

(No Model.)

2 Sheets—Sheet 1.

J. E. WILSON.
TYPE WRITING MACHINE.

No. 487,897.

Patented Dec. 13, 1892.

Fig. 1.

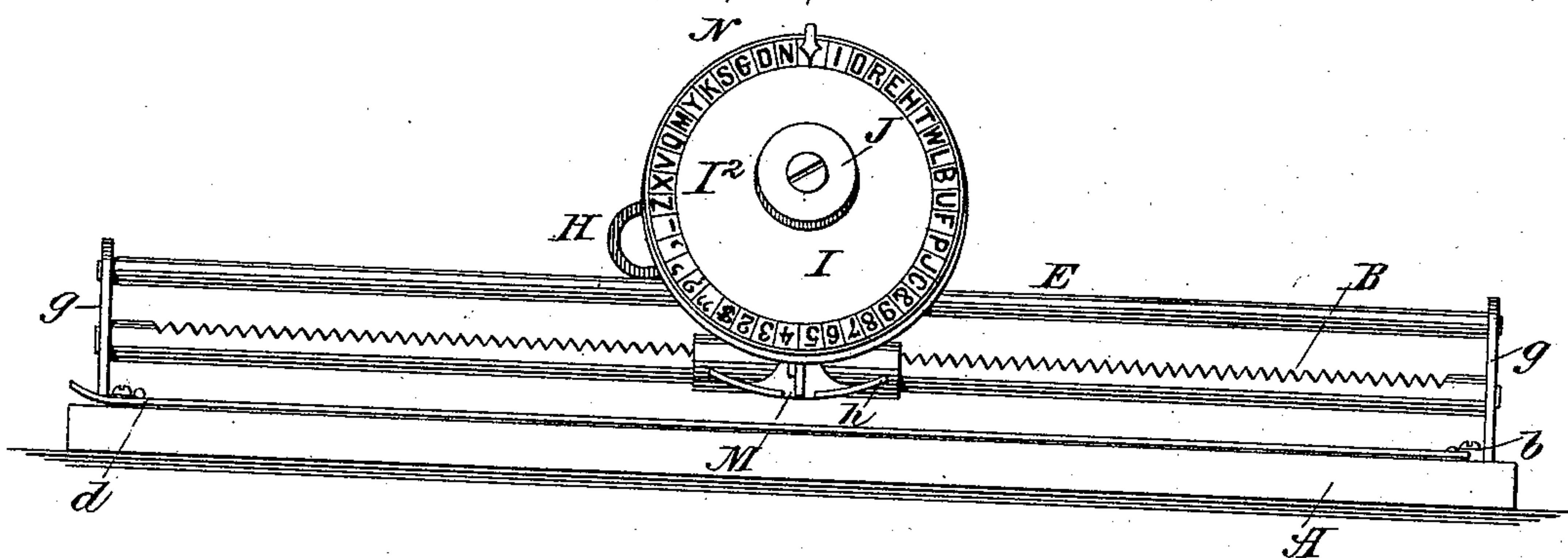


Fig. 3.

