

No. 885,616.

PATENTED APR. 21, 1908.

J. C. HANSEN-ELLEHAMMER & E. A. P. R. LUND.
PRINTING AND STAMPING MACHINE.

APPLICATION FILED JAN. 14, 1907.

4 SHEETS—SHEET 1.

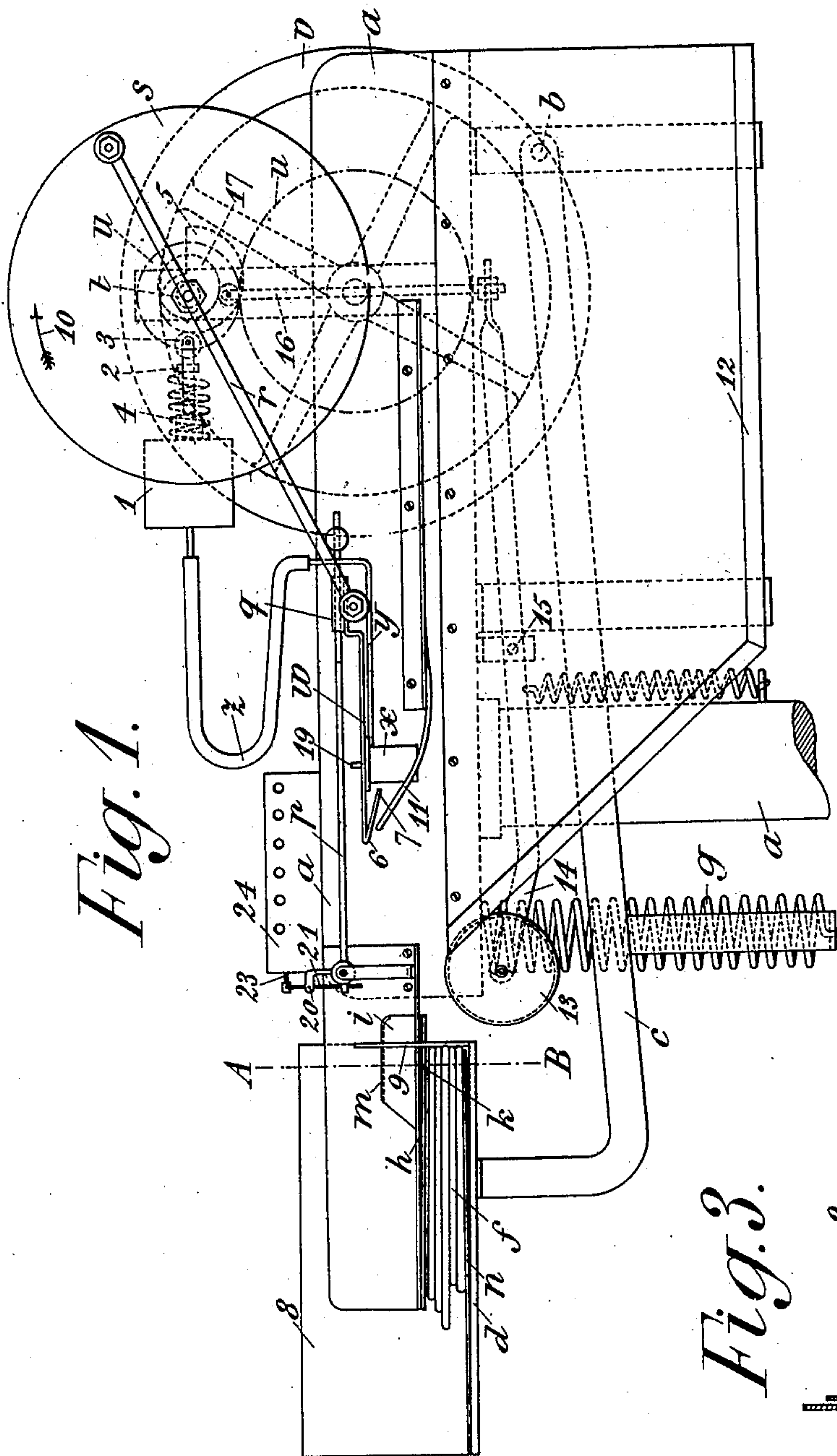


Fig. 1.

Fig. 3.

Witnesses
C. Wommers
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Inventors
Jacob Christian Hansen Ellehammer
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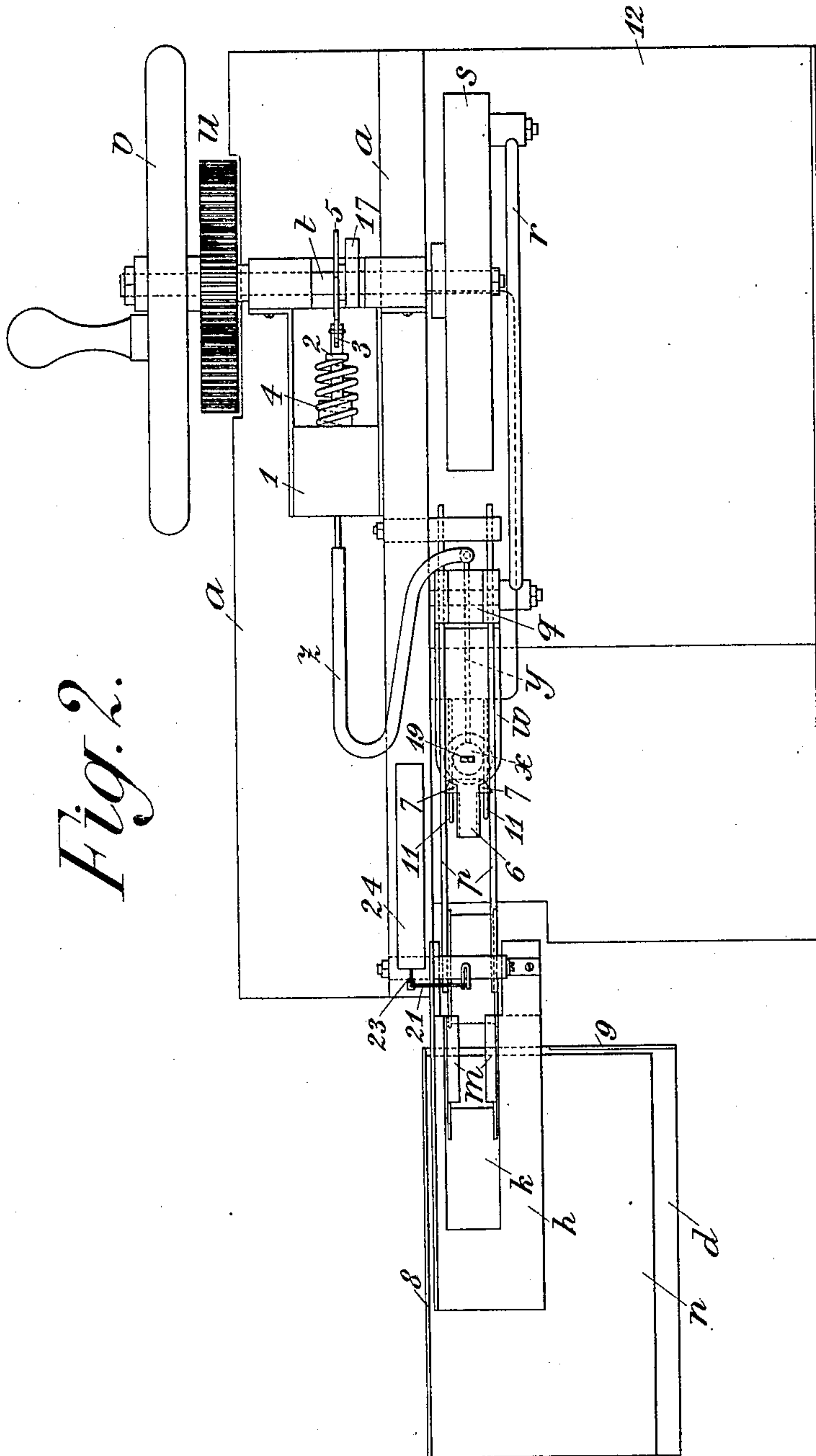


