

No. 708,600.

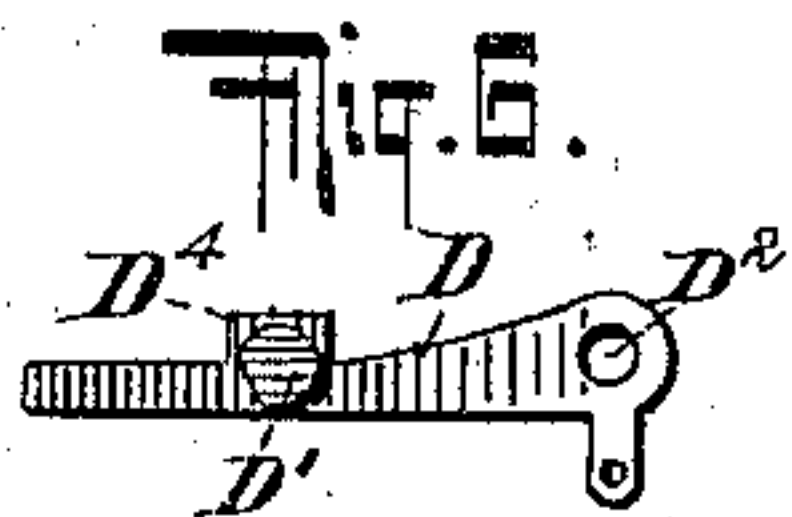
