

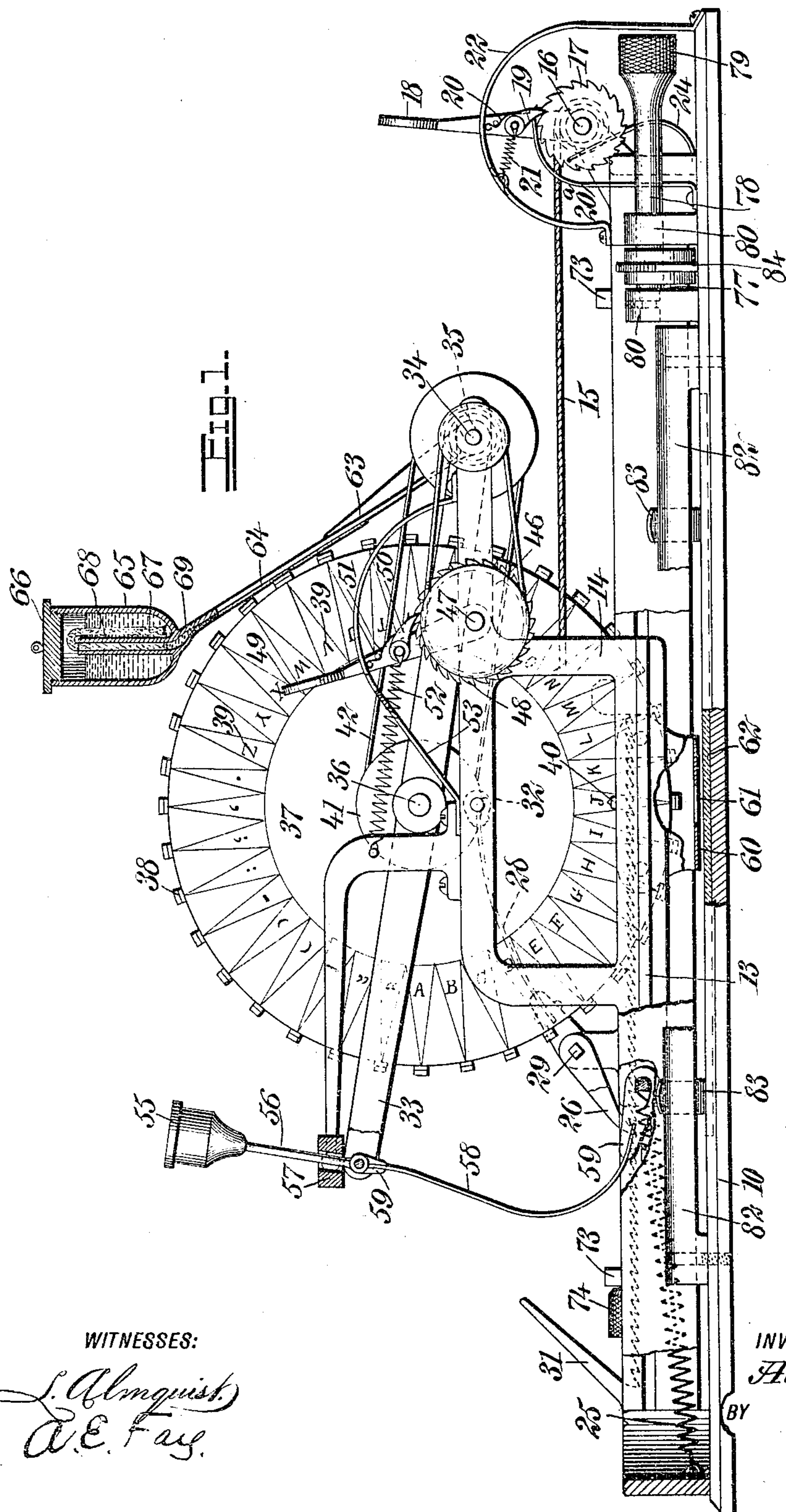
No. 825,728.

PATENTED JULY 10, 1906.

A. H. HOGEN.  
TYPE WRITER.

APPLICATION FILED MAR. 1, 1905.

