

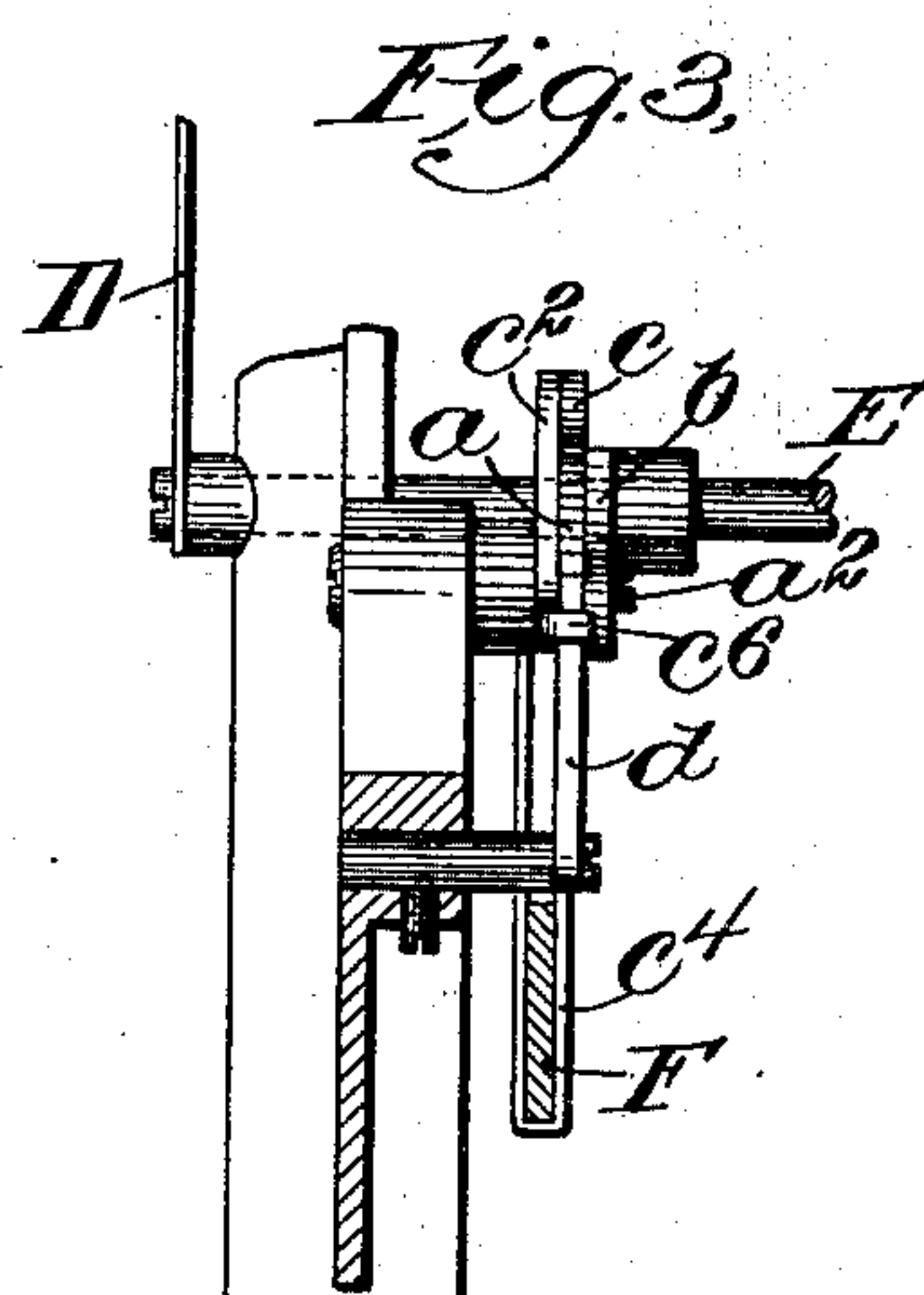
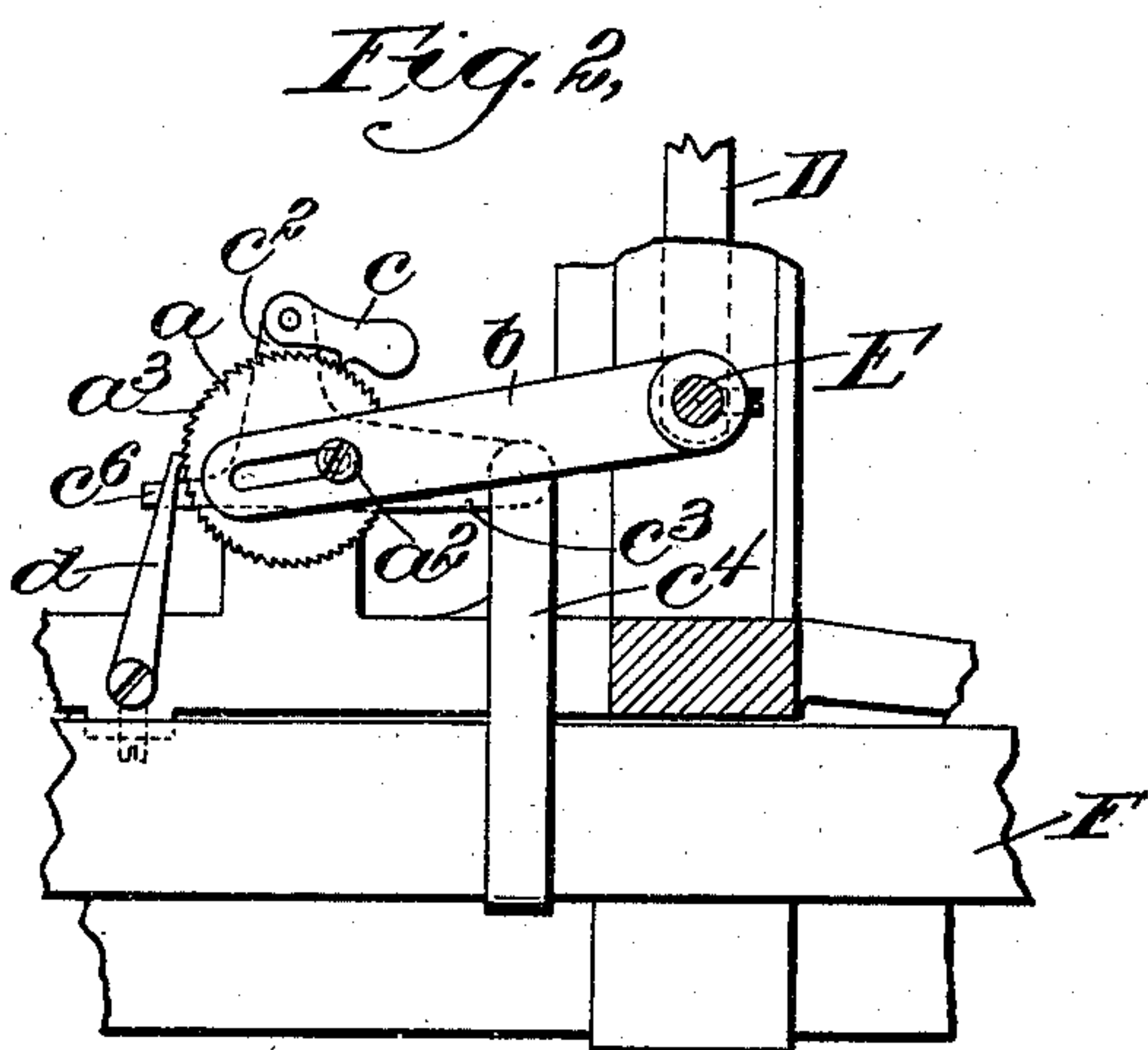
