

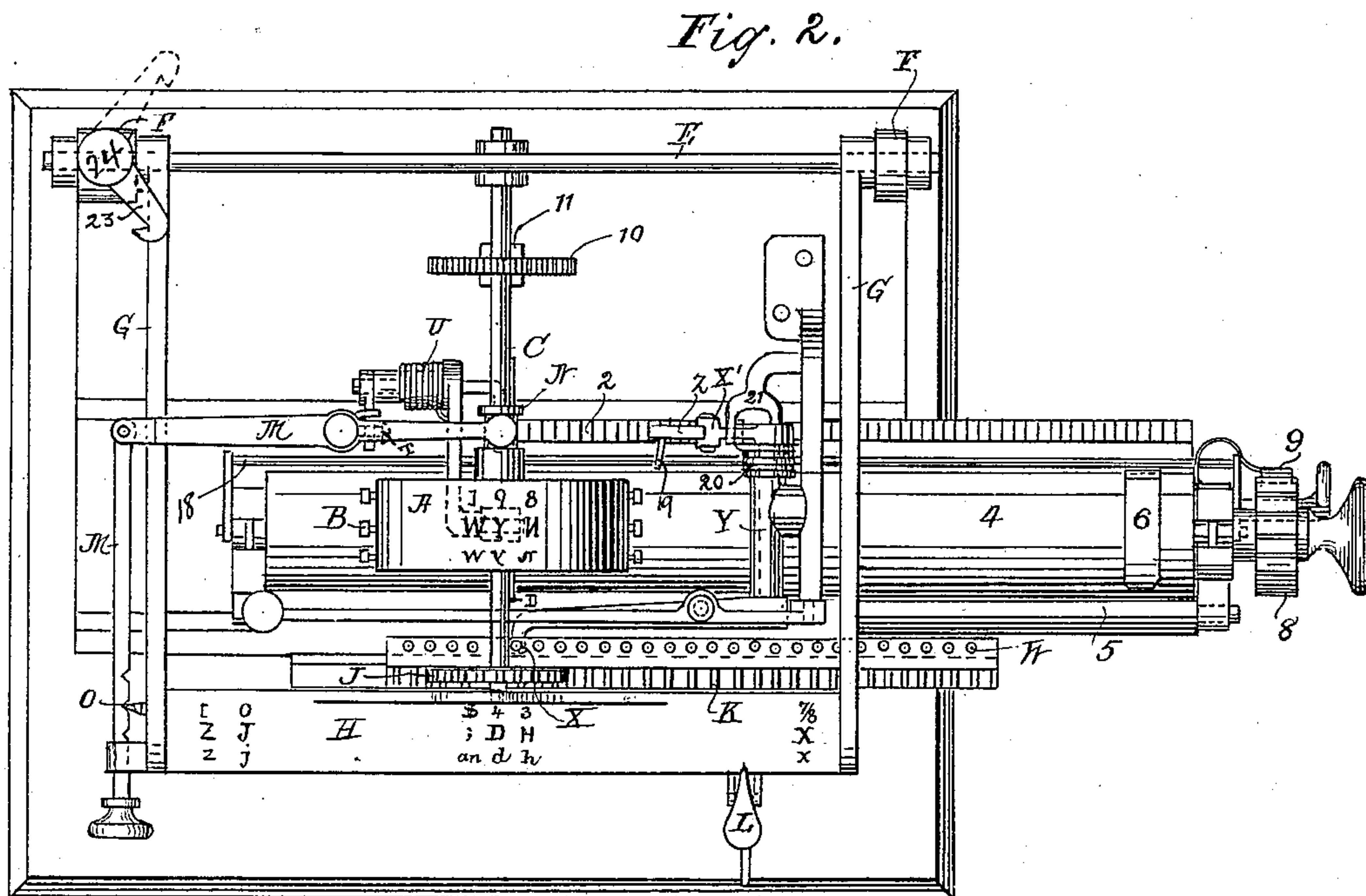
