

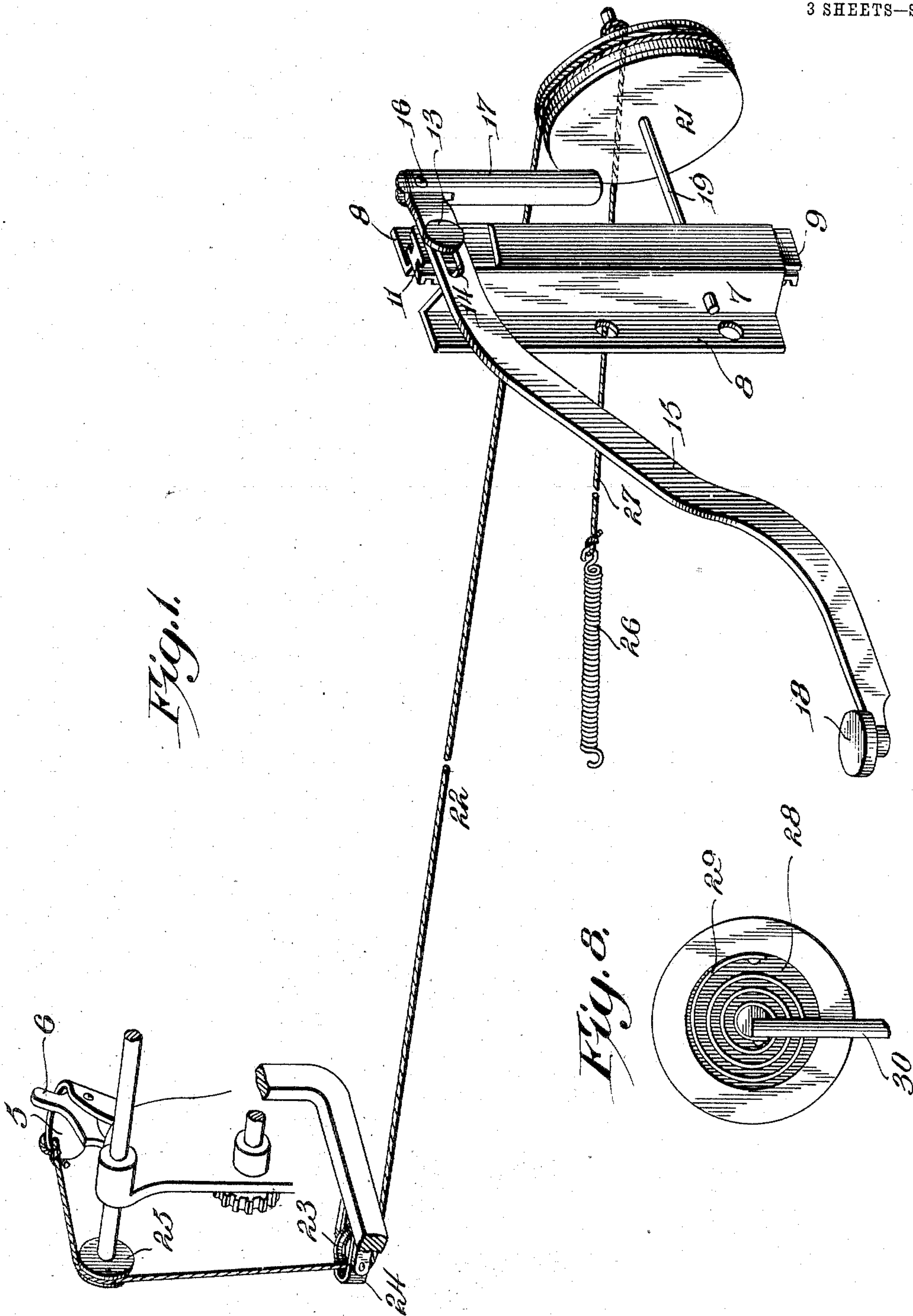
No. 817,242.

PATENTED APR. 10, 1906.

S. A. HARDMAN.
CONTROLLING ATTACHMENT FOR TYPE WRITERS.

APPLICATION FILED MAR. 2, 1905.