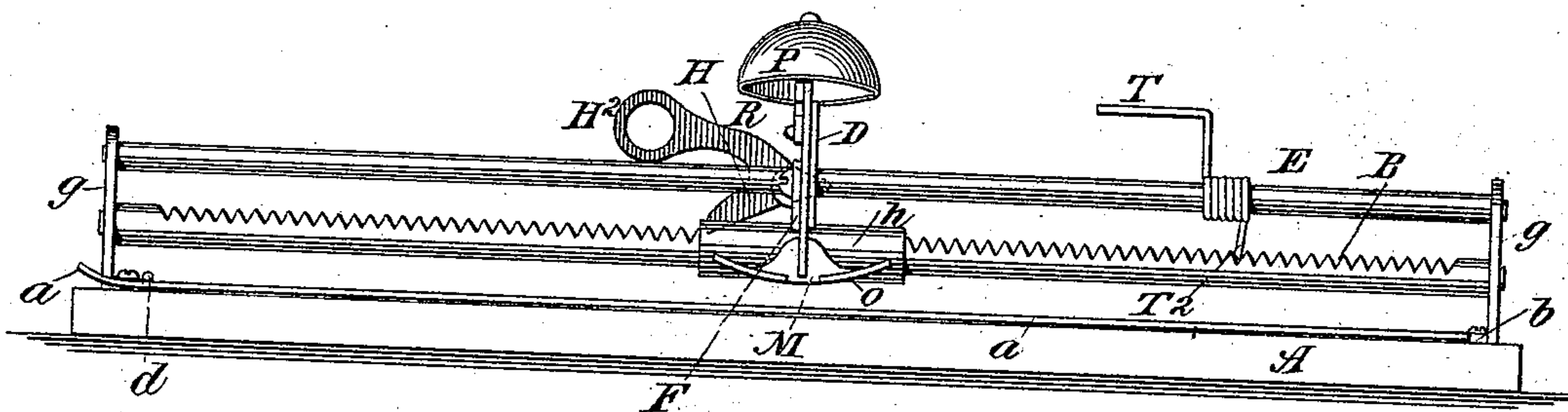
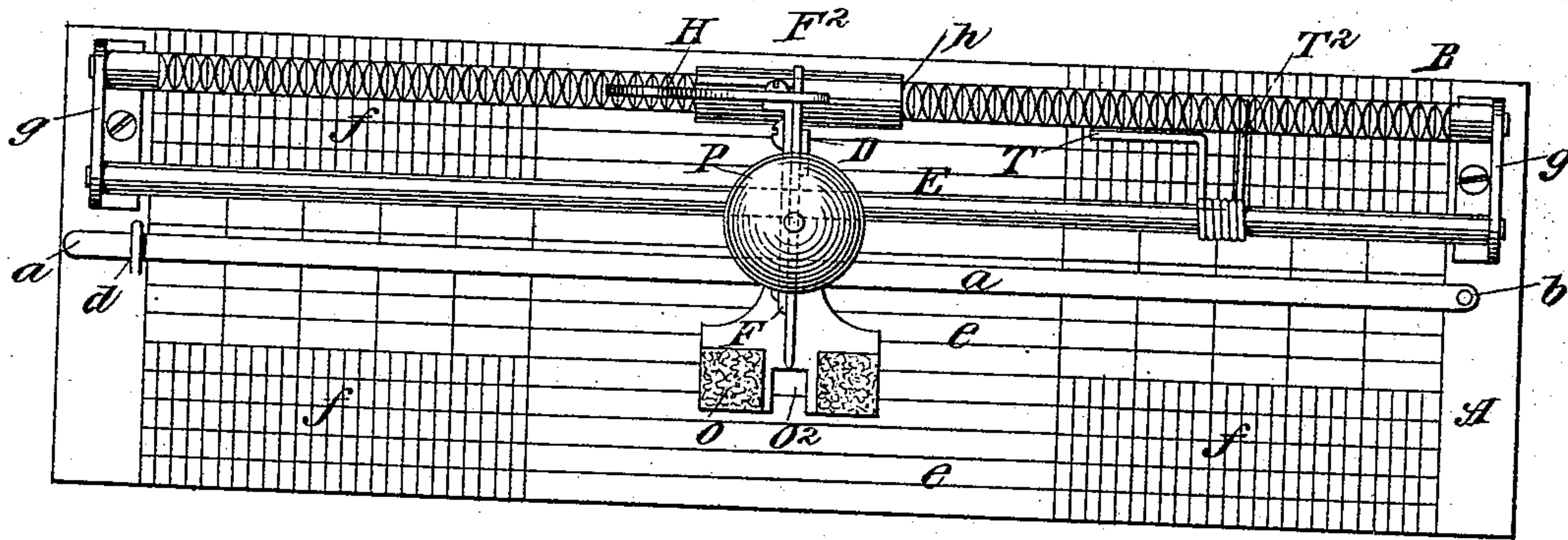


Fig. 5.