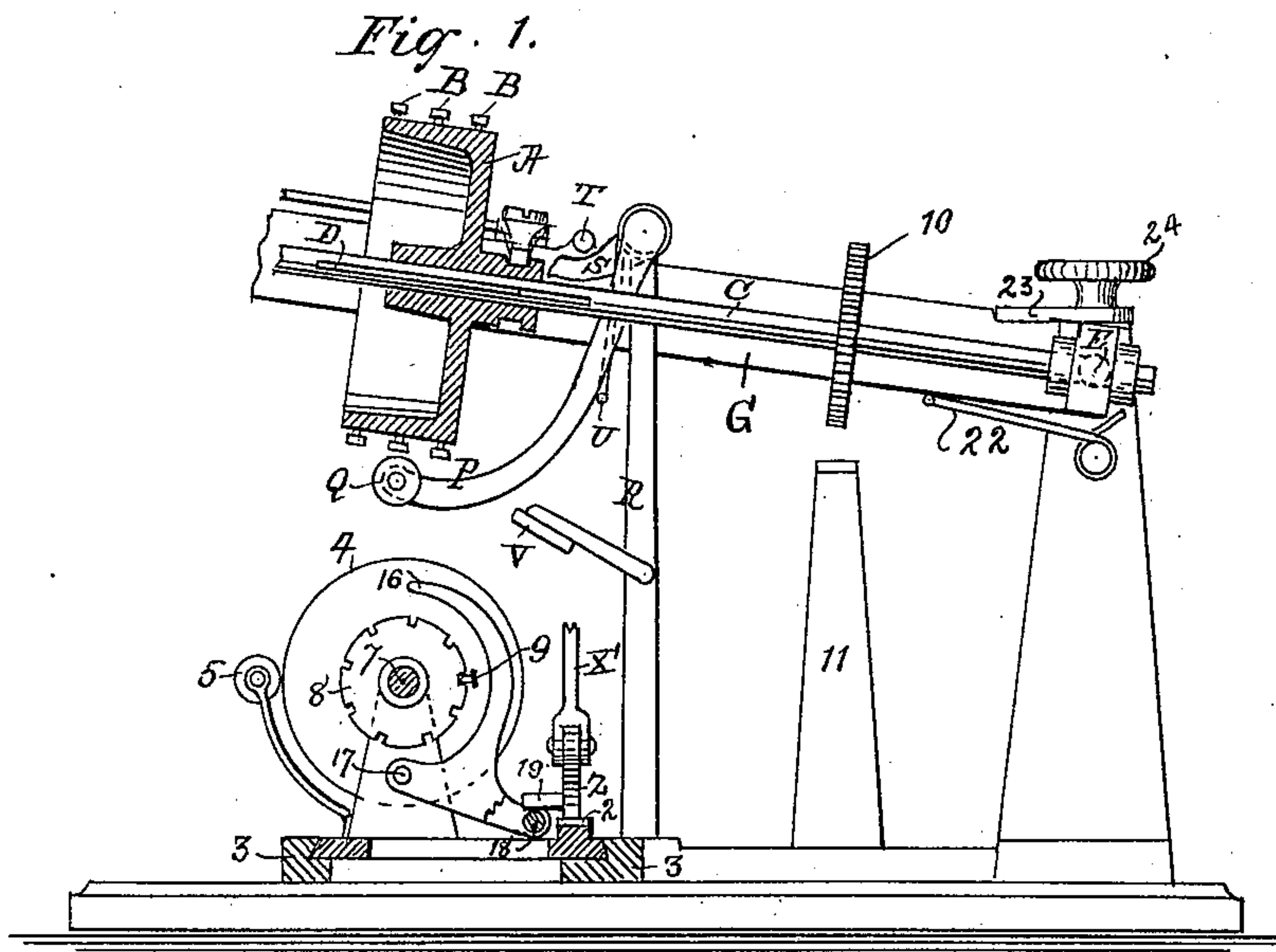
(No Model.)

