

(No Model.)

2 Sheets—Sheet 1.

A. B. DICK.
TYPE WRITING MACHINE.

No. 598,882.

Patented Feb. 8, 1898.

Fig. 1.

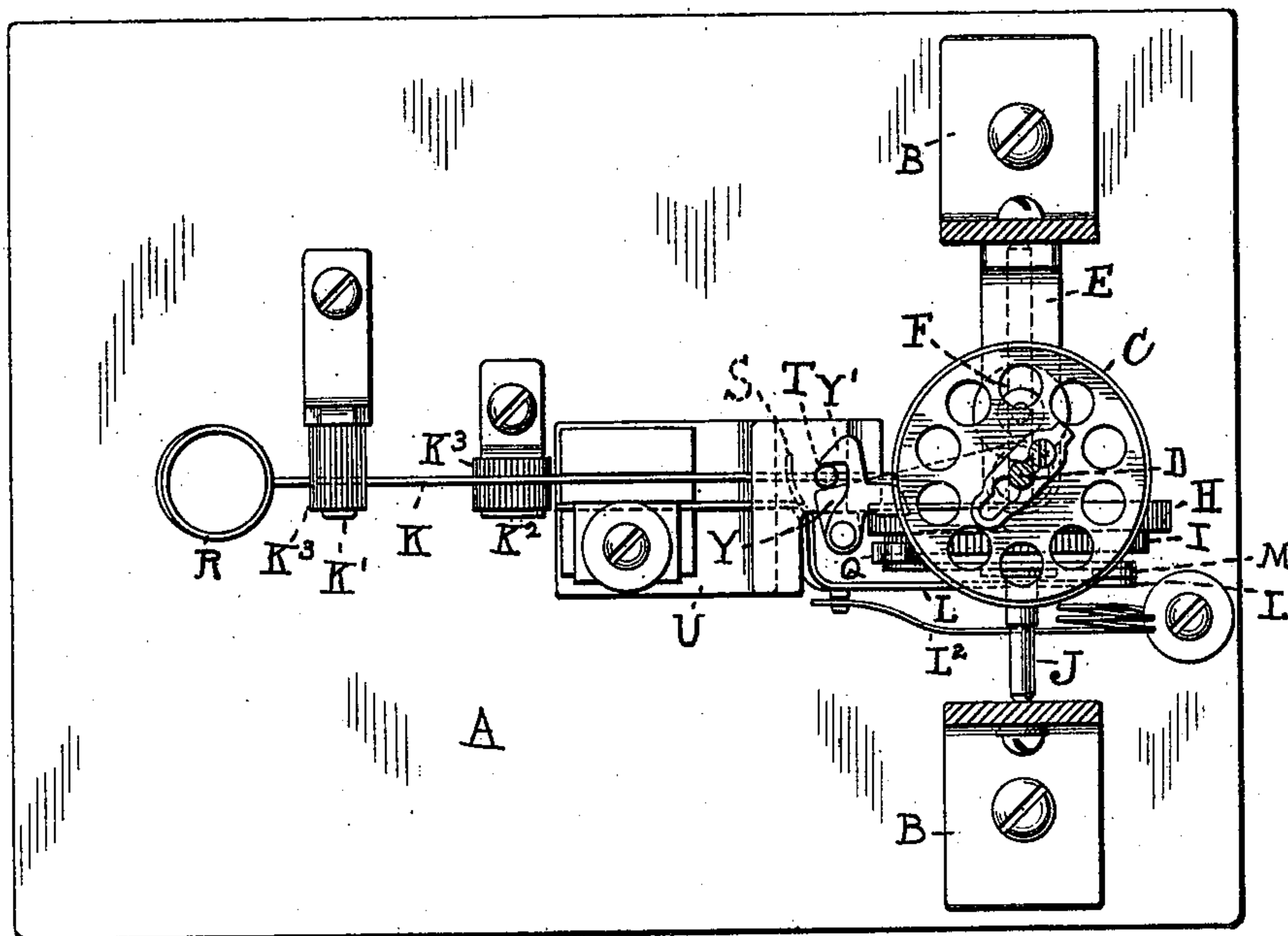
