

C. E. PETERSON.

TYPE WRITER.

(Application filed July 1, 1901.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.

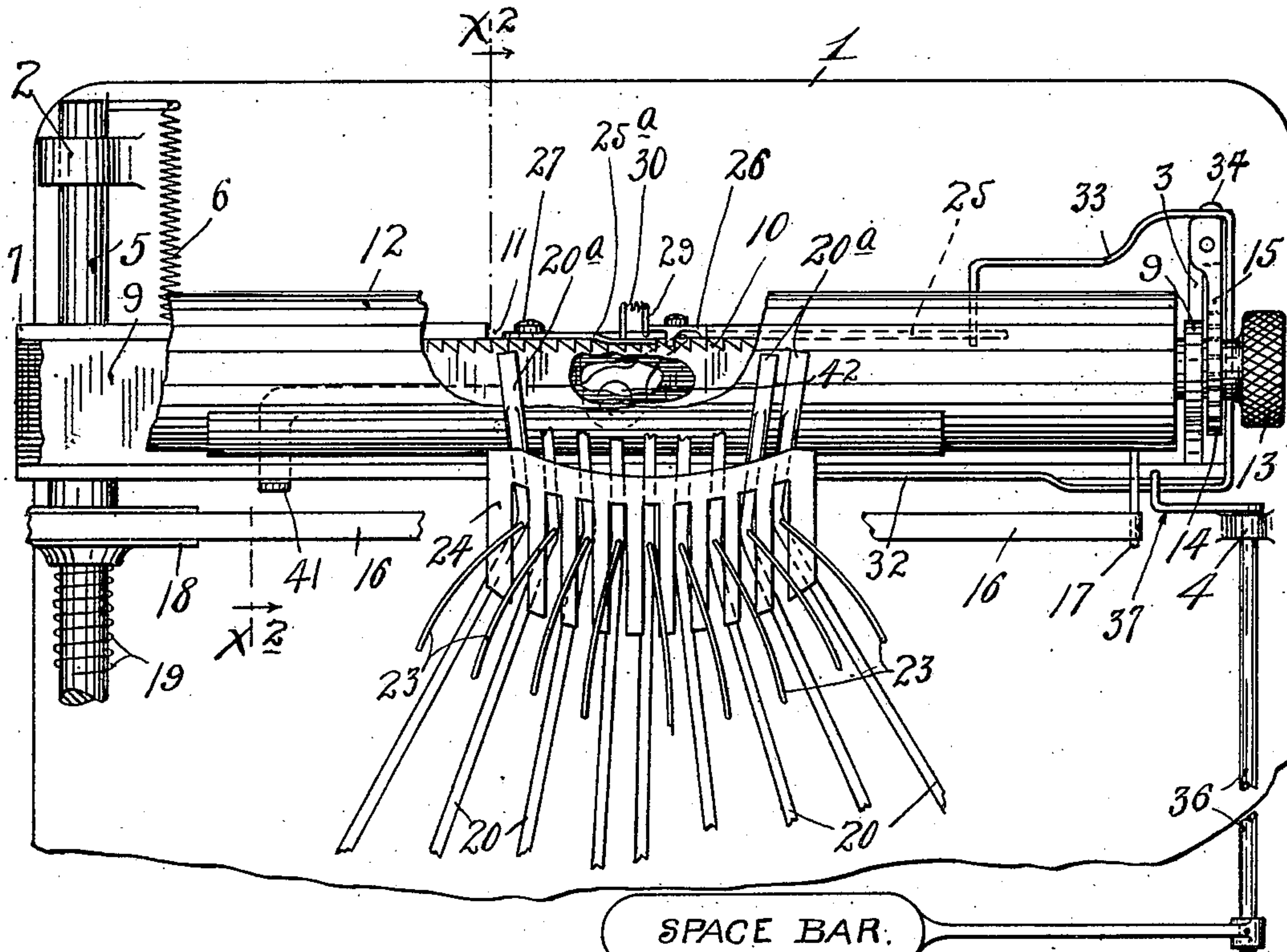
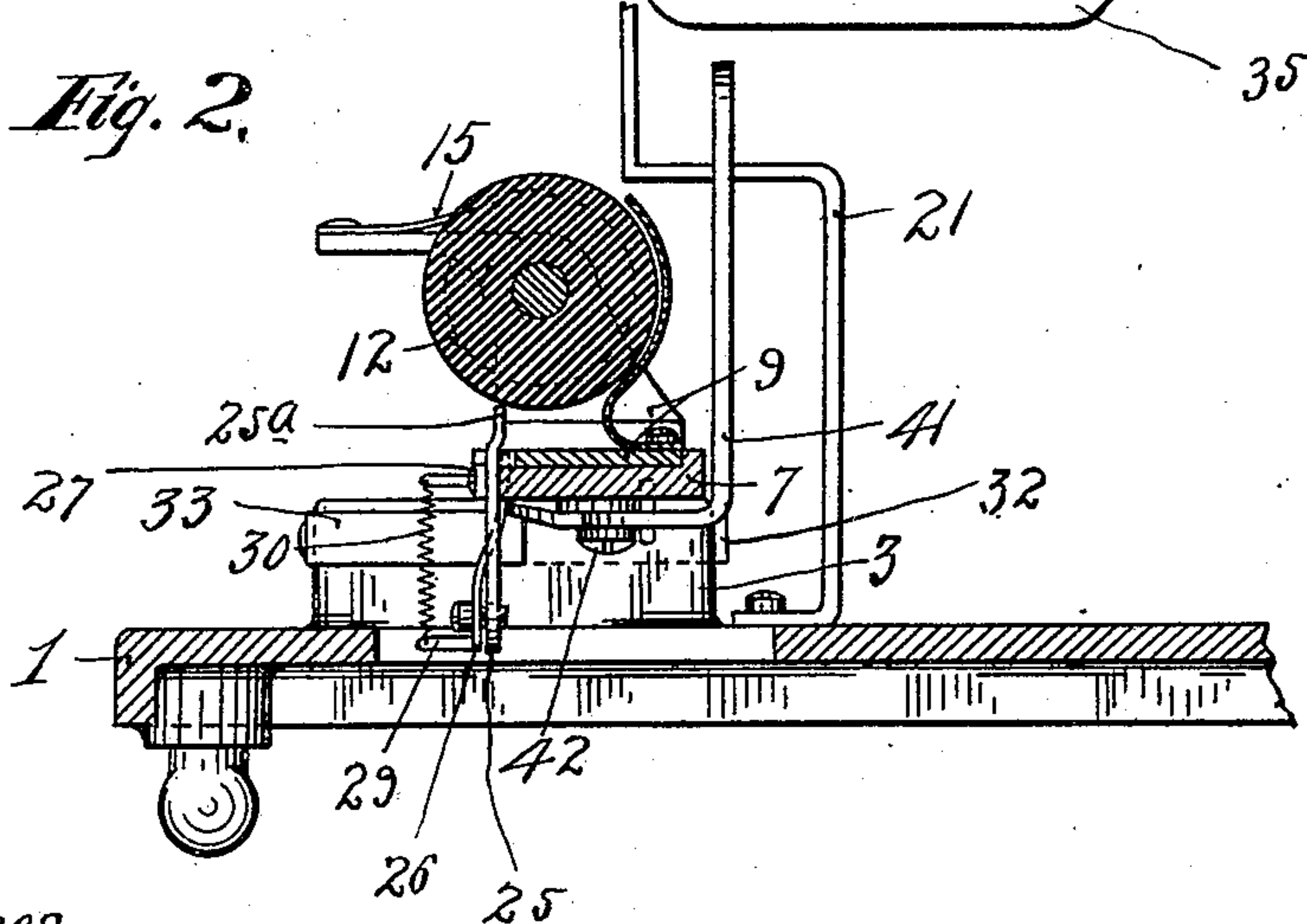


