

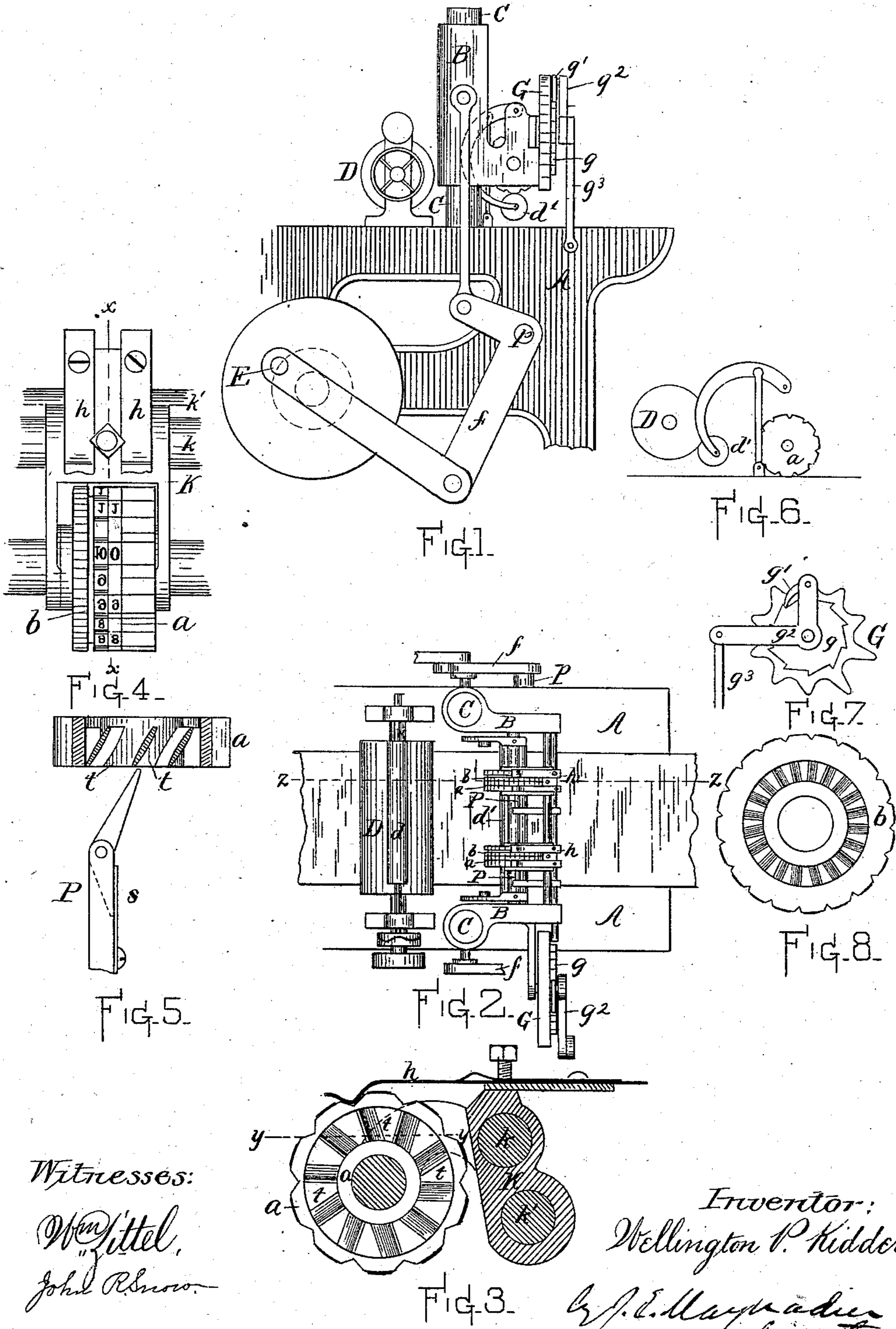
(No Model.)

2 Sheets—Sheet 1.

W. P. KIDDER.
NUMBERING MACHINE.

No. 254,827.

Patented Mar. 14, 1882.



Witnesses:

Wm. Fittel,
John R. Snow.

Inventor:

Wellington P. Kidder

by J. E. Maynard
his atty.

(No Model.)