3 SHEETS—SHEET 1.



WITNESSES:

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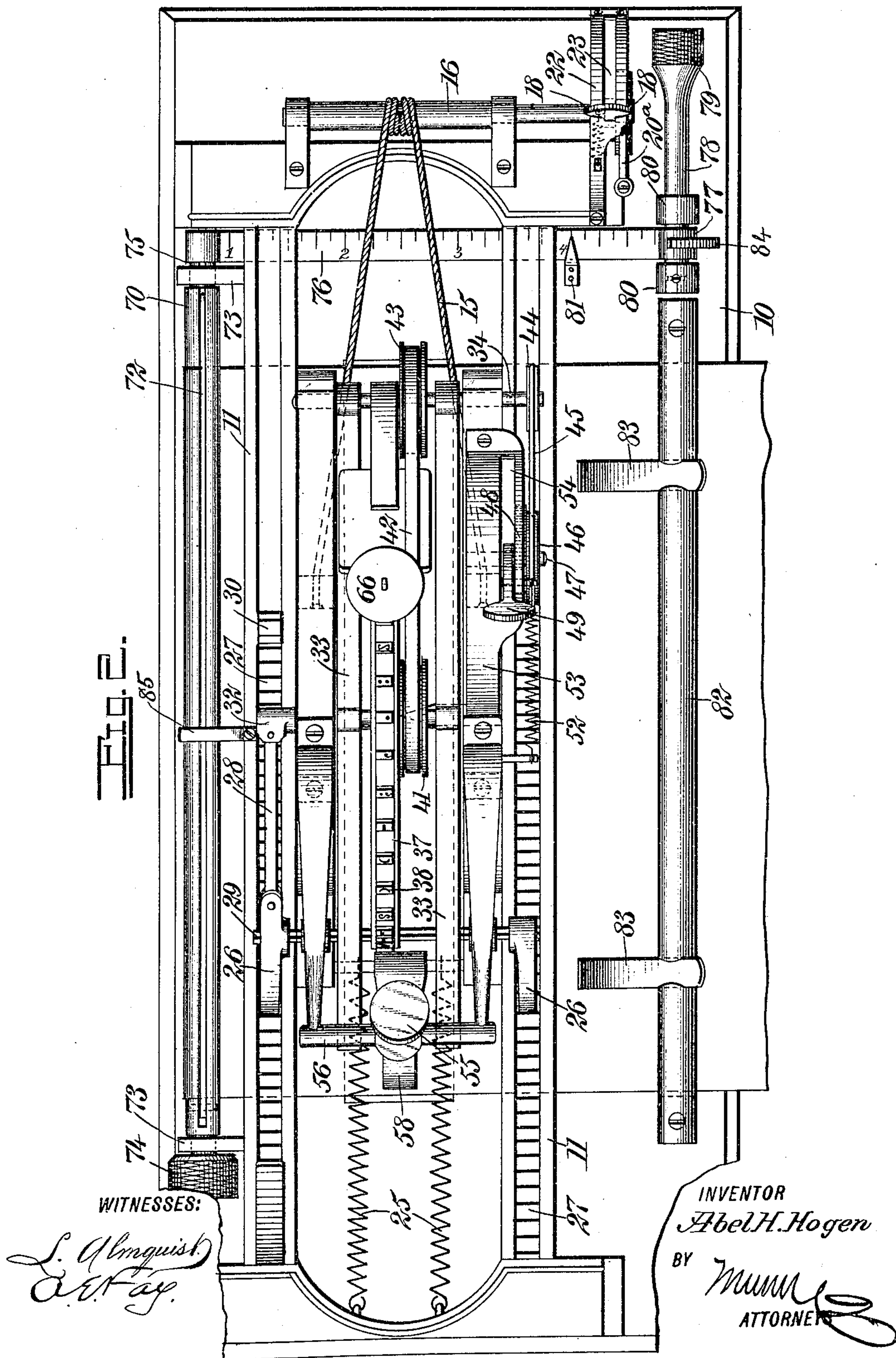
