

J. E. SHAVER, JR.
STENCILING MACHINE.
APPLICATION FILED JAN. 21, 1910.

985,297.

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Fig. 1.

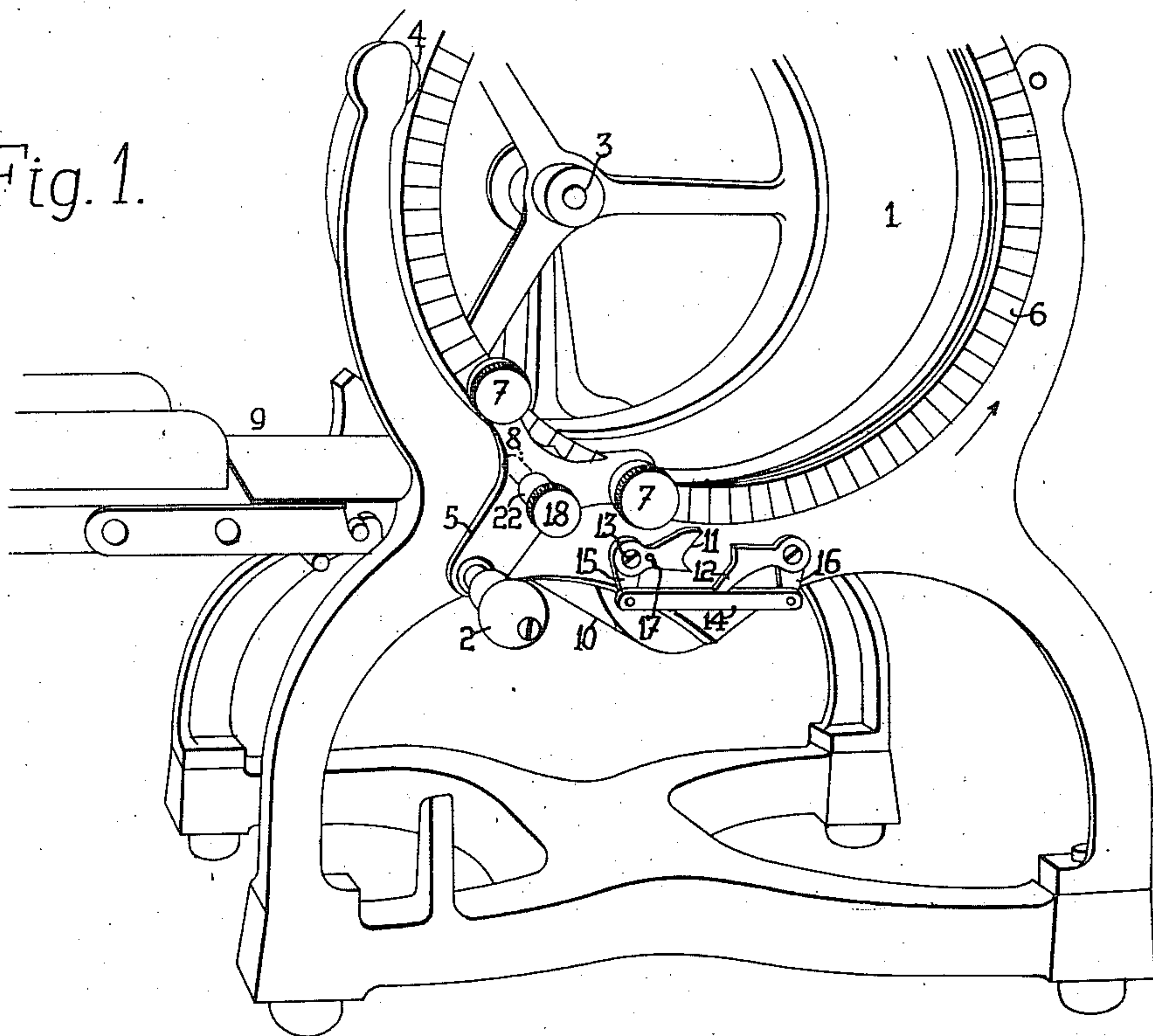


Fig. 2.