Fig. 2.

Witnesses

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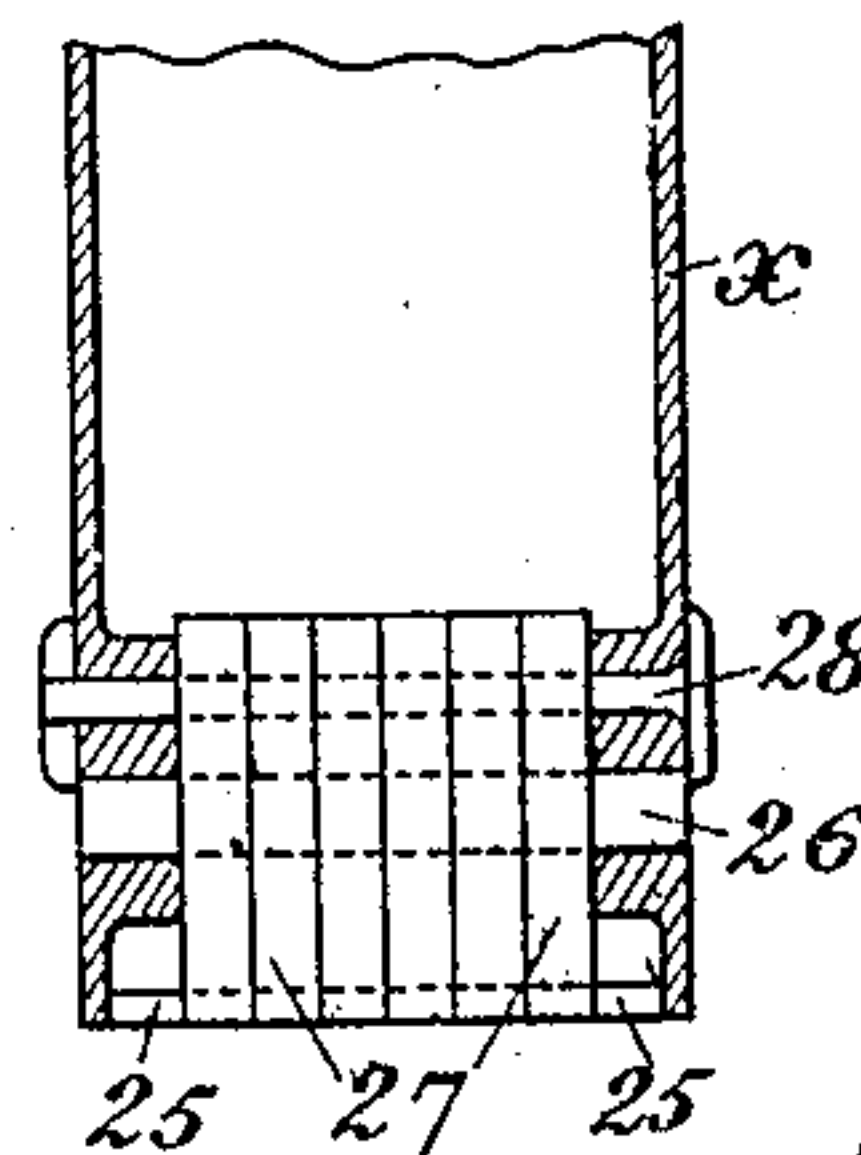
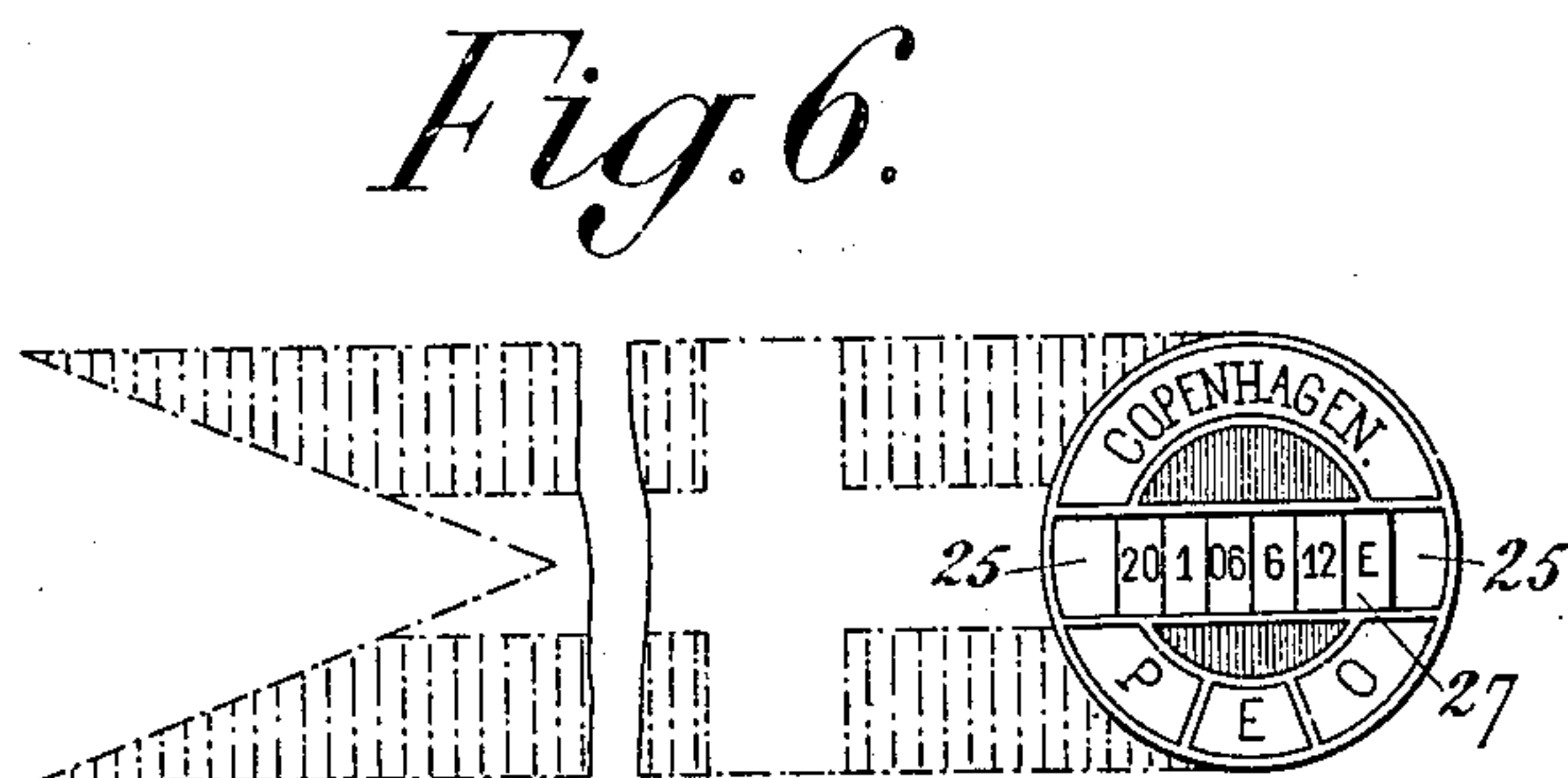