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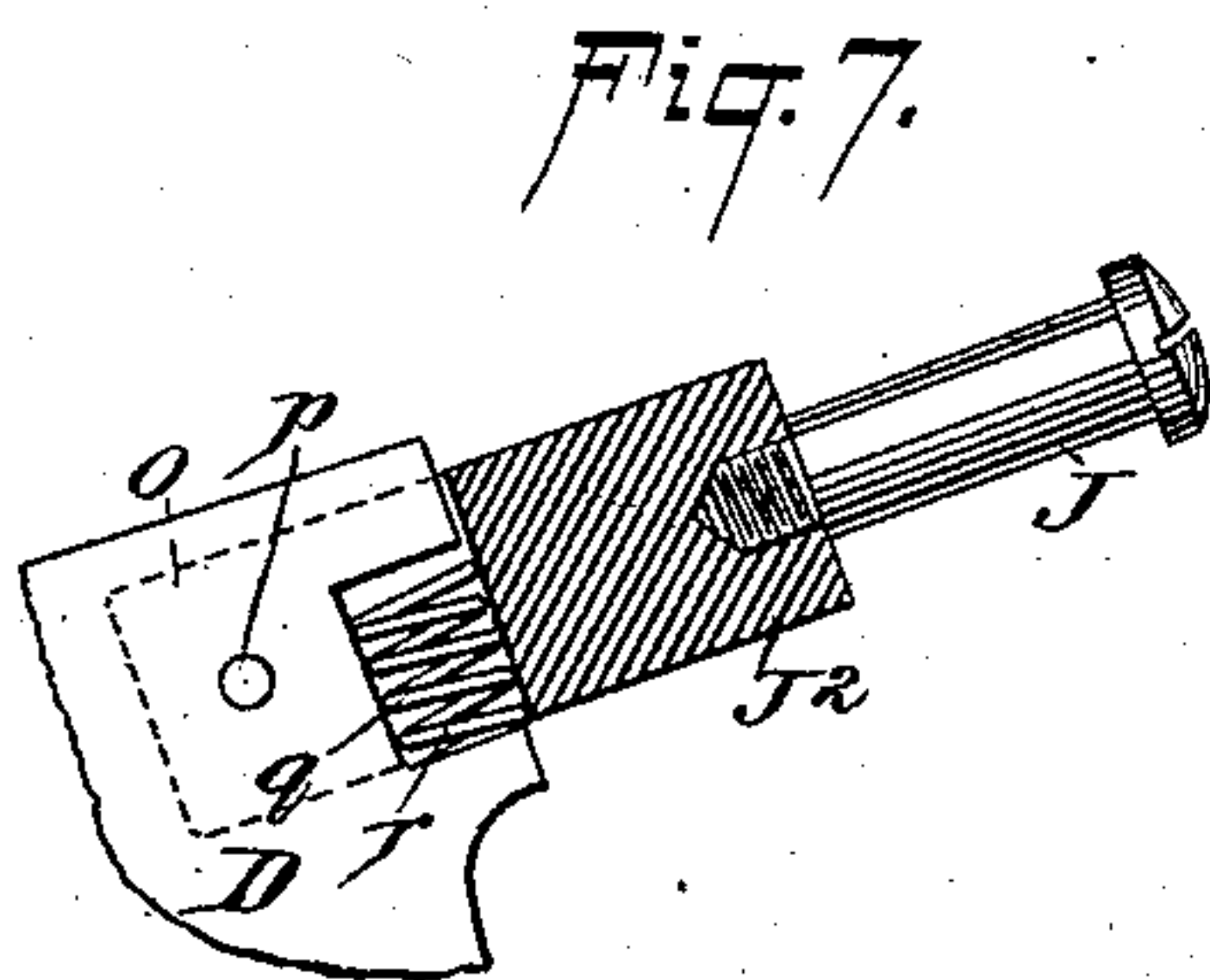
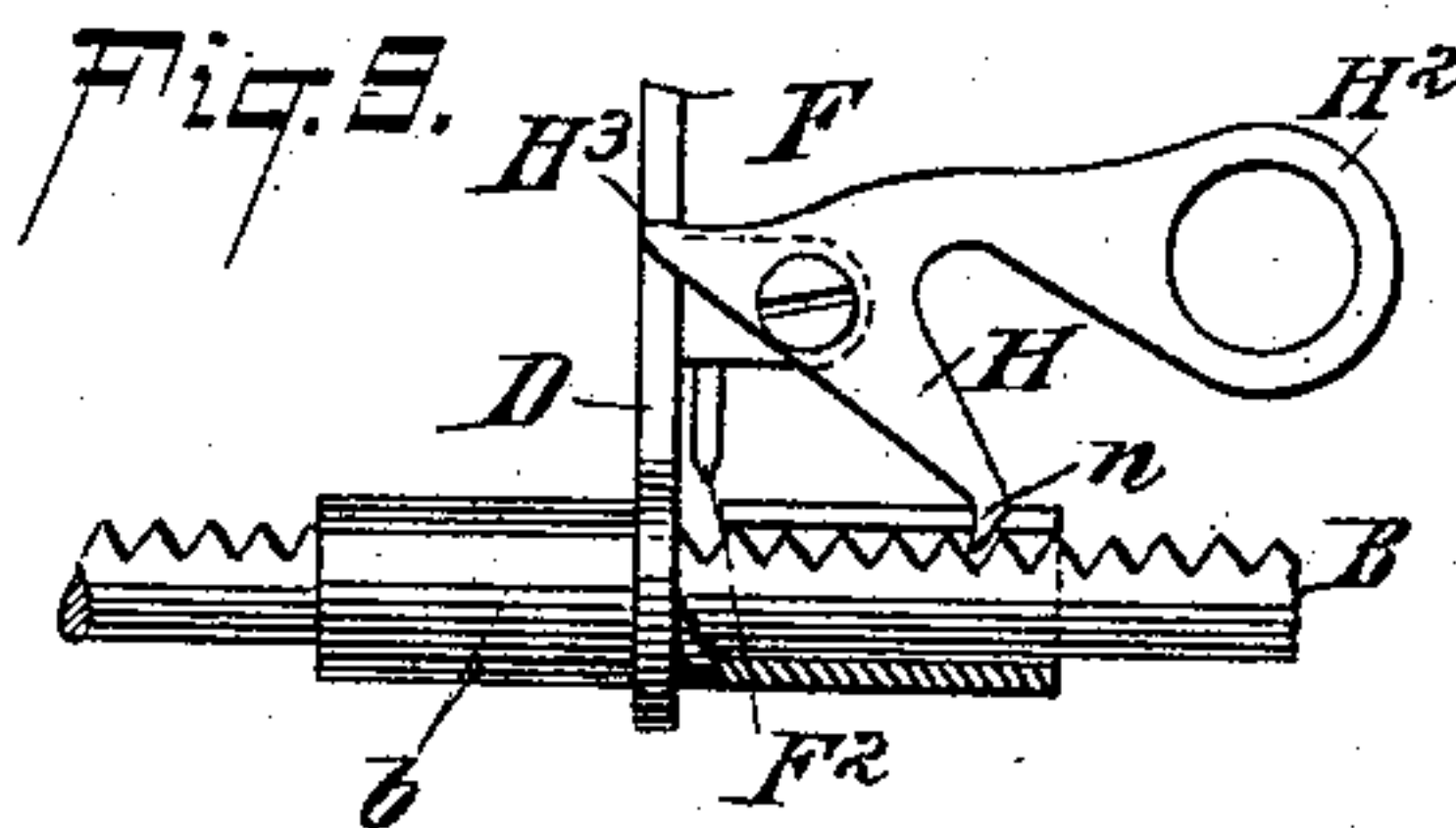