2 Sheets—Sheet 1.

B. A. BROOKS.
TYPE WRITING MACHINE.

No. 463,723.

Patented Nov. 24, 1891.



Witnesses.

Chas. R. Rattig
J. J. Rattig

Inventor.

Byron A. Brooks

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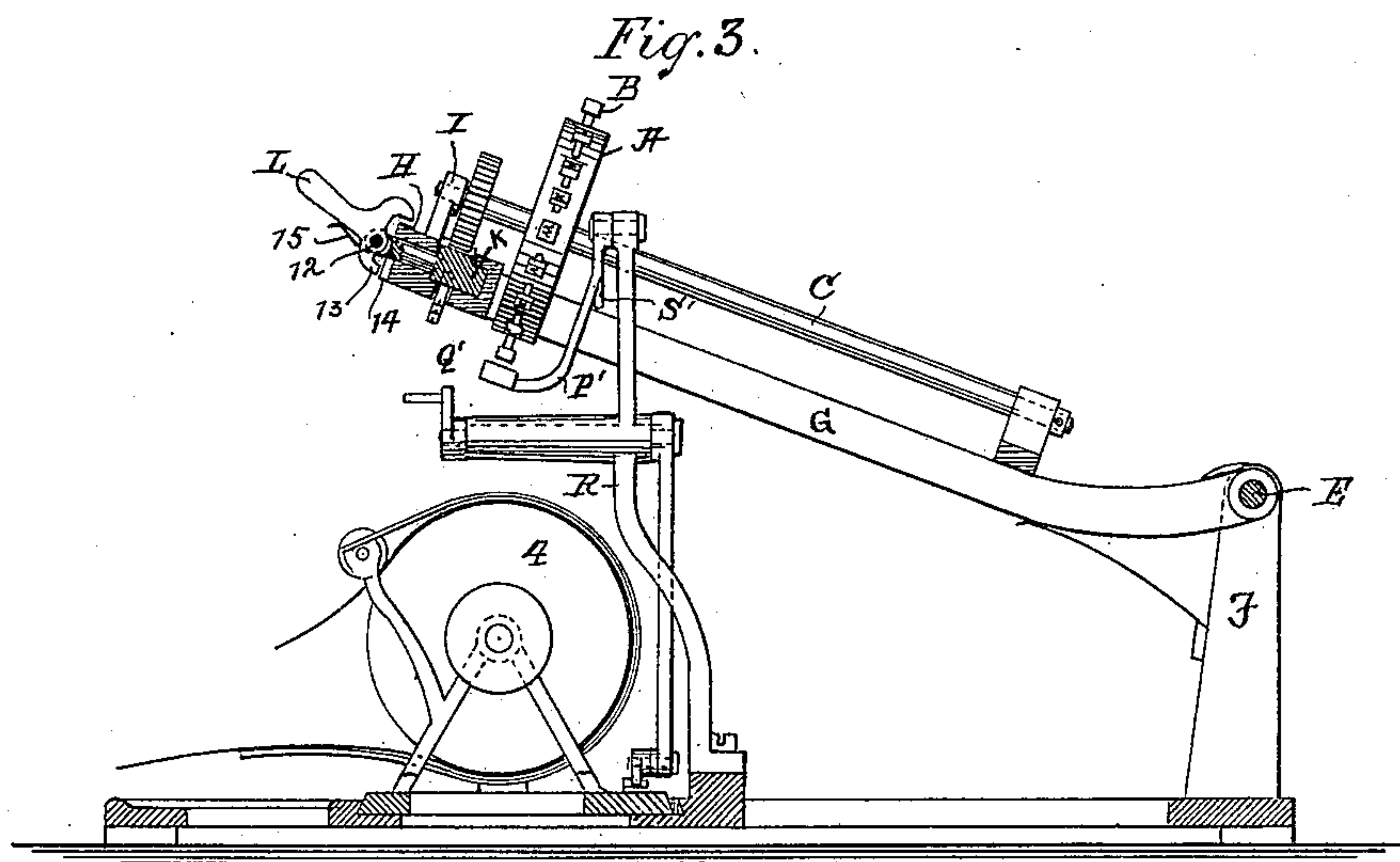
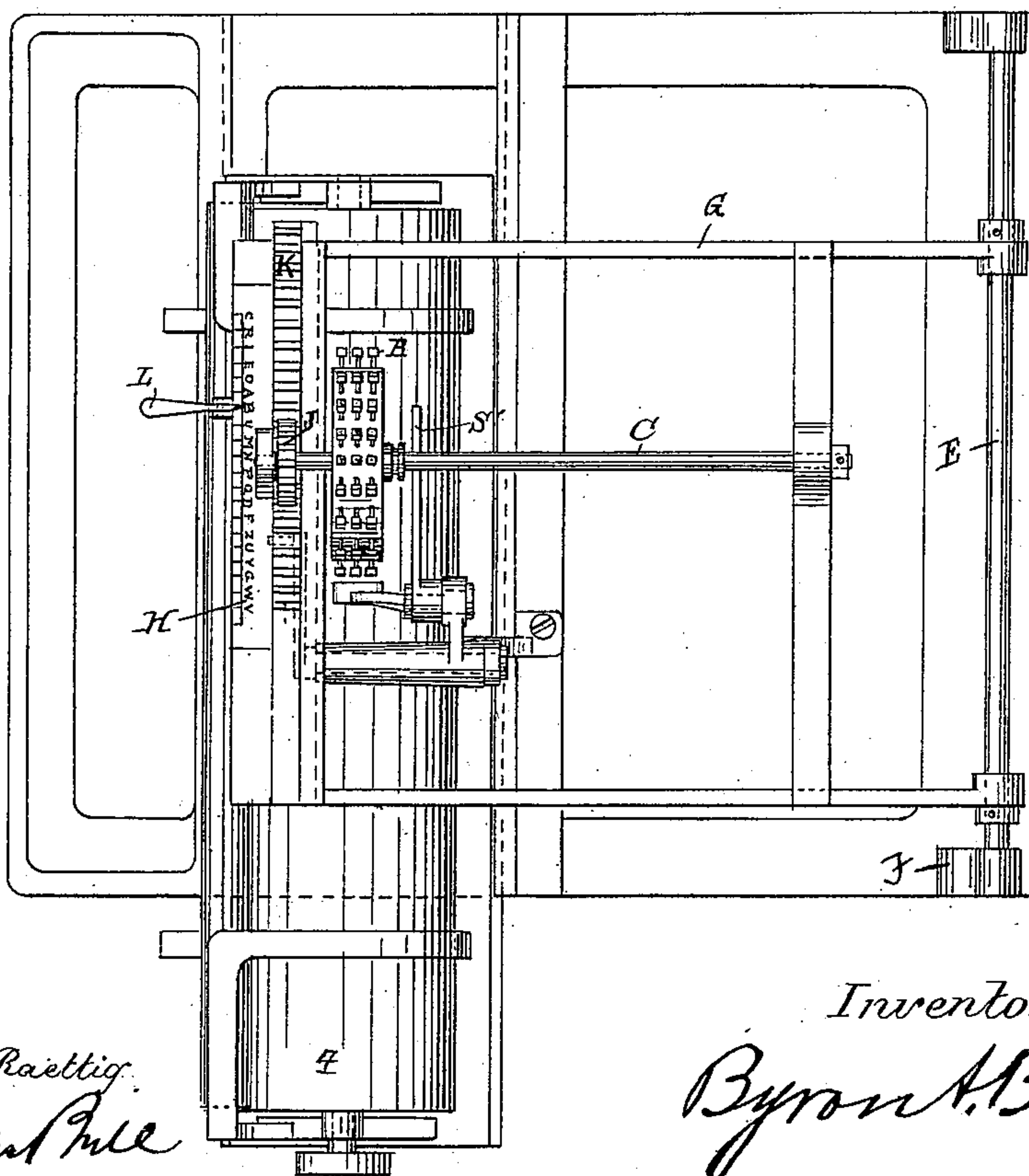


Fig. 4.