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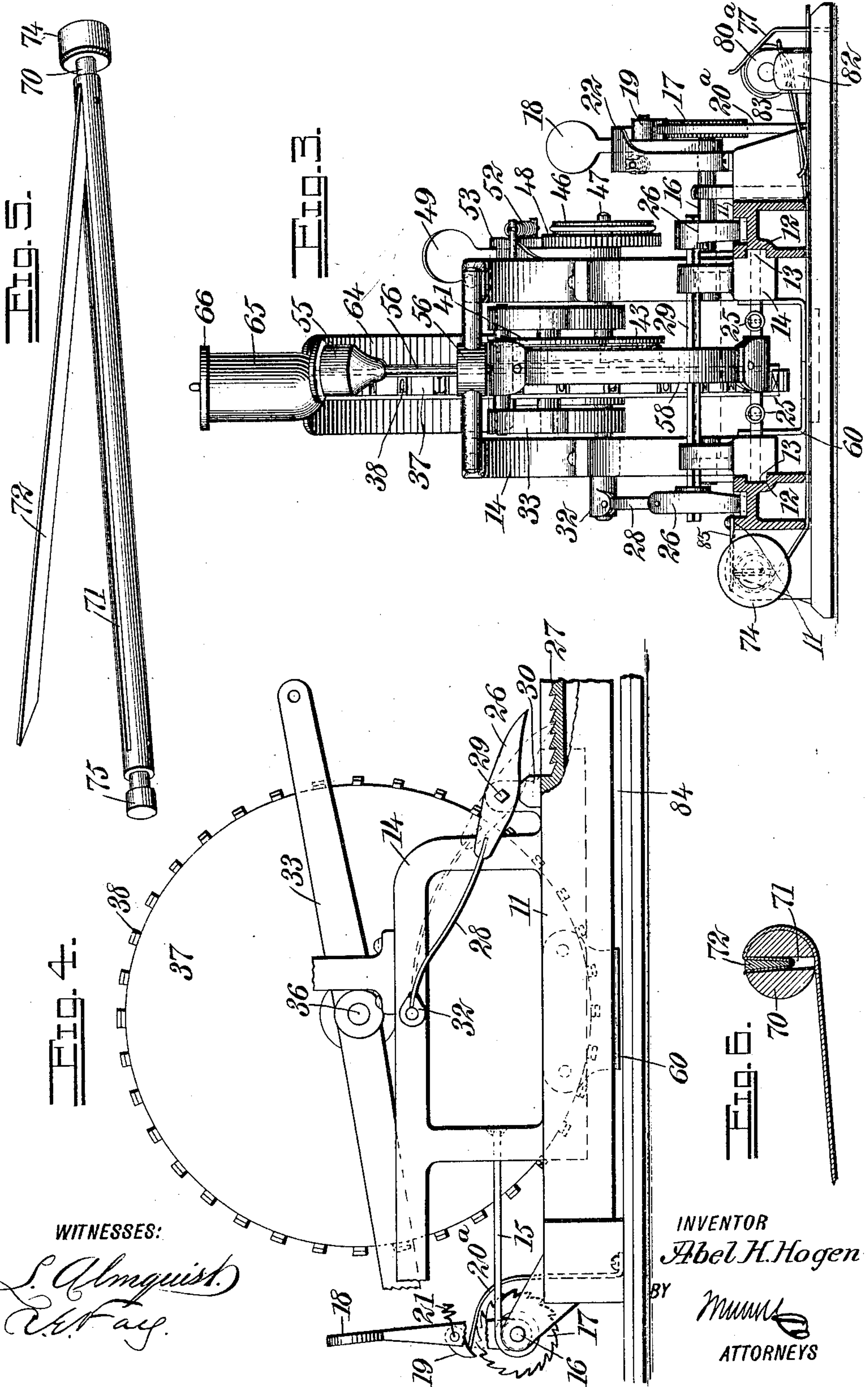
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# UNITED STATES PATENT OFFICE.

