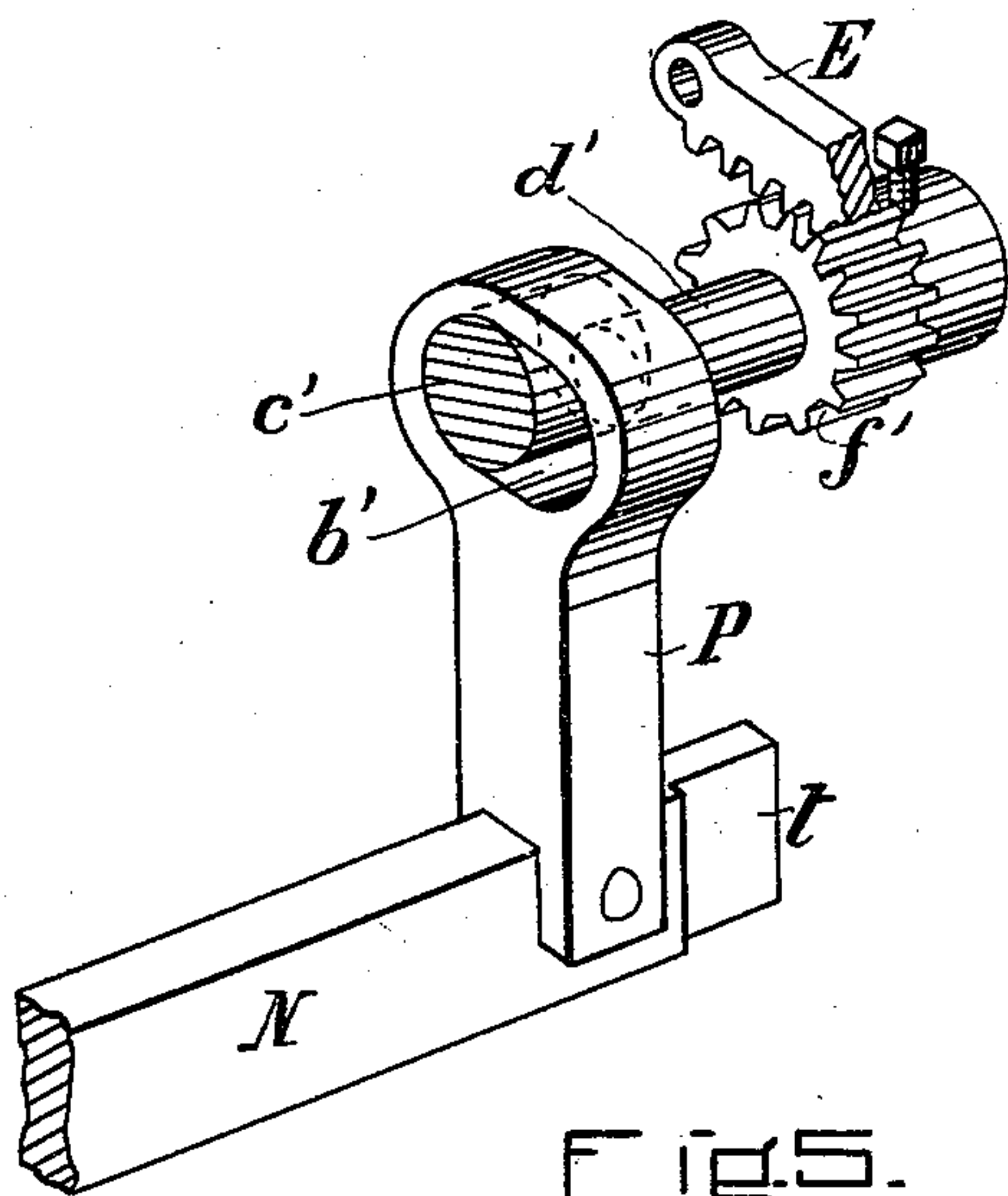


Fig 5.

WITNESSES.

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# UNITED STATES PATENT OFFICE.

FRANCIS MEISEL, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO THE CARTER-CRUME COMPANY, OF NIAGARA FALLS, NEW YORK.

## NUMBERING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 542,368, dated July 9, 1895.

Application filed April 25, 1894. Serial No. 509,003. (No model.)

*To all whom it may concern:*

Be it known that I, FRANCIS MEISEL, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Numbering-Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a sectional elevation of a numbering-machine embodying my invention, taken on the line 1 1 of Fig. 2, a portion of the framework at the left-hand side being broken away. Fig. 2 is a sectional plan of the same on the line 2 2 of Fig. 1. Fig. 3 is a sectional detail on the line 3 3 of Fig. 1, looking in the direction of the arrow. Fig. 4 is a transverse vertical section on the line 4 4 of Fig. 1. Fig. 5 is a detail in perspective of a portion of one of the movable platens, showing a part of its actuating mechanism.