3 SHEETS—SHEET 1.



Witnesses
Louis C. Starke
Herbert D. Lawson

Inventor
Shannon H. Hardman,

By W. J. Fitzgerald & Co.,
Attorneys

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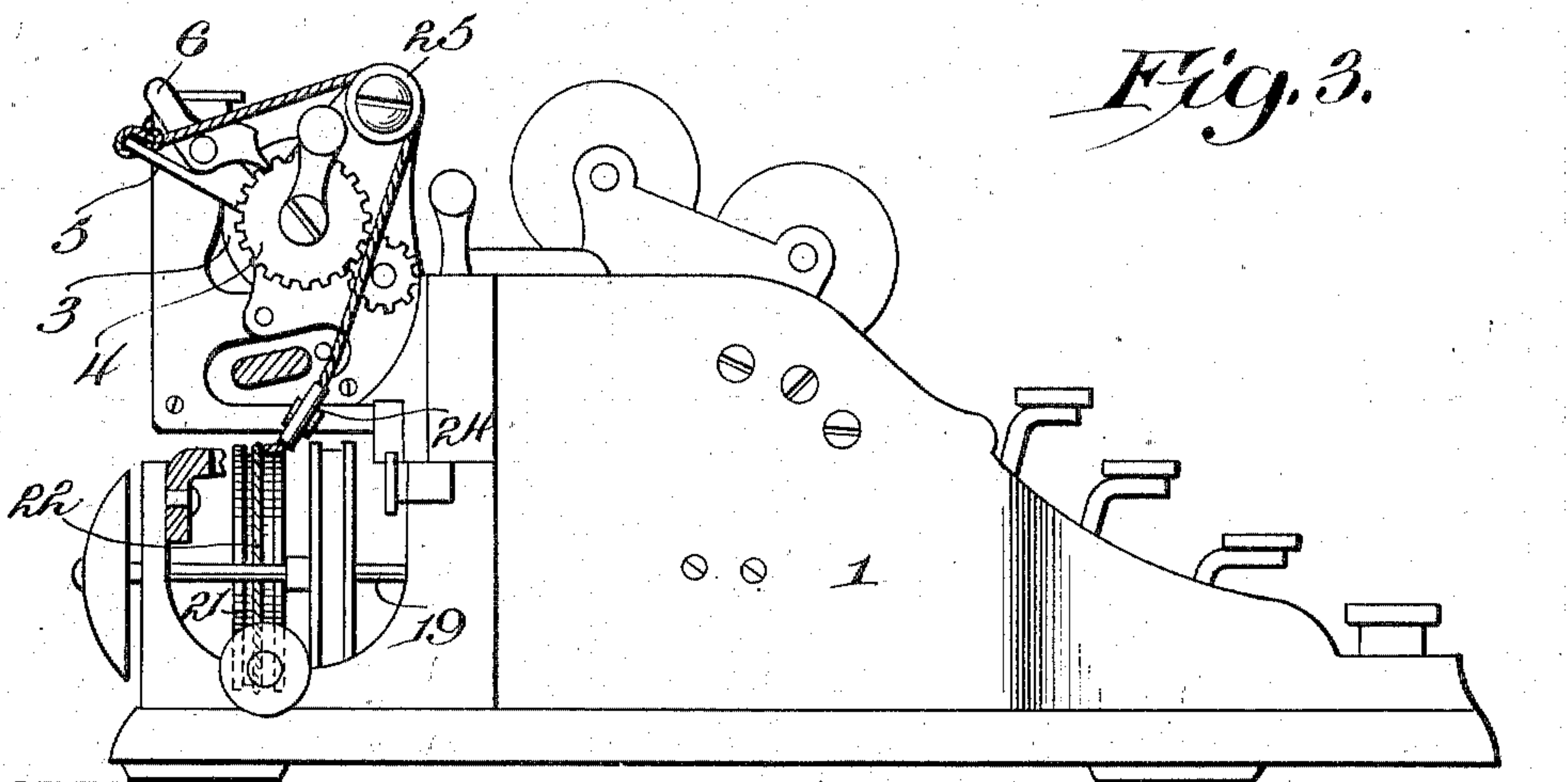
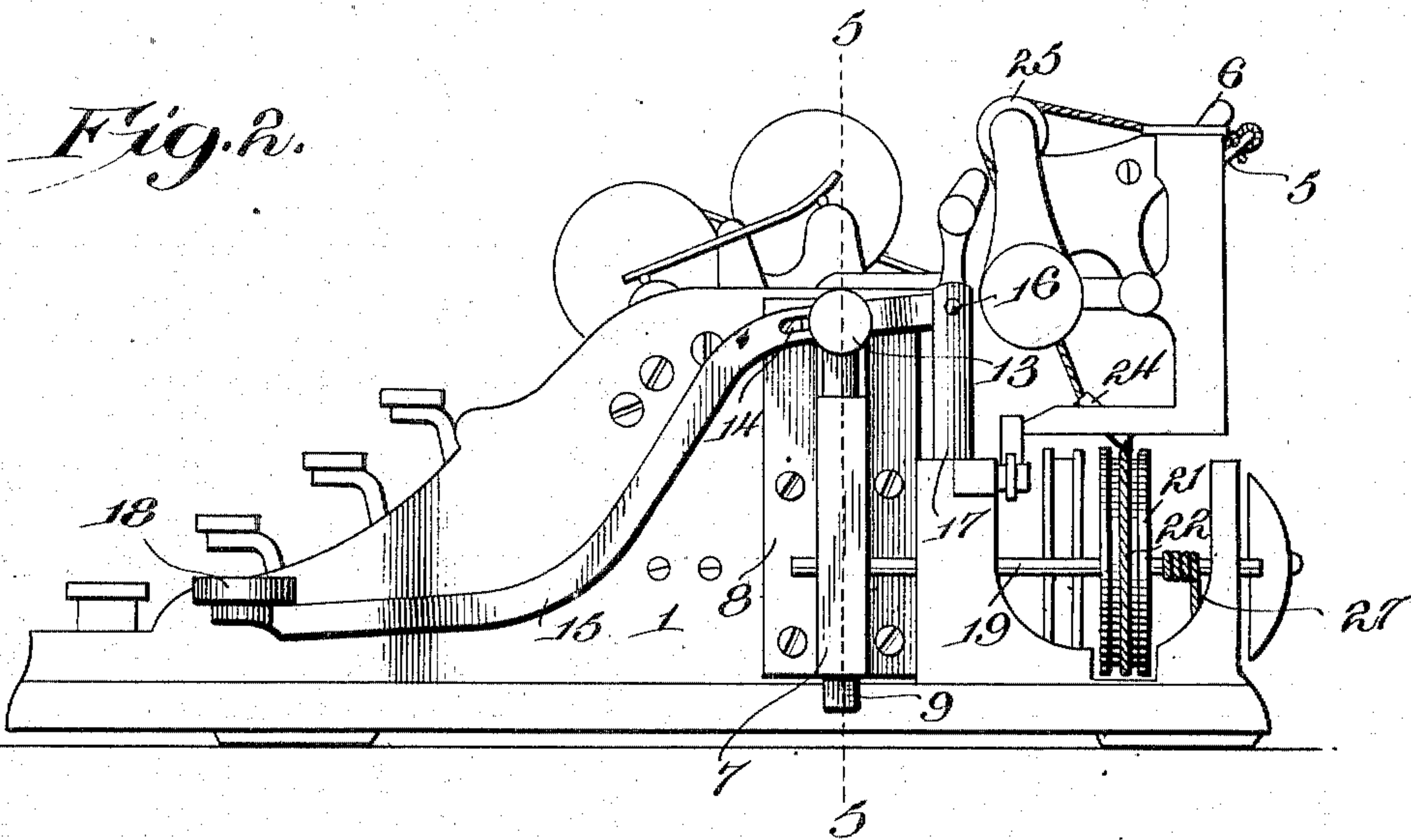
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Louis C. Starke
Herbert D. Lawson