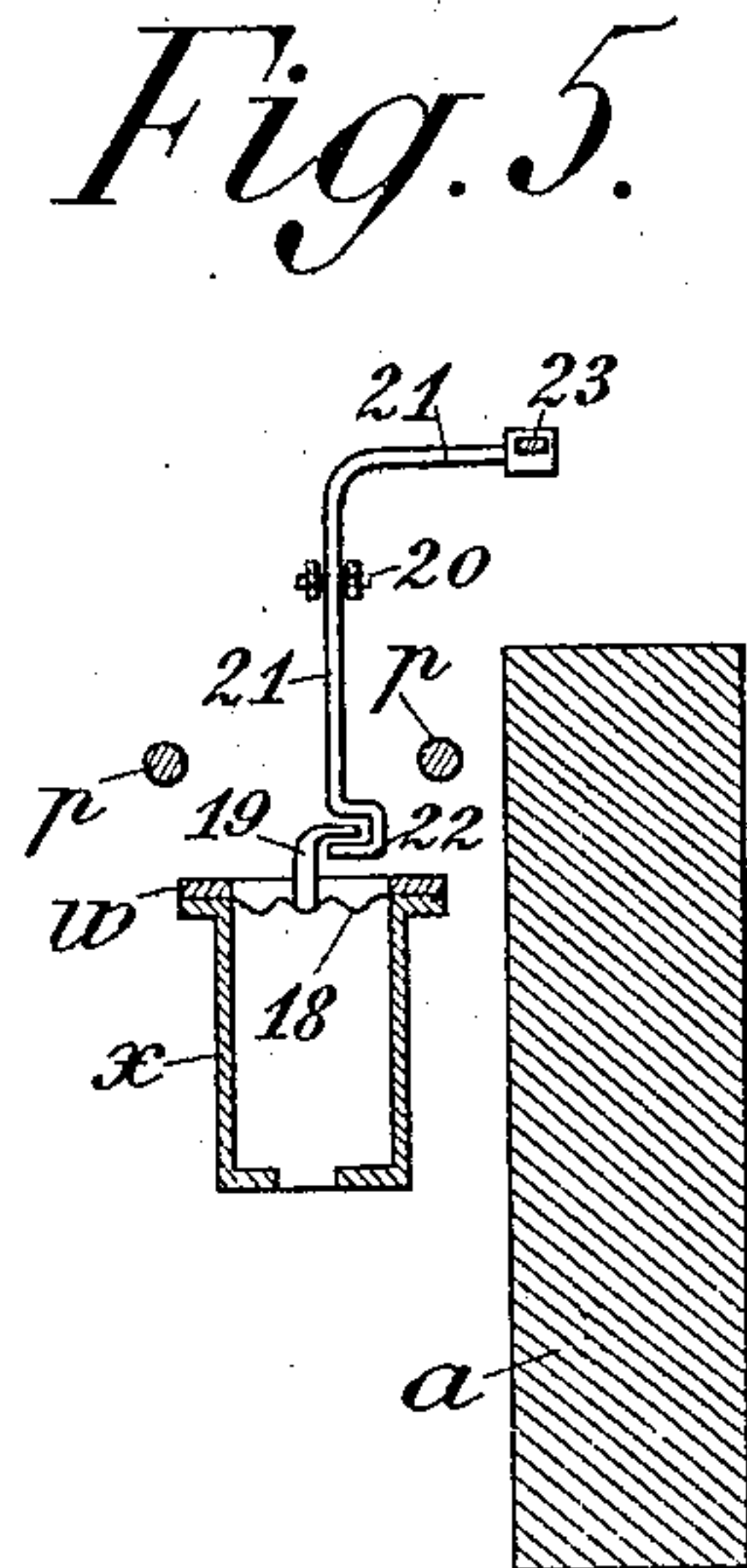
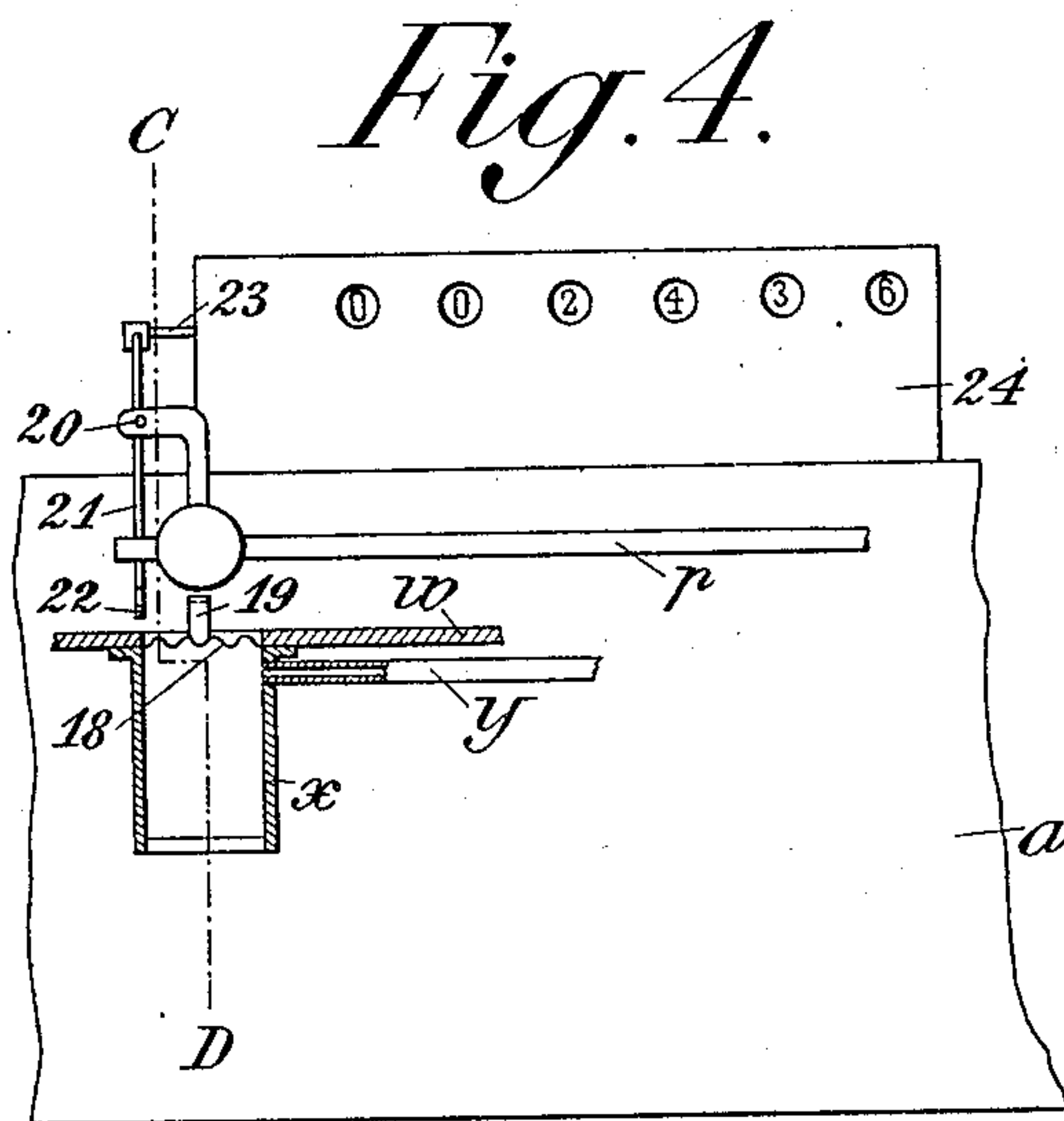
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4 SHEETS—SHEET 3.