2 Sheets—Sheet 2.

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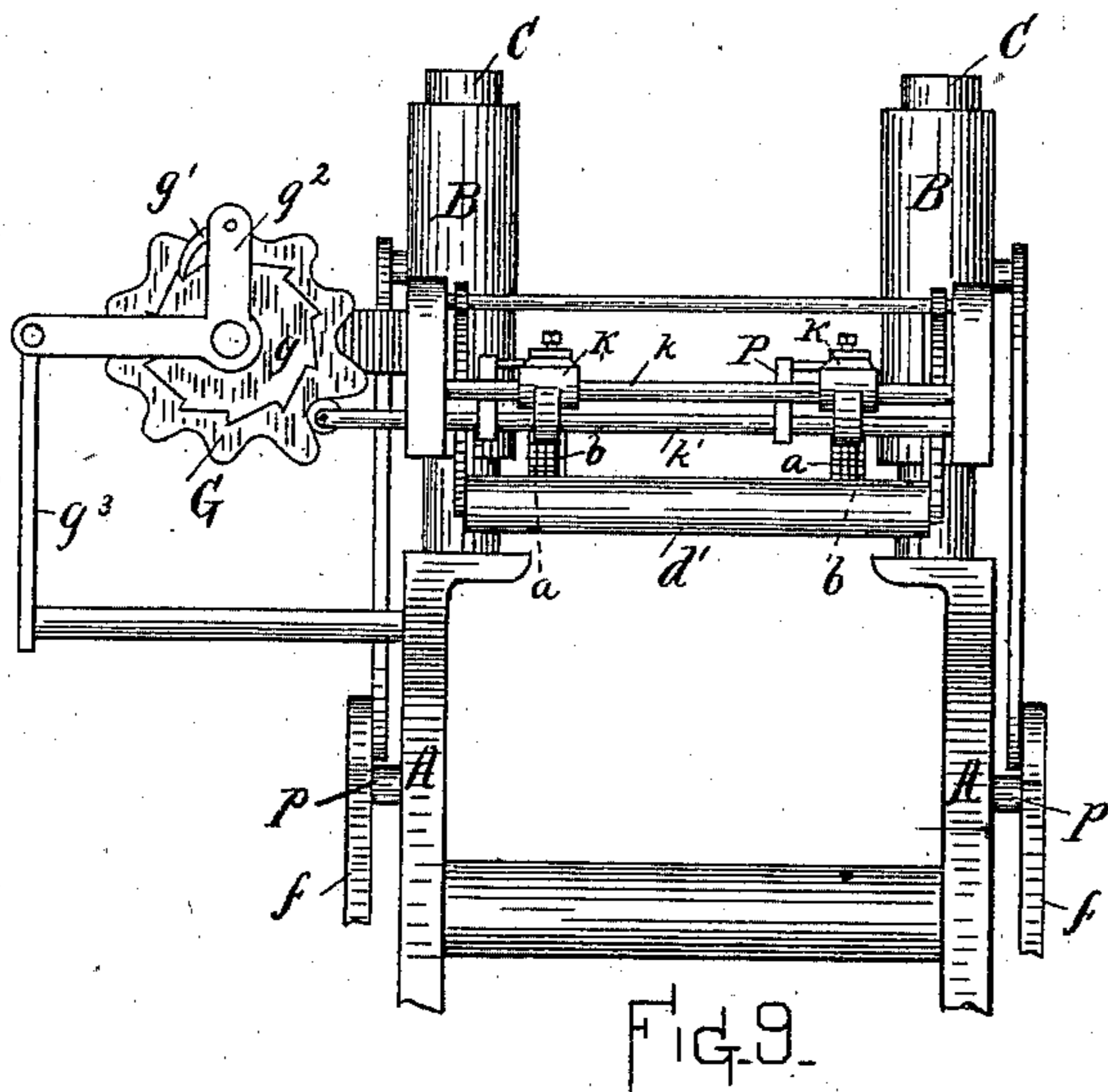


Fig. 9.