Inventor
Shannon H. Hardman,

By *W. J. Fitz Gerald*
Attorney

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3 SHEETS—SHEET 3.

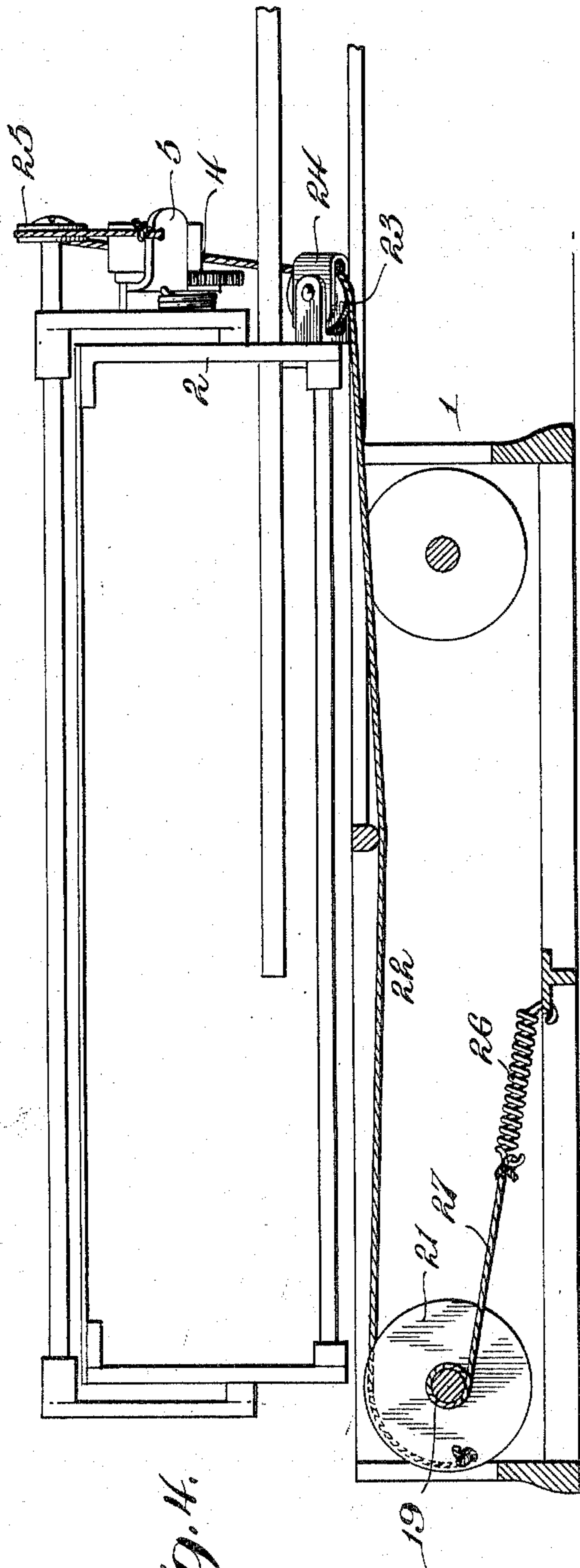


Fig. 4.

Fig. 1.