My invention has for its object to simplify and improve the construction of numbering-machines used for printing consecutive numbers upon both sides of sales-slips and other articles; and my invention consists in the combination of two sets of type-wheels with two movable co-operating platens having their faces arranged in planes at an angle to each other and acting upon opposite sides of the sheet or web to bring the same into contact with the types, whereby the numbers or characters on both sides of the sheet or web are rendered visible soon after they are printed, and the numbers on one side brought directly over the corresponding numbers on the other side, as hereinafter more fully set forth; and my invention also consists in certain novel combinations of parts and details of construction, as hereinafter set forth and specifically pointed out in the claims.

In the said drawings, A represents the framework of the machine in suitable bearings, in which runs a shaft *b*, carrying at one end a driving-wheel B, over which passes a driving-belt C. In the outer face of the wheel B is formed a cam-groove *c*, in which runs a cam-roll *a*, (shown dotted in Fig. 1,) mounted on a stud at one end of a bell-crank lever D, pivoted on a stud *d*, projecting from the framework, the le-

ver D being thus rocked as the cam-wheel revolves. To the upper end of the lever D is pivoted a link *e*, the opposite end of which is pivoted to a horizontal rack-bar E, to which is pivoted a lever *f*, fulcrumed on a stud *f*, and having pivoted thereto a rod *g*, pivoted at its opposite end to an arm *h*, mounted loosely on a shaft *i*, having its bearings in the framework, to which shaft are rigidly secured the upper numbering or type wheels G, said shaft *i* carrying a ratchet-wheel *k*, with which engages a weighted pawl *m*, pivoted to the arm *h*, whereby as the rack-bar E is reciprocated by the mechanism described the numbering-wheels G will be intermittently rotated, as desired, a distance equal to that between two consecutive numbers on their peripheries, at each complete revolution of the cam-wheel B. A retaining-pawl 12 is pivoted to the framework and engages the ratchet-wheel *k* to prevent any backward movement of the same due to the friction of the pawl *m* on its backward stroke.

The shaft *i* carries, outside of the framework, a gear H, which meshes with a gear I of the same size on a shaft *n*, supported in bearings in the framework, which shaft carries the lower numbering or type wheels K, securely fastened thereto, which are thus intermittently rotated simultaneously with the numbering-wheels G and with the same surface velocity.

L is a web or strip of paper upon which the sales-slips, checks, or other similar articles are to be printed, and which is to be provided with consecutive numbers up to any desired limit, as, for instance, fifty or one hundred. Each numbering or type wheel is therefore provided upon its periphery with the consecutive numbers corresponding with the series or bunches of slips to be numbered, as, for instance, from one to fifty or one hundred.

The strip or web of paper L passes over a supporting-roll *p*, under a guide-roll *q*, and over a guide-roll *r*, and thence between a pair of drawing-rolls *s s*, adapted to be actuated intermittently by mechanism not shown, by which the web L is drawn from the printing-press or other location at the desired speed through the machine, the upper and lower series of printing-wheels G K being arranged



as shown to print the numbers upon opposite sides of the sheet. The number of type-wheels on each shaft may be varied in accordance with the number of strips or series of sales-slips or other articles into which the web of paper is to be subsequently divided longitudinally, one upper and one lower numbering-wheel forming a pair which print the same number upon opposite sides of the web, the arrangement of the wheels—one in advance of the other—enabling me, if desired, to place the two wheels which form a pair in the same vertical plane, as shown at the right-hand side of Fig. 4, whereby the numbers on one side of the web or sheet are printed directly over the corresponding numbers on the other side of the same.

M N are two reciprocating platens or impression-bars which co-operate with the type or printing wheels G K and serve to bring the paper in contact therewith to produce the impressions. These platens have their operating faces arranged in planes at an angle to each other, as shown in Fig. 1, their opposite ends fitting within guide-slots *w* in the sides of the framework. Each platen has secured to its opposite ends two carriers P, which slide in forked guides *a'*, the outer end of each carrier being enlarged and provided with a slot *b'*, in which fits an eccentric *c'* on a shaft *d'*, which is provided with a pinion *f'*, (shown in Fig. 5 and dotted in Fig. 1,) which is engaged by the teeth of the rack-bar E, whereby as said rack-bar is actuated by the mechanism described a vertical reciprocating movement is imparted to the platen N and a horizontal reciprocating movement to the platen M, which causes the under surface of the paper L to be brought into contact with the numbering-wheel K and its opposite or upper surface simultaneously in contact with the numbering-wheel G, thus printing the same number on both sides of the web or sheet at the same time, as desired. The guide-roll *q* is made adjustable by means of screws *g'*, applied to its vertically-sliding bearing, whereby the length of the web or sheet between the two platens N M may be varied to cause the numbers to be printed at the exact points required.

