

(No Model.)

E. S. FIELD.
TYPE WRITING MACHINE.

No. 442,028.

Patented Dec. 2, 1890.

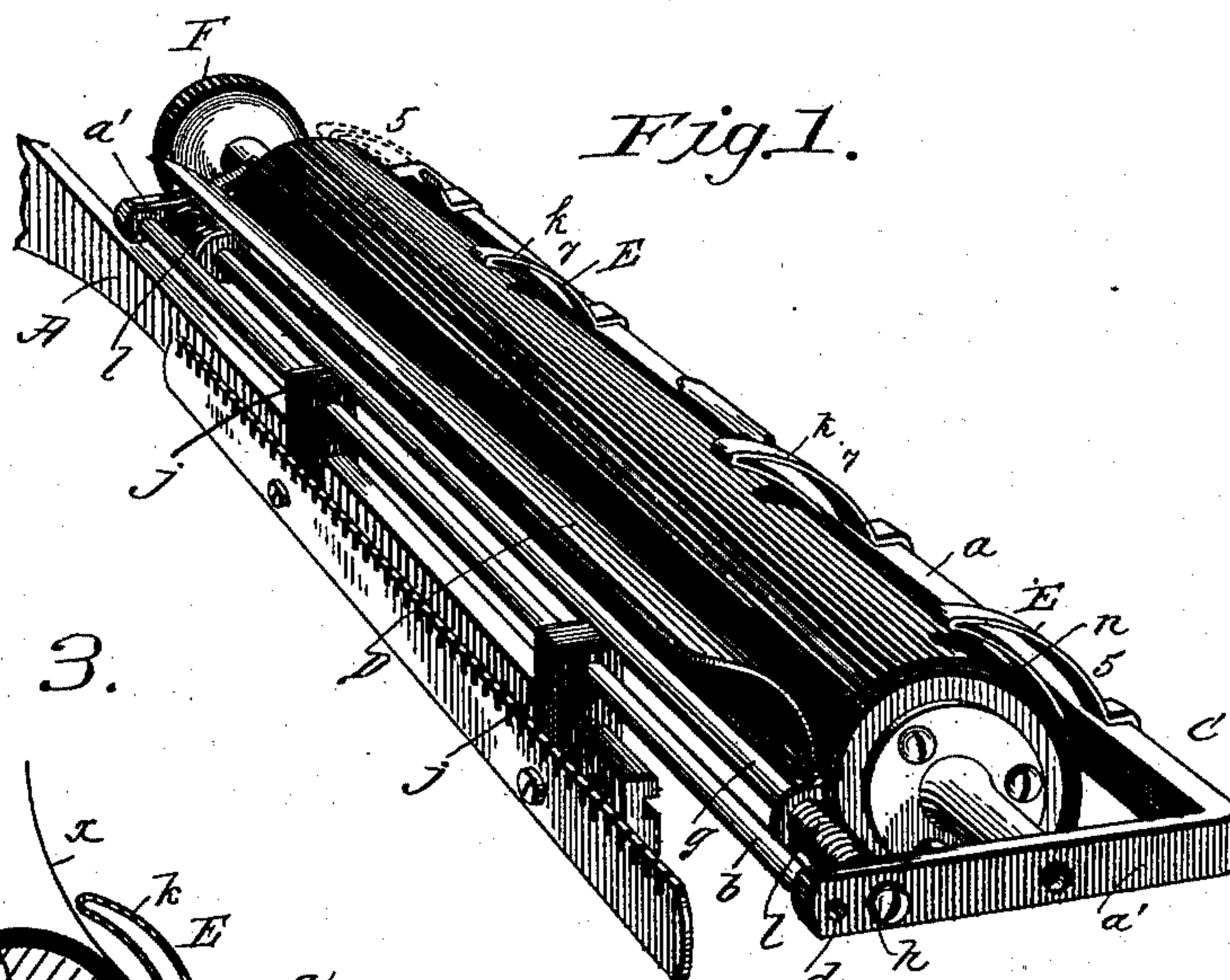


Fig. 3.