Witnesses

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4 SHEETS—SHEET 4.

Fig. 8.

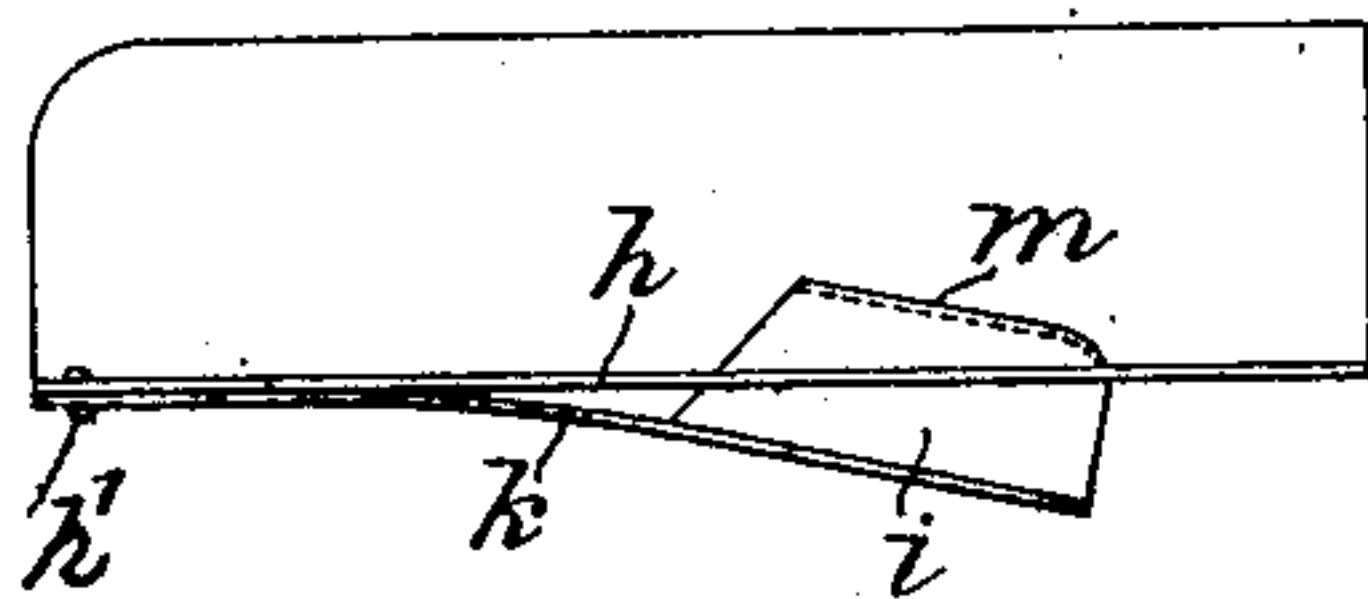


Fig. 9.

