

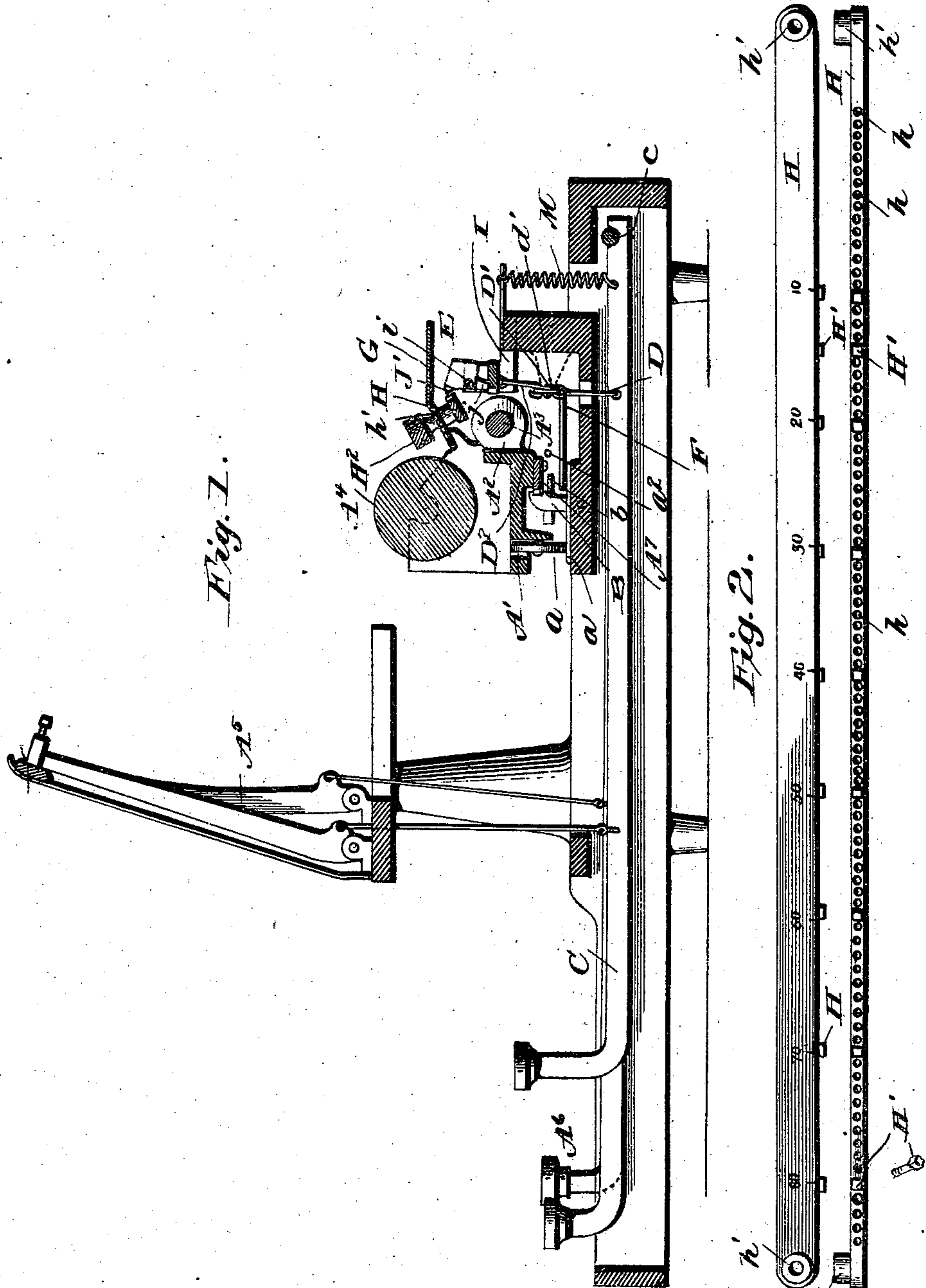
(No Model.)

2 Sheets—Sheet 1.

C. SPIRO.
TYPE WRITING MACHINE.

No. 543,112.

Patented July 23, 1895.