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UNITED STATES PATENT OFFICE.

BYRON A. BROOKS, OF BROOKLYN, NEW YORK.

TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 463,723, dated November 24, 1891.

Application filed July 22, 1887. Serial No. 245,013. (No model.)

To all whom it may concern:

Be it known that I, BYRON A. BROOKS, of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Type-Writing Machines, of which the following is a description in such full, clear, concise, and exact terms as to enable any one skilled in the art to which my invention appertains to make and use the same, reference being had to the accompanying drawings, making part of this specification, and to the letters and figures of reference marked thereon.

Similar letters and figures indicate corresponding parts in all the figures of drawings.

My present invention relates to improvements in type-writing machines of that class known as "one-hand machines."

The accompanying drawings illustrate one of the many forms of machines in which my invention may be embodied.

My invention is not limited to the precise devices or combinations of devices illustrated and described therein, but includes substantial equivalents, since many modifications may obviously be made without departing from either the spirit or scope of my invention. The said devices may be used separately as well as conjointly.

The machine herein illustrated and described is only intended as an illustration of the several novel features of my invention, such as will enable others skilled in the art of manufacturing type-writers to comprehend and practice the same.

Referring to the annexed drawings, Figure 1 illustrates a side view of a machine embodying some of the novel features of my present invention, parts being broken away; and Fig. 2 illustrates a top view of said machine. Fig. 3 illustrates a side view, and Fig. 4 a top view, of modified forms of said machine.

The following is a description of said drawings:

Referring first to Fig. 1; A is a type-wheel, on which the type B B are carried. This type-wheel is carried upon a shaft C, on which it is free to move longitudinally, being guided in said longitudinal movement by a tongue D upon said shaft working into a corresponding groove in the hub of the type-wheel. This shaft C is carried by a rod E, to which it is

attached by means of a collar, so as to be free to revolve about its own axis, but without freedom to move longitudinally. The rod E (see Fig. 2) is journaled in the standards F and is free to oscillate or have a limited movement about its own longitudinal axis. The rod E also carries rigidly attached to it the arms G G, extending forward and bearing the index-plate H. The shaft C, which carries the type-wheel, is journaled at its front end on a projection from this index-plate, as is more clearly shown in Fig. 3, where said projection bears the reference-letter I. The rod E, arms G G, and index-plate H form a frame free to vibrate or revolve around the axis of the bar E, said frame being supported on the standards F F.

23 is a hook held in position by means of a thumb-screw 24. When said hook is in the position illustrated by the drawings, it furnishes a stop to limit the upward movement of the said vibrating frame. When set in the position illustrated in dotted lines in Fig. 2, it furnishes a rest for said vibrating frame when it is raised and thrown back. The shaft C also carries rigidly attached to it a pinion-wheel J, which meshes into a rack K, traveling in a track attached to said frame E G G H. To this rack K a thumb-piece and index-pointer L is attached. When the thumb-piece L is moved toward the right hand or toward the left hand, the said rack is caused to travel longitudinally in its track, and thereby, through the agency of the pinion-wheel J, causing the wheel A, carrying the printing-type, to revolve and bring either one or the other of the said types to the printing-point. These parts are so proportioned and arranged that when the pointer stands opposite a given letter or symbol the corresponding letter or symbol on the type-wheel is brought opposite to or in line with the printing-point.

