

No. 865,147.

PATENTED SEPT. 3, 1907.

G. A. ALDRICH.
TYPE WRITER.

APPLICATION FILED SEPT. 29, 1905.

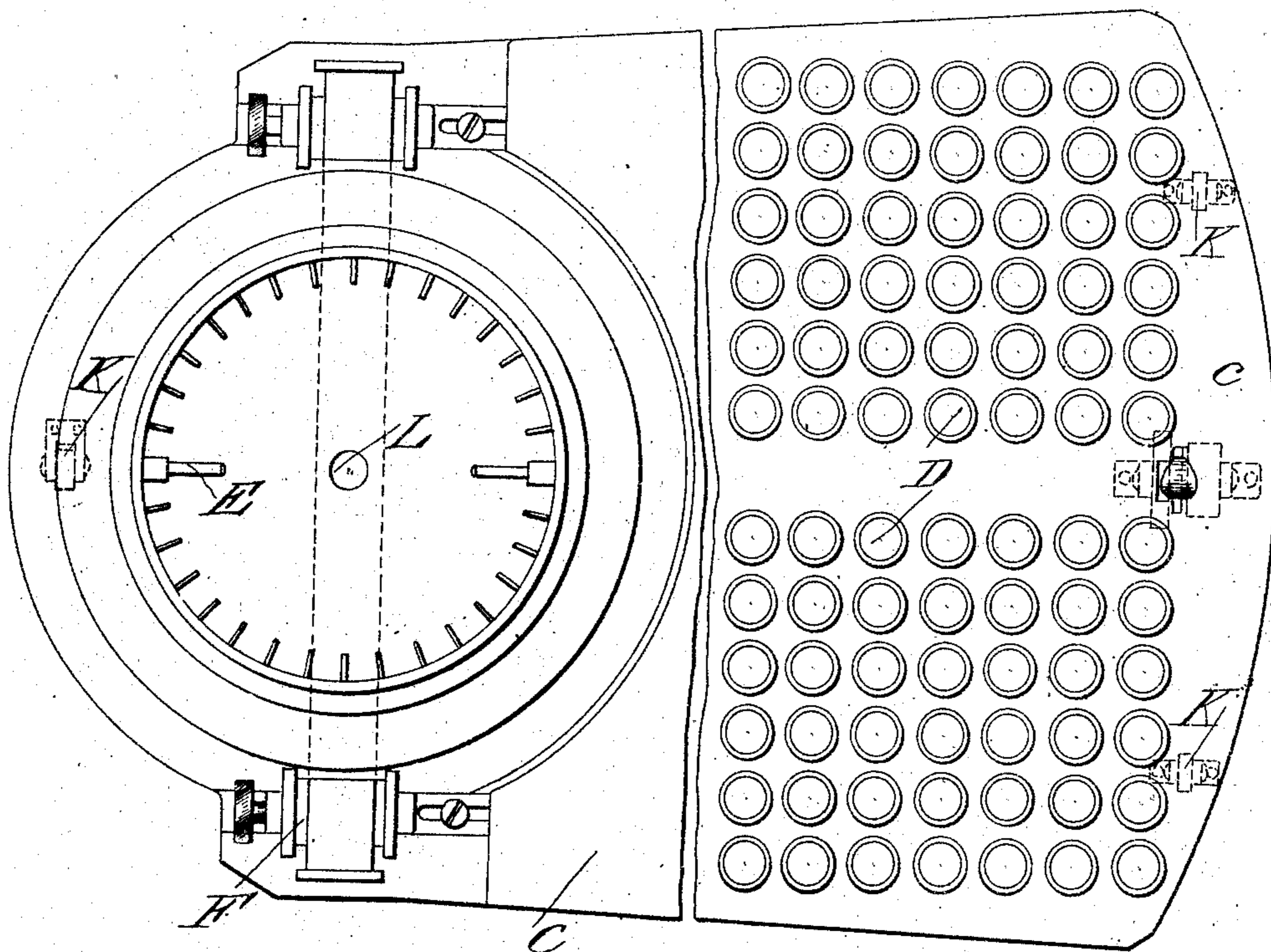


Fig. 1.