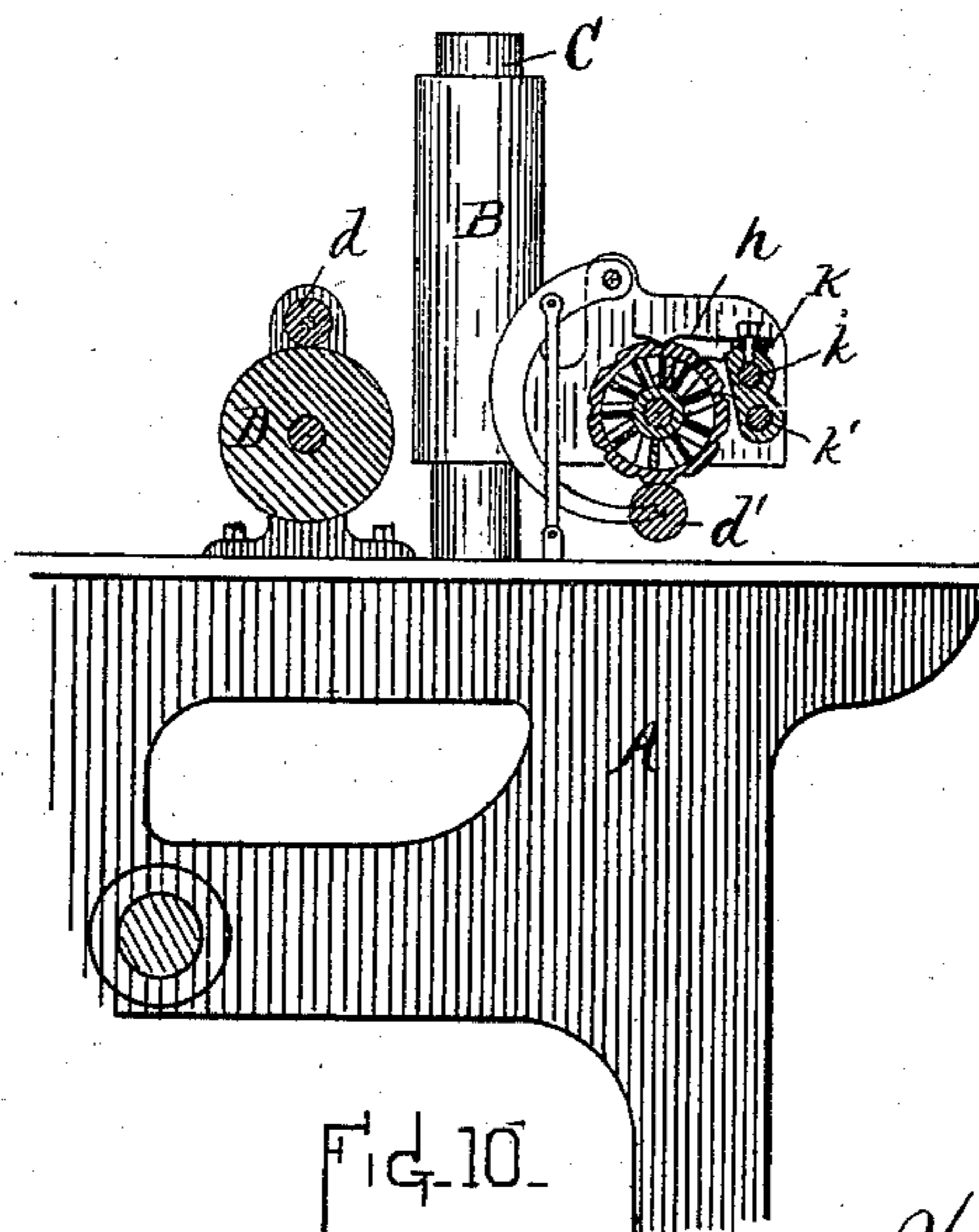


Fig-10-

Witnesses:

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UNITED STATES PATENT OFFICE.

WELLINGTON P. KIDDER, OF BOSTON, MASSACHUSETTS.

NUMBERING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 254,827, dated March 14, 1882.

Application filed March 18, 1881. (No model.)

To all whom it may concern:

Be it known that I, WELLINGTON P. KIDDER, of Boston, in the county of Suffolk and State of Massachusetts, have invented a certain Improvement in Numbering-Machines, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, making a part hereof.