The index-plate H bears a number of lines of letters and symbols corresponding with the rows of type on the type-wheel. The means by which said type-wheel is shifted to present the type in either one of these rows to the printing-point consists, in the machines illustrated in the drawings, of a lever M, working at one end in a groove cut in a collar N, attached to the type-wheel. As the knob at-

tached to the lever M is drawn out or pushed in, the type-wheel is caused to travel longitudinally on the shaft C, thereby bringing one or the other of the said rows of type on line with the printing-point. O is a spring-piece attached to said vibrating frame and bearing against the side of the rod N, in which notches are cut to form a break or catch to designate and determine the necessary position of the rod O to bring each of the several rows of type on the printing-line.

P indicates an arm carrying the inking-roller Q. Referring to Figs. 1 and 2 it will be seen that this arm is carried on a pivot-bearing attached to the standard R, and that the arm P is provided with a toe S, projecting under and in the path of a pin T, carried by said vibrating frame, and that therefore, when the vibrating frame is pressed down, the types first come in contact with the inking-roller Q, and then the rod T, striking the toe S, withdraws the inking-roller out of the path of the descending type-wheel.

U is a spring to return the inking-roller to its normal position (that shown in Fig. 1) when the vibrating frame is raised again.

V is a distributing inking-surface against which at each vibration the roller Q bears.

The rack K carries a series of set-pins W. These pins travel over the end of the lever X and are preferably so adjusted as to cause the lever X to be depressed a greater or less distance, according to the width of the letter or symbol being printed, at the time when they severally come in contact with and actuate said lever X for the purpose of giving a variable space between the letters. This lever X is pivoted on a standard Y and carries a pawl Z, meshing in the ratchet-teeth of a bar 2, said bar traveling in a track on the frame or bed-plate of the machine 3. Said ratchet-bar 2 is attached to the platen-carriage carrying the platen 4, the pressure-rolls 5, and the finger-guide 6.

20 is a spring constantly tending to keep the lever-arm X', bearing the pawl, Z in the position illustrated in Fig. 2. 21 is a fork which limits the arc of vibration of said arm X'.

To the axle 7 of the platen 4 a wheel 8, cut with a series of notches, is attached, and into these notches a spring 9 takes. When said wheel 8 is revolved, the platen is turned to space between lines of print, and said spring and notches indicate the distance the platen should be turned to give said line-space, and they hold the platen in position while the printing is going on.

Attached to the shaft C is a wheel 10, having V-shaped notches cut on its periphery.

11 is a standard or anvil attached to the bed-plate and bearing at its upper end a V-shaped projection fitting in the corresponding notches cut on the wheel 10. The number of these notches corresponds with the number of types carried on the wheel A in each row, and the function of said wheel 10 is to insure each

type being brought squarely face down upon the paper carried on the platen and to avoid the possibility of the type-wheel being when it reaches the paper in such a position as to give an imperfect impression. It also materially increases the rapidity with which the machine may be operated, because it relieves the operator of the necessity of bringing the pointer L very accurately over a letter before the frame is depressed to accomplish printing.

Figs. 3 and 4 show modified forms of type-writing machines embodying my present invention. The principal features distinguishing this machine from that already described consist of the means by which the type-wheel is brought automatically exactly to the printing-point and the means by which the inking of the type is accomplished. Referring to Fig. 3, L represents the pointer and thumb-piece corresponding to that illustrated in Figs. 1 and 2. This finger-piece in Fig. 3 is, however, carried by a pivot-pin 12, about which it has a limited motion. The lower end 13 of this finger-piece carries a tooth which fits in the V-shaped teeth 14 of a rack carried on the vibrating frame immediately under the index-plate H. 15 is a spring for holding the tooth 13 normally out of engagement with the rack 14. This tooth and rack, as will be readily understood, has precisely the same function as the standard 11 and wheel 10, (illustrated in Fig. 1,) the finger-piece L being pressed down to throw the tooth 13 in connection with the rack 14 as the vibrating frame carrying the type-wheel is thrown down to print. The inking-roll Q' is operated in substantially the same manner as the inking-roller previously described; but the roll Q', instead of being thrown back from the type-wheel out of its path as it descends, is pivoted so as to be thrown out sidewise in the line of the circumference of said type-wheel by similar mechanism.