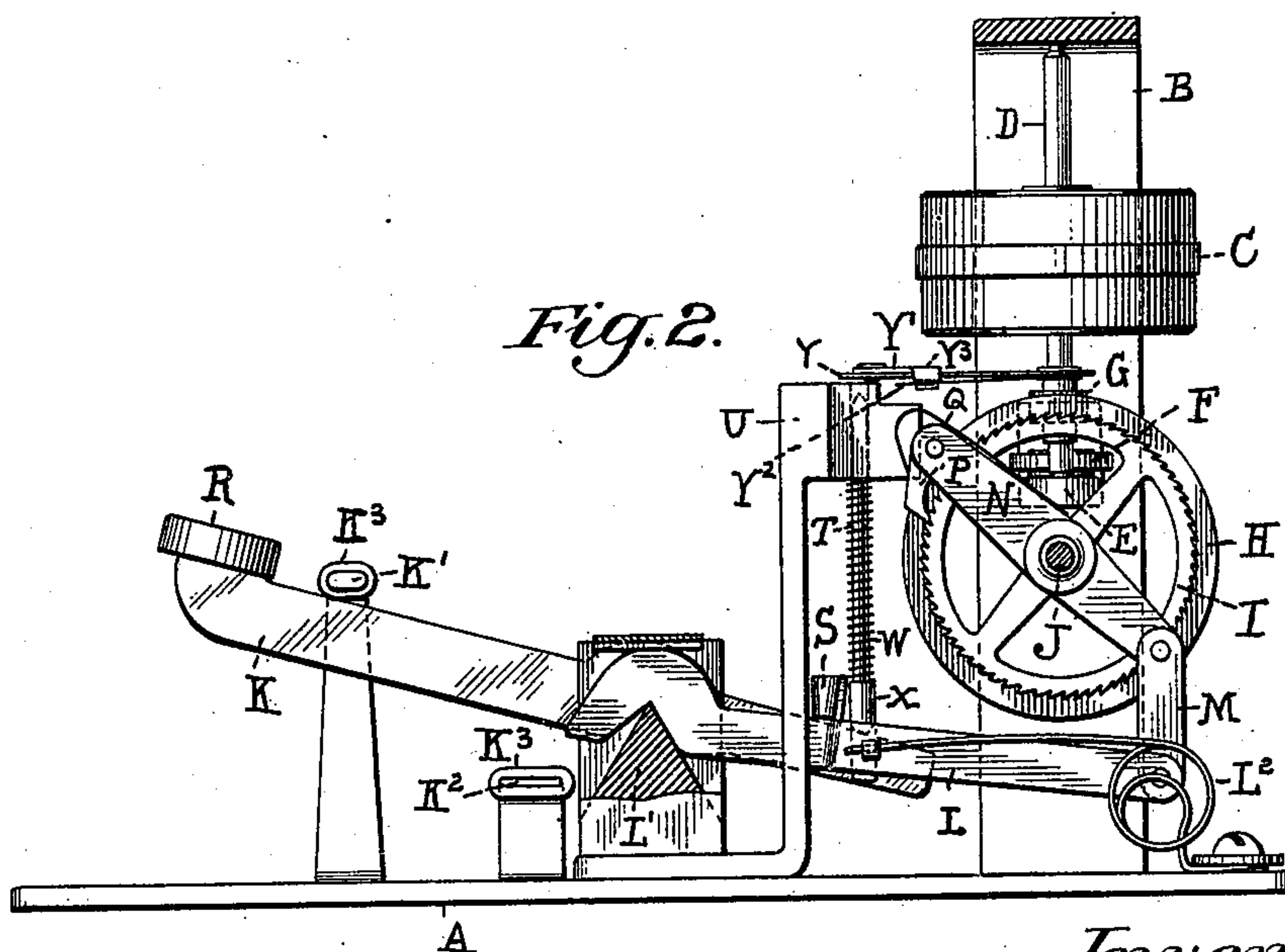


Fig. 2.



Witnesses:-

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Inventor:-
Albert B. Dick
by his Attorneys
Dyer & Stealy

(No Model.)