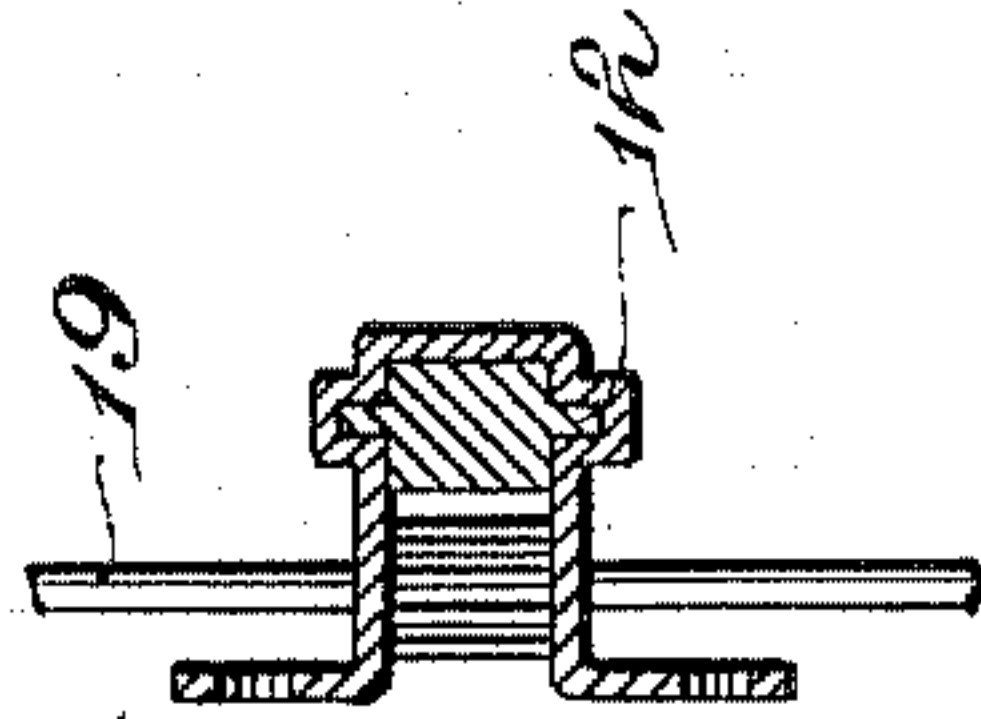


Fig. 6.