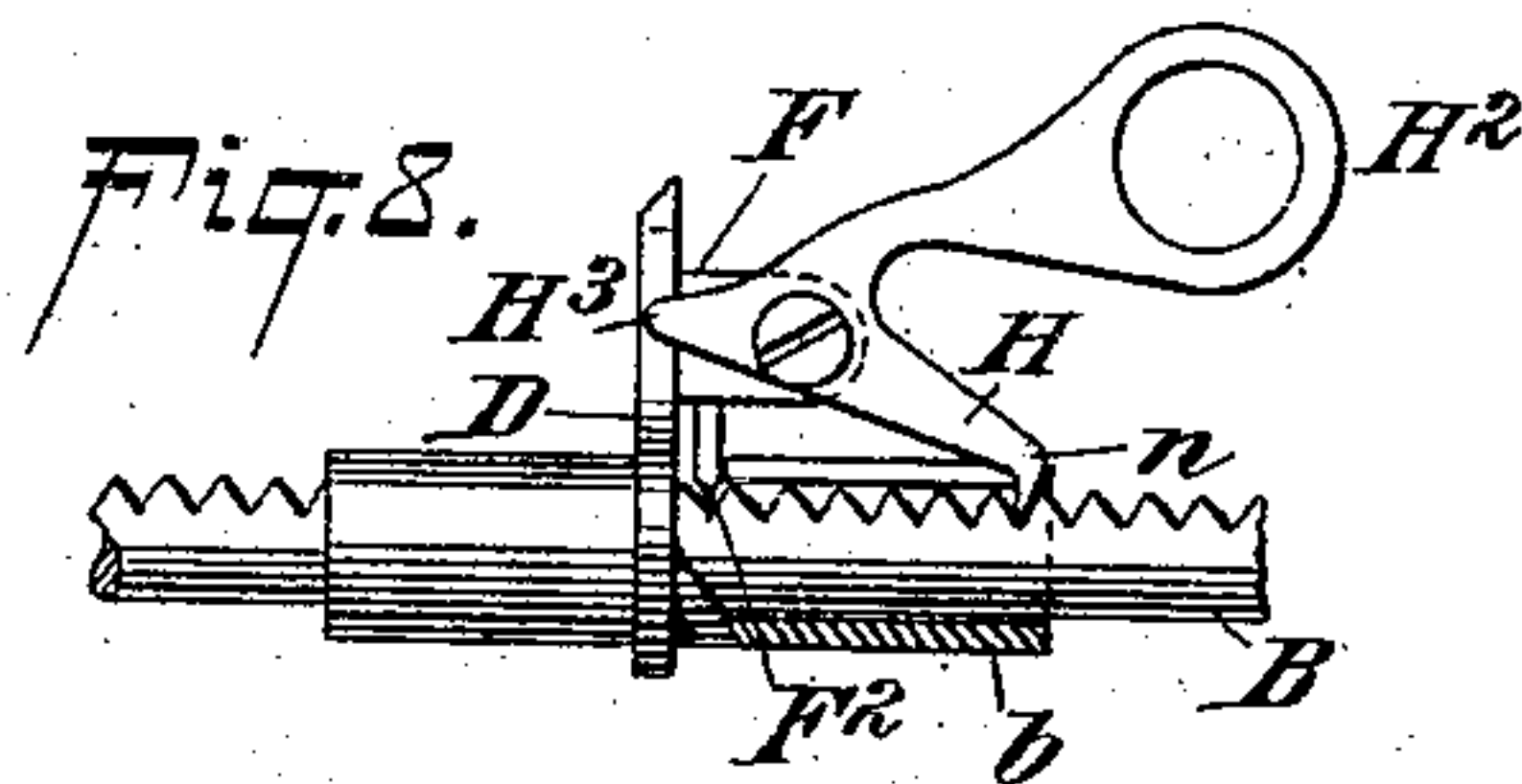
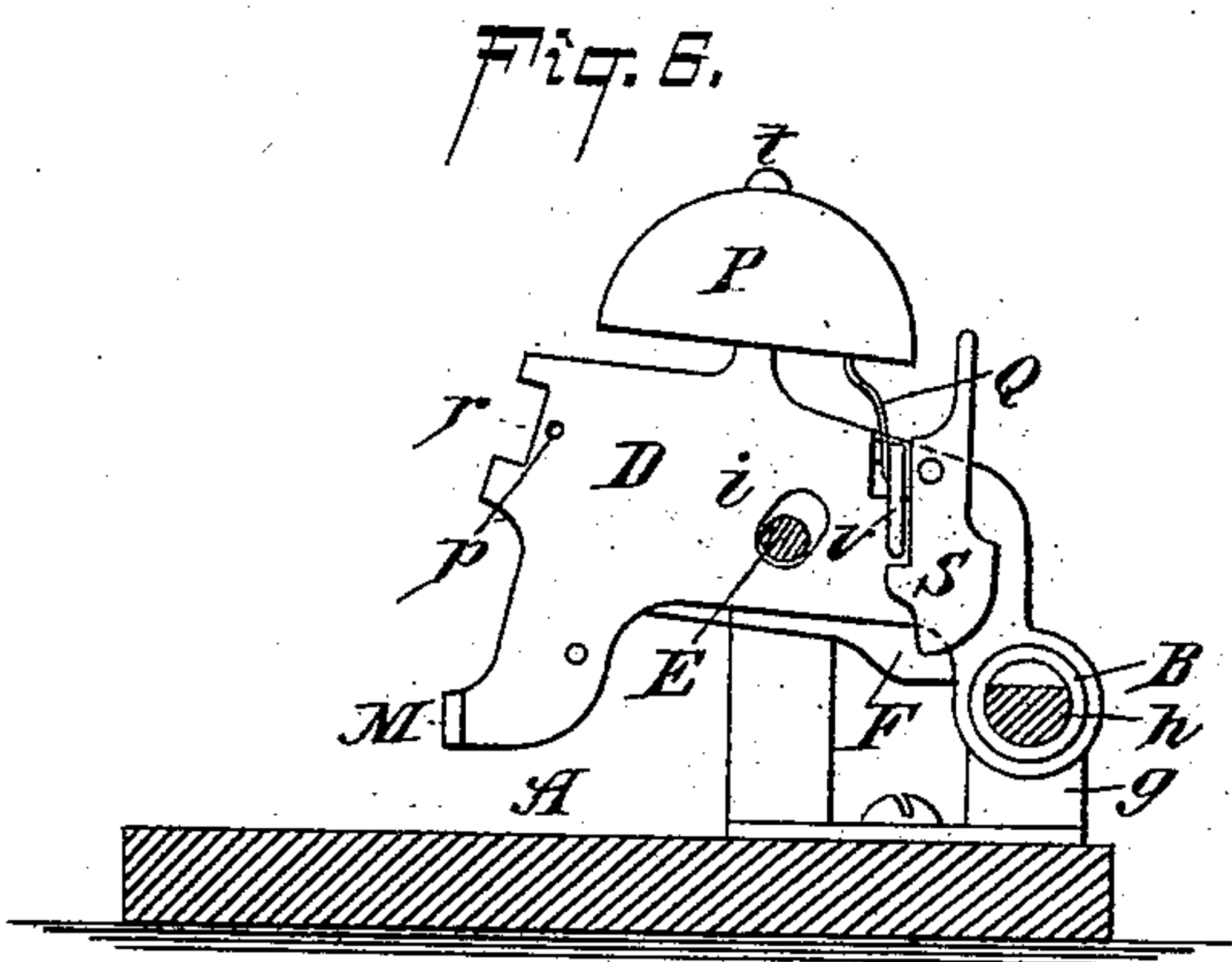
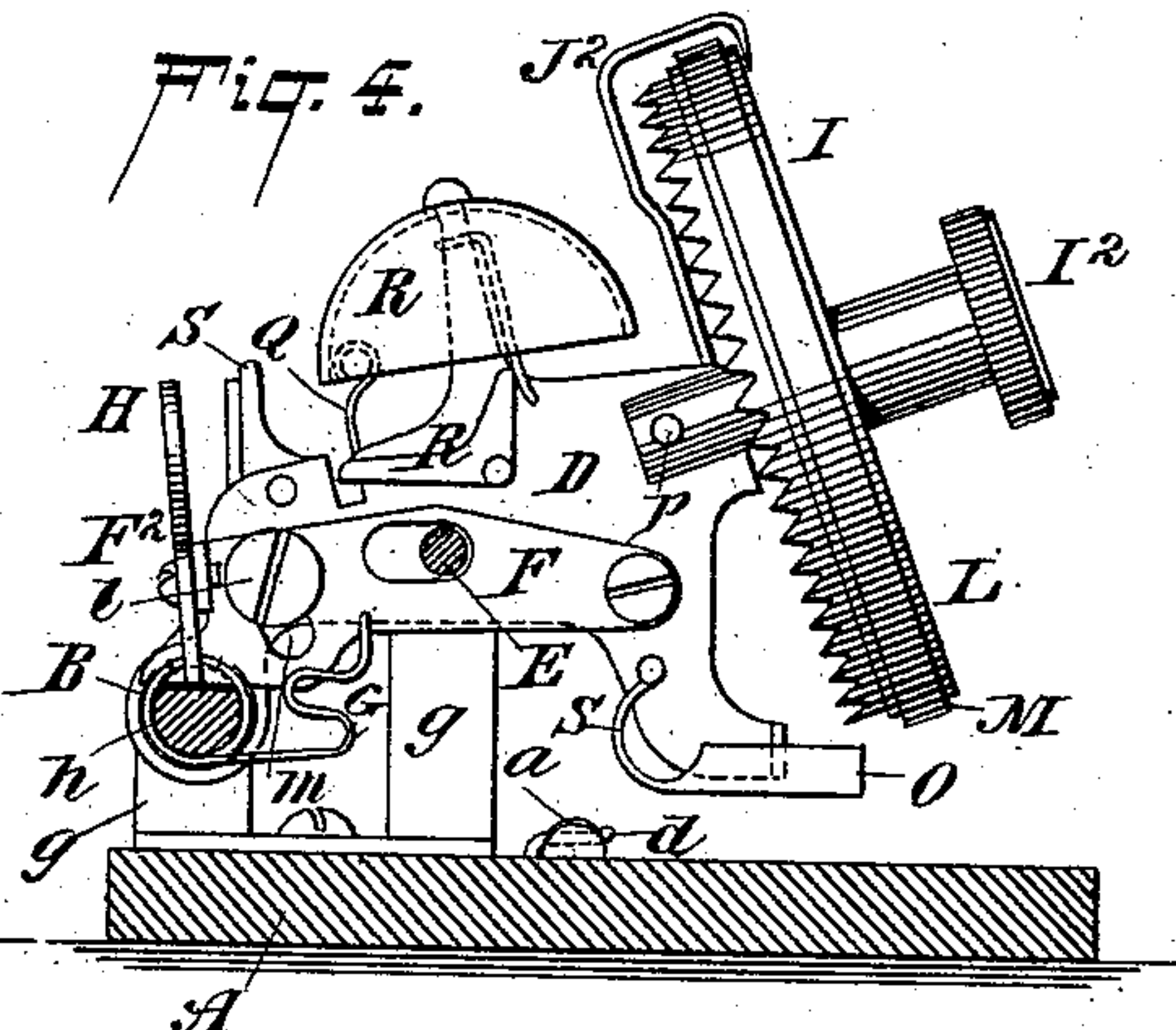