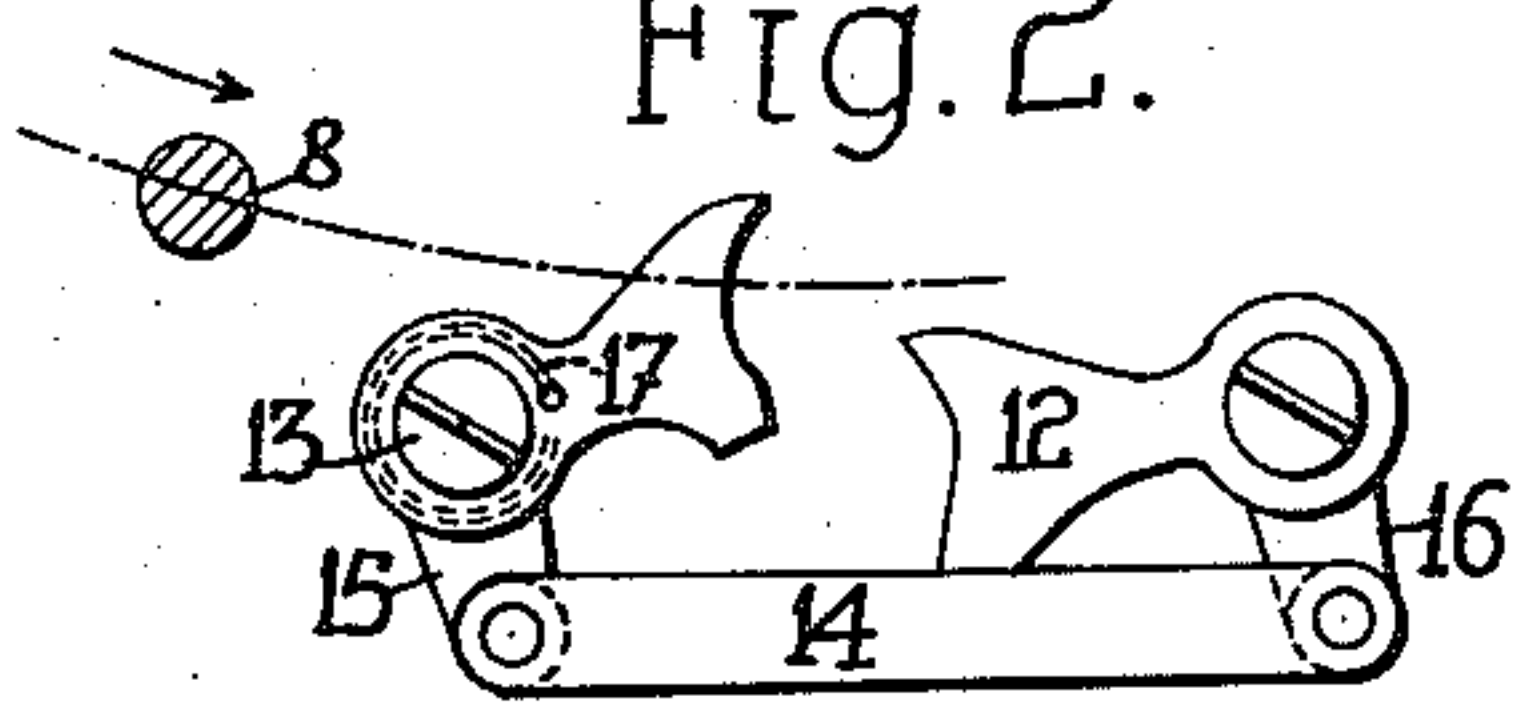


Fig. 3.