Q R are inking-rollers which supply ink to the numbering-wheels G K. These rollers are journaled in the framework and run in contact with the numbering-wheels, being intended to be used in connection with suitable ink-distributing rollers. (Not shown.) The inking mechanism may, however, be of any suitable or well-known construction and forms no part of my invention.

By thus arranging the shafts of the numbering or printing wheels, one in advance of the other, and the two co-operating platens in planes at an angle to each other to operate upon opposite sides of the web or sheet, it will be obvious that the numbers or characters on both sides of the sheet are rendered visible soon after they are printed, which is not possi-

ble with any other machine of this character with which I am acquainted, and which is a great advantage in printing work of this description, as it enables the operator to quickly discover any error or imperfection in the work and stop the machine at once to correct the same.

I do not wish to limit myself to the exact arrangement of the platens with their faces at a right angle to each other, as shown, as it is obvious that the angle may be varied to some extent without departing from the spirit of my invention.

Instead of arranging the platen N above the numbering-wheel K, as shown, it is obvious that it may be placed beneath the same, in which case the platen M would necessarily be arranged upon the opposite side of the numbering-wheel G.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a numbering machine the combination with the intermittently rotated printing wheels, of the reciprocating platens working in planes at an angle to each other to press the paper against the respective wheels, means for operating the platens, and an adjustable guide-and-web-adjusting roller below the upper platen and under which the paper passes from the first printing wheel and platen upwardly to the upper platen, substantially as described.

2. In a numbering machine, the combination with the intermittently rotated printing wheels, of intermittently reciprocating platens arranged with their faces at an angle to each other to move the paper against the respective wheels; one of the platens being above and in advance of the other, and guides over which the paper passes with one run extending upwardly to expose the impression from the first wheel to the operator prior to the impression by the second wheel, substantially as set forth.

3. In a numbering machine, the combination with the intermittently rotated printing wheels, of the reciprocating platens working in approximately vertical and horizontal planes respectively to press the paper against the respective wheels, means for operating the platens, and an adjustable guide-and-web-adjusting roller below the upper horizontally working platen and under which the lateral run of the paper passes from the first printing wheel and platen upwardly to the second wheel and upper platen, substantially as described.

4. In a numbering-machine, the combination, with the intermittently moving printing wheels G, K, mounted upon shafts *i*, *n*, extending across the machine and connected by gears H, I, whereby said shafts are revolved together at the same speed, of two movable co-operating platens having their faces arranged in planes at an angle to each other and acting upon opposite sides of the web or sheet to bring the same into contact with the types, shafts geared to the rack and provided with



cams or eccentrics engaging the said platens, the ratchet wheel *k* on the shaft *i*, the pawl *m* mounted upon the swinging arm *h*, the rack-bar *E*, and means for reciprocating the same, and suitable connections between the rack-bar and the pawl-carrying arm *h*, all operating substantially as described.

5. In a numbering-machine, the combination, with the intermittingly moving printing-wheels *G*, *K*, mounted upon shafts *i*, *n*, extending across the machine and connected by gears *H*, *I*, whereby said shafts are revolved together at the same speed, of the two movable co-operating platens *M*, *N*, having their faces arranged in planes at an angle to each other and acting upon opposite sides of the web or sheet to bring the same into contact with the types, the sliding platen-carriers *P* moving in planes at an angle to each other, the shafts *d'* provided with the eccentrics *c'* for actuating the carriers *P* and with pinions *f'*, the rack-bar *E* engaging said pinions, and means for reciprocating the rack-bar, all constructed to operate substantially as set forth.

6. In a numbering-machine, the combination, with the intermittingly moving printing wheels *G*, *K*, mounted upon shafts *i*, *n*, ex-

tending across the machine and connected by gears *H*, *I*, whereby said shafts are revolved together at the same speed, of the two movable co-operating platens *M*, *N*, having their faces arranged in planes at an angle to each other and acting upon opposite sides of the web or sheet to bring the same into contact with the types, the sliding platen-carriers *P* moving in planes at an angle to each other, the shafts *d'* provided with the eccentrics *c'* for actuating the carriers *P* and with pinions *f'*, the rack-bar *E* engaging said pinions and means for reciprocating the rack-bar, the ratchet wheel *k* on the shaft *i*, the pawl *m* mounted upon the swinging arm *h*, the rod *g*, the lever *10* connected with the rack-bar, and retaining pawl *12*, the guide-rolls *q*, *r*, and means for drawing the web or sheet through the machine, all constructed to operate substantially as and for the purpose set forth.

Witness my hand this 20th day of April, A. D. 1894.

FRANCIS MEISEL.

In presence of—

P. E. TESCHEMACHER,  
S. V. MERTSCHINSKY.