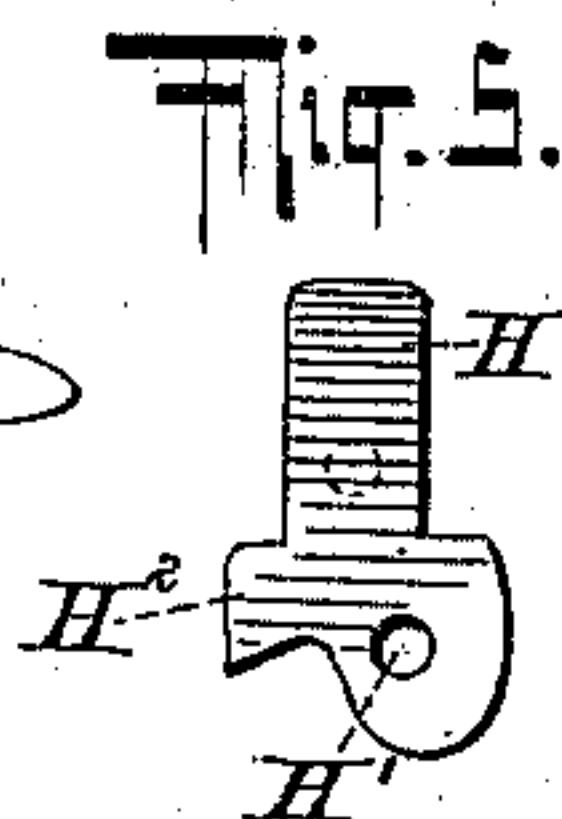
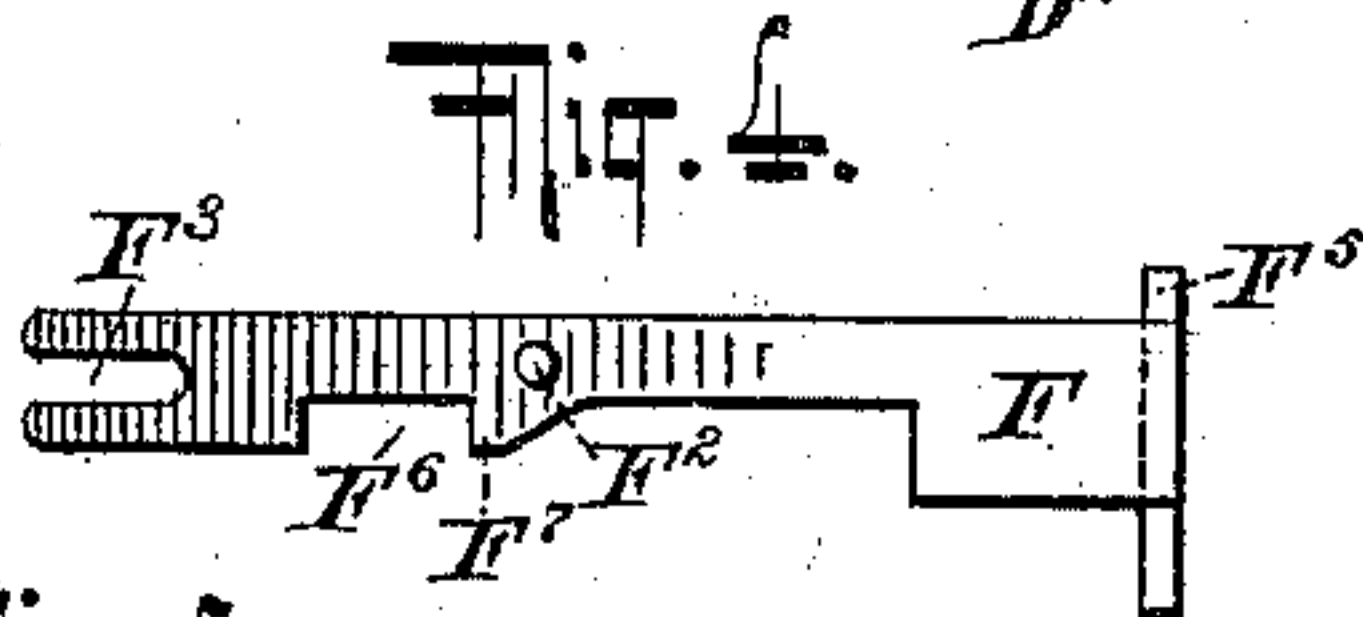