10 Numbering-machines have long been known, and it is a simple matter to print as high as 99 with two wheels by having the units-wheel supplied with types 1 2 3 4 5 6 7 8 9 0, and the tens-wheel with types 1 2 3 4 5 6 7 8 9, 15 and with a blank space instead of the 0. Then at the start the blank space of the tens-wheel will be in line with the 1 of the units-wheel, and after the first impression the units-wheel will move one step, bringing the 2 of 20 the units-wheel in line with the blank space of the tens-wheel, and so on, until after the 9 of the units-wheel has been brought in line with the blank space of the tens-wheel, when the units-wheel and tens-wheel will be moved 25 together by suitable well-known mechanism, thereby bringing the 1 of the tens-wheel in line with the 0 of the units-wheel, and printing 10. Thereafter the digits of the units-wheel are brought successively in line with the 1 of 30 the tens-wheel, and whenever the units-wheel moves to bring its 0 into proper place to print the tens-wheel will also move one step; but when 99 has thus been reached the movement of both wheels one step will set the 35 machine to print 1 by bringing the blank of the tens-wheel in line with the 1 of the units-wheel.

The object of my invention is to make a numbering-machine which will print consecutively 1 up to and including 100, and repeat indefinitely; and I have accomplished this object by moving the tens-wheel with the units-wheel in the usual way, but giving it a double motion and adding to it types to print 10.

45 One way of carrying my invention into practice is to use the well-known units-wheel and a tens-wheel just like it, except with types for printing as high as 10 and one blank space. The mechanism in this machine is precisely 50 the same as in the well-known machines until the 9 of the units-wheel is brought in line with

the 9 of the tens-wheel, and 99 is printed. Then both the units and tens wheels move together as before, thereby bringing the 10 of my new tens-wheel in line with the 0 of the 55 units-wheel and printing 100; and here suitable mechanism must be used to give my new tens-wheel a second motion with the units-wheel, in order to bring the blank space of my new tens-wheel in line with the 1 of the units- 60 wheel in order to print 1—that is, in this form of embodiment of my invention the operation is precisely the same as in well-known machines until 99 is printed, when, by means of suitable additional mechanism, my new 65 tens-wheel is twice moved with the units-wheel, instead of but once, as in the old machines. This double motion of the tens-wheel is the distinguishing characteristic of my invention, and by it I am enabled to print 100, and at 70 the next impression print 1. Or the digits may be duplicated in addition to using the figure 10 and the blank space—that is, the periphery of my new tens-wheel may have upon it 1 1 2 2 3 3 4 4 5 5 6 6 7 7 8 8 9 9 10 75 and a blank space, so that in printing the blank space is first in line with the 1 of the units-wheel, then in line with the 2, then with the 3, and so on, until 9 has been printed, when the units-wheel and the new tens-wheel 80 move one step together, as in the old machines, bringing the first character 1 of the new tens-wheel in line with the 0 of the units-wheel, and printing 10; and in this case the units-wheel and new tens-wheel again move one 85 step together, as above described, bringing the second character 1 of the new tens-wheel in line with the 1 of the units-wheel and printing 11, whereupon the new tens-wheel rests until the units-wheel has brought its 9 in line 90 with the second 1 of the new tens-wheel and printed 19; when both wheels again move one step together, bringing the first 2 of the new tens-wheel in line with the 0 of the units-wheel, and printing 20. Then both move one step to- 95 gether to bring the second 2 of the new tens-wheel in line with the 1 of the units-wheel to print 21, and this double movement of the new tens-wheel is repeated as often as the units-wheel passes from 9 to 0 and from 0 to 1, 100 so that after the 9 of the units-wheel is brought in line with the second 9 of the new tens-wheel

to print 99 both wheels move together one step, bringing the 0 of the units-wheel in line with the 10 of the new tens-wheel and printing 100; and then both wheels move again one step together, bringing the blank of the new tens-wheel and the 1 of the units-wheel in line, and recommencing by printing 1, this last double movement of the new tens-wheel being the only one which is essential, for it will be clear from what has been said that the sole purpose of duplicating the digits on my new tens-wheel is simply to enable me to give a double movement to the new tens-wheel as often as the 9 of the units-wheel is used, for I deem it preferable to give these nine unnecessary motions to the new tens-wheel—one double motion for every revolution of the units-wheel—rather than to give the new tens-wheel a single motion until its 9 has been printed with the 9 of the units-wheel, and then give it the essential double motion; and the reason for this is that the mechanism for moving the tens-wheel two steps for every revolution of the units-wheel seems to me preferable to the mechanism for moving the new tens-wheel one step at every revolution of the units-wheel, except the tenth and until 99 has been printed, and then at every tenth revolution of the units-wheel moving the new tens-wheel two steps with the units-wheel instead of but one.