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## TYPE-WRITER.

No. 825,728.

Specification of Letters Patent.

Patented July 10, 1906.

Application filed March 1, 1905. Serial No. 247,910.

*To all whom it may concern:*

Be it known that I, ABEL H. HOGEN, a citizen of the United States, and a resident of Geddes, in the county of Charles Mix and State of South Dakota, have invented a new and Improved Type-Writer, of which the following is a full, clear, and exact description.

My invention relates to improvements in type-writing machines, the principal object being to reduce the cost by increasing the simplicity thereof.

An important object of the invention is to do away with the keyboard now ordinarily used on type-writers and the delicate connections with which it is usually provided.

My invention comprises means for accomplishing all of the results obtainable on high-priced machines of a complicated nature, these results being obtained by means which render it possible to build a machine that will have very few delicate and easily broken or deranged parts and at the same time will be capable of being built at a low cost.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of a type-writing machine built in accordance with the principle of my invention, parts being shown in section. Fig. 2 is a plan view of the same. Fig. 3 is an end elevation with parts in section. Fig. 4 is a diagrammatic rear view of a portion of the machine. Fig. 5 is a perspective view of a detail; and Fig. 6 is a sectional view, on an enlarged scale, of the device shown in Fig. 5.

The machine comprises a base 10, on which are supported a pair of toothed tracks 11. These tracks are provided with ways 12 on their inner surfaces for the reception of projections 13 on a carriage 14. The carriage is designed to travel back and forth along the tracks, guided by these ways. For the purpose of moving the carriage in one direction I secure flexible connections 15 in the form of a rope, chain, or cable to the front portion of the carriage and carry them to a windlass or drum, preferably located at the front portion of the machine. This windlass is mounted upon a shaft 16, provided with a ratchet-wheel 17, and the latter is designed to be operated by a lever 18, having a pawl 19 pivotally mounted thereon and designed to engage in the teeth of the ratchet-wheel. The pawl

is provided with a pair of springs 20 and 21, the former for keeping the pawl normally in contact for engaging the teeth and the latter for returning the lever to its normal position after it has been swung upon the shaft 16 as a pivot to rotate the ratchet-wheel and drum. A bar 20<sup>a</sup> is so located as to engage the pawl when the lever is brought to its extreme position and disengage it from the teeth, so that it can be returned.

The lever is provided with a guide 22, secured to the frame of the machine and having a slot 23 for receiving the lever. The shaft is provided with a resilient brake 24 to hold it in any position in which it may be placed by the pawl. The carriage is normally urged in the opposite direction by means of a spring 25, connected with the rear of the carriage and the rear of the base. It will be readily understood that the spring will normally hold the carriage in a position as far to the rear as possible and that the operation of the lever 18 will move the carriage forward by a step-by-step motion, it being yieldingly held in any position in which it may be placed by means of the springs 24 and 25.

In order to insure the step-by-step motion of the carriage and provide for an accurate spacing, the carriage is provided with a pair of pawls 26, pivoted to the body of the carriage and adapted to engage the teeth 27 of the tracks 11. These pawls are normally held in contact with the teeth by springs 28 and will slide from one tooth to another in such a manner that a backward motion of the carriage would not be possible. The two pawls are rigidly connected together by a shaft 29. In order to provide for throwing these pawls out of operative position when the carriage reaches the end of its stroke, so that it can be drawn back to the rear of the machine by the spring 25, a stud 30 is provided in one of the tracks. This stud will engage one of the pawls, as indicated in Fig. 4, and throw both of them from the position shown in dotted lines to that shown in full lines in an obvious manner, the flexion of the spring 28 normally holding the pawls in the position in which they are forced by the stud. When the carriage reaches the other end of its stroke, one of the pawls 26 comes into contact with an inclined projection 31, which forces it, together with the opposite pawl, back in position for engaging the teeth 27. It should be noticed that the end of the spring 28 is held by a rigid clamp 32, which



enables the spring to perform the functions described above.

Through the mechanism described the carriage is adapted to be set in any desired position for the printing of the letter, and it will be readily understood that from the rear to the front end of the carriage it will ordinarily be moved one step at a time by the lever 18, thus providing for the successive printing of characters in the proper position upon the paper.

Upon the carriage is mounted a frame 33, pivoted to the carriage by means of a shaft 34 or the like, this shaft being preferably located at the front end of the carriage and of the frame and being mounted in slots 35 in the frame, so that it can be readily removed. The frame is provided with a shaft 36, on which is mounted a type-wheel 37. This type-wheel is provided upon its edge with a succession of characters 38, which may be of any desired kind. It is also provided with characters 39 upon its side in order that the particular character which is located at the bottom, and therefore in position for printing, may be designated by a pointer 40, located near the bottom of the carriage.

In order to rotate the type-wheel to the proper position for presenting the required letter at the bottom for printing, a pulley 41 is mounted on the shaft 36 and rigidly connected with respect to the type-wheel. This is provided with a belt 42, passing over a pulley 43 on the shaft 34. On the same shaft is mounted another pulley 44, connected by a belt 45 with a pulley 46 upon a shaft 47, mounted on the frame of the carriage. The shaft 47 is provided with a ratchet-wheel 48, rigidly mounted with respect to the pulley 46, and a lever 49, pivotally mounted on the shaft 47, is provided with a pawl 50, engaging the teeth of the ratchet-wheel and yieldingly held in contact with the teeth by means of a spring 51. A spring 52, connected with the carriage and with the lever, is provided for returning the lever to normal position after it has been manipulated to set the wheel. A guide 53, provided with a slot 54, is provided for the lever.