2 Sheets—Sheet 2.

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Fig. 3.

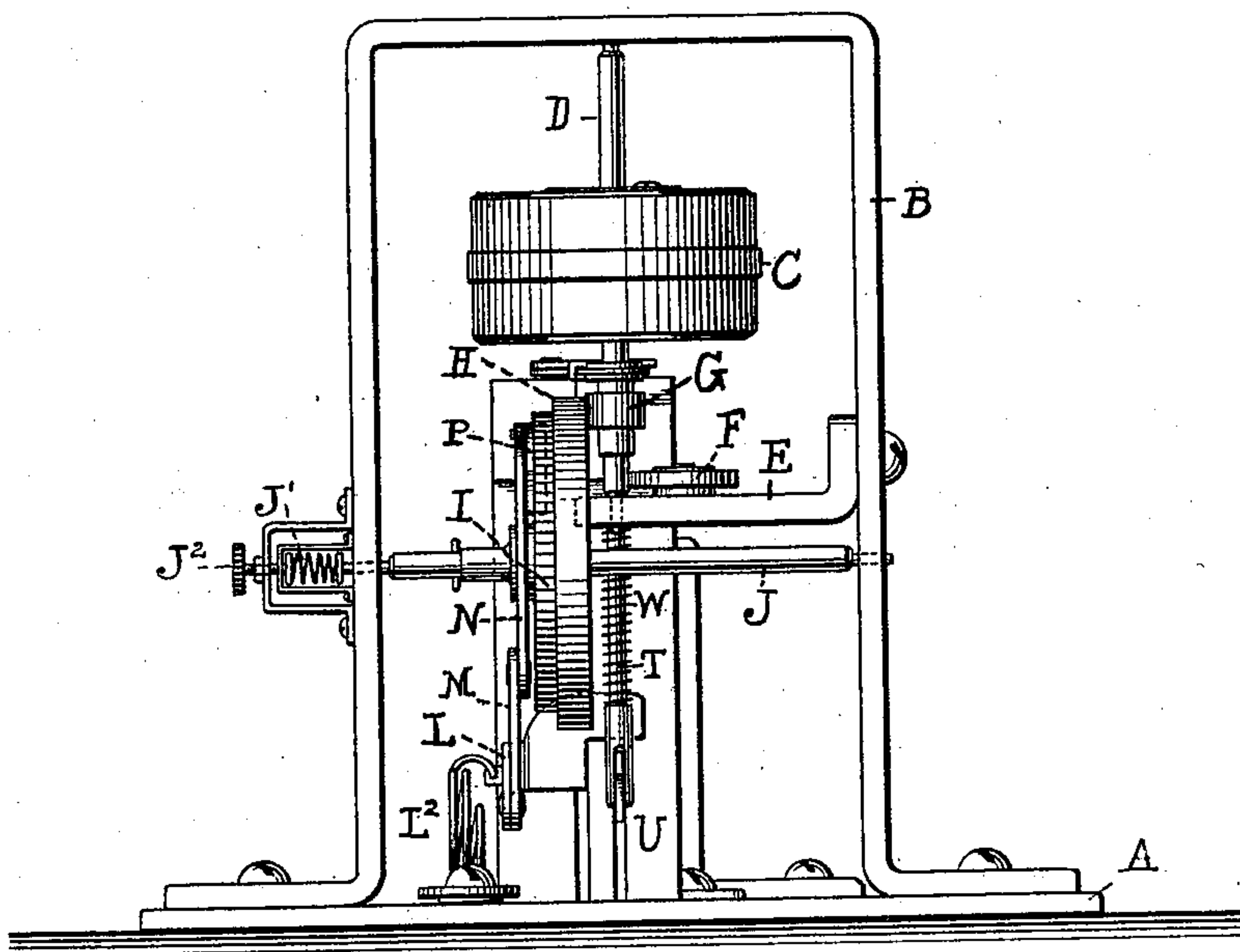
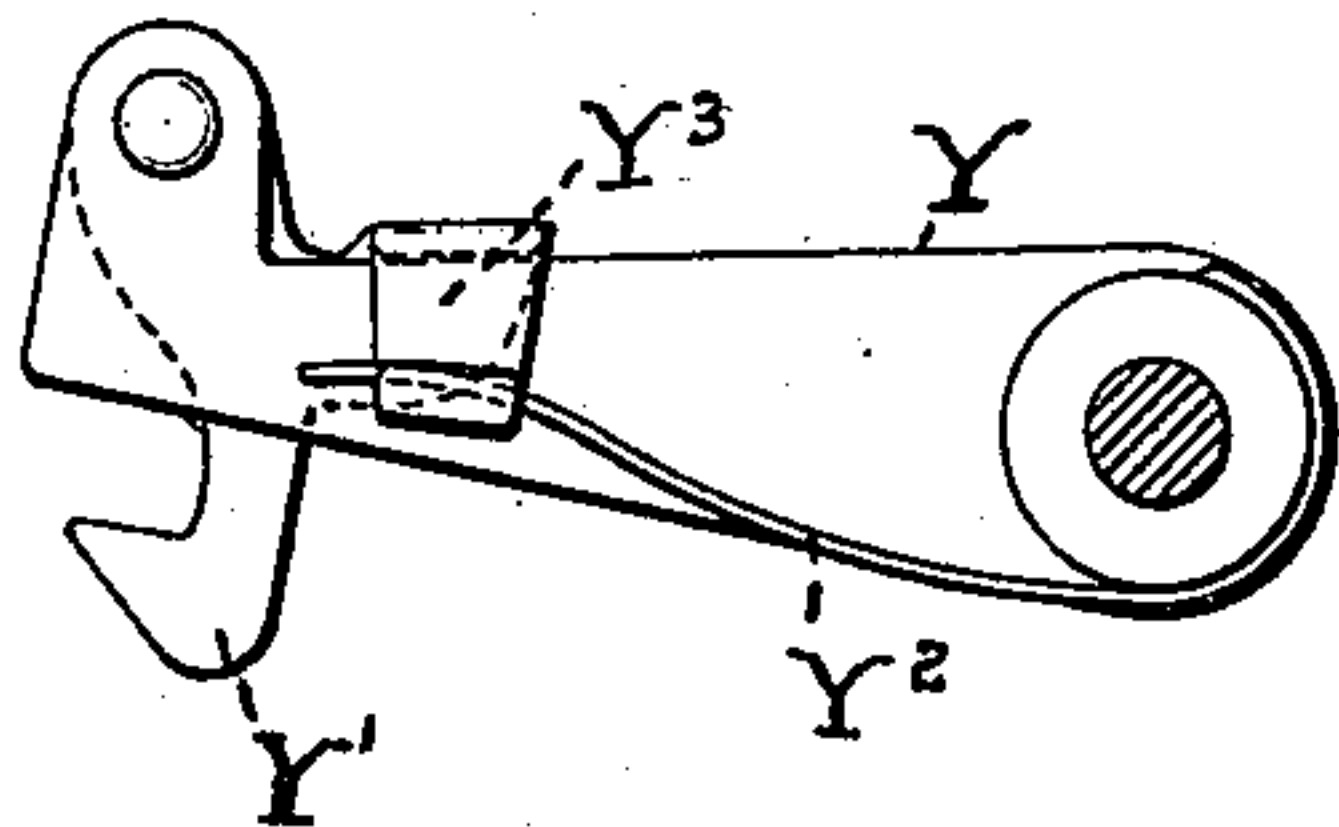