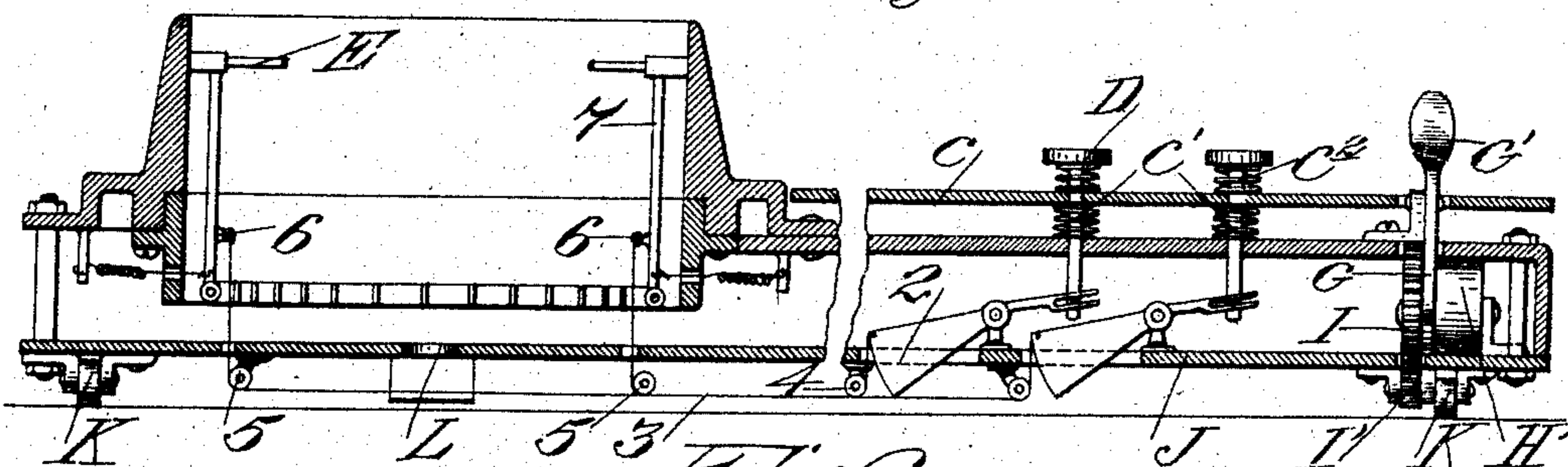


Fig. 2.