When the wheel is set in proper position, the printing is accomplished for all letters and all characters by forcing the frame 33 downward about its pivot 34, and this is accomplished by means of a key 55, mounted on a rod 56, which is connected with the rear end of the frame 33 and is provided with a guide 57, rigidly mounted on the carriage. A spring 58 is connected with the lower portion of the rod 56 for normally returning the rod and carriage to their most elevated position after being depressed to print a character. The spring 58 is preferably connected with clamps 59, each pivotally mounted upon the frame of the carriage. The bottom of the carriage carries a sheet-metal guard

60, having a perforation 61 directly under the shaft 36, through which the type character is designed to print. This guard protects the paper from contact by any other character than the one located directly above it. In order that a smooth surface may be provided for the paper, a glass plate 62 is located in the base of the machine between the tracks and throughout the printing length of the device.

Many different forms of inking devices may be employed; but I prefer a frame 63, pivotally connected with the shaft 34 and carrying a pad 64 upon its inner face. At the top of the frame is an ink-cup 65, having a cover 66 and a well 67. A wick 68 in the cup connects the fresh ink therein with the interior of the well, which in turn is connected by a passage 69 with the pad 64, so that ink will be conducted by capillary attraction into the well and thence by gravity to the pad. The characters as they pass the pad will be inked in an obvious manner. The pad can be turned down when not in use.

The means which I have illustrated for holding and feeding the paper comprises a roll 70, having a slot 71, and a pivoted plate 72, adapted to enter said slot and clamp the paper in it, as shown in Fig. 6. This roll is mounted in bearings 73 and is provided with a hand-wheel 74 for operating it. Upon the opposite end it is provided with a roll 75, adapted to carry a tape 76, which in turn is connected with a roll 77 upon a shaft 78 upon the opposite side of the machine. This shaft is also provided with a hand-wheel 79 and is mounted in bearings 80 upon the frame of the machine. A pointer 81 is mounted on the machine for indicating on the tape the position of the paper with respect to the type-wheel. A guide 82, having inclined resilient holders 83, is provided upon this side of the machine for resiliently bearing upon the paper and holding it in the machine against the force of the roller 70, thus providing the necessary tension. The paper passes under the tracks 11 through spaces located between them and the base of the machine. The tape and paper-roller also have springs 84 and 85 for holding the tape and paper.

It will be seen that by the construction of a type-writer on the principle set forth above, whether in the exact form shown or in any other form falling within the scope of my claims, a machine is provided which is much simpler in construction than machines now on the market, which will be very durable, having no delicate parts to get out of order, and which can be very easily operated.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. A type-writing machine having a traveling carriage, a rotatable type-wheel there-



on, means for giving the carriage a step-by-step motion, and means for intermittently rotating the wheel; said last-named means comprising a pulley rigidly mounted with respect to the wheel, a ratchet-wheel, connections from the pulley to the ratchet-wheel, and means for giving the ratchet-wheel, a step-by-step motion of rotation.

2. A type-writing machine having a traveling carriage, a rotatable type-wheel thereon, means for giving the carriage a step-by-step motion, and means for intermittently rotating the wheel; said last-named means comprising a pulley rigidly mounted with respect to the wheel, a ratchet-wheel, connections from the pulley to the ratchet-wheel, and means for giving the ratchet-wheel a step-by-step motion of rotation; said last-named means comprising a pivoted lever, a pawl on the lever adapted to engage the teeth of the ratchet-wheel, a spring for normally holding the pawl in engagement with said teeth, a guide for the lever, and resilient means for normally forcing the lever in one direction.

3. A type-writing machine having a traveling carriage, a rotatable type-wheel thereon, means for giving the carriage a step-by-step motion, and means for intermittently rotating the wheel; said means for giving the carriage a step-by-step motion comprising a windlass connected with the carriage, a ratchet-wheel connected with the windlass, and means for intermittently rotating the ratchet-wheel.

4. The combination of a traveling carriage, a type-wheel thereon, means for giving the carriage a step-by-step motion, means for intermittently rotating the wheel on an axis perpendicular to the direction of motion of the carriage, said carriage comprising a frame pivoted on an axis parallel with the first-named axis, for supporting the type-wheel, and an inking device mounted on said carriage independently of said frame.

5. The combination of a rotatable type-wheel adapted to travel in a plane coincident with the plane of rotation and oscillatable on an axis parallel with the axis of the wheel, and an inking device for the type-wheel pivotally mounted on the first-named axis.

6. A type-writing machine, comprising a carriage, a printing mechanism mounted thereon, means for moving the carriage in one direction intermittently, a resilient means for normally forcing the carriage in the other direction, means for normally preventing the carriage from moving under the influence of said last-named means, and means for rendering the last-named means inoperative when the carriage reaches one end of its stroke.