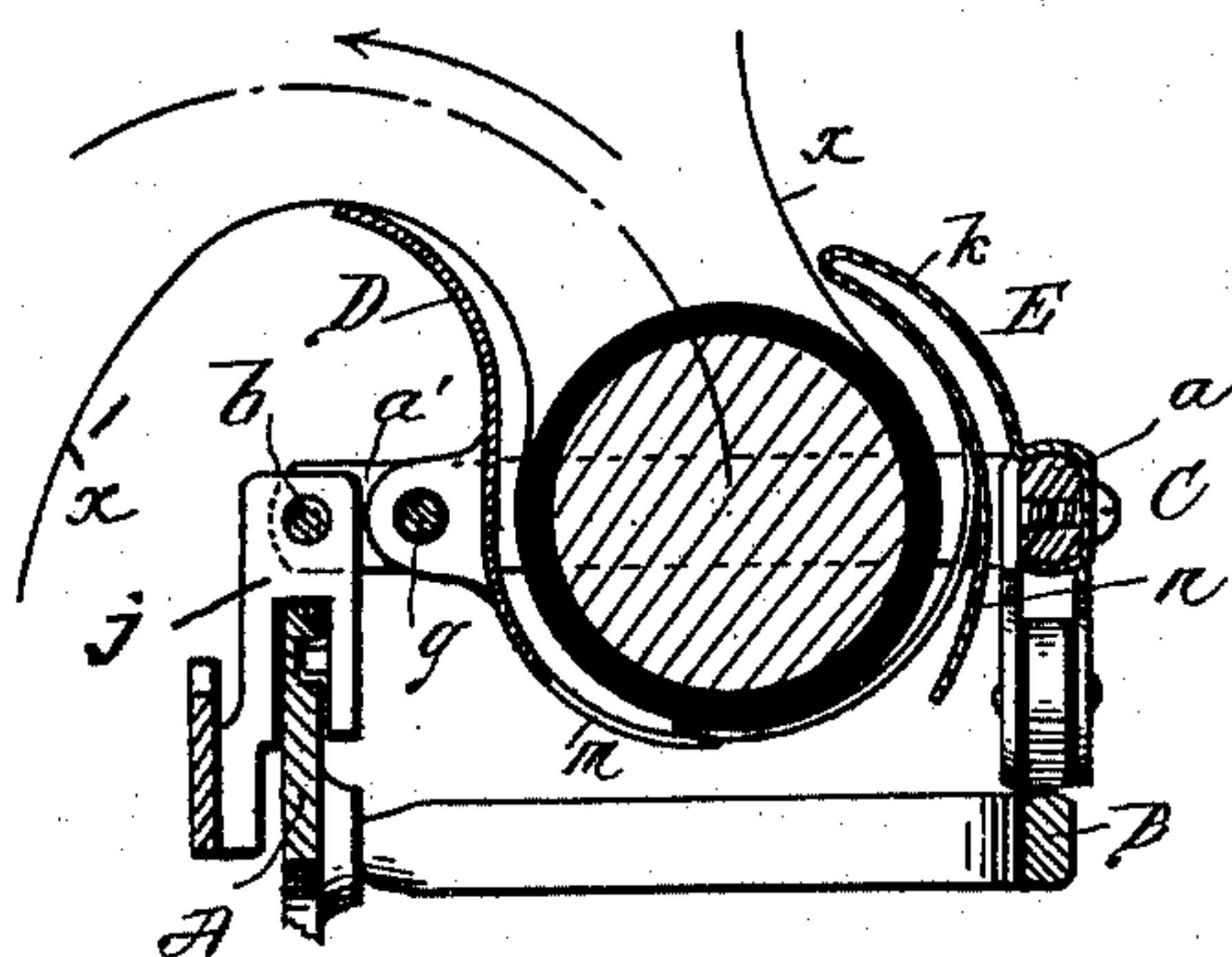