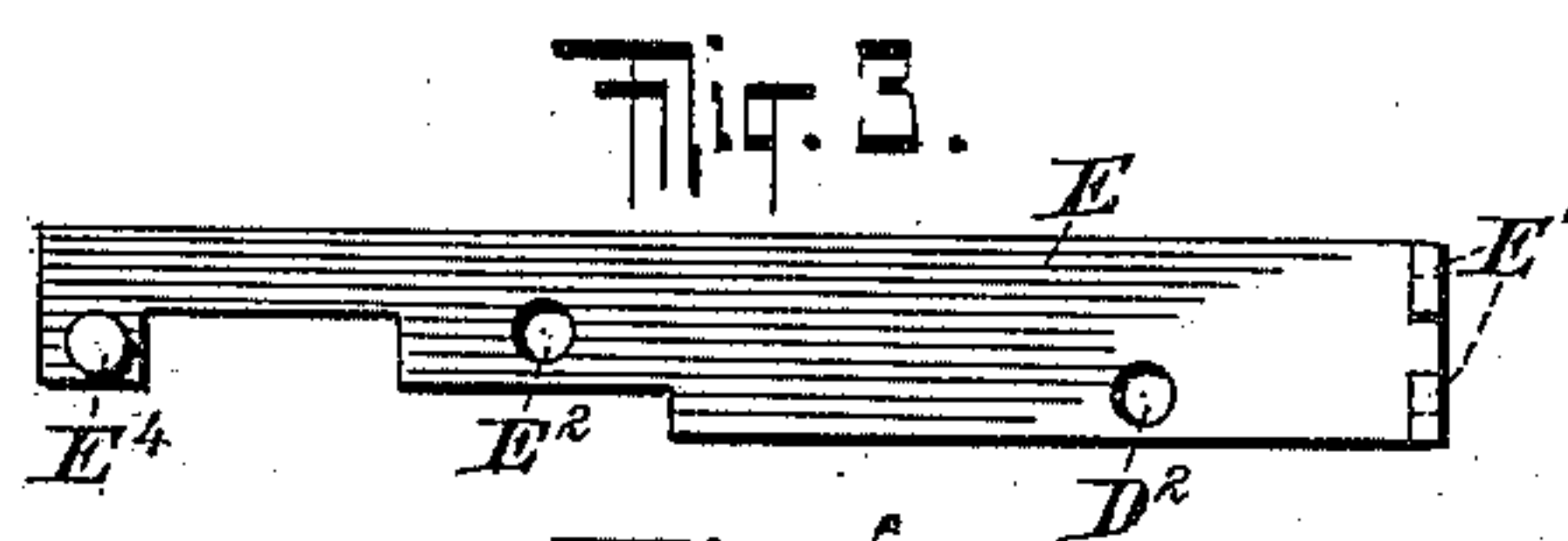
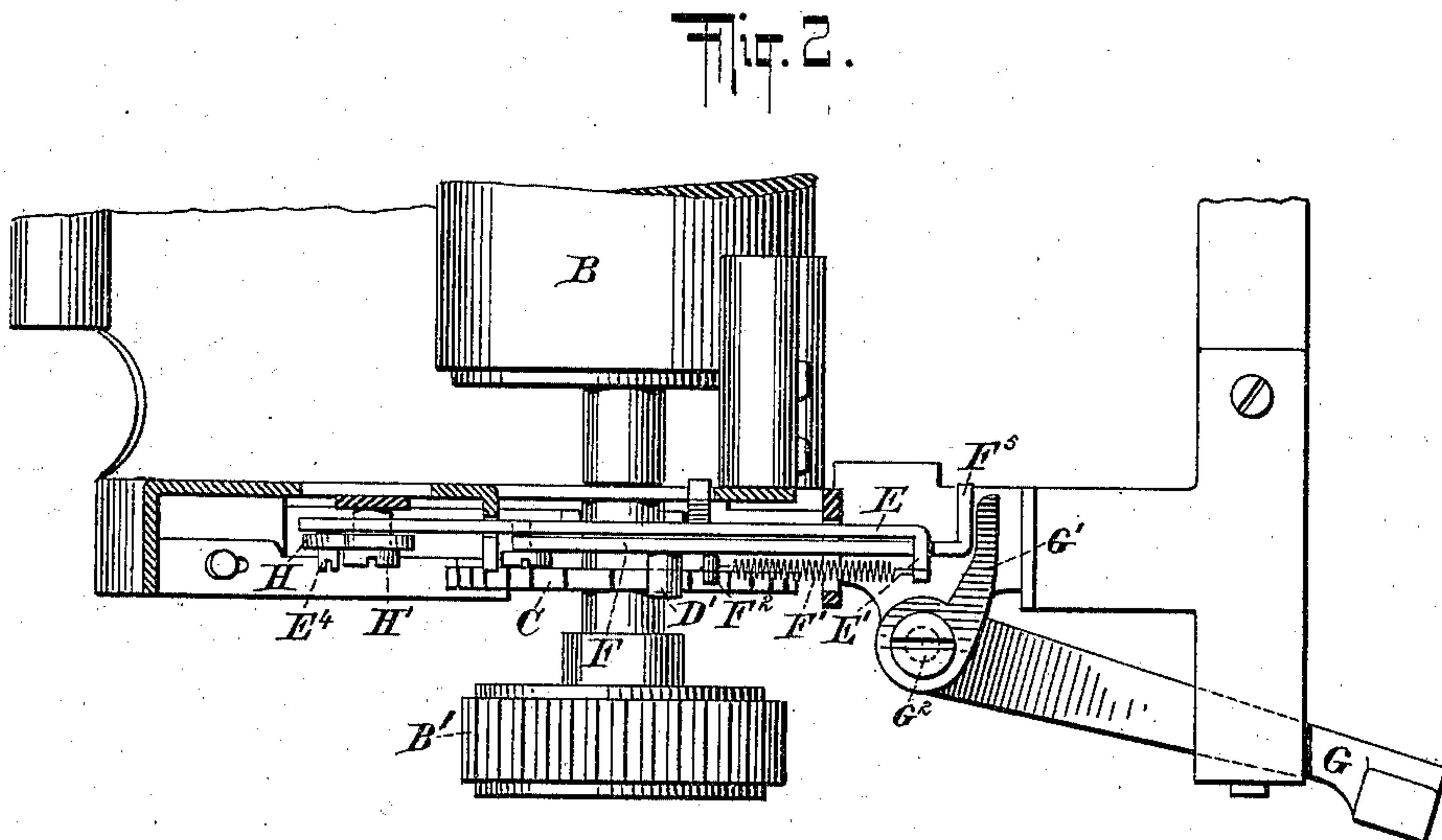