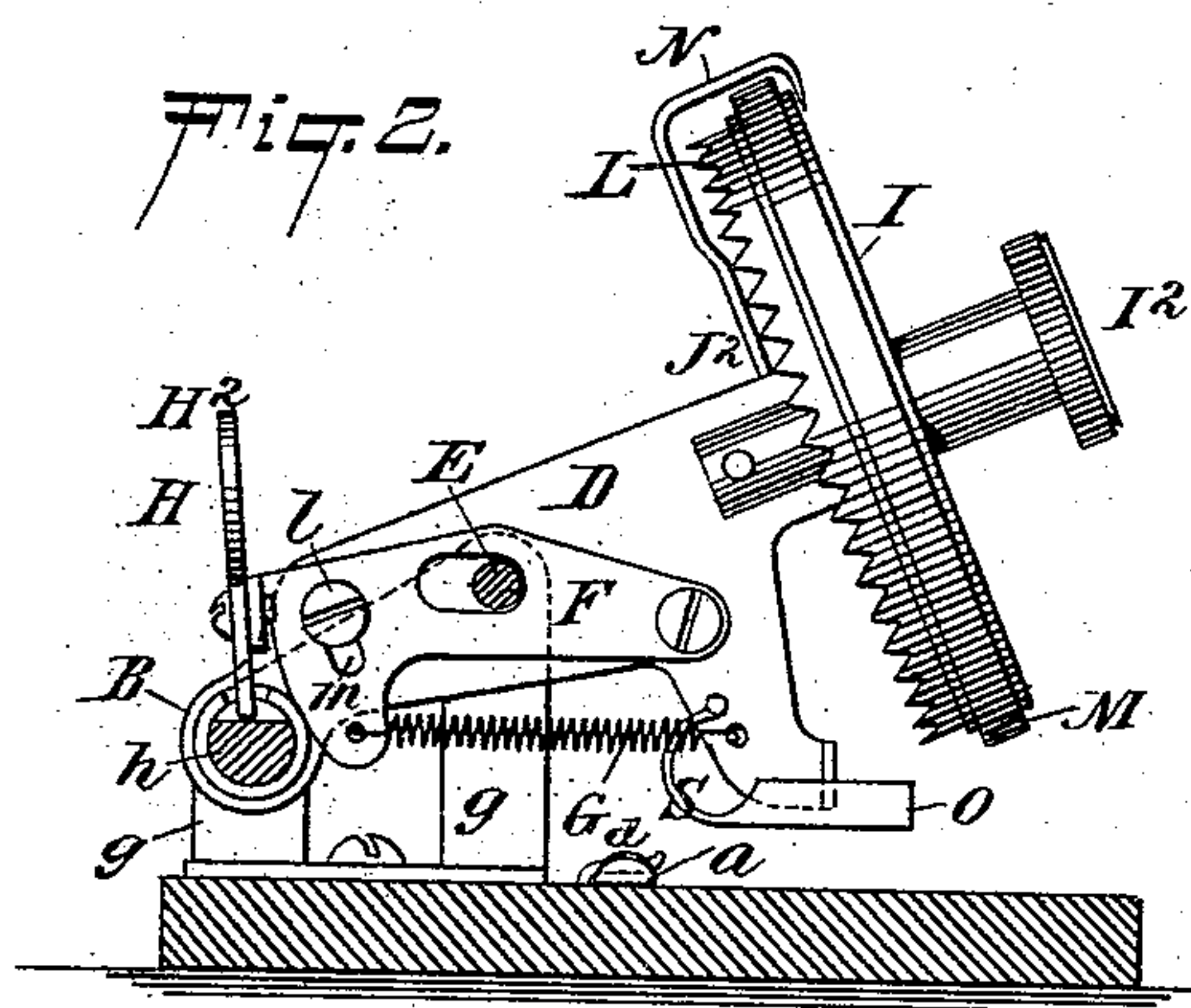
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2 Sheets—Sheet 2.