7. A type-writing machine, comprising a track having ways, a carriage having projections adapted to engage in said ways, means for moving the carriage along the

track in one direction, yielding means for normally moving the carriage along the track in the opposite direction, means for preventing the carriage from moving under the influence of the yielding means, comprising teeth located on the track and pawls located on the carriage and adapted to engage said teeth, means for forcing the pawls out of operative position when the carriage reaches the end of its stroke in one direction, and means for forcing the pawls into operative position when the carriage reaches the end of its stroke in the other direction.

8. A type-writing machine, comprising a track having ways, a carriage having projections adapted to engage in said ways, means for moving the carriage along the track in one direction, yielding means for normally moving the carriage along the track in the opposite direction, and means for preventing the carriage from moving under the influence of the yielding means, comprising teeth located on the track, pawls located on the carriage and adapted to engage said teeth, and a single means for normally holding said pawls in both operative and inoperative positions.

9. A type-writing machine, comprising a track having ways, a carriage having projections adapted to engage in said ways, means for moving the carriage along the track in one direction, yielding means for normally moving the carriage along the track in the opposite direction, and means for preventing the carriage from moving under the influence of the yielding means, comprising teeth located on the track and pawls located on the carriage and adapted to engage said teeth, yielding means for normally holding said pawls in operative position, means for forcing the pawls out of operative position when the carriage reaches the end of its stroke in one direction, and means for forcing the pawls into operative position when the carriage reaches the end of its stroke in the other direction.

10. A type-writing machine, comprising a movable carriage and an escapement device therefor, said escapement device comprising a rack, a pawl pivotally mounted on the carriage and adapted to engage the rack, a flexible spring adapted to be bent into concave or convex form to hold the pawl normally either in engagement with the rack or out of engagement with it, and means at opposite ends of the path of motion of the carriage for moving the pawl with respect to the rack.

11. A type-writing machine, comprising a carriage, a rack along which said carriage is adapted to move, a pivoted pawl adapted to engage said rack, a stop located at one end of the rack for forcing the pawl out of engagement with the rack, a projection located at the other end of the rack for forcing the pawl into engagement with the rack, and resilient



means for holding the pawl in both of said positions, said means comprising a flat spring capable of normally retaining either a concave or convex form.

5 12. A type-writing machine having a traveling carriage, a rotatable type-wheel thereon, means for giving the carriage a step-by-step motion, means for intermittently rotating the wheel, and an inking device pivotally  
10 mounted with respect to said carriage and provided with a pad adapted to engage the type-wheel; said inking device comprising a receptacle for ink, a well centrally located in said receptacle, and having an opening at the  
15 bottom thereof communicating with the pad, and a wick for conveying ink from the receptacle to the well, said well being connected with the pad.

13. A type-writing machine having a type-  
20 wheel and an inking device mounted adjacent thereto, said inking device comprising a pad adapted to engage the type-wheel, a receptacle for ink, a well centrally located in said receptacle and having an opening in the  
25 bottom thereof communicating with the pad, and a wick for conveying ink from the receptacle to the well.

14. A type-writing machine, comprising a base, a pair of tracks thereon spaced from  
30 the base, a carriage movably mounted on the tracks and bearing a printing mechanism, and means for guiding paper through the spaces between the tracks and base; said means comprising a roller mounted outside  
35 of the tracks and provided with means for securing a paper thereto, and a guide located

upon the other side of the tracks and having resilient means for engaging the paper.

15. A type-writing machine, comprising a base, a pair of tracks thereon spaced from the  
40 base, a carriage movably mounted on the tracks and bearing a printing mechanism, and means for guiding paper through the spaces between the tracks and base; said means comprising a roller having means for  
45 securing paper thereto and located parallel to the tracks upon one side thereof, and a tension device located upon the other side of the tracks and comprising a bar spaced from the base and resilient springs adapted to engage  
50 the paper.

16. A type-writing machine, comprising a base, a pair of tracks thereon spaced from the base, a carriage movably mounted on the tracks and bearing a printing mechanism,  
55 and means for guiding paper through the spaces between the tracks and base; said means comprising a roller located on one side of the tracks and having means for securing the paper thereto, and provided with a hand-  
60 wheel and a second roller, a roller located upon the other side of the tracks and having a hand-wheel, a tape adapted to pass over the last two rollers mentioned, and a pointer mounted on the base adjacent to the tape.  
65

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ABEL H. HOGEN.

Witnesses:

JOHN O. TRONVOLD,  
SEVERT S. WALSTED.