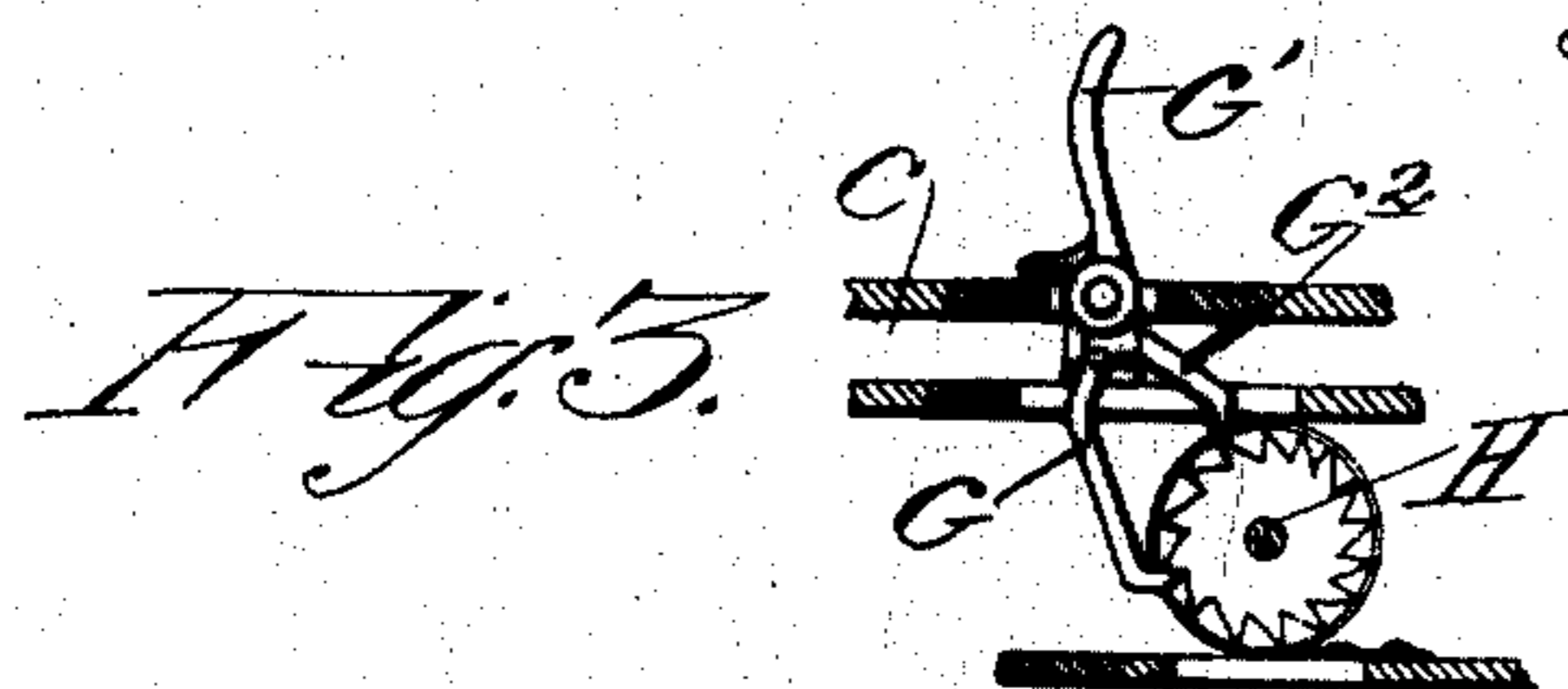


Fig. 3.

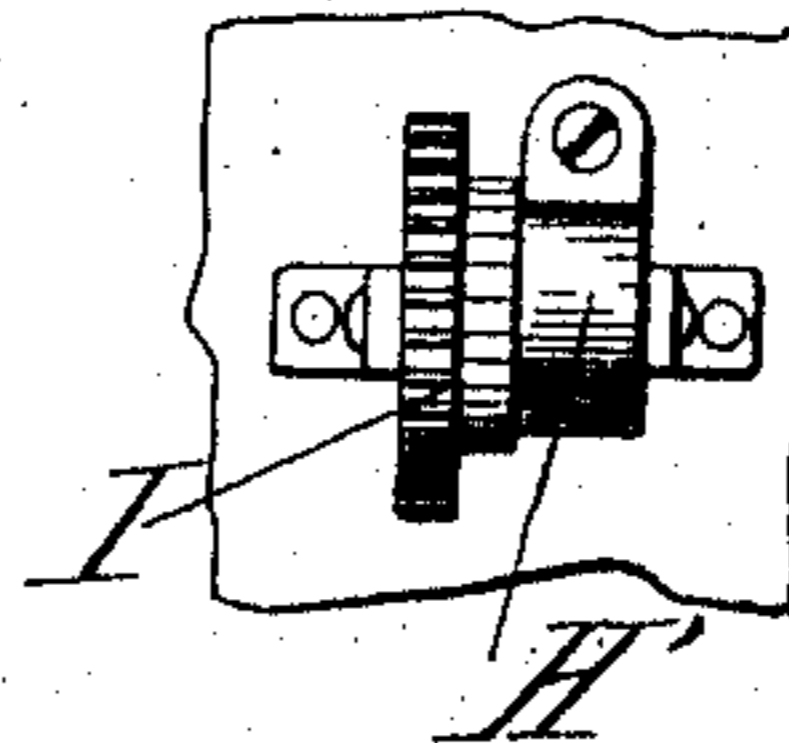


Fig. 4.