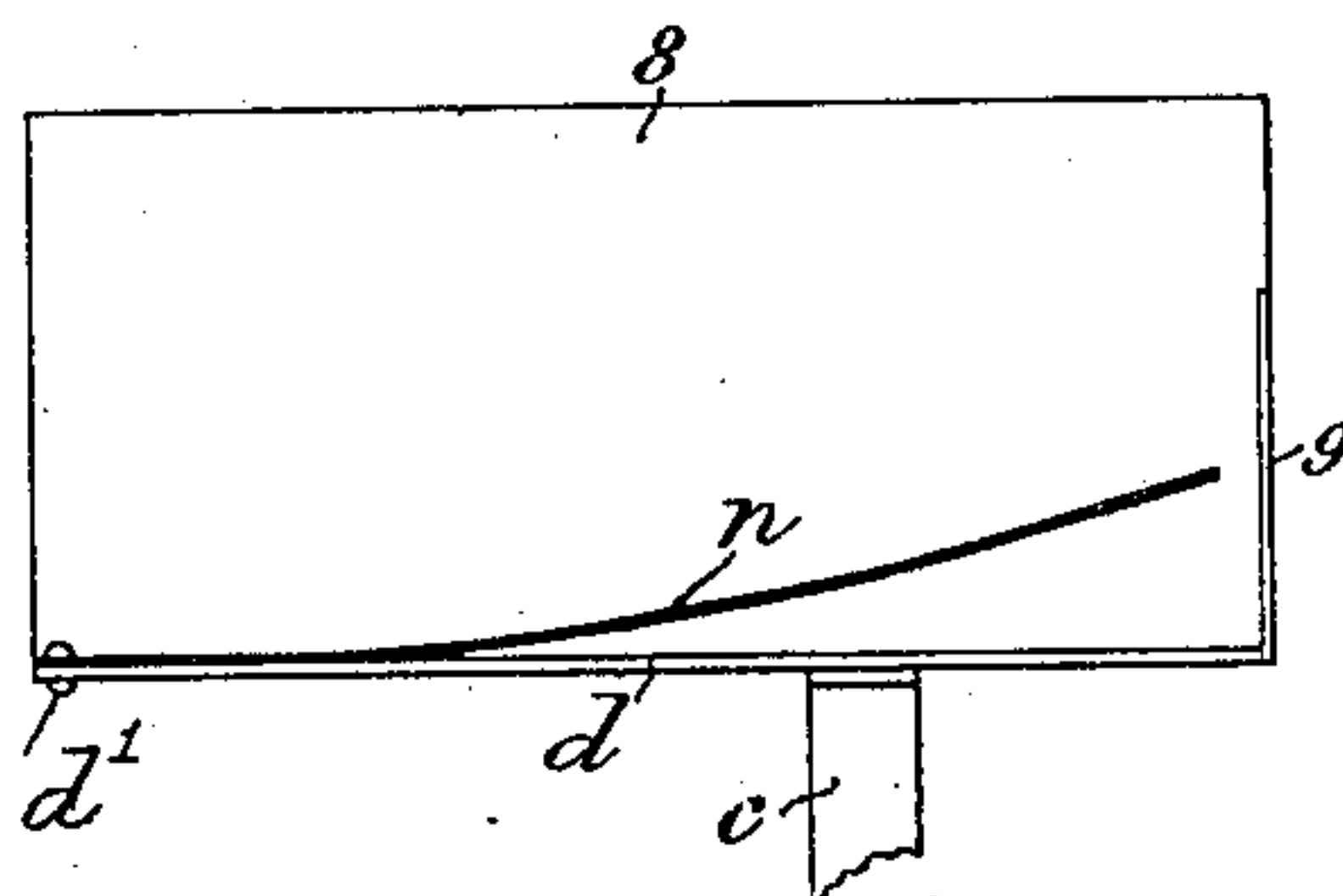


Fig. 10.

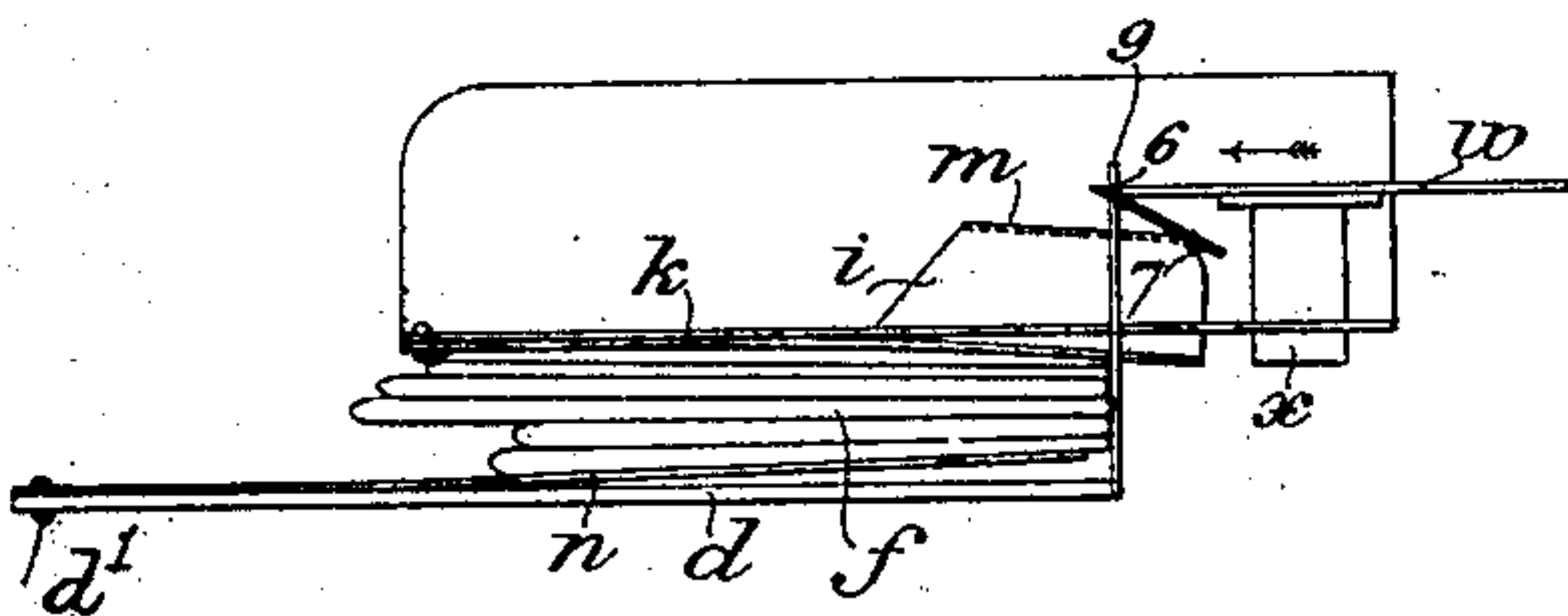


Fig. 11.