Fig. 4.



Witnesses:-

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Norris A. Clark.

Inventor:-
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by his Attorneys
Dyer & Seely

UNITED STATES PATENT OFFICE.

ALBERT B. DICK, OF CHICAGO, ILLINOIS.

TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 598,882, dated February 8, 1898.

Application filed August 16, 1894. Serial No. 520,435. (No model.)

To all whom it may concern:

Be it known that I, ALBERT B. DICK, a citizen of the United States, residing in the city of Chicago, county of Cook, and State of Illinois, have invented a certain new and useful Improvement in Type-Writing Machines, of which the following is a specification.

My invention has for its object the embodiment in a type-writing machine of a mechanical idea which I deem to be novel with myself and which practically carried out, as hereinafter set forth, results in a simple, cheap, and efficient type-writing machine.

My invention relates more particularly to that class of type-writing machines in which the type are carried by a revoluble wheel.

The idea above referred to is that of driving the type-wheel always in the same direction by a frictional connection, preferably in the form of a friction wheel or disk, which is moved by the key-levers and intermediate mechanism always in the same direction. The mechanism for rotating this frictional driving device is adapted to cause it to move a distance sufficiently great to give the type-wheel more than a complete revolution, although it is not always called upon to do so, as will be hereinafter explained. By this means and the arrangement of suitable stops to arrest the motion of the type-wheel the type-wheel may be operated without bringing it back to the same starting-point.

In the accompanying drawings, forming part of this specification, Figure 1 is a plan view of a part of a machine sufficient to show the principle underlying the operation and the mechanism for effecting the same. Fig. 2 is a side elevation of the same, partly in section. Fig. 3 is a rear elevation, and Fig. 4 is a detail bottom view of a form of latch employed to coact with the stop-pins to arrest the motion of the type-wheel and bring the proper character in printing position.

A is the base of the machine, carrying a frame B, which affords support to certain of the parts, as shown.

C represents the type-wheel; D, the spindle on which the same is mounted, which spindle is stepped in bracket E, laterally projecting from the frame B. Said shaft D is steadied by the steady-roller F. A friction-wheel

G is also carried on said shaft and bears against the frictional face H of a ratchet-wheel I, carried upon the cross-shaft J, supported in the frame B, so as to have an endwise movement, whereby the degree of contact between the friction-wheels may be increased as the wearing of the parts may require. I have shown a spring J' and an adjusting thumb-screw J², whereby the frictional contact between the friction-wheels may be regulated and maintained. This ratchet-wheel is driven in a step-by-step movement by the depression of the key-lever K, which key-lever in turn moves the levers L M N, which operate the pawl P, the latter having a spring Q bearing upon the same to keep it in contact with the teeth of the ratchet-wheel. Said lever L is fulcrumed, as shown at L', and is provided with a spring L² to bring it and its connected levers back to the normal position. As shown, the key-lever is not rigidly connected with the levers for operating the ratchet-wheel, but when its outer end having the key R is depressed the inner end moves a cross-bar S, which extends in a full-sized machine entirely across the same and under which the ends of all the key-levers project, it being obvious that the key-levers not being rigidly connected with said bar the movement of any one will raise the same, and consequently operate the ratchet-wheel, and through its frictional connection with the type-wheel rotate the latter.

Each key-lever is provided with a pin T, pivoted thereto near its inner end, said pin projecting upward through a guide-hole in an upright U and being provided with a coil-spring W between the shoulder X and the bottom of the upright, as shown, whereby it and the key to which it is connected are brought back to the normal position shown in Fig. 2. Carried on the type-wheel shaft D is a latch. (Shown enlarged in Fig. 4.) This latch is rigidly connected with the spindle D, and comprises an arm Y, a pivot-head Y', and a spring Y², engaging with a lip Y³, carried by said head on the under side of the arm Y.

In order to prevent noise, I provide the stops K' K² with a covering of rubber or other soft material, so as to deaden the sound.

The following is a description of the operation of the machine: By the movement of any key-lever K the cross-bar S, and consequently the levers connected therewith, are operated to move the ratchet-wheel a certain part of a revolution. The movement of the ratchet-wheel, carrying, as it does, a frictional material, of rubber, leather, or their equivalents, moves the friction-wheel on the spindle of the type-wheel, and consequently the type-wheel itself. The friction-wheel on the spindle D is of such a diameter relatively to the frictional surface of the ratchet-wheel moved by the key-lever as to receive, unless stopped before the completion of the movement of the ratchet-wheel, more than a complete revolution, whereby the type-wheel is moved also more than a complete revolution; but by reason of the simple friction-contact between the friction-wheel and the friction-face of the ratchet the latter may slip by the friction-wheel when the latter is stopped and complete its full movement, thereby permitting the key-lever to also complete its full movement independently of the extent of movement of the type-wheel. By the movement of the key-lever the stop-pin is projected up into the path of the latch, and as there is a pin for each character in a given row of characters the point where the type-wheel stops depends upon the pin which is caught by the latch. The moment the finger is removed from the key the spiral spring acting on the pin depresses the same onto the path of the latch and another key is free to rotate the type-wheel and project upward its pin, which will be caught by the latch, as before.