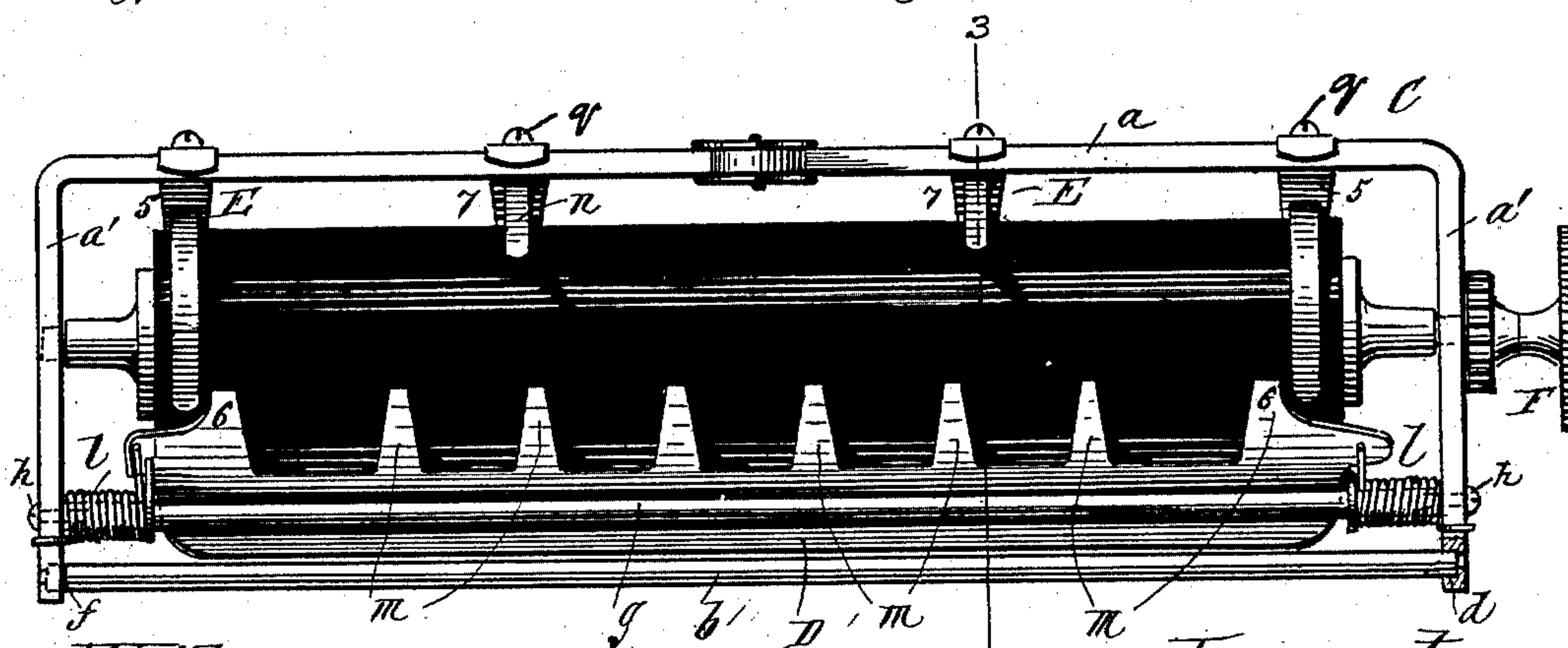