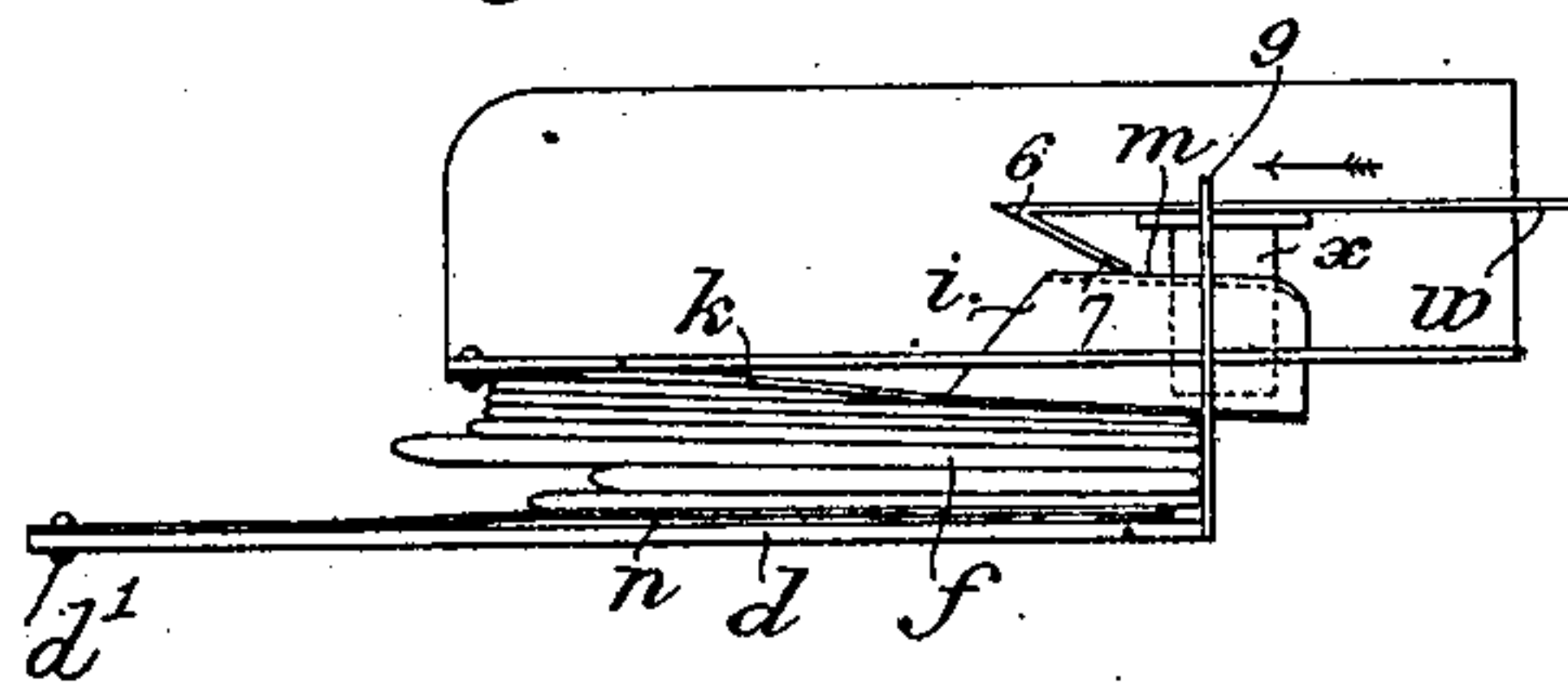


Fig. 12.

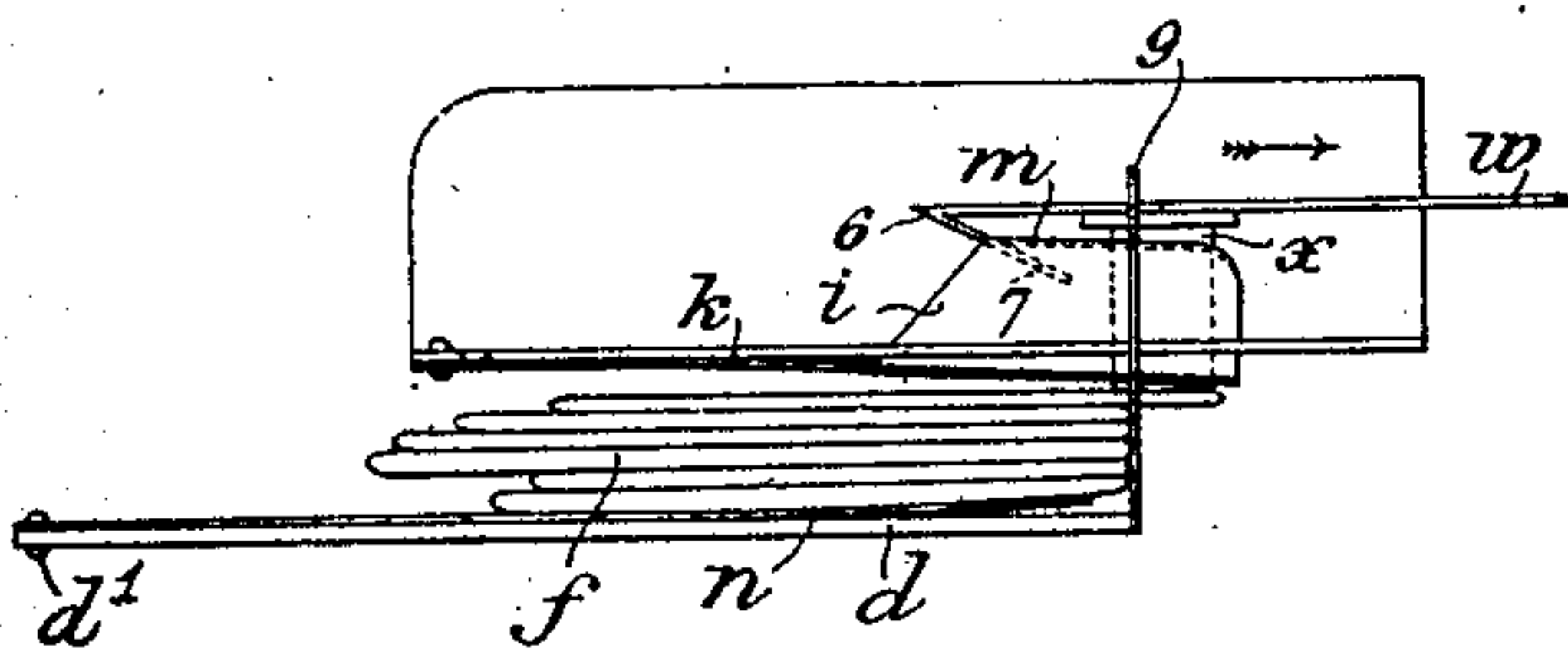
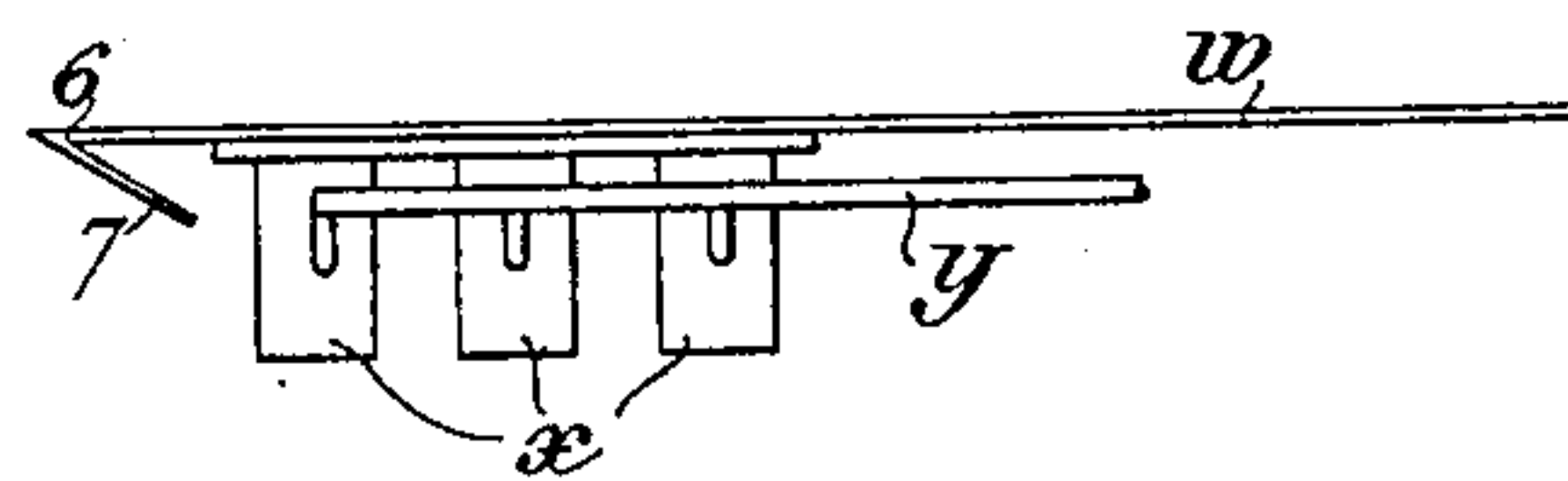