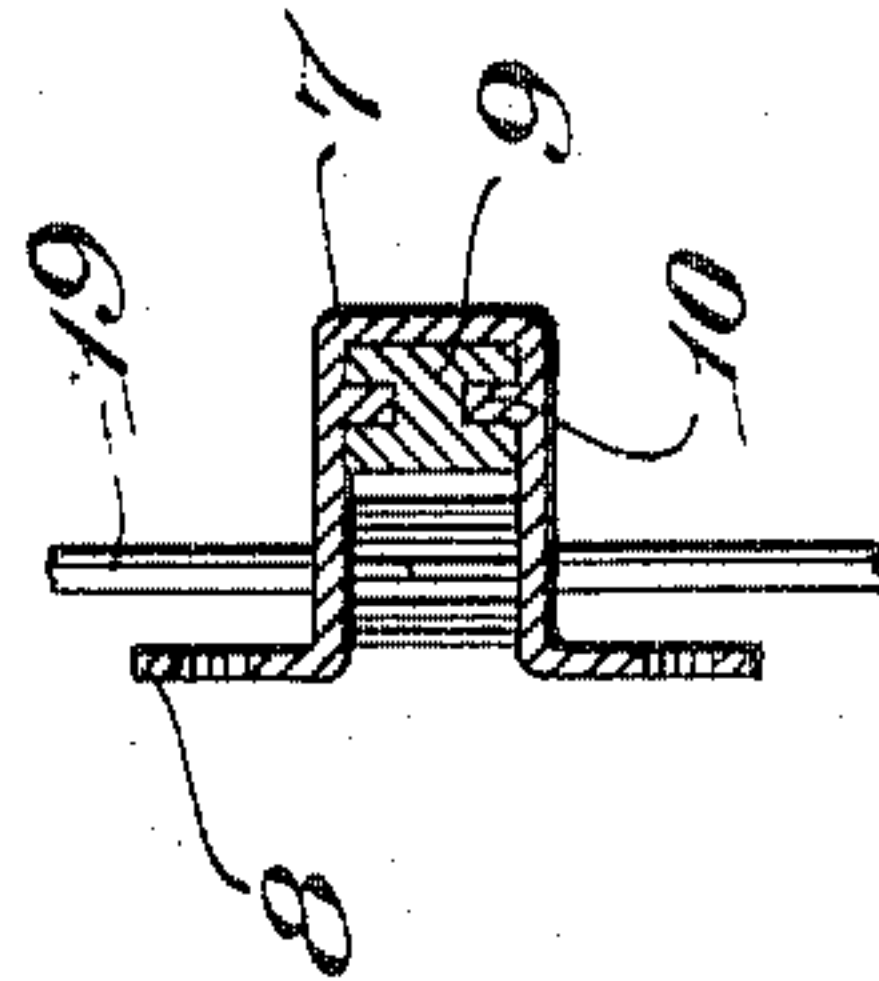
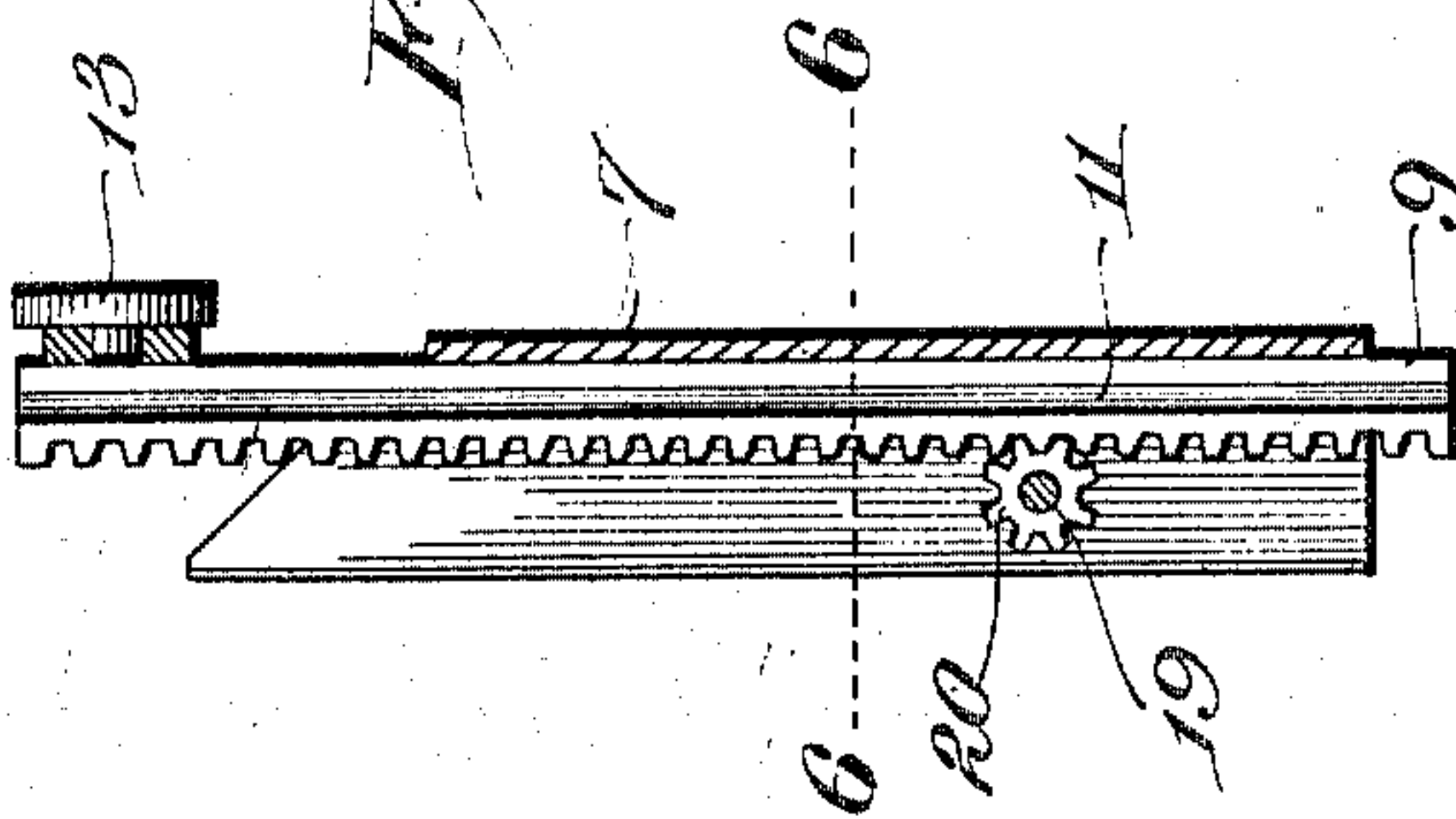


Fig. 5.



Witnesses

Louis C. Starke
Harbert D. Lawson

Inventor
Shannon H. Hardman,

By W. J. Fitzgerald & Co.
Attorneys

UNITED STATES PATENT OFFICE.

SHANNON A. HARDMAN, OF ELKINS, WEST VIRGINIA.

CONTROLLING ATTACHMENT FOR TYPE-WRITERS.

No. 817,242.

Specification of Letters Patent.

Patented April 10, 1906.

Application filed March 2, 1905. Serial No. 248,114.

To all whom it may concern:

Be it known that I, SHANNON A. HARDMAN, a citizen of the United States, residing at Elkins, in the county of Randolph and State of West Virginia, have invented certain new and useful Improvements in Controlling Attachments for 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 invention relates to an attachment for type-writers, and it is more particularly a device operated by a key for rotating the platen of a type-writer and for moving the type-writer carriage backward a desired distance after the platen has been rotated.