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UNITED STATES PATENT OFFICE.

JAMES E. WILSON, OF NEW YORK, N. Y.

TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 487,897, dated December 13, 1892.

Application filed September 5, 1891. Serial No. 404,915. (No model.)

To all whom it may concern:

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

My invention relates to the class of typewriters in which the type are carried by a rotating wheel or disk and are brought into contact with the surface to be printed upon by a forward or downward movement of the wheel.

The invention has for its object to provide a type-writing machine that shall be simple in construction, accurate and effective in operation, and cheap to manufacture and which shall not only be useful as an educational device for children, but shall be capable of practical use by older people for business and professional purposes.

The invention consists in the novel details of improvement and the combinations of parts that will be more fully hereinafter set forth, and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming part hereof, wherein—

Figure 1 is a front elevation of my improved typewriter. Fig. 2 is an end elevation thereof. Fig. 3 is a front elevation of the same, the type-wheel being removed, showing the bell in position. Fig. 4 is an end elevation thereof, partly in section, showing both the type-wheel and bell in position. Fig. 5 is a plan view, the type-wheel being removed. Fig. 6 is a partly-sectional end view looking from the right in Fig. 5. Fig. 7 is an enlarged detail sectional view of the type-wheel-carrying head. Fig. 8 is a partly-sectional rear view of the spacing mechanism in the normal position, and Fig. 9 is a similar view showing the second position.

In the accompanying drawings, the letter A indicates the base of my machine, upon which the operative parts are to be carried. The paper to be printed on is placed upon said base and is held in position by a bar *a*, shown pivoted at one end to the base A at *b* and at its free end passing under a hook *d*, that holds it upon the paper. The base A constitutes a platen for the paper to be printed upon.