Witnesses
L. C. Mills.
E. A. Bond

Inventor:
Charles Spiro,
by E. B. Stocking
Attorney

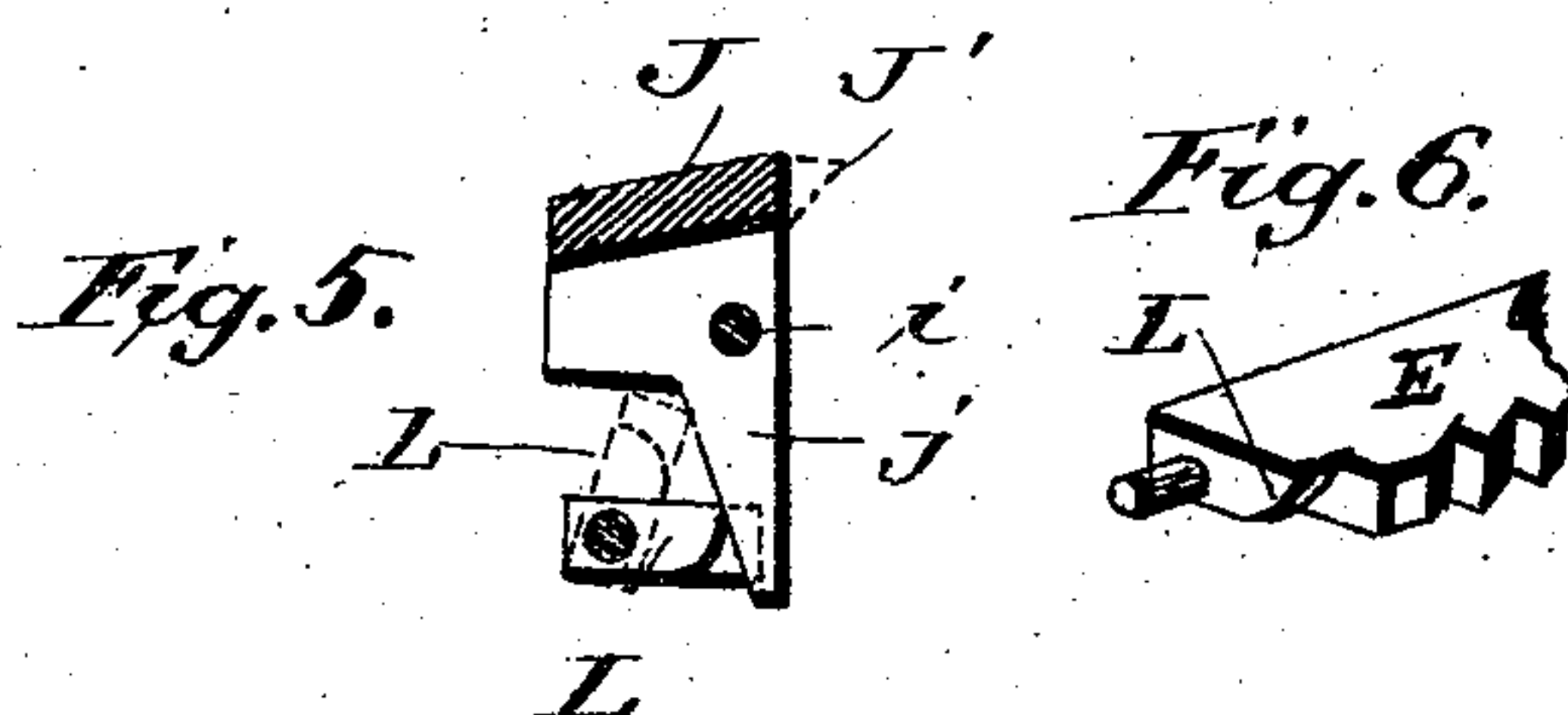