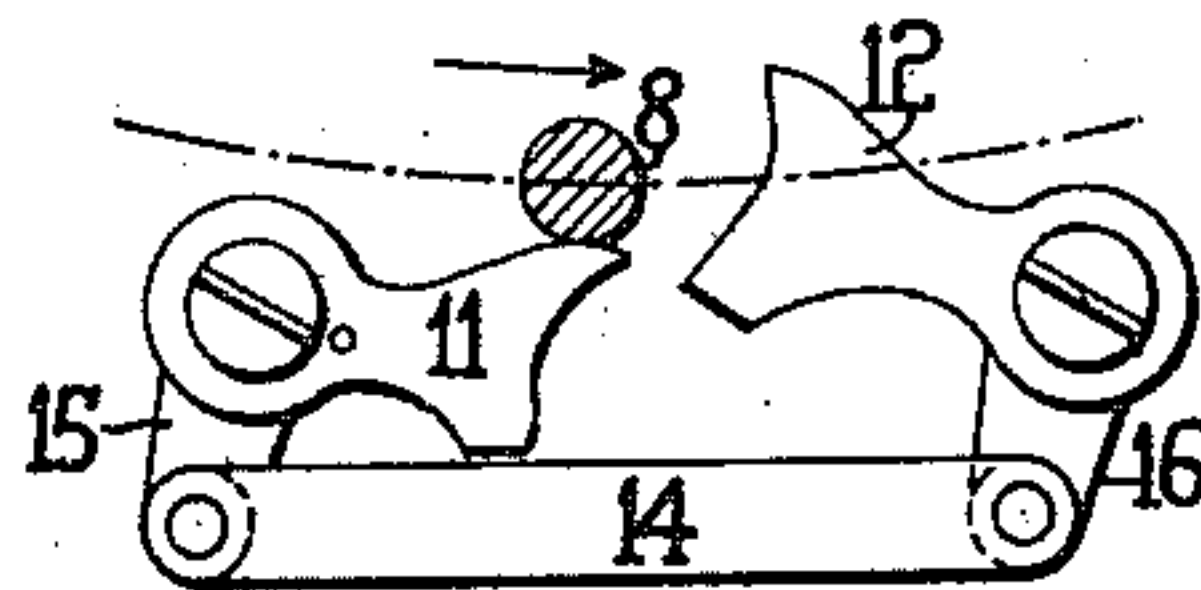


Fig. 4.

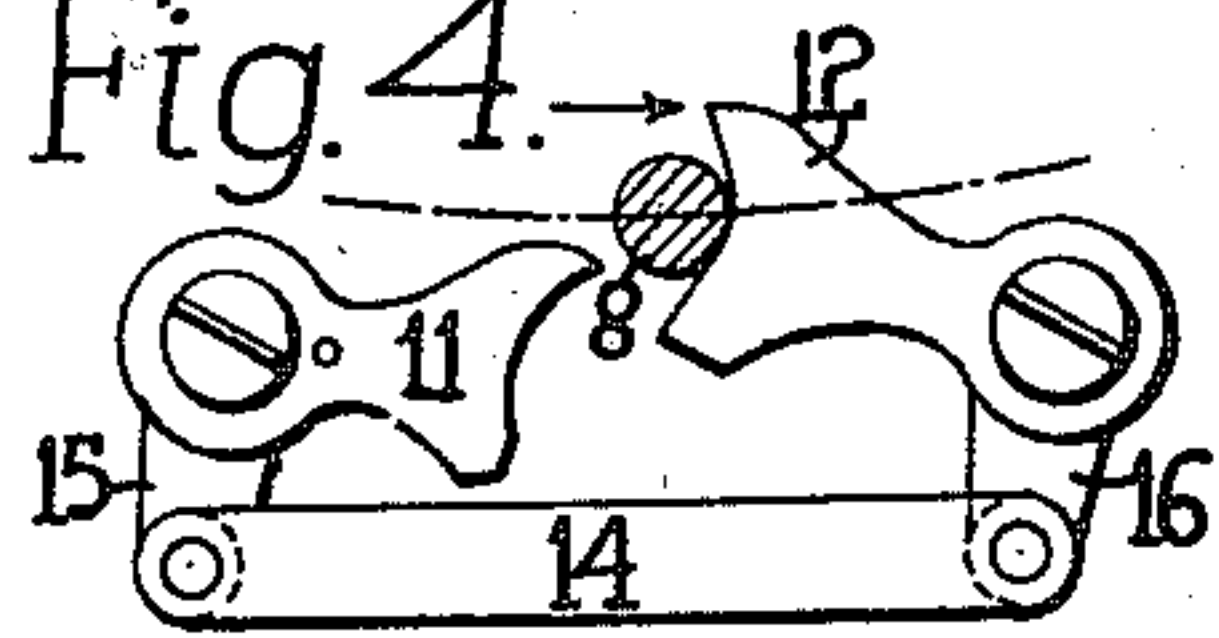


Fig. 5.