WITNESSES:

J. H. Haskberg
J. H. Haskberg

INVENTOR

George A. Aldrich
BY *Geo. B. Strong*
ATTORNEY

UNITED STATES PATENT OFFICE.

GEORGE A. ALDRICH, OF SAN FRANCISCO, CALIFORNIA.

TYPE-WRITER.

No. 865,147.

Specification of Letters Patent.

Patented Sept. 3, 1907.

Application filed September 29, 1905. Serial No. 280,607.

To all whom it may concern:

Be it known that I, GEORGE A. ALDRICH, a citizen of the United States, residing in the city and county of San Francisco and State of California, have invented new and useful Improvements in Type-Writers, of which the following is a specification.

My invention relates to improvements in type-writers.

It consists in a mechanism by which the whole carriage may be moved transversely with relation to the surface upon which the impressions take place.

It consists in the combination of parts and in details of construction which will be more fully explained by reference to the accompanying drawings, in which—

Figure 1 is a plan view of my typewriter. Fig. 2 is a longitudinal section. Fig. 3 is a side elevation of the spacing mechanism. Fig. 4 is a plan view of same, showing the escapement or lever G removed.

J is the main frame mounted upon rollers K, which are so located as to form a support which will always accommodate itself to any slight irregularities of surface. This may be effected by the use of three rollers making a three-point support for the apparatus. The rollers are so journaled as to allow the carriage to roll upon them transversely to its length.

The spacing mechanism of the apparatus is actuated by means of a plate C, which as shown in the plan view, substantially follows the outline of the periphery of the main frame, and is depressible in unison with the depression of any key of the apparatus. This plate is normally returned after depression by the action of springs C' and other springs C² located between the top of the plate and the heads of the keys serve to simultaneously return the keys after they have been depressed.

The plate C upon its return after depression actuates a detent lever G, which in turn engages with the teeth of a ratchet wheel H. This ratchet wheel is mounted upon a shaft and acts through a spur gearing as shown at I to turn the bearing wheel or roller K which supports the rear portion of the apparatus; and this movement is sufficient to advance the machine transversely and place it in position to impress another letter upon the surface beneath, and thus the machine is advanced transversely across the paper until the line is completed.

The machine having been moved off of the paper, the sheet may be moved by hand, or otherwise and at right angles with the transverse travel of the machine, sufficiently to bring the next line upon which printing is to be effected into line with the types of the machine; and the machine may be moved back to its original position where either before or after moving the paper is in readiness to print another line.

The surface upon which the paper lies is sufficiently hard so that the depression of the type bars will cause the type to strike the surface of the paper in the same

manner that such type operate in ordinary type-writing machines, and each type will make its impression without the necessity of any especial platen other than above stated. The surface is of sufficient width and length to allow the machine to be moved entirely across the paper and off one side and return to the starting position after a line has been finished. After each line has been completed, the machine having passed entirely off the paper, the latter may be moved upwardly, or in the direction of its head, or top, a distance equal to the space between the lines, and the machine then returned across the paper to the point of beginning. Its forward movement to print the line across the paper is effected by means of an escapement, which escapement consists of the usual toothed wheel H, and a detent lever G, as previously described.

The detent lever has an upwardly projecting arm G' which extends through the plate C in such a manner that the upward movement of this plate causes one pawl of the detent to engage the corresponding tooth of the escapement wheel and release it in the usual manner of such escapements.

The downward movement of the plate C allows the detent to move so as to engage the other pawl with its corresponding tooth on the periphery of the escapement wheel; the operation of such escapements being well known in the art.

The advance of the escapement wheel is effected by a coil spring shown at H; and this spring acts at each rise of the plate C to advance the escapement one tooth, and as before stated, the escapement acts through the gears I and I' to turn the shaft of the bearing roller.

The spring unwinds as the machine moves across the paper while printing a line, and when the machine is pushed back, the rotation of the bearing-roller causes the spring to again wind up so that it is always in condition for operation. This rewinding of the spring, without interfering with the escapement, may be effected by either holding the lever arm G' so that the detent teeth are in the intermediate position, or preferably by a pawl and ratchet mechanism such as is usually employed to allow the free reverse movement of the spring winding shaft without affecting the escapement, but which I have not here shown, as practice has shown that the detent may be held by the fingers sufficiently for the purpose.