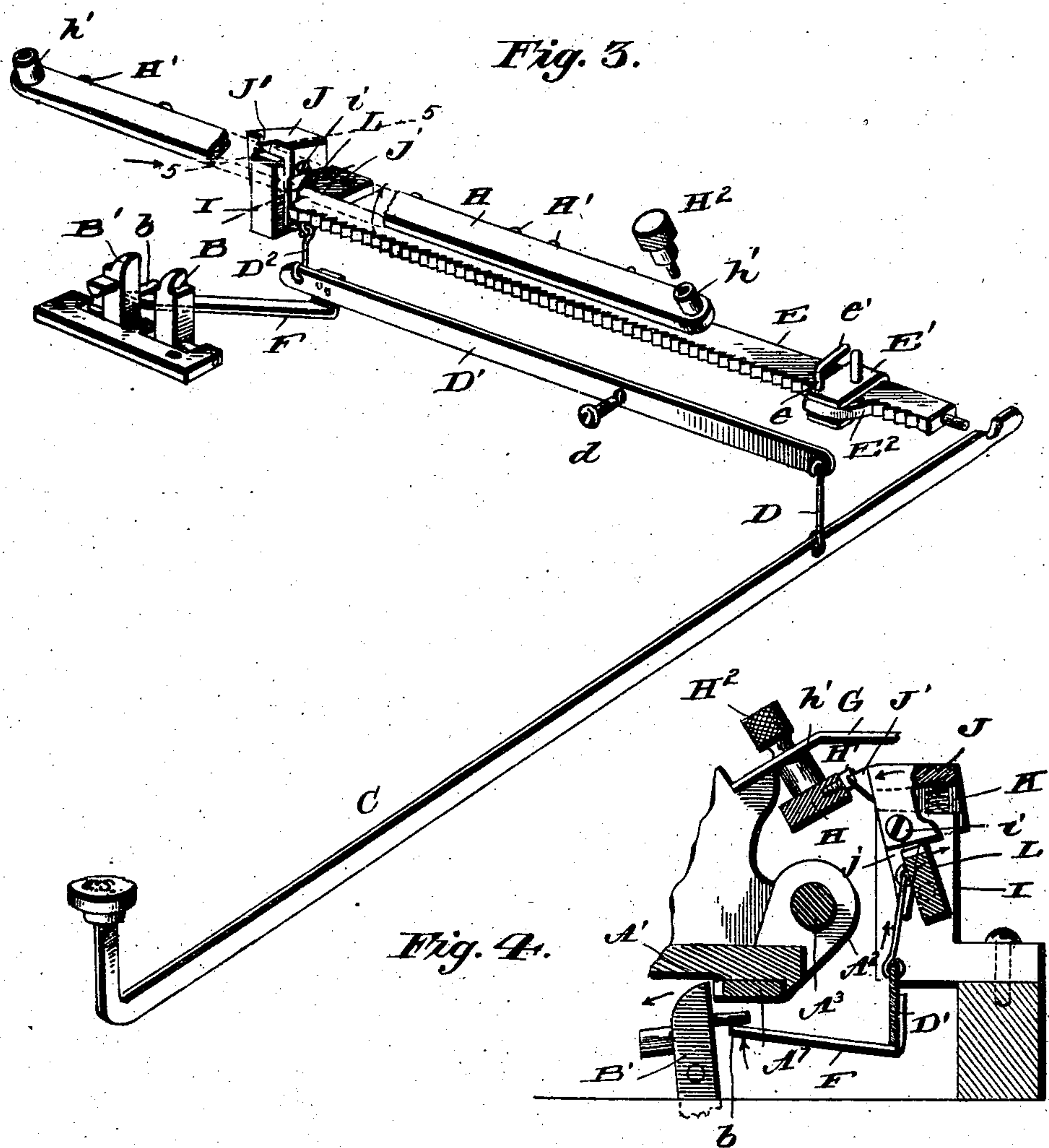
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UNITED STATES PATENT OFFICE.