When it is desired to draw the platen-carriage back to space between lines, the arm 16, Fig. 1, pivoted to the platen-carriage at 17, is pressed forward, elevating the rod 18, which it carries and which rests under a pin 19, attached to the pawl Z. Said pawl is thereby raised out of engagement with its rack, thereby permitting the platen-carriage to be drawn back.

The operation of the machine may be thus described: The pointer L is moved by the operator opposite to the letter on the index-plate H which it is desired to print. The type-wheel is thereby, through the agency of the rack K, attached to said pointer, and the pinion-wheel J, attached to the shaft carrying said type-wheel, turned to present the corresponding type to the platen. The finger-piece and pointer L are then depressed, and being attached to the vibrating frame E G G H, carrying the type-wheel, said frame is thereby depressed, and one of the types on said type-wheel is pressed against the paper carried by the platen. The type-wheel de-

scending first brings the type standing opposite the printing-point against the inking-roller, and then as the vibrating frame continues to descend the bar T strikes against the toe S and withdraws said roller out of the path of the descending wheel. Just before the type-wheel reaches the paper the wheel 10, attached to the type-wheel shaft, strikes on the anvil 11 and insures the type being brought squarely to the printing-point. At the same time one of the pins W depresses the end of the lever X, thereby drawing the arm X' back, causing the pawl Z, which it carries, to slip over the ratchet-teeth on the ratchet-bar 2. When the vibrating frame is released from the pressure of the finger, the spring 22 throws it up to its normal position against the stop 23, and the spring 20 throws the arm X', carrying the pawl Z, forward against the stop 21, and said pawl thus moving forward causes the platen-carriage attached to the rack-bar 2, with which said pawl engages, to advance and space between letters. It will be seen that the distance the platen moves is dependent upon the distance the lever-arm X has been just previously depressed, and this is dependent upon the adjustment of the pins W, by which a variable spacing is accomplished.

Referring to the pointer L it will be observed that the power by means of which the type-wheel is revolved to bring the required type to the printing-point and to impress the platen against the type is applied by the operator to said pointer. This pointer may of course be of the simplest construction as long as it is fashioned to receive either directly or indirectly the manipulation of the operator.

Having thus described my invention, I claim—

1. In a type-writing machine, the combination of a traveling platen, a letter-plate parallel with the axis of said platen, a pointer provided with a hand-piece, a vibrating frame,

a type-wheel having a plurality of rows of type carried by said frame, a rack and pinion for rotating said type-wheel, an inking-pad suspended between the type-wheel and platen, a movable arm attached to a fixed support by which said inking-pad is carried, and a projection on the frame by means of which the pad is moved out of the path of the type-wheel descending to print.

2. In a type-writing machine, the combination of a platen, a letter-plate parallel to the axis of said platen, a pointer provided with a hand-piece whereby the hand of the operator is shifted to different positions with relation to the axis of the type-wheel to bring the several letters opposite the printing-point, a vibrating frame, a type-wheel carried by said frame, a rack and pinion for operating said type-wheel, a toothed wheel carried on the shaft of said type-wheel, and a fixed standard, substantially as described.

3. In a type-writing machine, a type-wheel, suitable spacing mechanism, and a vibrating frame, combined with a pinion and a sliding plate carrying a rack, both carried by said frame, said plate being provided with a series of projections of varying lengths for operating the pawl and ratchet of said spacing mechanism, substantially as described.

4. In a type-writing machine, the combination of a traveling platen, a letter-plate parallel with the axis of said platen, a pointer provided with a hand-piece, a vibrating frame, a type-wheel having a plurality of rows of type carried by said frame, a rack and pinion for rotating said type-wheel, and a shifting-lever by means of which the type-wheel is shifted to bring its different rows of type to the printing-point.

BYRON A. BROOKS.

Witnesses:

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R. BARTLETT.