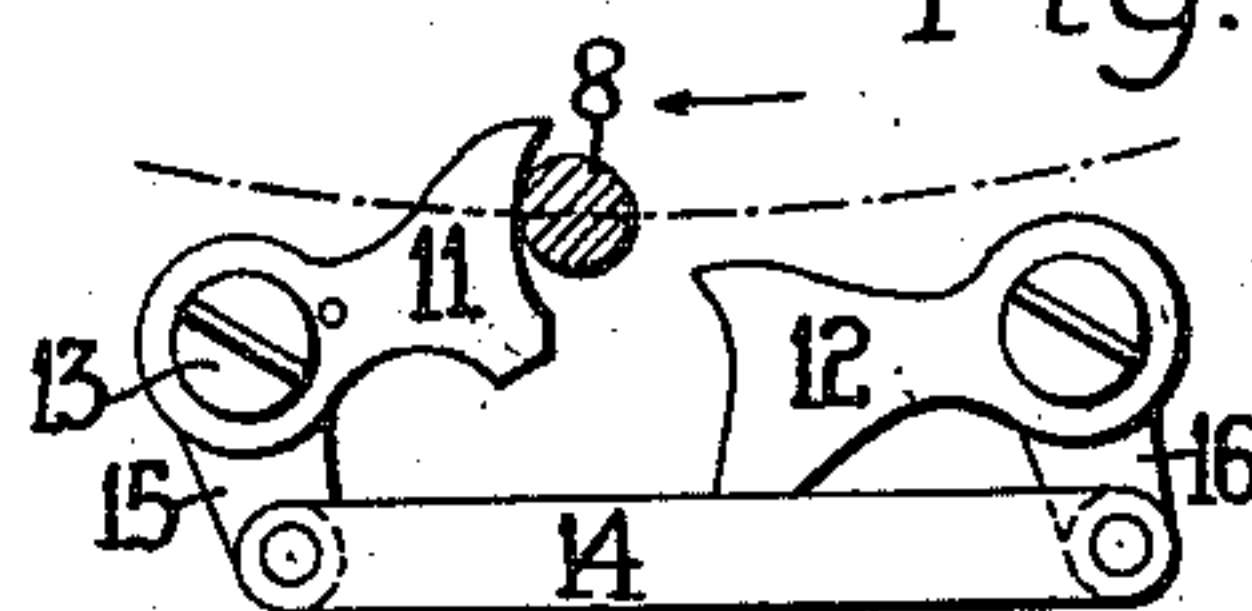


Fig. 6.