Fig. 13.



Witnesses

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UNITED STATES PATENT OFFICE.

JACOB CHRISTIAN HANSEN-ELLEHAMMER AND EDMUND ANTHON PETER RUDOLPH LUND,
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PRINTING AND STAMPING MACHINE.

No. 885,616.

Specification of Letters Patent.

Patented April 21, 1908.

Application filed January 14, 1907. Serial No. 352,196.

To all whom it may concern:

Be it known that we, JACOB CHRISTIAN HANSEN-ELLEHAMMER, of No. 119 Istedgade, Copenhagen, Denmark, mechanical engineer, and EDMUND ANTHON PETER RUDOLPH LUND, of No. 5 Oliebladsgade, Copenhagen, Denmark, postmaster, both citizens of the Kingdom of Denmark, have invented certain new and useful Improvements in Printing and Stamping Machines; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

This invention relates to improvements in post-marking and stamp canceling machines.

The invention consists in providing a suitable receptacle for the letters, a hollow cylinder carrying a stamp canceling or marking die; mechanism to reciprocate the cylinder, means for periodically creating a vacuum in the cylinder when over the letters whereby the letters are simultaneously marked and removed from the receptacle, means for removing the marked letters from the cylinder, and means for inking the die.

In the accompanying drawings, Figure 1 is a side elevation of a machine embodying the invention. Fig. 2, is a top plan view. Fig. 3, a section on line A—B, of Fig. 1. Fig. 4, a detail side view on an enlarged scale of mechanism for operating a counting device. Fig. 5 a section on line C—D, of Fig. 4. Fig. 6, an enlarged detail face view of the die. Fig. 7, a partial longitudinal section of the cylinder. Figs. 8 and 9 are enlarged detail side views of the plates forming the letter receptacle. Figs. 10, 11 and 12 are like views showing the plates assembled and the marking cylinder in different positions, and Fig. 13, a detail side view of a modification.

Referring to the drawings, *a* designates the main frame of the machine on which is pivoted at *b* a supporting-arm *c* carrying a bed plate *d* upon which letters, indicated by *f* to be stamped are supported, the arm *c* being normally held in a raised position by a spring *g*.

The frame *a* has an abutment plate *h* fixed thereto which projects over the plate *d* and on the underside of the plate *h* is secured at

one end, by means of bolts or rivets *h'*, a spring plate *k* the free end of which normally lies close to the underside of the plate *h*. On the top of the plate *k* near the free end thereof are formed parallel lugs *i* which project through a recess formed in the plate *h*, the upper edges of said parallel lugs *i* being bent inward towards each other forming flanges *m*.

On the top face of the plate *d* is secured at one end, by means of bolts or rivets *d'*, a spring plate *n* the free end of which normally lies away from the top face of the bed-plate as clearly shown in Fig. 9.

The letters *f*, to be stamped, rest directly on the spring *n* on the bed-plate *d* which latter through the medium of the spring *g* is pushed towards the spring *k* which is depressed as will be hereinafter described.

The frame *a* has two horizontal guide rods *p* on which is mounted a slide *q* connected to a pitman *r* one end of which is pivoted to a crank disk *s*. This disk is mounted upon a shaft *t*, journaled in the frame and capable of being rotated by means of suitable gearing *u* from a hand wheel *v* or from any other suitable means such as a motor, not shown.

The slide *q* has connected to it a support *w* which carries a hollow cylinder *x* of a diameter capable of passing between the flanges *m* and in the lower end of said cylinder is mounted a printing stamp or die.

A tube *y*, communicates with the cylinder and is connected by means of a flexible tube *z* to an air pump cylinder 1 mounted upon the frame. In the pump cylinder is a piston, the rod 2 of which carries a small roller 3, held by means of a spring 4 against a snail 5 mounted on the shaft *t*.

The plate *d* is provided with a wall 8 on one side and with a wall 9 at one end which extends from the opposite side of the plate *d* to near the side of the plate *h* leaving a space through which the latter projects over the plate *d*. The letters to be marked are laid on the spring plate *n* so that the corner of the envelop containing the stamp comes under the recess formed in the plate *h*. If the hand wheel *v* is rotated so that the disk *s* moves in the direction of the arrow 10, the slide *q* with the support *w* carrying the cylinder *x*, is moved through the medium of the pitman *r*, towards the plate *h*. The end 6 of the support *w* is provided with rearwardly inclined pins 7 and these on the continued movement of the slide engage the flanges *m*, as shown in

Fig. 10, depressing the spring *k* and consequently the letters below the bottom of the cylinder *x*, as shown in Fig. 11, so that it can pass over the top letter without coming into contact therewith.

When the slide *g* has reached its extreme position to the left, from the position shown in Fig. 1, the pins 7 will have passed over the flanges *m* and the spring plate *k* will rise to its normal position while the letters are likewise raised, by means of the spring *g* and the plate *n*, and brought into contact with the marking surface of the cylinder *x*. Simultaneously with the contact of the cylinder with the letters a vacuum is created in the cylinder for the purpose of causing an adherence of the letter thereto. This is caused by the roller 3, dropping from the step of the snail 5 and permitting the spring 4 to suddenly move the piston in the cylinder 1 to the right thereby exhausting the air in the cylinder.