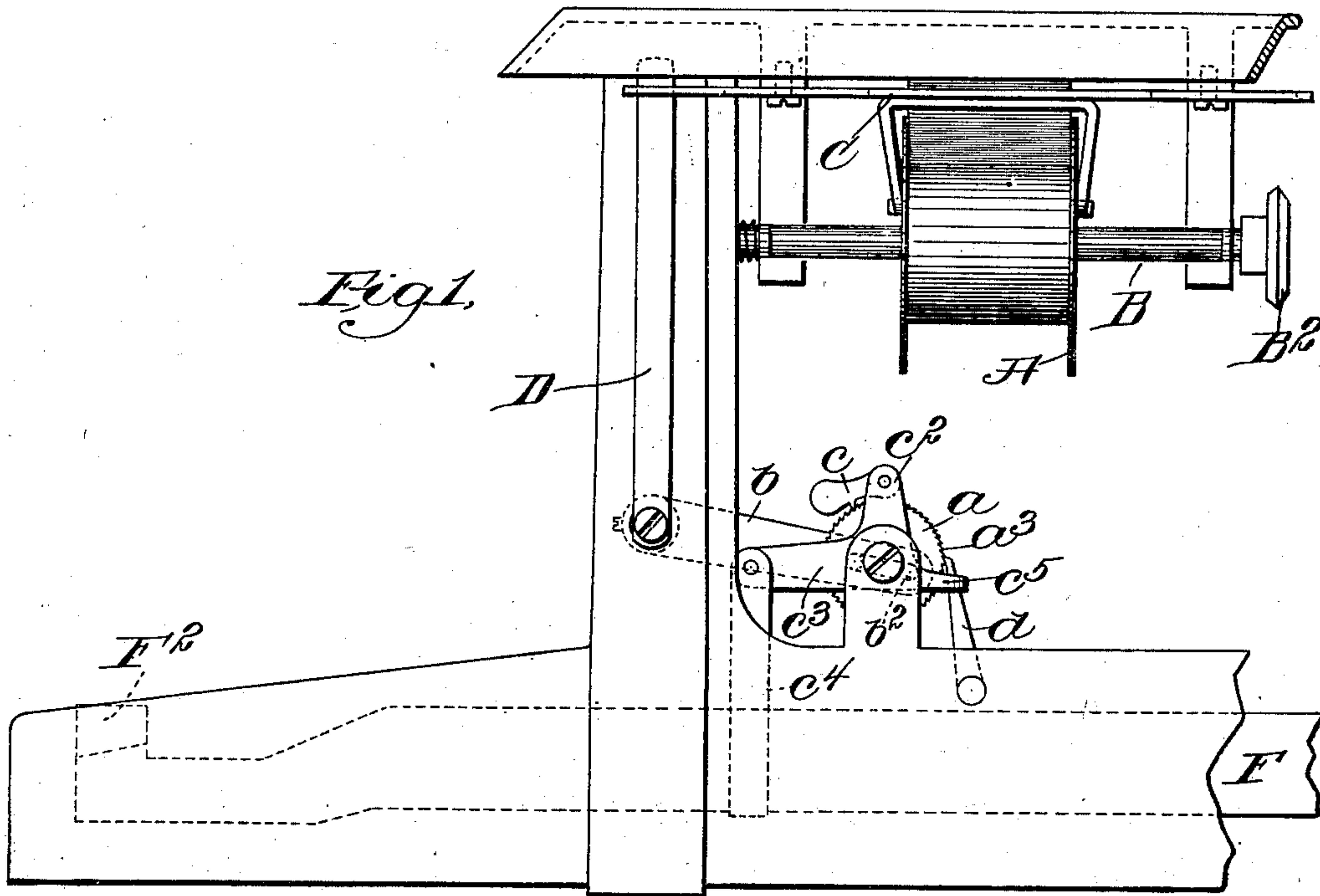
No. 664,500.