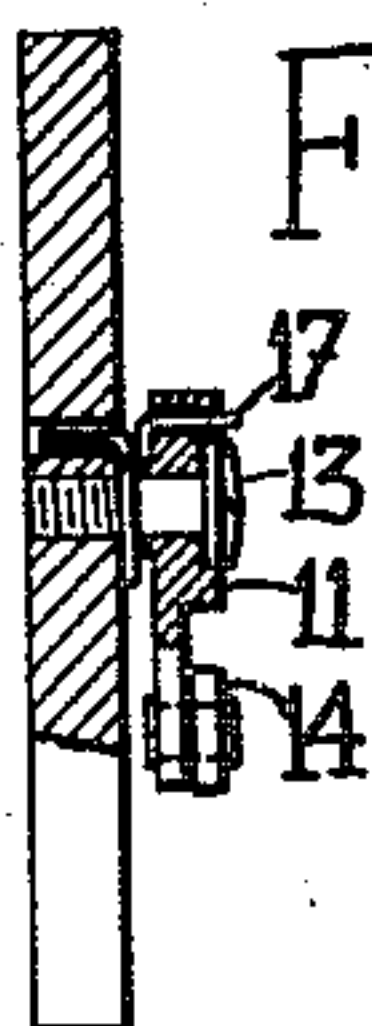
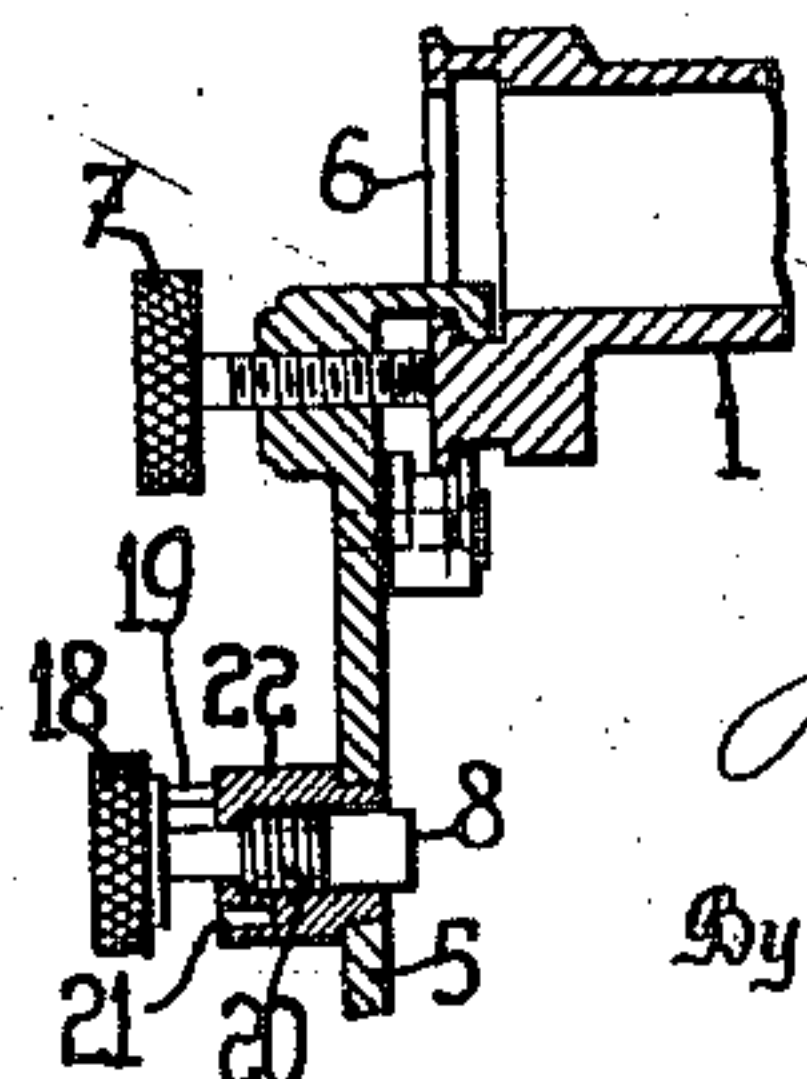


Fig. 7.



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UNITED STATES PATENT OFFICE.

JAMES E. SHAVER, JR., OF NEW YORK, N. Y., ASSIGNOR TO UNDERWOOD TYPEWRITER COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW JERSEY.

STENCILING-MACHINE.

985,297.

Specification of Letters Patent.

Patented Feb. 28, 1911.

Application filed January 21, 1910. Serial No. 539,266.

To all whom it may concern:

Be it known that I, JAMES E. SHAVER, Jr., a citizen of the United States, residing in New York city, in the county of New York and State of New York, have invented certain new and useful Improvements in Stenciling-Machines, of which the following is a specification.

This invention relates to stenciling machines of the class illustrated in the patent to Benjamin P. Fortin, No. 891,766, granted June 23, 1908, in which sheets to be stenciled are run between two rolls, one roll carrying a stencil and a supply of ink therefor, and the other roll pressing the sheet against the stencil roll or cylinder. In machines of this class, it is customary to provide a stop to which the stencil cylinder is set, until the leading edge of the sheet to be stenciled is inserted into the bight of said cylinder and said pressure-roll; the cylinder being manually operated, and the movement of the entire machine being of course arrested by said stop. This construction is found in the well-known Underwood revolving duplicator. Said stop does not offer resistance to the advance rotation of the stencil cylinder; and in practice the operator turns the cylinder to a point a little beyond the stop or dog, and then brings the cylinder back against the stop or dog. This little back and forth movement of the cylinder takes place once in each revolution, or preparatory to the introduction of each sheet of paper into the machine. It is found in practice that there is liability, in some instances, of the operator carrying the cylinder too far beyond the stop or dog, before setting the cylinder back against said dog. In some cases no harm results; but in other cases, where it is necessary to place the writing or stenciling close up to the leading edge of the sheet, there is liability that the pressure-roll will receive a deposit of fresh ink from the stencil, whenever the cylinder is advanced too far beyond said registering-dog.