The surface of the top letter is thereby held to the bottom of the cylinder *x*, which as above mentioned carries a printing stamp the impression from which is transferred to the letter. The cylinder is now moved to the right carrying the top letters by suction. While this movement is taking place the ends of the pins 7 pass under the flanges *m* as shown in Fig. 12. When the cylinder *x* together with the letter has traveled a certain distance to the right, the letter contacts with rods 11. These rods are mounted on the frame and have their ends curved above the plane in which the letter travels so that the letter is pulled off the cylinder and drops upon a plate 12 from which it may be removed at will.

The operation is repeated in the manner above described and at each revolution of the disk a letter is stamped and removed from the pile on the plate *n*.

During the movement of the cylinder *x* to the left the printing face passes over an inking roller 13. In order to prevent the letter from coming into contact with the roll while the letter is on the cylinder *x*, the roller is lowered below the plane of travel of the letter by means of a lever 14 fulcrumed on the frame at 15. This lever is controlled by a rod 16 which is actuated by a cam 17 mounted on the shaft *t* in such position that the roller is suddenly and sufficiently lowered as soon as the cylinder *x* has passed it when moving to the left in which lowered position it will remain until the cylinder has again commenced to move to the left.

In Figs. 4 and 5 is shown a mechanism for counting the letters as they are stamped. For this purpose the upper head of the cylinder *x* is made in the form of an elastic diaphragm 18 carrying a small hook 19. When there is no vacuum in the cylinder this hook may pass through a hook 22 (Fig. 5) formed

on the end of a rod 21 which is pivoted on an arm 20 projecting upward from the rod *p*. Whenever a partial vacuum is formed in the cylinder for the purpose above explained, the diaphragm is drawn inward and the hook 19 will be drawn down into engagement with the hook 22 and the rod 21, which is connected to a pull-rod 23, actuates a ratchet wheel or the like (not shown) of a counting mechanism of any suitable design mounted in a casing 24 on the frame. It is evident, that the counting mechanism will be operated only when the cylinder removes a letter from the pile to be stamped.

As clearly shown in Fig. 6 the stamping head of the cylinder is provided with a central opening 25 for the purpose of effecting a suction on the letters. The stamp is composed of a plurality of disks 27 mounted to rotate on an axis 26 fixed in the cylinder, said disks carrying a series of characters to indicate the month, day, year, hour &c. These disks may be turned separately and can be held and locked in any desired position by means of a pin 28, passing through holes in the disks and cylinder.

As shown in Fig. 13, a number of cylinders *x'* may be arranged on the plate *w* and each cylinder provided with a stamp and connected in such manner that a suction may be effected simultaneously in all. By means of this arrangement where letters have several postage stamps on them, each stamp will be canceled. One cylinder may also be provided with a plate having for instance, the design of a flag thereon which serves to spread the impression over a large part of the letter.

As the stamping of the letters is accomplished by sucking only the top one onto the stamp, no damage of the contents can result therefrom should the letters contain fragile objects.

We claim:—

1. In a machine of the character described, the combination with a letter-stack support, of a carrier, a stamp thereon normally in a plane below the top letter of the stack and means to depress said letter below the stamp.

2. In a machine of the character described, the combination with a letter-stack support, of a reciprocating carrier, a stamp thereon normally below the top of the stack, means operated by the movement of the carrier to depress the stack, and means to raise the stack.

3. In a machine of the character described, the combination of a yielding letter-stack support, a carrier, means to move the latter to and from the support, a stamp on the carrier normally below the top letter of the stack, a yielding member mounted over the stack support, and means to temporarily depress the yielding member.

4. In a machine of the character described, the combination of a yielding letter-stack

support, a carrier, means to move the latter to and from the support, a stamp on the carrier normally below the top letter of the stack, a yielding member mounted over the stack support, means to temporarily depress the yielding member and means to raise the letters after being depressed.

5. In a machine of the character described, a letter receptacle comprising a resiliently supported bed-plate, a stationary abutment having an opening therein above the latter, a spring secured to the underside of the abutment, a carrier, means to move the latter into the opening, a die on the carrier below the abutment, and means connected with the carrier to depress the spring.

6. In a machine of the character described, a letter receptacle comprising a resiliently supported bed plate, a stationary abutment having an opening therein, a spring secured to the underside of the abutment having lugs thereon projecting through the opening, a carrier, means to move the latter into the opening, a die on the carrier below the abutment, means connected with the carrier adapted to engage and pass over the lugs, and means to create a vacuum in the carrier after said passage.

7. In a machine of the character described, a letter receptacle comprising a bed-plate, a pivoted arm supporting the same, a spring supporting the arm, a stationary abutment having an opening therein above the bed plate, a spring secured to the underside of the abutment having lugs projecting through the opening, a hollow carrier, a reciprocating support therefor adapted to engage the lugs during a portion of its travel in one direction and release them upon its return movement and means to create a vacuum in the carrier at the end of its movement in one direction.

8. In a machine of the character described, the combination with a yielding letter stack support, of a carrier, means to move the latter to and from the support, a stamp in the carrier normally below the top letter of the stack, a yielding member over the letter stack, and cooperating means on the carrier and yielding member to depress the letter, the stack, and its support as the carrier moves into operative position and to afterwards release them to allow the stack to move into engagement with the stamp.

9. In a machine of the character described, the combination with a yielding letter stack

support, of a carrier, means to reciprocate the latter, a stamp in the carrier normally below the top letter of the stack, a yielding member over the letter stack, cooperating means on the carrier and yielding member to depress the stack as the carrier moves into operative position and to allow the stack to afterwards move into engagement with the stamp, and means to create a vacuum in the carrier when in operative position.

10. In a machine of the character described, the combination with a main frame, of a supporting arm pivoted thereon, a spring supporting the latter, a bed plate mounted on the arm, a stationary abutment over the bed plate having an opening therein, guide rods on the frame parallel to the abutment, a slide on the guide rods, a support on the slide, a carrier cylinder on the support, a stamp mounted in the cylinder below the abutment, a spring on the underside of the latter having lugs projecting through the opening in the path of the support, a drive shaft, a pitman connected to the slide operated by the drive shaft, a pump cylinder, a piston therein operated by the shaft, and means connecting the pump cylinder and carrier cylinder.

11. In a machine of the character described, a letter stack support, a hollow carrier cylinder, means to move the latter onto the letter stack, and means to create a vacuum in the cylinder at the end of said movement, in combination with a counting device, an operating member therefor, and means on the carrier cylinder to actuate the operating member.

12. In a machine of the character described, a letter stack support, a hollow carrier cylinder, means to move the latter onto the letter stack, a flexible diaphragm in the carrier, a hook on the diaphragm and means to create a vacuum in the cylinder, in combination with a counting device and an operating member therefor adapted to be actuated by the hook on the diaphragm.

In testimony that we claim the foregoing as our invention, we have signed our names in presence of two subscribing witnesses.

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Witnesses:

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