An object of the invention is to provide mechanism whereby a key can be located adjacent or within the keyboard of the type-writer and which when pushed downward will operate the mechanism to rotate the platen and to reverse the movement of the carriage, the extent of the operations produced by the depression of the key being controlled by the amount of downward movement imparted to the key.

Another object is to provide an attachment which can be readily adapted for use upon type-writers of different constructions and which can be utilized either for rotating the platen or for returning the carriage one or more spaces or for producing both of these operations simultaneously.

A great objection heretofore experienced in the use of type-writers has been loss of time due to the necessity of removing one of the hands from the keyboard to push the carriage backward and to rotate the platen after the completion of each line of writing.

The primary object of my device is to provide mechanism of very simple and very inexpensive construction which obviates these disadvantages in that the rotation of the platen and the back-shifting of the carriage can both be produced by depressing one of the keys of the keyboard to a greater or less extent.

The invention consists of a rotatable spring-controlled device connected by suitable mechanism with a key-lever whereby upon imparting slight downward movement to the key of said lever the rotatable device will be revolved a desired number of times.

This device is connected to the carriage and to the line-spacing attachment thereon in such a manner that during the first portion of the downward movement of the key the line-spacing device will be operated, and as said downward movement of the key continues the carriage will be driven backward the desired distance.

The invention also consists of certain novel devices of construction and combinations of parts such as will be hereinafter more fully described, and pointed out in the claims.

In the accompanying drawings I have shown the preferred form of my invention.

In said drawings, Figure 1 is a perspective view of my improved type-writer attachment and showing a portion of a type-writer carriage connected thereto. Fig. 2 is an end elevation of a type-writer having my improved attachment connected thereto. Fig. 3 is a view of said type-writer looking at the opposite end thereof, a portion of said end being broken away to show the attachment. Fig. 4 is a rear elevation of the type-writer frame, the same being shown partly in section to disclose the attachment in rear elevation. Fig. 5 is an enlarged vertical section on line 5 5, Fig. 2. Fig. 6 is a section on line 6 6, Fig. 5. Fig. 7 is a modified form of rack and guide therefor, and Fig. 8 is a detail view of a spring-controlled drum which may be used in connection with the attachment.

Referring to the figures by numerals of reference, 1 is the body of a type-writer, the same being provided with a movable carriage 2, which may have any suitable mechanism for imparting movement thereto during the operation of the keys of the keyboard. This carriage is also formed with a rotatable platen 3, having a toothed wheel 4 connected thereto and adapted to be rotated ordinarily by means of a lever 5, having a wheel-engaging device 6 thereon.

It will of course be understood that I do not restrict myself to the use of any particular form of type-writer or of platen-rotating mechanism, as the attachment which I have devised can be employed upon any of the various makes of machines.

Secured to one end of the frame 1 is a sleeve 7, preferably in the form of a longitudinally-channeled strip having side flanges 8 for the reception of means whereby said flanges and the sleeve can be secured upon the body 1. A rack 9 is slidably mounted