Patented Dec. 25, 1900.

J. B. PRICE.
TYPE WRITING MACHINE.

(Application filed Aug. 10, 1899.)

(No Model.)



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UNITED STATES PATENT OFFICE.

JOHN B. PRICE, OF NEWARK, NEW JERSEY, ASSIGNOR TO THE MANHATTAN TYPEWRITER COMPANY, OF NEW JERSEY.

TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 664,500, dated December 25, 1900.

Application filed August 10, 1899. Serial No. 726,773. (No model.)

To all whom it may concern:

Be it known that I, JOHN B. PRICE, of Newark, county of Essex, and State of New Jersey, have invented an Improvement in Type-
5 Writing Machines, (Case B,) of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

10 The present invention relates to a type-writing machine, and is embodied in novel means for laterally shifting the printing-ribbon, so that a larger amount of the surface of the ribbon may be utilized in the printing
15 operation. It is already the custom in type-writing machines of this kind to shift the ribbon laterally, the ribbon-spools being laterally movable along suitable bearings and controlled by a sliding frame capable of moving
20 the spools a certain distance in either direction along the said bearing. In some cases the frames are under the manual control of the operator, so that the shifting of the ribbon is left entirely to individual judgment,
25 and certain automatic devices have also been devised, so that the ribbon is sure to be shifted from time to time. These automatic devices, however, have depended either upon the operation of reversing the ribbon-feed or upon
30 the operation of the universal bail, the result being that in the former case the printing all comes on a single line during the whole run of the ribbon from end to end, while in the latter case the printing is on a symmetrical
35 zigzag line from one side of the ribbon to the other, while in any case a considerable portion of the ribbon is used up, while other portions are not used at all.