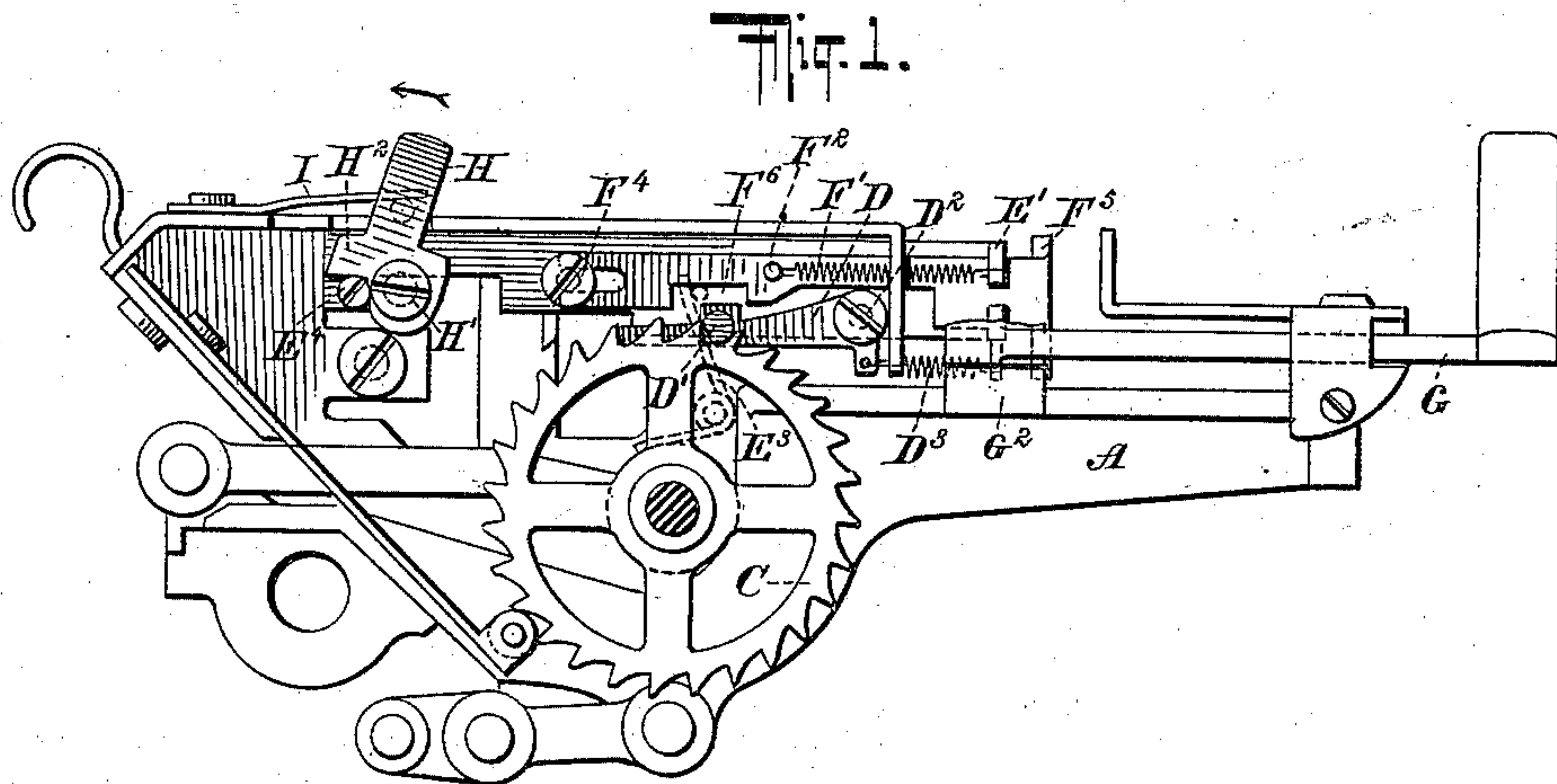
Patented Sept. 9, 1902.