Fig. 2.



Witnesses:

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UNITED STATES PATENT OFFICE.

EDWIN S. FIELD, OF SPRINGFIELD, MASSACHUSETTS.

TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 442,028, dated December 2, 1890.

Application filed February 1, 1890. Serial No. 338,868. (No model.)

To all whom it may concern:

Be it known that I, EDWIN S. FIELD, a citizen of the United States, residing at Springfield, in the county of Hampden and State of Massachusetts, have invented new and useful Improvements in Type-Writing Machines, of which the following is a specification.

This invention in type-writers relates particularly to the construction of the carriages thereof and to parts or equipments for said carriages; and the invention consists in the construction and combination of parts, all substantially as will hereinafter more fully appear, and be set forth in the claims.

Reference is to be had to the accompanying drawings, in which is shown a part of the supporting-frame of a type-writer and the carriage supported and adapted to be guided thereon, Figure 1 being a perspective view; Fig. 2, a bottom plan view; and Fig. 3, a vertical cross-sectional view taken on line 3 3, Fig. 2.

In the drawings, A represents the rear horizontal beam or rail of the stationary supporting-frame, and B, Fig. 3, the front rail of said frame.

C represents the carriage-frame, of which *a* indicates the front rail, *a' a'* the transverse rails at the ends of the carriage, and *b* represents the rear rail.

The construction of the carriage-frame may be readily seen on an inspection of the drawings, in which the preferred form of construction is shown—that is, to make the part *a* and ends *a' a'* of one piece of metal, the same being bent at the corners, as shown in Figs. 1 and 2, the “set” of the metal retaining said portions in the disposition shown, thus avoiding the difficulty heretofore experienced in making rigid and strong joints at the junction of the separated rails.

I prefer that the back *b* of the carriage-frame consist of a straight rod, as shown, the ends of which enter the sockets *d* in the extremities of the end sections *a' a'*, which end sections may be readily sprung open sufficiently to admit of the insertion of the ends of this rod into said sockets and as shown. Along forward of and parallel with the said rear rod *b* is another rod *g*, having a length equal to the proper distance between the inner faces of the sections *a' a'*, and screws *h*

pass through the said portions *a' a'* into the ends of the said rod *g*, confining the parts of the frame against springing movements.

To the rear rail *b* is secured in pivotal relations thereto the standards *j j*, which have a guiding bearing and support upon the rear stationary rail A of the frame, and the said rod *g* serves as a pivot-rod, on which is mounted the curved longitudinal plate D, provided with the fingers *m*, which plate and fingers following quite closely the contour of the platen-roll at its lower and rear portion serve, in connection with the other fingers E, carried on the front of the carriage-frame, to guide the paper, whereby it is always in its proper presentation for receiving the work to be performed by the machine. The plate D is pivotally mounted on the said rod *g* by having at its end upturned and apertured ear-pieces, as clearly shown in all the views, which apertured ear-pieces embrace said rod. The spiral springs *l l*, coiled around the rod *g* and each by one end having an engagement with the plate D and by its other with the end sections *a' a'*, impart to the plate a spring-pressure to sustain the fingers thereof against the under portion of the platen-roll. The springs *l l* between the ear-pieces on the plate D and the end sections *a'* of the carriage-frame maintain said plate against any undue endwise movement. The said fingers E at the front of the carriage embody a construction whereby, while they possess all required strength, also have the much desired equable and elastic bearing for a greater length than ordinary. I therefore from the front rail of the carriage project the springs upwardly for quite a distance, as at *k*, and then continuing same in an inwardly-returning bend *n*, following more or less the cross-sectional curvature of the roll, I thereby give a greater extent of spring-surface and length and equability in the spring than would be obtained by the employment of a spring extending directly downwardly and inwardly from the front rail, as has heretofore usually been done when springs have been provided at all. It will be noted that the pair of said springs 5 borne on the front rail, which are at the ends of the platen-roll, follow the contour of the roll quite closely and project alongside of and past the points of the end fingers (par-

ticularly indicated by 6 6) of the said rear
 spring-pressed plate D, as may readily be done,
 for the extension of said end spring-fingers
 beyond or across the vertical plane coinci-
 5 dent with the axis of the roll does not interfere
 with the impact of the type along the line of the
 roll, which is in the plane stated, for said type
 are arranged between the said end fingers 6 6.
 The other intermediate spring-fingers 7 7 at
 10 their terminal portions have their curvature
 so as to stand somewhat away from the pe-
 riphery of the platen-roll toward its under
 and forward side, as seen in Fig. 3, and said
 intermediate fingers 7 7 are not extended
 15 across the plane coincident with the type-im-
 pact line of said roll, and therefore, while said
 fingers are of much efficiency in their paper
 guiding and sustaining action, they present
 no obstruction to the striking of the type
 20 throughout the entire length of the roll which
 is to comprise a line of printing. By enter-
 ing the paper straight and true at the rear of
 the carriage between the plate D and the roll
 the paper is by said plate and fingers guided
 25 forwardly and constrained to follow around
 the periphery of the roll, and when the for-
 ward portion of the paper has been advanced
 sufficiently far to be nipped between the roller
 and the extremities of the fingers *m*, on then
 30 merely turning the roll (through the thumb-
 knob F) the paper is guided under the ex-
 tremities of the said end fingers 5 5, main-
 taining the so-entered portions of the paper
 at the ends of the carriage closely upon the
 35 roll, and the forward edge of the paper be-
 tween the end fingers 5 5 is also held in such
 proximity to the roll that when further fed
 forward by turning the roll it will remain
 within the space between the points of the
 40 intermediate spring-fingers 7 7 and the roll,
 and there will be no liability of the paper be-
 ing guided astray or becoming caught or
 stuck in any part of the carriage, nor will
 there be any necessity of swinging up the
 45 carriage to adjust the paper after it has once
 been properly directed and partially forced
 within the guiding and engaging parts, as
 described. In Fig. 3 the course of the in-
 serted paper is indicated by the line *x*.