I have described mechanism for printing up to 100 and repeating indefinitely; but it will be obvious that is not the only application of my invention, for if it be desired to print, say, 50, and repeat, then the tens-wheel will have types for printing 1, 2, 3, 4, and 5 and a blank space, and the digits are preferably duplicated, as above described; but the essential feature is the same as before—that is to say, after printing 49, (instead of 99, as before,) the tens-wheel and units-wheel move together to bring the 5 of the tens-wheel in line with the 0 of the units-wheel, and 50 is printed (instead of 100, as before;) and the next motion of the tens-wheel with the units-wheel brings the blank of the tens-wheel in line with the 1 of the units-wheel, and 1 is printed, as before; and so of any multiple of ten up to 100, the tens-wheel moving twice with the units-wheel, the first motion bringing the two wheels in position to print the full number, and the second motion bringing them into position to repeat.

A variety of mechanical means may be used to give the necessary movements to the wheels and to take the impression, as will be obvious to all familiar with the ordinary numbering-machines now in use; but the means I prefer for these purposes are clearly shown in the drawings, in which—

Figure 1 is a side elevation, showing one of my numbering-machines as applied to the press described in my Patent No. 224,440, dated February 10, 1880. Fig. 2 is a plan of the machine. Fig. 3 is a section on line $x x$,

Fig. 4. Fig. 4 is a plan of the numbering-wheels and their mechanism. Fig. 5 is a section on line $y y$, Fig. 3, showing also the pallet which acts to produce the intermittent rotary motion of the numbering-wheels. Fig. 6 is an elevation of the ink-rolls and numbering-wheel. Fig. 7 shows the cam and ratchet mechanism which moves rod k' . Fig. 8 is an elevation of the tens-wheel. Fig. 9 is an end elevation as viewed from the right of Fig. 1. Fig. 10 is a longitudinal vertical section on line $z z$, Fig. 2.

A is the frame of the press, to which the numbering-machine is applied.

B is the sliding frame of the numbering-machine, which slides on posts C, fast to the press-frame A.

D is the inking-roll; d , the distributing-roll.

a is the units numbering wheel.

b is the tens-numbering wheel.

d' is the roll which inks the numbering-wheels.

f is a bell-crank lever pivoted at p , and actuated by crank E to give motion to the sliding frame B.

G is the cam-wheel, which actuates the pallet P for producing the intermittent rotary motion of the numbering wheels.

h is a spring secured to a block, K, and arranged in such a manner that the spring bears upon the numbering-wheel and brings it to the proper place after it is moved. The block K is supported by rod k , which is fast to frame B. Sliding rod k' is moved by cam G, and carries pallet P, the forward motion of which rotates the numbering-wheels. Pallet P is shown in Fig. 5 as it is about to enter one of the inclined slots, t , in the wheel, and thereby move the wheel until spring h sinks into the next notch in the periphery of the wheel, the spring serving to complete the motion of the wheel, as well as to hold it steady for printing. As the pallet moves backward its outer end will strike the upper wall of the slot and be slightly depressed by the spring s , which spring will throw it back into position to enter the next inclined slot. So that at any forward motion of pallet P produced by one of the short teeth of cam G the units-wheel a will be moved one step; but when pallet P is moved by the long teeth of cam G it not only moves the units-wheel a one step, but also enters one of the inclined slots in the tens-wheel b , and moves that wheel also one step. Cam G is moved by ratchet g and pawl g' , and pawl g' is actuated by the bell-crank lever g^2 , which is moved, as the frame B descends to make the impression, by connecting-rod g^3 , one end of which is pinned to lever g^2 and the other end to the frame of the press.

The operation will be clear without further description.

What I claim as my invention is—

1. The combination, in a numbering-machine, of a units-wheel and a tens-wheel and mechanism, substantially such as is described, for not

only giving the proper motions to the wheels to print from 1 upward in regular order, but in addition for moving the tens-wheel two steps with the unit, as above described, in order to
5 begin again at 1, as above explained.

2. In a numbering-machine, the tens-wheel above described, carrying, in addition to types for printing the digits, the type for printing 10 and the blank space, and arranged and op-
10 erating with the units-wheel, as set forth, the

tens-wheel having a double motion with the units-wheel after 99 has been printed, the first step of this double motion bringing the 10 in line with the 0 of the units-wheel and printing 100, and the next step the blank space in line
15 with the 1 of the units-wheel and printing 1.

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Witnesses:

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