The principal object of the present invention is to avoid liability of any ink being deposited or stenciled upon the pressure-roll, and thence transferred to the back of the sheet or card to be stenciled. To accomplish this object, I provide a device which prevents excessive overthrow or move-

ment of the cylinder past said registering-dog.

Stated generally, the invention may be said to comprise an escapement mechanism for the stencil cylinder, which arrests the advance movement of the cylinder, then arrests the cylinder upon the recoil thereof, and then releases the cylinder for a succeeding advance revolution. The cylinder may be positively arrested at the conclusion of its advance stroke, so that undue overthrow is rendered impossible. Then the cylinder may be brought back or recoiled to set against the registering-dog; whereupon the sheet or card is inserted in the machine to be stenciled. Then the cylinder may be freely advanced to carry the sheet or card through the machine, and again arrested in the manner just explained. The device is therefore automatic; it being only necessary for the operator to turn the cylinder around in advance direction as far as it will go, and then turn it back as far as it will go, and then turn it forward again as far as it will go, and so on.

In the accompanying drawings, Figure 1 is a front perspective view of an Underwood revolving duplicator provided with the present improvements; the stencil cylinder being illustrated as advancing, at a point near the completion of its revolution; the escapement mechanism being shown in normal position. Fig. 2 is a diagram showing the escapement devices in the Fig. 1 position, with the stop which is provided upon the cylinder advancing toward the escapement devices upon the framework. Fig. 3 shows the cylinder stop as having engaged the top or back of the yielding register-dog, to depress the same; said stop being movable freely past said dog during the advance revolution of the cylinder. Fig. 4 shows the cylinder stop engaging the second dog, whereby the cylinder is arrested. It will be seen by comparison of Figs. 3 and 4 that the depression of the registering-dog has elevated the second or final-stop dog into the path of the cylinder-stop. Fig. 5 shows the position of the parts at the recoil of the cylinder; the register-dog having been elevated by a spring to a position to intercept the cylinder stop, and the final-stop dog having been dropped to release the cylinder for

another advance revolution. Fig. 6 is a sectional view to illustrate the spring which is connected to the dogs. Fig. 7 is a view similar to Fig. 3 of said Patent No. 891,766 to show the preferred construction of the stop which is carried upon the cylinder.

The stencil cylinder is indicated at 1, and is revoluble by means of a handle 2. The cylinder is journaled at one end upon a stud 3, and at its other end is carried upon trunnions 4, as usual. In said Underwood machine the handle 2 projects from a bracket 5, which is adjustable around the rim or flange 6 formed upon the open end of the cylinder; said bracket being secured by thumb screws 7. Projecting rearwardly from the back side of said bracket is a stop-pin 8, which forms part of the preferred form of the escapement mechanism herein illustrated; said stop-pin being designated as 37 in said patent. When a sheet is laid upon the table 9 and fed into the bight of the stencil cylinder 1 and a pressure roll 10 therebeneath, it is carried through the machine and stenciled. The bight of the roll and cylinder serves as a gage for positioning the leading edge of the sheet. At the time that the sheet is inserted, the stop pin 8 on the cylinder is set back to the left against a register dog 11, as at Fig. 5; and the cylinder is held in this position by the handle 2 until the sheet is properly positioned. Then by means of said handle the cylinder is swung around in the direction shown by the arrow at Fig. 1, in order to effect the stenciling. The stop 8 must of course be carried beyond the registering-dog 11 in the first instance, before it can be set back against the same; and in order to provide against excessive overthrow of the cylinder at this time, there is provided a second dog 12. When the advancing cylinder-stop 8, Fig. 2, strikes the back of the register-dog 11, it depresses the same as at Fig. 3; said dog for this purpose being mounted upon a pivot 13. By this means, not only is said register-dog pressed aside from the path of the stop 8, so as not to interfere with the advance of the cylinder, but this movement of the dog 11 is also utilized to throw the normally ineffective dog 12 upwardly from the Fig. 2 position to the Fig. 3 position. To this end said dogs are connected, preferably by a link 14. This link may be pivoted at its ends to pendent arms 15, 16 formed upon said dogs, in such a manner that when either dog is moved into effective position, that is, into the path of the stop-pin 8, the other dog is moved into ineffective position, or out of the path of said stop-pin; and vice versa. Depression of the dog 11 causes its arm 15 to pull the link 14 to the left, thereby turning the arm 16 in the same direction and lifting the dog 12