CHARLES SPIRO, OF NEW YORK, N. Y.

TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 543,112, dated July 23, 1896.

Application filed June 28, 1894. Serial No. 515,925. (No model.)

To all whom it may concern:

Be it known that I, CHARLES SPIRO, a citizen of the United States, residing at New York, in the county of New York, State of New York, have invented certain new and useful Improvements in Type-Writing Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention relates to an improvement in type-writing machines; and it has for its principal object the provision of improved means for varying the feed of the paper-carriage, so as to provide for impressions being
15 made upon the paper at variously-separated points in a line instantly, instead of the necessity of a determination of the points in the line at which impressions shall be made by a repeated depression of the usual space lever
20 or key of the machine. I aim at improvements in the devices for accomplishing this end. I provide for the easy adjustment to vary the points of stopping of the carriage. I simplify and lessen the number of parts required to produce the desired result.

Other objects and advantages of the invention will hereinafter appear and the novel features thereof will be specifically defined by the appended claims.

30 The invention is clearly illustrated in the accompanying drawings, which, with the letters of reference marked thereon, form a part of this specification, and in which—

Figure 1 is a vertical section from front to rear, showing sufficient parts of the typewriter to illustrate my present invention and its application. Fig. 2 shows in plan and edge view my improved rack-bar removed. Fig. 3 is a perspective view of the parts constituting the invention with a portion broken away. Fig. 4 is an enlarged detail, partly in section and partly in elevation, with portions broken away. Fig. 5 is a vertical section through the pivoted pawl, and Fig. 6 is an enlarged perspective detail showing the cam portion on the rack-bar.

Like letters of reference indicate like parts throughout the several views.

45 All the parts of the machine not illustrated may be of any well-known form of construction

with which the parts constituting the present invention will co-operate or upon which they may be employed.

Referring now to the details of the drawings by letter, A designates the base or frame 55 of the machine, A' the carriage, and A² the lugs thereon, which embrace and slide upon the carriage-rod A³ in the usual manner.

A⁴ is the platen, A⁵ the type-bars, and A⁶ the key-lever connected therewith to operate 60 the same in the ordinary way.

The carriage is provided with the front wheel *a* running on the track *a'* as usual and is propelled forward by the spring and chain, the latter being seen in Fig. 1 and designated 65 by the letter *a*². A' is a step-by-step feed rack-bar.

B and B' are the pawls for engagement with the rack-bar A', the said pawls being pivotally mounted in the usual manner and 70 the one provided with the rearwardly-projecting pin *b*, which serves in connection with the margin-regulator mechanism now to be described.

C is the column-printing lever. It is pivotally mounted at its rear end upon the rod 75 *c*, as shown in Fig. 1, and at a point in front of its pivot it is connected by the ligament D' with one end of the arm D', which is pivoted between its ends upon a pivot *d* on a lug *d'*, 80 projecting from the frame, as indicated by dotted lines in Fig. 1. The other end of this arm is connected by the ligament D² with the inner end of the rack-bar E, which is mounted at its ends for pivotal or rocking movement, 85 and upon this rack-bar is adjustably mounted the block E', in which is pivotally mounted a pawl E², which is adapted to engage the teeth of the rack-bar E, the pivot *e* of the pawl being mounted for rotation in the block and 90 the pawl being fast thereon, the pivot being extended upward to form a handle *e'*, by which the pawl may be moved to throw it out of engagement with the rack-bar to shift the block to stop the carriage at any desired point in 95 its travel to the right to leave any desired width of margin on the paper. The inner end of the arm D' carries a forwardly-extending bar F, which may be held thereto or integral therewith and the free end of this bar is de- 100

signed to engage beneath the pin or projection *b* on the pawl *B'*, as seen in Figs. 1, 3, and 4.

G is the paper-table, and *H* is my special feed rack-bar, the edge of which is provided with a plurality of holes *h*, into any one or more of which may be removably inserted, as by screwing, pins or screws *H'*, as seen in Figs. 2 and 4, so that they may be readily changed to varying the distance between stopping-points when desired. This bar *H* is provided at each end with bosses *h'*, which are interiorly threaded and with which engage the thumb-screws *H''*, which pass through openings in the paper-table, as shown, and thus detachably hold the rack-bar to the under side thereof. This rack-bar is by preference arranged at an inclination relatively to the vertical, as seen best in Fig. 4, in order to accomplish the best results.

I is a bracket secured on the frame *A*, as seen best in Fig. 4, and upon this bracket is pivoted a pawl *J* on the horizontal pivot *i*, held in the vertical portion of the bracket and having the depending side portions *j*, which straddle the vertical portion of the bracket, and the front face of the pawl is provided with a tooth *J'*, while beneath its rear portion is a spring *K*, as seen best in Fig. 4, which spring finds a bearing upon the top of the vertical portion of the bracket. The pintle of the inner end of the rack-bar *E* is supported in this block, and at this end the said rack-bar is provided with a cam portion *L*, as seen in Fig. 3 and by dotted lines in Fig. 4.

M is the ordinary spring connected with the key-levers for retaining them normally in position.