Fig. 2.



Witnesses.

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No. 690,460.

Patented Jan. 7, 1902.

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2 Sheets—Sheet 2.

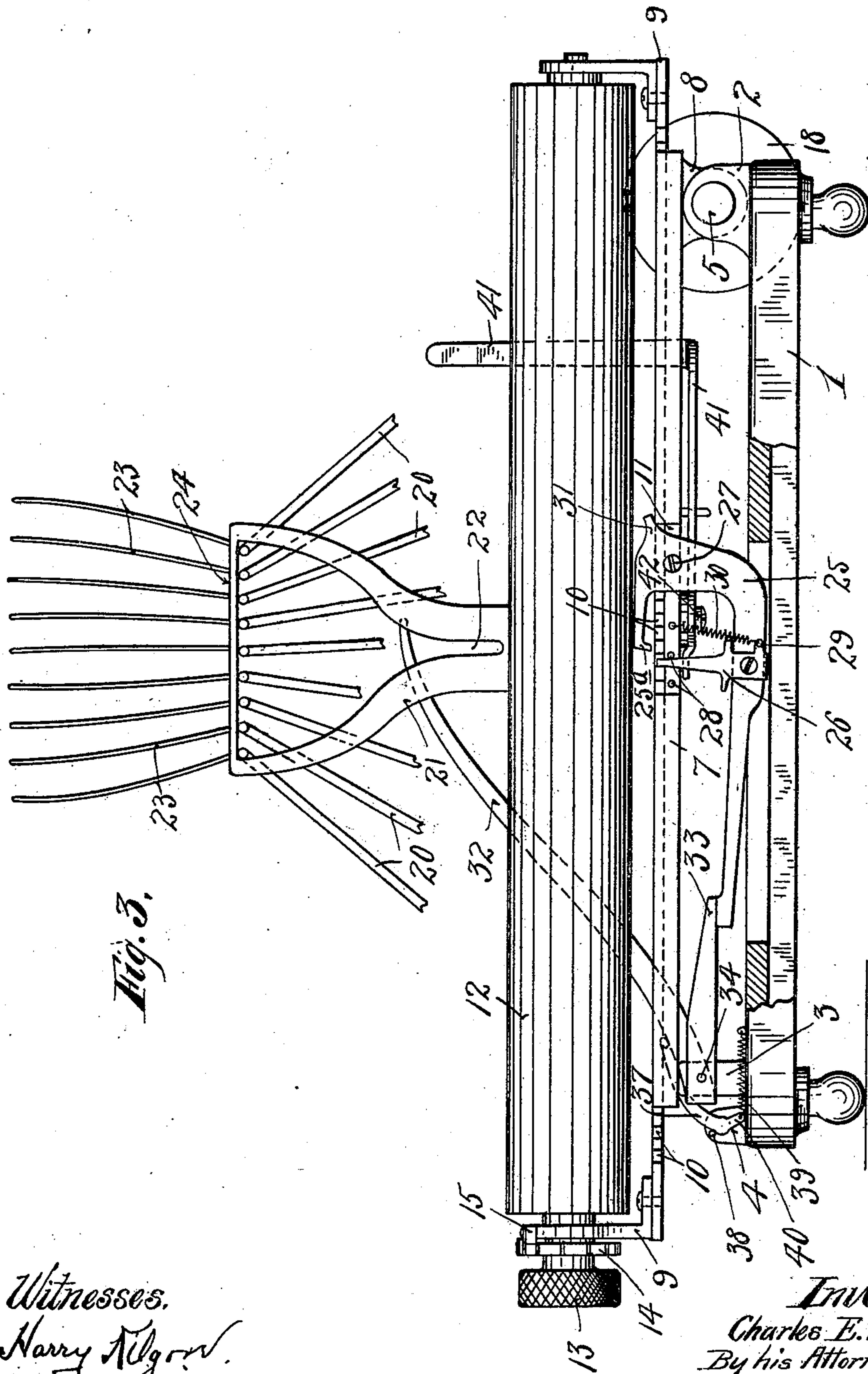


Fig. 3.

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UNITED STATES PATENT OFFICE.

CHARLES E. PETERSON, OF MINNEAPOLIS, MINNESOTA.

TYPE-WRITER.

SPECIFICATION forming part of Letters Patent No. 690,460, dated January 7, 1902.

Original application filed October 4, 1900, Serial No. 31,964. Divided and this application filed July 1, 1901. Serial No. 66,623. (No model.)

To all whom it may concern:

Be it known that I, CHARLES E. PETERSON, a citizen of the United States, residing at Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain new and useful Improvements in Type-Writers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My present invention relates to type-writers and is particularly directed to the improvement of the escapement devices for controlling the feed movement of the roll-carriage.

This application is in the nature of a division of my prior application, Serial No. 31,964, filed October 4, 1900, allowed June 11, 1901, entitled "type-writing machines."

My present invention consists of the novel devices and combinations of devices herein-after described, and defined in the claims.

The invention is illustrated in the accompanying drawings, wherein like characters indicate like parts throughout the several views.