F. X. WAGNER.

LINE SPACING MECHANISM FOR TYPE WRITERS.

(Application filed Dec. 27, 1901.)

(No Model.)



WITNESSES:

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UNITED STATES PATENT OFFICE.

FRANZ X. WAGNER, OF NEW YORK, N. Y., ASSIGNOR TO WAGNER TYPE-WRITER COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

LINE-SPACING MECHANISM FOR TYPE-WRITERS.

SPECIFICATION forming part of Letters Patent No. 708,600, dated September 9, 1902.

Application filed December 27, 1901. Serial No. 87,473. (No model.)

To all whom it may concern:

Be it known that I, FRANZ X. WAGNER, a citizen of the United States, and a resident of the borough of Manhattan, New York city, New York, have invented certain new and useful Improvements in Line-Spacing Mechanism for Type-Writers, of which the following is a specification.

My invention relates to line-spacing mechanism for type-writers, and has for its object to provide a mechanism of the above-indicated kind in which there is employed a pawl for driving the ratchet-wheel, which pawl, in contradistinction to other devices now used, is held permanently in engagement with the ratchet-wheel, and with the said pawl I combine devices which in one position allow the ratchet-wheel, together with the platen or paper-roller, to be turned freely in either direction, while in another position of the said parts the pawl is held in driving engagement with the ratchet-wheel and allows it to be turned in one direction only. To accomplish these results, I employ the particularly-novel construction described hereinafter and defined in the appended claims.

Reference is to be had to the accompanying drawings, in which—

Figure 1 is a side elevation of part of a type-writing machine provided with my improvement. Fig. 2 is a partial plan thereof. Fig. 3 is a detail view of one of the slides forming part of my improved mechanism. Fig. 4 is a separate view of the other slide. Fig. 5 is a detail view of the stop for regulating the throw of the driving-pawl, and Fig. 6 is a side elevation of the driving-pawl proper.

A indicates the frame of the carriage, which may be of any suitable construction, and the carriage illustrated in the drawings is that employed in the Underwood type-writer. In the said carriage is journaled in the customary manner the platen or paper-roller B, having at one end a milled hand-wheel B' to permit the operator to feed and adjust the paper as desired. On the shaft of the platen B is further mounted a ratchet-wheel C, having teeth facing in one direction. This ratchet-wheel is adapted to be engaged by a

projection or pin D' upon a pawl D, which is fulcrumed at D² upon a slide E. The pawl is pressed toward the ratchet-wheel by means of a spring D³, having its ends attached, respectively, to the driving-pawl and to the slide E. This slide is mounted to move in suitable guideways of the frame A in a direction transverse to the shaft of the platen. The slide E is provided at one end with guide-lugs E', which are adapted to receive between them and to guide an auxiliary slide F. The lugs E' are bent forwardly, as shown in Fig. 2, and one of them is connected by a spring F' with a pin F² on the auxiliary slide F, so that the spring tends to move the auxiliary slide F outward—that is, toward the right. To further guide the slide F in its movement, it is provided with a slot F³ at one end, which slot receives a pin or screw F⁴, secured to the main slide E at the point E². The auxiliary slide F has a lug F⁵, adapted to be engaged by the operating end G' of the spacing-lever G, fulcrumed at G². The pin D' of the driving-pawl is slightly beveled on that face which engages the straight or radial side of the ratchet-wheel teeth. This is for the purpose of allowing the platen to be turned manually in either direction as long as the pawl is free to move outward. This is the case when the lug or shoulder D⁴ on the driving-pawl is opposite a recess F⁶ of the auxiliary slide F, as shown in Fig. 1. In this normal position in which the pawl engages the teeth of the ratchet-wheel the operator may therefore turn the platen or paper-roller forward or backward as desired. Now when it is intended to feed the paper through the medium of the line-spacing lever G this lever is swung so as to bring its operating member G' against the lug F⁵ of the auxiliary slide. The latter slide will then move inwardly alone at first—that is, independently of the main slide E—and thus the lug F⁷ of the slide F will be brought in immediate proximity to if not in contact with the shoulder D⁴ of the driving-pawl. From this time on, an outward movement of the driving-pawl being no longer possible, it will be clear that the ratchet-wheel C and the platen are locked and cannot rotate except