40 It is the principal object of the present invention to keep shifting the ribbon from time to time, but at irregular intervals, so that there is no regularity in the lateral movement of the ribbon, the result being that the whole surface of the ribbon is more uniformly
45 used. To this end the ribbon-shifting frame is arranged to be moved a short distance in response to the movement of one only of the keyboard-levers, the movement of the said lever obviously occurring at irregular intervals, owing to the difference in the number of
50 letters in different words.

The invention further relates, however, to a novel construction and arrangement of the operating devices themselves, the said operating devices being capable of being con- 55 nected with parts other than the space-bar only—the universal bail, for example.

Figure 1 is a side elevation of a sufficient portion of a type-writing machine to illustrate the invention. Fig. 2 is a sectional de- 60 tail seen from the opposite side from that shown in Fig. 1, and Fig. 3 a sectional detail on a plane transverse to the plane of Fig. 2 looking toward the right.

The ribbon-spool A is suitably mounted on 65 the bearing-shaft B, having the feed-gear B², the spool being commonly splined on the said bearing, the spline construction, however, not being illustrated, since it is the same as that of the ordinary Remington machine. To pro- 70 duce the lateral movement of the spool A, said spool is controlled by a sliding frame C, connected with a lever D, mounted on a rock-shaft E, Figs. 2 and 3, which extends across the frame of the machine for the purpose of 75 supporting the arm for the other ribbon-spool. (Not herein shown.) As herein shown, the rock-shaft E is arranged to be oscillated in response to the movement of one only of the keyboard-levers, the space-bar lever be- 80 ing preferably employed, so that the ribbon-spools will be moved laterally a slight extent each time the space-bar is operated, the complete movement, of course being back and forth, so that the ribbon is shifted from side 85 to side. As herein shown, the rock-shaft E is under the immediate control of an actuating-wheel a, which is arranged to oscillate a lever-arm b, connected with and projecting laterally from the said rock-shaft, the said 90 arm b having a slot b², through which projects a wrist-pin a², secured to the wheel a. The continuous rotation of the said wheel a in the same direction, therefore, will produce an oscillation of the arm b, which is trans- 95 mitted through the arms D to the spool-frames, so that in the rotation of the said wheel the said spool-frames will be carried laterally back and forth. In order that this reciprocating movement of the spool-frames 100 may be divided up so that the ribbon will be moved intermittingly a little at a time in

either direction, the wheel a is arranged to be rotated a short distance only each time the space-bar is operated and to remain stationary at all other times. As herein shown, the said wheel is provided with ratchet-teeth a^3 , adapted to be engaged by a pawl c , pivoted to a projection c^2 from a rocker supported coaxially with the wheel a and having a projection c^3 , connected by a link or strap c^4 with the space-bar lever F , which is of the usual construction. Each time the space-bar F^2 is depressed, therefore, the pawl c will engage the teeth a^3 and cause a partial rotation of the wheel a , carrying the arm b a short distance in one direction or the other. The space-bar lever is employed as an actuator in preference to any of the other keyboard-levers for the reason that it averages the same number of movements in each line, although said movements in ordinary writing are at irregular intervals.

The pawl c is shown as provided with a weight to keep it in engagement with the teeth a^3 , and a rearward movement of the wheel a is prevented by a retaining-pawl d , shown as pivoted on the frame of the machine. The said retaining-pawl may be kept in engagement with the teeth in any suitable or usual way, but is herein shown as engaged by a projection c^5 from the rocker which carries the pawl c , the said projection having an offset portion c^6 , forming a shoulder to engage the rear side of the pawl d . As the rocker is moved in response to the depression of the said space-bar lever F the offset portion c^6 passes out of engagement with the retaining-pawl d , freeing the ratchet-wheel, the said retaining-pawl, however, being carried back into engagement and held there as soon as the lever F is released.