In order to permit proper alignment of the paper upon the base or platen A, I place upon the latter a series of lines *e*, running longitudinally, and another series of lines *f*, running laterally or at right angles to the lines *e*, as shown in Fig. 5. By this means the paper can be properly placed upon the base or platen A for printing upon by causing its edges to coincide with the lines *e f*; also, for adjusting the paper to a new line its proper position will be found by the use of the lines *e f*. The lines *e f* may be stamped upon the base or platen A or be printed upon paper or the like and pasted upon the base A or otherwise suitably attached. By this means a very cheap arrangement for aligning the paper to be printed on is effected.

Upon the base A are standards *g*, that support a rack-bar B. Upon the rack B is mounted a sliding frame or lever D, having a tubelike part *h*, through which the bar B passes, whereby the frame D is supported and guided on the rack-bar B. The frame D extends forwardly over the base or platen A, and through an aperture *i* in said frame passes a rod E, that is supported by the standards *g* and extends parallel with the rack-bar B. The slot *i* is large enough to permit an up-and-down or rocking movement of the frame D over or upon the rod E around the rack-bar B as a fulcrum. (See Fig. 6.)

To the outer or forward part of the frame D is pivoted a lever F, that extends rearwardly toward the rack-bar B and parallel with and preferably close to the frame D. The lever F has a substantially horizontal or longitudinal slot *j*, through which the rod E passes. By means of a screw *l*, carried by the frame D and passing through a slot *m* in the lever F, the latter is guided on the frame D and lateral movement of said lever is prevented. On the rearward or free end of the lever F is a projection or finger *F*², that is adapted to enter between the teeth of the rack B to prevent movement of the frame D thereon. (See Fig. 8.) A spring G connects the frame D with the free end of the lever F and by its tension tends to depress the free end of the lever F, which, bearing upon the rod E as a fulcrum, lifts the outer part of the frame D, (see Figs. 2 and 4,) whereby the parts are held in their normal positions. The lever F

at its free end pivotally carries a pawl or lever H, having a toe *n*, that is adapted to engage the teeth of the rack B. (See Figs. 8 and 9.) In their normal positions the finger 5 F^2 and toe *n* are in their respective notches of the rack-bar B, Fig. 8; but when the frame D is depressed the lever F (working on the rod E as a fulcrum) is lifted at its free end, whereby the pawl H is lifted, and thereby its 10 toe *n* advances one tooth on the rack B. (See Fig. 9.) When the frame D next rises, the lever F descends, carrying down with it the pawl H, which by engaging a tooth of the rack B causes the frame D to advance the space 15 of one tooth. This will occur each time the frame D is depressed and raised, and thereby the advance or "feeding" of the frame is effected step by step. To the pawl H is also connected an arm H^2 , by which the pawl may 20 be operated.

To leave a space between the words, the type-carrier is turned until the part having no type is brought in line with the paper, whereupon as the carrier is depressed the pawl 25 will be lifted to move the frame the space of one tooth on the rack-bar, as before described, but no impression on the paper will be made. The pawl H also carries a cam-like projection H^3 , adapted to engage the frame D, so that 30 when the arm H^2 is raised the cam H^3 will be pressed against the frame D, the toe *n* and finger F^2 will be lifted out of the rack B, and thereby the frame D will be free to be shifted along the rack-bar B.

35 The frame D at its outer part carries a type-wheel I, having a thumb-piece I^2 , by which it can be rotated. The type-wheel I is mounted on a suitable shaft J on the frame D, and I prefer to give the type-wheel I a slight lateral or oscillating movement on the frame D. 40 For this purpose I connect the shaft J pivotally with the frame D, and prefer to connect the shaft J with a head J^2 , that is forked at *o* on its inner end to straddle the frame D, a 45 pivot-pin *p* passing through that part of the head J^2 and through the frame D. (See Fig. 7.) Only a slight amount of motion is allowed the head J^2 on its pivot *p*.

Between the head J^2 and frame D is interposed a spring *q*, shown placed in a recess *r* 50 in the frame D and bearing at one end against the frame D and at its other end against the head J^2 , (see Fig. 7,) the tendency of the spring *q* being to hold the head J^2 and shaft J up.

55 On the inner side of the type-wheel I is a series of teeth L, corresponding in position and in number to the type upon the periphery of the type-wheel I.

On the lower part of the frame D is a tongue 60 or projection M, that is adapted to enter between the teeth L when the type-wheel is oscillated laterally to lock the latter in position to prevent rotation during the act of printing.

On the face of the type-wheel I is an index, 65 on which are arranged the letters and characters, &c., corresponding to the type on the periphery of the wheel I. (See Fig. 1.)

N is a pointer carried by the frame D and extending over the type-wheel I in line with the characters on the face of the type-wheel, 70 so that to produce an impression of the type the desired character on the index or on the face of the type-wheel is brought opposite the pointer N, which places the corresponding type in line with the platen, and the frame D 75 is depressed to produce an impression.

To ink the type, I secure to the frame D—say at its lower part—an inking-pad O, which is normally out of line with the type, as in Fig. 2. The pad O is supported by spring-arms *s*, 80 that are connected to the frame D, as shown, so that when the type-wheel I is depressed the type will come in contact with the pad and the type to print will be permitted to pass through the aperture O^2 in the pad O. 85 (See Figs. 2 and 5.)