within the sleeve and is held in proper relation therein in any suitable manner, as by means of ribs 10, extending into grooves 11, formed in the rack, as shown in Figs. 5 and 6, or by providing ribs 12 on the sides of the rack which project into grooves formed in the side walls of the sleeve, as shown in Fig. 7. The upper end of the rack has a headed lug or other like device 13 projecting therefrom and slidably mounted within a slot 14, formed within a lever 15. This lever is mounted upon a fixed pivot 16, which may be located in a post 17 on the body 1 and extends downward to a point adjacent or within the keyboard of the type-writer and has a key 18, adapted to be depressed by one of the fingers of the operator. A shaft 19 is rotatably mounted within the sleeve 7 and extends under the carriage of the machine. This shaft has a small gear 20 secured to it within the sleeve and meshing at all times with the rack 9. It will therefore be seen that when the rack is moved longitudinally a number of rotations of the gear 20 are produced, said number being in proportion to the extent of movement of the rack and the size of the gear. A drum 21 is secured to the shaft 19 and is preferably provided with a grooved periphery in which is secured and adapted to be wound a flexible strip 22 in the form of a cord of metal or fiber, and this strip extends under a roller 23, which is secured to the front or advancing end of the carriage by means of a bracket 24 or in any other preferred manner. The cord then extends over another roller 25 and is secured to the platen-rotating lever 5, hereinbefore referred to. A coiled spring 26 is connected at one end to the body 1, while its other end is secured, by means of a flexible strip 27, with the shaft 19 and is adapted to be wound thereon when the drum 21 is rotated to unwind the strip 22. It will therefore be understood that the strip 22 will always be kept taut by the spring 26. During the operation of writing with the type-writer the carriage thereof will travel from right to left in the ordinary manner, the cord 22 will unwind from drum 21, and the strip 27 will be wound on the shaft 19, thereby tensioning the light spring 26 and preventing the strip 22 from sagging. Shaft 19 will of course be rotated as the carriage moves forward, and therefore the gear 20 will raise the rack 9 and cause the lever 15 to move upward a short distance. After the completion of the line of writing the carriage can be returned to its initial position by pressing downward on the key 18. Rack 9 will therefore rotate the gear 20 and shaft 19, so as to revolve drum 21. Strip 22 when first pulled by the drum will swing the lever 5 forward on its pivot, so as to rotate the platen, and after this lever has reached the limit of its movement pulling on the strip 22 will cause the carriage 2 to be brought back

to its initial position. If the downward pressure of key 18 ceases as soon as the platen is rotated, the carriage will not move, and by regulating the extent of downward movement of the key the carriage can be either partly or entirely returned. The tension of spring 26 serves to assist in returning the carriage as it causes the strip 27 to unwind from shaft 19 when said shaft is rotated by the depression of key 18.

While I have shown the strip 22 connected to lever 5, it will be understood that this is not necessary, for, if desired, the strip could be connected directly to the carriage, so as to only shift the carriage and not the platen when the key 18 is depressed. Moreover, the manner of connecting the strip 22 to the carriage and platen may be varied to suit the different types of machines to which the attachment is applied.

It will of course be understood that the amount of movement of key 18 necessary to return the carriage will depend upon the relative diameters of gear 20 and drum 21. By increasing the size of the drum it will require fewer rotations thereof to wind the strip 22 than where a drum of smaller diameter is employed. The necessary vertical movement of key 18 diminishes in proportion to the increase in diameter of drum 21.

While I have shown the strip 27 and spring 26 used in connection with this attachment, I may, if desired, substitute a hollow drum 28, such as shown in Fig. 8, said drum being provided with a coiled spring 29 therein, connected to it and to a non-rotatable element, such as a post 30, whereby when the drum is rotated so as to unwind the strip 22 therefrom the spring 29 will be tensioned, and vice versa.

It will be noted that by utilizing the spring 26 and the flexible cord 22 the carriage of the type-writer can be returned to its initial position without necessarily depressing key-lever 15. Should the carriage be returned manually in this manner, the spring 26 will promptly wind cord 22 on drum 21, so as to hold it taut, and it will likewise automatically return the key-lever 15 to its initial position.

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

1. The combination with a type-writer having a longitudinally-movable carriage, a rotatable platen, and a platen-operating lever; of a key-lever pivoted to the type-writer, a sleeve secured to the type-writer, a rack slidably mounted therein, guides for retaining the rack within the sleeve, a sliding connection between the lever and rack, a shaft journaled within the sleeve, a gear secured thereon and within the sleeve and meshing with the rack, a drum secured to the shaft, a flexible connection between the drum and

the platen-lever, said connection movably engaging the carriage, and means for holding said connection normally taut.

2. In a device of the character described
5 the combination with a key-lever having a fixed pivot at one end; of a stationary sleeve, a rack slidably mounted therein, guides for holding the rack within the sleeve, a sliding connection between the key-lever and rack, a
10 shaft journaled within the sleeve, a gear upon the shaft and within the sleeve and

meshing with the rack, a drum upon the shaft, and flexible means connected to the drum and adapted to be secured to the carriage of a type-writer.

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

SHANNON A. HARDMAN.

Witnesses:

BENNETT S. JONES,
W. T. FITZ GERALD.