It will be seen from the foregoing description that the ribbon is being continually shifted a little at a time with an intermittent movement and at irregular intervals, so that the work will be well distributed throughout the entire surface of the ribbon and not along one or more lines repeatedly. It is to be understood, however, that so far as relates to the irregular shifting of the ribbon it is not intended to limit the invention to the specific means shown and described for imparting the movement of the space-bar to the ribbon-frame, it being obvious, moreover, that some other part of the machine which operates at irregular intervals—a single key-lever, for example—might be similarly caused to operate the ribbon-frame. Furthermore, so far as relates to the construction and arrangement of the mechanism by which the movement is transmitted to the ribbon-frame it is not intended to limit the invention to the particular instrumentality from which the movement is derived.

I claim—

1. In a type-writing machine, the combination with one only of the several keyboard-levers which cooperate with the carriage feed-

ing mechanism; of means for laterally shifting the ribbon in response to the operative movement of said keyboard-lever, as set forth. 7c

2. In a type-writing machine, the combination with the ribbon-spools; of mechanism for laterally shifting the said spools; keyboard-levers cooperating with the carriage feed mechanism; and means for connecting the shifting mechanism with one only of the said keyboard-levers, as set forth. 75

3. The combination with the ribbon-spools and the laterally-movable shifting frame therefor; of a step-by-step actuator whereby said frame is moved back and forth intermittently; the space-bar lever; and means for connecting said actuator with said space-bar lever, as set forth. 80

4. The combination with the ribbon-spools, of the rock-shaft E adapted by its oscillation to shift the said ribbon-spools; an arm projecting from said rock-shaft; a rotatable member adapted to produce an oscillating movement of said arm; the space-bar; and means for producing a rotary movement of said rotatable member in the same direction each time the space-bar is operated, substantially as described. 85

5. The combination with the ribbon-spools, of the rock-shaft E adapted by its oscillation to shift the said ribbon-spools; an arm projecting from said rock-shaft; a ratchet-wheel adapted to produce an oscillating movement of said arm; a rocker connected with the space-bar lever; said space-bar lever; and a pawl carried by said rocker to cooperate with said ratchet-wheel, substantially as described. 95

6. The combination with the rock-shaft E adapted by its oscillation to shift the ribbon-spools; of an arm projecting from said rock-shaft; a ratchet-wheel adapted to produce an oscillating movement of said arm; a space-bar lever; a rocker connected with said space-bar lever; a pawl carried by said rocker to cooperate with said ratchet-wheel; a retaining-pawl; and a projection from said rocker to engage said retaining-pawl during the return movement of said arm and to carry said pawl into engagement with the ratchet-wheel, substantially as described. 105

7. The combination with the rock-shaft E ; of the arm b connected therewith and provided with the slot b^2 ; the ratchet-wheel a having the wrist-pin a^2 projecting through said slot; and the pawl c and its rocker, the space-bar F , and means for connecting the said rocker with said space-bar F , substantially as and for the purpose described. 120

8. The combination with the ribbon, of a rock-shaft adapted by its oscillation to laterally shift the ribbon; an arm projecting radially from said rock-shaft and provided with a slot, a rotary member provided with a wrist-pin cooperating with said slot; and means for rotating said member, substantially as described. 125

9. The combination with the ribbon, of a

rock-shaft adapted by its oscillation to later-
ally shift the ribbon; an arm projecting ra-
dially from said rock-shaft and provided with
a slot; a ratchet-wheel provided with a wrist-
5 pin projecting into said slot; a pawl coöper-
ating with said ratchet-wheel; and means for
reciprocating said pawl, substantially as de-
scribed.

10 10. The combination with the rock-shaft
E; of the arm *b* connected therewith and pro-
vided with the slot *b*²; the ratchet-wheel *a*
having the wrist-pin *a*² projecting through

said slot; and the pawl *c* and its rocker, pro-
vided with the projection *c*⁶; means for os-
cillating said rocker, and the retaining-pawl 15
d coacting with projection *c*⁶, as set forth.

In testimony whereof I have signed my
name to this specification in the presence of
two subscribing witnesses.

JOHN B. PRICE.

Witnesses:

FRANK A. LEMAL,
HELEN M. SULLIVAN.