Figure 1 is a plan view, with some parts broken away, showing a portion of a type-writer of the character disclosed in my said prior application. Fig. 2 is a vertical section on the irregular line $x^2 x^2$ of Fig. 1, and Fig. 3 is a rear elevation of the machine with some parts broken away.

As in my prior application, the bed-plate 1 is shown as formed integral with a plunger guide-lug 2, a rest-lug 3, and a bearing-lug 4. A sliding plunger 5 is loosely mounted in a pair of the guides 2 (only one of which lugs is shown) for a limited sliding movement the same as shown, being yieldingly held forward to its limits by a coiled spring 6, attached thereto and to the bed-plate. A carriage-support, which, as shown, is in the form of a transversely-extended bar 7, has a lug 8 at one end, which is rigidly secured on the plunger 5. The free end of the supporting-bar 7 rests loosely upon and slides over the rest-lug 3, and on its upper face it is grooved to receive and form a runway for the base-bar of the platen-carriage 9. At its rear edge the base-bar of the platen-carriage is provided

with ratchet-teeth 10, and the rear central portion of the bar 7 is cut away at 11 to expose certain of the ratchet-teeth 10. The platen-carriage 9 is provided with an ordinary platen-roller 12, which, as shown, has an ordinary operating-knob 13 and notched retaining-wheel 14, with the latter of which a retaining-pawl 15 on the carriage 9 coöperates in the ordinary manner.

The platen-carriage is yieldingly drawn toward the left with respect to Fig. 1 and toward the right with respect to Fig. 3, substantially as in standard machines, by a flexible strap 16, secured at one end, as shown, to a projection 17 on said carriage and secured at its other end to a spring-turned feed-wheel 18, loosely mounted on said plunger 5. As shown, the feed-wheel 18 is subject to a torsion-spring 19, secured thereto at one end and to the plunger 5 at its other end.

The type-bars 20 are given their swinging movements to produce the impression and to return by any suitable key-actuated devices (not shown)—such, for instance, as shown in my said prior application. At their free ends the type-bars 20 are provided with type-heads 20^a, which carry the type.

The free ends of the type-bars 20 are embraced by a yoke-like guide 21, which has downwardly-converging cam-surfaces terminating in a centrally-depending alining channel 22 of such width that it will admit to the printing-point only one type-bar at a time and will accurately aline the type of the depressed bar. The type-bars 20 are provided with upwardly-projecting guide-fingers 23, which work through suitable guides afforded by a guide-comb 24, which, as shown, is formed integral with the prongs of the alining-guide 21, and serves as a stop against which the type-bars are normally yieldingly held by suitable spring devices. (Not shown.) The guide-fingers 23 extend on such lines that they freely permit the type-bars to be directed to the impression-point under the action of the alining-guide 21, and they serve to positively guide the type-bars back to their proper normal positions under the upward movements of said type-bar.

The feed-escapement for controlling the movements of the platen-carriage involves a

bell-crank lever 25, the shorter arm of which serves as the lock-pawl member of the escapement and the longer arm of which carries a slip-pawl 26, pivoted thereto with freedom for sufficient lateral movement to permit the free end thereof to slip over the ratchet-teeth 10 under the return movement of the carriage. The bell-crank 25 is pivoted at 27 to the supporting-bar 7 in position for both of its pawl members to properly engage the ratchet-teeth 10 of said carriage, where they are exposed at the gap 11 of said bar 7. As shown, the slip-pawl 26 is limited to a vibration between stops 28 on said bar 7. The slip-pawl 26 has a projection 29, which is located eccentric to its pivot and is also offset laterally outward from the pivotal connection between said pawl and the said bell-crank 25. A light coiled spring 30, connected to the bar 7 and to the outer end of the projection 29 of said slip-pawl 26, yieldingly holds the bell-crank 25 upward, as limited by a stop 31, and further tends to hold the upper end of said slip-pawl in engagement with the ratchet-teeth 10 and against the left-hand stop 28, as viewed in Fig. 3. It may be here noted, however, that normally the greater tension of the carriage feed-spring 19 forces the upper end of said slip-pawl 26 against the right-hand member of the said stops 28.