With the parts constructed and arranged substantially as above set forth the operation is as follows: The pins or screws *H'* are placed in the proper holes to give the desired space between stoppages of the machine for tabulated work, the machine being fed along step by step in the ordinary manner, except when it is desired to employ the same for such tabulated work. By depressing the lever *C* the right-hand end of the arm *D'* is drawn down and its other end consequently thrown up, when its bar *F* engages the pin *b* on the pawl *B'* and throws the latter out of engagement with the ordinary rack-bar of the machine. This depression of the lever *C* also rocks the rack-bar *E* on its pivots and throws the same up, and the cam *L* is moved away from the leg of the pawl *J*, when the spring *K* throws the same forward, as will be readily understood from Fig. 4, so that its tooth *J'* is projected into the path of the pins or projections *h'* on the special rack-bar. As soon as pressure is removed from the lever *C* the parts return to their normal position, and the cam portion, coming in contact with the depending leg of the pawl *J*, throws the upper portion thereof back out of the path of the projections on the rack-bar *H*. In Fig. 1 the parts are in the po-

sition they assume during the ordinary use of the machine; but in Fig. 4 the lever *C* has been depressed and the pawl *B'* thrown out of the path of the rack-bar *A'* and the tooth *J'* of the pawl *J* into the path of the projections on the special rack-bar. The lug *A''*, acting in contact with the margin-stop *E'*, serves to stop the movement of the carriage.

Modifications in detail may be resorted to without departing from the spirit of the invention or sacrificing any of its advantages.

What I claim as new is—

1. The combination with the relatively fixed step-by-step feed rack-bar, and the pawls co-operating therewith, of a special rack-bar on the carriage independent of the step by step feed rack bar, a rocking pawl for cooperation with the special rack, a rocking rack bar carrying said pawl and a lever and connections for actuating said rocking pawl, substantially as specified.

2. The combination with a rack-bar, a rack bar *E* independent thereof and movable with relation thereto a rocking pawl, and a lever, of an interposed bar and connections for rocking said pawl, as set forth.

3. The combination of the carriage rack-bar and its pawls, of a pivoted rack bar independent of and movable with relation to said pivoted rack bar, a rocking pawl and special rack-bar, a lever and an interposed rocking part, as set forth.

4. The combination of the carriage rack-bar and its pawls, of a special rack-bar on the carriage, a rocking pawl for engagement therewith, a lever and an interposed rocking part *E* and connections for simultaneously throwing the first named pawls out of action and the other into engagement, as set forth.

5. The combination with the special rack bar and the rocking pawl, of a rocking part having a projecting tooth and a cam portion independent of said tooth, said cam portion being designed for actuating said pawl, substantially as described.

6. The combination with the special rack-bar and the rocking pawl, of a lever and a rocking part connected therewith and having a portion independent of its part that serves as a pawl, said portion being designed to engage and actuate said pawl, as set forth.

7. The combination with the special rack-bar of the rocking pawl, a rocking rack-bar with adjustable stop block, a rocking pawl having a projecting tooth a lever and connections between the same and the lever, as set forth.

8. The combination with the special rack-bar and a rocking pawl for engagement therewith, of a rocking rack-bar a rocking pawl with projecting tooth, a lever and a connection between the same and the rocking rack-bar for rocking the latter and actuating said pawl, substantially as specified.

9. The combination with the usual rack-bar and the rack-bar *E*, of the rocking pawl, the ordinary pawls, the lever and connections

between the lever and special rack-bar and means for actuating all of the pawls as set forth.

5 10. The combination with the special rack bar and the rocking pawl having a depending portion, of the rocking rack having a cam portion to engage said depending portion of the pawl and means for rocking the rocking rack, substantially as specified.

10 11. The combination with the special rack bar, of a rocking pawl for engagement with said rack, a pivotally mounted rocking part having a cam portion, a pivotal arm connected with the pivotally mounted rocking part and having a lateral arm and a lever connected with said pivoted arm, substantially as specified.

15 12. The combination with the special rack-

bar, of a bracket, a pawl pivoted thereon and having a depending portion, a spring bearing 20 on the under side of the pawl, a cam portion for engagement with the depending portion, and means for actuating the cam portion to rock the pawl, as set forth.

13. The combination of a relatively fixed 25 pivoted rack bar, of a paper table, a special rack bar independent of the pivoted rack and interposed devices actuated by the movement of the pivoted rack for engaging the special rack, substantially as specified. 30

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

CHARLES SPIRO.

Witnesses:

J. FREUDENTHAL,
H. LESINSKY.