to the position at Fig. 3, where it may intercept the stop-pin 8, as at Fig. 4, thus limiting the advance rotation of the stencil cylinder 1. The operator now imparts to the cylinder a backward movement or recoil; and during this recoil a spring 17, which may be connected to the dog 11, elevates the latter to normal position as at Fig. 5, and enables the dog to intercept the stop-pin 8, to arrest the recoil of the cylinder and hold said cylinder in position for permitting the sheet of paper to be inserted into the bight of the cylinder and pressure-roll. The upward movement of the register dog 11 is of course accompanied by a downward movement of the final-arrest dog 12, so that the latter releases the stop 8 and the cylinder for a succeeding advance rotation.

While I have shown the dogs separately pivoted and connected by a link, they may be otherwise formed and mounted within the scope of the invention; and many other variations in the structure, form and location of the parts may be resorted to without departing from the invention; and portions of the improvements may be used without others, as for instance the final arrest dog 12 may be employed and may have means for moving it automatically into and out of effective position, whether or not the register-dog is used; since the part 11 may be employed simply as a lever for controlling the position of the final dog 12. It is also obvious that in an escapement mechanism of this character, the parts may be reversed within the scope of the improvements.

As shown in said patent, the stop 8 may have a button 18, whereby it may be withdrawn from use; and said button may carry a pin 19 to hold the stop 8 out of use. A spring 20 may be provided to snap the stop back into effective position again when the pin 19 falls into a recess 21 in the boss 22 which carries the pin 8.

Having thus described my invention, I claim:

1. The combination with a manually revoluble stencil cylinder, a handle being connected to said cylinder whereby it may be revolved, of an automatic escapement mechanism operable during the movements of said cylinder and comprising means to arrest the advance movement of the cylinder at the completion of each revolution, said cylinder manually movable backwardly from the point at which it is arrested, and said escapement mechanism also comprising a device to arrest the cylinder upon such backward movement thereof, and also comprising means operable during the backward movement of the cylinder to release the same to permit a succeeding advance revolution thereof.

2. The combination with a revoluble sten-

cil cylinder, of means to arrest the advance movement of the cylinder at the completion of each revolution, means to arrest the cylinder upon the recoil thereof, and means rendered effective by reason of such recoil for releasing the cylinder for the succeeding advance revolution.

3. In a stenciling machine, the combination with a revoluble stencil cylinder and a framework, of two coöperative elements, one consisting of a stop device, and the other consisting of a set of dogs, one to arrest the advance of the cylinder and the other to arrest the recoil thereof, one of said coöperative elements being mounted upon the cylinder, and the other being mounted upon the framework; said dogs being each movable into and out of effective position, and the dogs being operatively connected to cause the movement of one to ineffective position to be accompanied by the movement of the other to effective position.

4. In a stenciling machine, the combination with a revoluble stencil cylinder and a framework, of two coöperative elements, one consisting of a stop device, and the other consisting of a set of dogs, one to arrest the advance of the cylinder and the other to arrest the recoil thereof, one of said coöperative elements being mounted upon the cylinder and the other being mounted upon the framework, said dogs being each movable into and out of effective position, and the dogs being so connected that the movement of either to ineffective position is accompanied by the movement of the other to effective position; said stop device having means to effect the movements of said dogs, a spring normally holding in ineffective position the dog that arrests the advance revolution of the cylinder; said recoil dog being movable out of effective position by said stop device during the advance of the cylinder.

5. The combination with a revoluble stencil cylinder and a stop, of a cylinder-arresting dog normally out of position to be engaged by said stop, and means to enable the rotary movement of the cylinder to effect a relative shift between said stop and said dog to bring one into the path of the other.