It will of course be understood that whenever the long free end of the escapement bell-crank 25 is depressed the free end of the shorter arm or lock-pawl member will first be moved down into engagement with one of said teeth 10, and immediately thereafter the free end of the slip-pawl 26 will be drawn from engagement with said teeth and will then under the action of the spring 30 be thrown against the left-hand stop 28. When the free end of said bell-crank 25 is again raised, the free end of the slip-pawl, moving upward, will engage with a tooth 10, which stands to the left next adjacent to the tooth previously engaged thereby, and immediately thereafter, the lock-pawl 25^a being raised from engagement with said teeth 10, the carriage under the action of its spring 19 will be given a step of movement, and the slip-pawl 26 will be again thrown against the right-hand stop 28. It will be understood that these stops 28 may be provided in a great many different ways and made to serve the same purposes.

When the carriage is drawn back to its starting-point toward the right with respect to Fig. 1 or toward the left with respect to Fig. 3, the slip-pawl 26, being free for lateral movement, will readily slip over the ratchet-teeth 10 and offer practically no resistance to such movement of carriage.

The escapement-trip, which in this machine is actuated directly by the depressed type-bar, instead of being actuated directly by the depressed key, as in prior machines, is shown as in the form of a bail 33, which embraces the rest-lug 3 and is pivoted thereto at 34. The free end of the forward and longer arm

32 of this trip-bail extends close to the guide-yoke 21 and stands in the path of the depressed type-bar a considerable distance above the lower extremity of the contracted alining-channel 22. The outer and shorter arm 33 of said trip-bail overlies the long arm of the escapement bell-crank 25. Hence whenever a type-bar 20 is depressed or makes its impression-stroke it will strike the long arm 32 of said trip-bail, depressing the same and the short arm 33, and said latter arm, acting on the escapement bell-crank, will move the free end thereof downward and actuate the escapement in the manner above described.

The spacing bar or key 35, which is suitably located at the front of the machine, is secured on one end of a rock-shaft 36, suitably mounted in a pair of the bearing-lugs 4, only one of which is shown in the drawings. At its rear end the rock-shaft 36 is provided with an inwardly-projecting finger 37, the free end of which, as shown, is bent laterally and overlies the long inner arm 32 of the trip-bail 32 33. Hence when the escapement-bar 35 is struck or depressed an escapement movement will, as is evident, be given to the escapement. As shown, the trip-finger 37 of the shaft 36 is yieldingly held upward against the stop-pin 38 on the rear bearing-lug 4 by light spring 39, connected to the bed-plate and to a short arm 40, depending from the rear end of the shaft 36. This spring 39 serves to hold upward the spacing-key 35 and the trip-finger 37 when the trip-bail 32 33 is depressed.

In order that the escapement device may be completely thrown out of action and the carriage thereby rendered free for movement in either direction, I provide a releasing lever or key 41, which, as shown, is pivoted to the under side of the guide-bar 7 at 42, with its free end standing in position to engage the slip-pawl 26 and force the free end of the same laterally out of engagement with the ratchet-teeth 10 of the carriage. This releasing-key 41 may, of course, take various forms and may be bent so as to bring its upper end at the most convenient or desirable point.

The mechanism above described is capable of considerable modification within the scope of my invention.

What I claim, and desire to secure by Letters Patent of the United States, is as follows:

1. In a type-writer, a carriage-escapement comprising a main lever having a lock-pawl and having a slip-pawl pivoted for vibrating escapement movements and lateral slip movements, and a spring applied to a laterally and eccentrically located projection of said slip-pawl, whereby said spring yieldingly holds said main lever upward, and said slip-pawl in an operative position, substantially as described.

2. In a type-writer, a platen-carriage having ratchet-teeth 10, in combination with an escapement device comprising a lever 25 with

rigid lock-pawl 25^a, the slip-pawl 26 pivoted to said lever 25 with freedom for vibrating escapement movements and lateral slip movements, and provided with a laterally and eccentrically located projection 29, and the spring 30 connected to the projection 29 of said pawl 26, and to a relatively fixed support, substantially as described.

3. In a type-writer, the combination with a carriage having ratchet-teeth, of a carriage-escapement comprising a main lever having a rigid lock-pawl and a pivoted spring-held

slip-pawl mounted for lateral slip movements, and a releasing lever or key acting on said slip-pawl to force the same laterally out of engagement with said ratchet-teeth and to thereby release the carriage, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES E. PETERSON.

Witnesses:

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E. W. VAN VRANKEN.