A small spiral spring G² connects the detent with the plate C, and may act in unison with the movement of the plate to assist the movement of the detent.

The connection for operating the type bars is as follows: Each key has its lower end connected with a fulcrumed bar, and the end of this bar 2 which is opposite to the point where the stem of the key connects with it, may be curved or segmental shape. A cord 3 is attached to the upper part of this segment, passing below a direction pulley 4, thence around another direc-

tion pulley 5, thence upwardly where its end is connected with a lug 6 upon the pivoted fulcrumed type-carrying bar 7.

The operation of the device will then be as follows:

- 5 Whenever any type or character key is depressed, the spring between it and the plate C will be compressed, and the pressure upon the key will press the plate down. This compresses the springs C' beneath the plate and allows the stem of the key to act in the
- 10 slotted end of the segment bar 2, which end being depressed, the opposite end will be raised, and through the cord will act upon its particular key as described. When the plate C again rises it moves the detent lever G to release a tooth of the escapement wheel, and
- 15 this allows the spring at H' to act upon the gears I, I', and thus turn the roller K, and advance the carriage a distance equal to the space between the letters; the gearing and escapement being designed to produce such a movement.
- 20 In this construction it will be seen that the type always strikes upon a flat surface upon which the paper lies, instead of a cylindrical one, as in the case of type-writers in which rollers are employed as platens over which the paper passes, and against which
- 25 the keys strike, and by my construction the clearness of the characters will be improved, and the manifolding power of the machine will be considerably increased.

The imprint of the type is produced by means of an inking ribbon shown extending across below the carriage in Fig. 1, which passes around rollers F disposed in suitable relation with the carriage, and with relation to the central opening L through which the type passes when the stroke is made.

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

1. In a typewriter, the combination of a carriage having bearing wheels upon which it is movable, type-carrying bars, keys, and levers, a spring-pressed plate horizontally
- 40 disposed beneath the keys with which each key contacts

when depressed, a spring-pressed escapement actuated by the depression of said plate, and connections between the escapement and the bearing wheels of the carriage whereby the carriage is moved at each impulse a distance equal to the space between characters.

2. In a typewriter, a carriage having bearing wheels upon which it is movable transversely, fulcrumed type-carrying bars, keys and levers by which said type bars are actuated, a spring-pressed member underlying the keys and actuated by the latter, a spring-pressed escapement actuated by said member in unison with the depression of any key, said escapement comprising a ratchet wheel and a detent lever said lever having two pawls to engage said ratchet wheel, and having an arm which extends through the said spring-pressed member, and gearing between the escapement and bearing wheels whereby the latter are simultaneously revolved to advance the machine.

3. In a typewriter, a frame or body, wheels upon which it is movable transversely, fulcrumed type bars, rollers and an inking ribbon passing thereover in a plane between the frame and the surface over which it is movable, an opening through the frame through which the types may be propelled to imprint through the ribbon upon the surface beneath, depressible keys by which the type bars are actuated, a plate beneath the keys with which each key contacts when depressed, spring-pressed escapement mechanism actuated by the depression of the plate, and gearing between said escapement and the bearing-wheels whereby the latter are moved at each impulse to advance the machine a space equal to that between the letters.

4. In a typewriter, a frame having hinged bars carrying types upon their ends, keys by which said types are moved and the type projected through the center of the frame, an inking ribbon carried below said frame and parallel with the surface to be imprinted, bearing rollers or wheels journaled to travel parallel with the lines to be imprinted, an escapement and intermediate gearing whereby the wheels are turned to advance the carriage, a plate through which the stems of the finger-keys pass, springs upon said key stems located above and below the plate, said plate being depressible in unison with the key movement, and an escapement pawl carried by the plate.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

GEORGE A. ALDRICH.

Witnesses:

HENRY M. McFILL,
B. BROOKS.