50 As well known, a common annoying inci-
 dent ensuing in the use of type-writers as
 heretofore constructed is occasioned by the
 trouble and delay caused by the irregular
 feeding and uncertain constraint of the pa-
 55 per in its proper course, and these objection-
 able features are overcome by the construc-
 tion and combination or arrangement of parts
 described.

On reference to the drawings it will be seen
 60 that each spring-finger E at its terminal por-
 tion *p* is bent twice upon itself, whereby it
 is adapted to embrace the top, bottom, and
 outer side of the front rail *a* of the carriage,
 said embracing portion of the spring-finger
 65 having a certain amount of spring contrac-
 tion, whereby its confinement on the rail is

made close, the bearing being continuous
 throughout the entire surface of said embrac-
 ing extremities, and the screws *q* securely
 hold said spring-fingers in their places. The
 journal-bearing for the roller G, which sup-
 70 ports the front of the carriage from the for-
 ward rail B of the stationary frame, is formed
 by a single blank of sheet metal bent into an
 extended U shape adapted to embrace the
 75 front rail *a*, and by its terminal and pending
 members to lie upon and against and to ex-
 tend below the said rail, whereby suitable
 parallel hangers are formed and in which the
 roller G may be journaled, all as shown in
 80 the drawings. A screw or rivet passing
 through the opposing members of the hanger
 and through the rail *a* insures the proper con-
 finement of the one upon the other. It will
 be noted in Fig. 1 that the top of the hanger
 85 is of considerable extent longitudinally of
 the rail *a*, whereby in its bearing on said rail,
 when secured by the screw or rivet, no tilting
 or shifting movement of the hanger may be
 permitted.

What I claim as my invention is—

1. In a type-writer, the combination, with
 the stationary supporting-frame and parts, as
 the standards *j j*, guided for movement on
 said frame and having affixed thereto the
 95 horizontal rod *b*, of the platen-roll carriage
 consisting of the front rail *a* and end sec-
 tions *a' a'*, integrally formed of a single piece
 of suitable metal, the said end sections being
 provided with the sockets *d d* and adapted
 100 to be sprung into an engagement with said
 rod *b*, substantially as and for the purpose set
 forth.

2. In a type-writer, the combination, with
 a rectangular frame having the platen-roll
 105 journaled thereon and the longitudinal rod *g*,
 of the plate D, having the turned-up ear-
 pieces at its ends and by which it is pivot-
 ally supported on said rod, and by its lower
 portion having a conformation corresponding
 110 to the adjacent surface of the roll, and pro-
 vided with the series of adjustable fingers *m*,
 adapted to bear with a yielding pressure on
 the under side of said roll, the spiral springs
l l, encircling said rod *g* and having an en-
 115 gagement with the carriage-frame and with
 said plate D, a series of spring-fingers se-
 cured on the front rail of the carriage and ex-
 tended downwardly and inwardly therefrom,
 the ones thereof coincident with the end of
 120 the roll extended under the surface thereof
 beyond the ends of said extensions *m*, and
 the intermediate fingers having their extremi-
 ties slightly separated from the periphery of
 the roll and terminating a short distance be-
 125 low the said front rail and in advance of the
 type-impact line of the roll, substantially as
 and for the purposes described.

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Witnesses:

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