in conjunction with the driving-pawl. The auxiliary slide F may therefore be termed a "locking-slide," inasmuch as it locks the driving-pawl D with the ratchet-wheel. Upon the further movement of the lever G the lug F⁵ of the slide F will engage the lugs E' of the main slide E, and thus cause the said main slide to partake of the further movement of the auxiliary slide—that is, both slides will now move together. As the pawl D is now locked to the ratchet-wheel C, it follows that the ratchet-wheel will be turned as the slide E moves toward the left, and when the lever G arrives at the end of its stroke it is released. The springs F' and D³ then restore the pawl D and auxiliary slide F to their original position, and at the same time the main slide E is restored to its original position by a spring E³, secured to the frame A.

So far as described the device would always turn the ratchet-wheel the same distance. When it is desired to provide a variable feed, this can be done through the well-known expedient of an adjustable stop, which in this instance is shown as a pivoted member H, fulcrumed at H' and held by means of a spring I in whatever position it may be momentarily. In the position shown in Fig. 1 the stop H is so turned that a limiting-pin E⁴, which projects from the main slide E, will practically come in engagement with the pivot-screw H'. This gives a long feed and a wide space between lines. If the stop H is turned to the left, as indicated by the arrow, when the slides have been moved so far to the left as to make the limiting-pin E⁴ clear the stop H, this will bring the shoulder H² on the stop into the path of the pin E⁴, and consequently the initial position of the slides E F will be further to the left and the movement imparted to them by the lever G will be of smaller extent, so that the space between lines will be reduced.

It will be observed that the pawl D—that is, its pin D'—remains in engagement with the ratchet-wheel C at all times and not only during the driving movement of the pawl. I thus secure a very positive action, as there is no danger of a failure of the pawl to properly catch the teeth of the ratchet-wheel.

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination in a type-writer or like machine of a rotary paper-roller having a ratchet-wheel, a driving-pawl for turning said

ratchet-wheel and permanently in engagement therewith but normally free to slip over the ratchet-wheel teeth, a locking device for preventing an outward movement of the driving-pawl during its entire driving movement, and single means for operating the driving-pawl and for bringing the locking device into action at the beginning of the operative movement of the driving-pawl.

2. In a type-writer or like machine, the combination of a paper-roller having a ratchet-wheel, a main slide, a driving-pawl carried by said main slide and in permanent engagement with the ratchet-wheel, said driving-pawl being normally free to slip over the ratchet-wheel teeth, a locking-slide with a limited movement relatively to the main slide, and means for operating the locking-slide and the main slide successively.

3. The combination of the paper-roller having a ratchet-wheel, the main slide, the pivoted driving-pawl engaging the ratchet-wheel permanently and carried by the main slide, the auxiliary slide projecting beyond the main slide and having a spring connection therewith, said auxiliary slide being provided with a projection adapted in one of its positions to lock the driving-pawl against outward movement, and an operating device for engaging the projecting portion of the auxiliary slide and moving the said slide and the main slide successively.

4. The combination of a main slide carrying a driving-pawl, a paper-roller having a ratchet-wheel engaged by said pawl, a locking device movable on the main slide and adapted to prevent outward movement of the driving-pawl, an operating means adapted to engage said locking device and to move the same preparatory to moving the main slide and the driving-pawl.

5. The combination of a paper-roller having a ratchet-wheel, with a spring-pressed slide, a driving-pawl secured thereto, an adjustable stop for varying the initial position of said slide, a locking-slide movable relatively to the main slide and carried thereby, said locking-slide being adapted to prevent outward movement of the driving-pawl, and operating means for first moving the locking-slide alone and then both slides together.

FRANZ X. WAGNER.

Witnesses:

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