6. The combination with a revoluble stencil cylinder, of a cylinder-arresting dog normally in ineffective position, and means to enable the rotary movement of the cylinder to set said dog to effective position, and to enable the recoil of said cylinder to cause the dog to return to normal position.

7. The combination with a revoluble stencil cylinder, of a cylinder-arresting dog normally in ineffective position, and means to enable the rotary movement of the cylinder to set said dog to effective position, and to enable the recoil of said cylinder to cause the dog to return to normal position; means be-

ing provided to arrest the recoil of the cylinder.

8. The combination with a revoluble stencil cylinder, of a cylinder-arresting dog normally in ineffective position, and means to enable the rotary movement of the cylinder to set said dog to effective position, and to enable the recoil of said cylinder to cause the dog to return to normal position; means being provided to arrest the recoil of the cylinder, said recoil-arresting means having a yielding construction to permit the cylinder to advance freely past it.

9. The combination with a revoluble stencil cylinder, of a cylinder-arresting dog normally in ineffective position, a second dog normally in effective position for arresting the recoil of the cylinder from the first dog, said second dog yieldingly constructed, to permit the advancing cylinder to depress the same, and means connecting said dogs to enable the second dog, when depressed, to cause the first dog to move to effective position.

10. The combination with a revoluble stencil cylinder, of a cylinder stop, a pivoted member movable by the stop, and a normally ineffective dog connected to said pivoted member to be moved thereby into position to engage said stop.

11. The combination with a revoluble stencil cylinder, of a cylinder stop, a pivoted member movable by the stop, a normally ineffective dog connected to said pivoted member to be moved thereby into position to engage said stop, and a spring to return said pivoted member with said dog to normal position.

12. The combination with a revoluble stencil cylinder, of a dog or device to arrest the cylinder, and means dependent upon the recoil of the cylinder for releasing it from said dog.

13. The combination with a revoluble stencil cylinder having a stop, of a cylinder-arresting dog normally out of the path of said stop and movable into the path thereof, and means to enable the advance of the cylinder to move said dog into the path of said stop to arrest the cylinder.

14. The combination with a revoluble stencil cylinder, of a cylinder-arresting dog movable into and out of effective position, means to enable the advance of the cylinder to move said dog to effective position and to arrest the cylinder, and means controlled by the cylinder for automatically returning said dog to ineffective position after the arrest of the cylinder to permit the cylinder to advance past said dog.

15. The combination with a revoluble stencil cylinder and a framework on which it is mounted, of two stops one upon the cylinder and one upon the framework, means to cause said stops to coöperate to arrest the ad-

vance rotation thereof, and automatically operating means depending upon the recoil of the cylinder for releasing the cylinder so that it may make a succeeding revolution in
5 advance direction.

16. In a stenciling machine, the combination with a cylinder and a stop therefor, of a pivoted registering dog, a pivoted final-stop dog, means connecting said dogs, and a
10 spring normally holding the registering-dog in effective position and the final-stop dog in ineffective position; said registering dog being depressible by said stop when the cylinder moves in one direction, said dogs so con-
15 nected that when the register-dog is depressed the final-stop dog is elevated to working position.

17. In a stenciling machine, the combination with a cylinder and a stop therefor, of a
20 pivoted registering-dog, a pivoted final-stop dog, each of said dogs having an arm, a link connecting said arms, and a spring normally holding the registering-dog in effective position and the final-stop dog in ineffective po-

sition; said registering dog being depressi- 25
ble by said stop when the cylinder moves in one direction, said dogs so connected that when the register-dog is depressed the final-stop dog is elevated to working position.

18. In a stenciling machine, the combina- 30
tion with a revoluble stencil cylinder and a framework, of two coöperative elements, one consisting of a stop device, and the other consisting of a set of dogs, one to arrest the
35 advance of the cylinder and the other to arrest the recoil thereof, one of said coöperative elements being mounted upon the cylinder, and the other being mounted upon the
framework; said dogs being each movable
40 into and out of effective position, and the dogs being operatively connected to cause the movement of one to ineffective position to be accompanied by the movement of the other to effective position.

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