Although my type-writer may be used without a bell, for some styles I prefer to use a bell, and for this purpose I place upon the frame D a standard *t*, upon which a bell P is 90 mounted. (See Fig. 4.) Q is its clapper, that is carried by a bell-crank lever R, pivoted on the frame D and acted on to strike the bell by a spring *u*. The bell-crank lever R is bent across the frame D and then downwardly on 95 the opposite side, (see Fig. 6,) forming a downward projection *v*. This projection *v* is adapted to be engaged by a counterbalanced trigger S, carried by the frame D.

On the rod E is an arm T, that is adapted 100 to engage the trigger S to trip the same to release the clapper Q. The arm T is movable along the rod E, and for this purpose it has connected to it an arm T^2 , that is adapted to rest in the rack B to prevent spontaneous 105 side movement. When the frame D is depressed, the lever F engages and raises the bell-crank lever R to draw the clapper away from the bell P, and at the same time the projection *v* engages the trigger S, which holds 110 the clapper set to strike. When the frame D has moved along the rack-bar B the required distance, the trigger S will encounter the arm T, and thereby the projection *v* will be tripped, thus permitting the clapper to strike the bell. 115

My type-writer operates as follows: The paper to be printed upon is first placed upon the base or platen A and straightened according to the lines *e f*. The type-wheel I is then turned to bring the desired letters of the 120 index opposite the pointer N, which causes the corresponding type to pass in line with the opening O^2 in the pad O. The type-wheel I is then depressed and rocks on its pivot *p* until the teeth L engage the projection M to prevent rotation of the type-wheel. The frame D is now pressed down until the type passes through the opening O^2 and reaches the paper to make an impression, the spring-pad O 125 permitting the type to pass through. As the frame D is thus depressed it carries the outer end of the lever F down, which fulcrums on the rod E, and thereby its inner end, carrying the pawl H, rises. As it thus rises, its finger

P^2 is lifted out of the rack B and the toe n of the pawl H is moved along one notch. When the frame next rises under the influence of the spring G, acting on the lever F, as stated, the inner end of the lever F descends, causing the pawl H to push the frame D along the rack B the distance of one tooth, whereupon the finger F^2 enters between two teeth on the rack B to hold the frame D from movement. Each time the frame D is rocked the same motions occur to feed the frame D along the base A step by step to space apart the letters. To make a space between words, the arm H^2 of the pawl H is raised, which causes the toe n on said pawl to move the frame D one space.

The manner of ringing the bell, having been already stated, need not be further described here.

Having now described my invention, what I claim is—

1. In a type-writing machine, the combination of a rack-bar, a lever or frame pivoted on said bar, a type-carrier pivotally carried by said frame, said frame being adapted to travel across the base or platen to space apart letters, a lever pivotally connected with said frame, an abutment to actuate the lever when the frame is depressed, and means connected with said lever for moving the frame step by step.

2. In a type-writing machine, a rack-bar, a frame or lever pivotally carried therein, a head J^2 , pivoted on said frame or lever, and a spring between said frame and head, combined with a type-carrier journaled on said head, substantially as described.

3. In a type-writing machine, the combination of a rack-bar, a frame or lever pivotally carried to slide thereon, a head J^2 , pivoted on said frame, a spring between said frame and head, a type-carrier journaled on said head, a series of teeth on said carrier, and a projection on said frame to engage said teeth to lock the carrier, substantially as described.

4. In a type-writing machine, the combination of a rack-bar, a frame or lever to slide thereon, and a type-wheel connected thereto, with a lever pivoted to said frame and having a finger to engage the rack-bar and with a rod upon which said lever operates, substantially as described.

5. In a type-writing machine, the combina-

tion of a rack-bar, a frame or lever to slide thereon, and a type-wheel connected thereto, with a lever pivotally connected with said frame, a finger on said lever to engage said rack, a pawl carried by said lever also to engage said rack to feed the frame along, and a rod upon which said lever operates as the frame is actuated, substantially as described.

6. In a type-writing machine, the combination of a frame or lever, a type-carrier connected therewith, and a rack-bar upon which the frame is mounted, with a lever pivoted to said frame, a spring connecting said frame and lever, and a rod upon which said lever acts, substantially as described.

7. In a type-writing machine, the combination of a rack-bar, a frame mounted thereon, and a type-wheel connected to said frame, with a lever pivoted to said frame, a pawl carried by said lever to move the frame step by step, a cam-like projection on said pawl by which the lever can be lifted, and a rod upon which said lever operates, substantially as described.

8. In a type-writing machine, a frame and a type-carrier connected thereto, a bell connected with said frame, and a clapper for said bell also connected with said frame, combined with a lever pivoted to said frame and adapted to actuate said clapper and a rod E, upon which said lever operates, substantially as described.

9. In a type-writing machine, the combination of a frame, a type-carrier connected thereto, a bell carried by said frame, a clapper, and a lever carrying said clapper, with a lever to actuate said clapper, a trigger to hold said clapper, and an arm to trip said trigger, substantially as described.

10. In a type-writing machine, a frame and a type-carrier carried thereby, a bell on said frame, a clapper, a lever carrying the same, and a projection on said lever, combined with a lever to actuate said clapper, a trigger to engage and hold said projection, and an arm to trip said trigger, substantially as described.

Signed at New York, in the county of New York and State of New York, this 31st day of August, A. D. 1891.

JAMES E. WILSON.

Witnesses:

C. L. WALKER,
T. F. BOURNE.