Whether the type-wheel is rotated more than a revolution or less depends upon the position of the character relative to the pin which controls its stoppage, and as the type-wheel is not brought back to the same position after each depression of a key it follows that a type and its controlling-pin will continually vary. If, therefore, a type is a distance from its controlling-pin less than the distance of a complete revolution of the wheel, but far enough to allow the pin to rise into the path of the latch, then less than a revolution of the type-wheel will be sufficient; but if the type is so close to its pin after the last rotation, so that the pin will not rise into the path of the latch, then an entire revolution, plus the distance between the type and pin when the operation commenced, will be made by the type-wheel.

I claim—

1. In a type-writing machine, the combination of a revoluble type-wheel, a key-lever, a driving-surface for rotating the type-wheel by frictional contact, said driving-surface being operated by said key-lever, and a latch for arresting the movement of said type-wheel, substantially as set forth.

2. In a type-writing machine, the combination with a revoluble type-wheel, of a key-le-

ver, a frictional driving device intermediate said key-lever and said type-wheel and driving the latter, mechanism operated by said key-lever for rotating said frictional device always in the same direction, and independent means for arresting the movement of said type-wheel, substantially as set forth.

3. In a type-writing machine, the combination with a revoluble type-wheel, of a key-lever, a frictional driving device intermediate said key-lever and said type-wheel and driving the latter, comprising a driving and a driven member, mechanism operated by said key-lever to impart a step-by-step movement of given length to the driving member, and independent means for arresting the movement of said type-wheel, substantially as set forth.

4. In a type-writing machine, the combination of a revoluble type-wheel, a key-lever, and a driving-wheel for rotating the type-wheel by frictional contact, said driving-wheel being operated by said key-lever, substantially as set forth.

5. In a type-writing machine, the combination of a revoluble type-wheel, a key-lever, a driving-wheel for rotating the type-wheel by frictional contact, and a pawl-and-ratchet connection between said driving-wheel and said key-lever, substantially as set forth.

6. In a type-writing machine, the combination with a revoluble type-wheel, of a key-lever, a frictional driving device intermediate said key-lever and said type-wheel and driving the latter, comprising a friction-wheel on the spindle of the type-wheel, and a ratchet-wheel frictionally bearing against said friction-wheel, a pawl for operating said ratchet-wheel, and levers connected with said pawl and operated by the movement of the key-lever, substantially as set forth.

7. In a type-writing machine, the combination with revoluble type-wheel, of a latch rotating with said type-wheel, a key-lever, and a pin projected by said key-lever into the path of said latch, substantially as set forth.

8. In a type-writing machine, the combination with a revoluble type-wheel, of a latch rotating with said type-wheel, a key-lever, a spring-pressed pin projected by said key-lever into the path of said latch, and a guide for the upper end of said pin, substantially as set forth.

9. In a type-writing machine, the combination with a revoluble type-wheel, of a latch rotating with said type-wheel, a frictional driving device composed of two members, a key-lever, and a pin projected by said key-lever into the path of said latch, whereby the movement of the type-wheel is arrested by the movement of the driving member while the driving member of the frictional driving device is permitted to continue, substantially as set forth.

10. In a type-writing machine, the combination of a revoluble type-wheel, a key-lever, a

frictional driving device intermediate said
key-lever and type-wheel for driving the lat-
ter, a latch rotating with said type-wheel and
a pin projected into the path of said latch and
5 operated by said key-lever, and connections
between said key-lever and said frictional
driving device, substantially as set forth.

This specification signed and witnessed this
10th day of August, 1894.

ALBERT B. DICK.

Witnesses:

EUGENE CONRAN,
W. PELZER.