

No. 606,940.

Patented July 5, 1898.

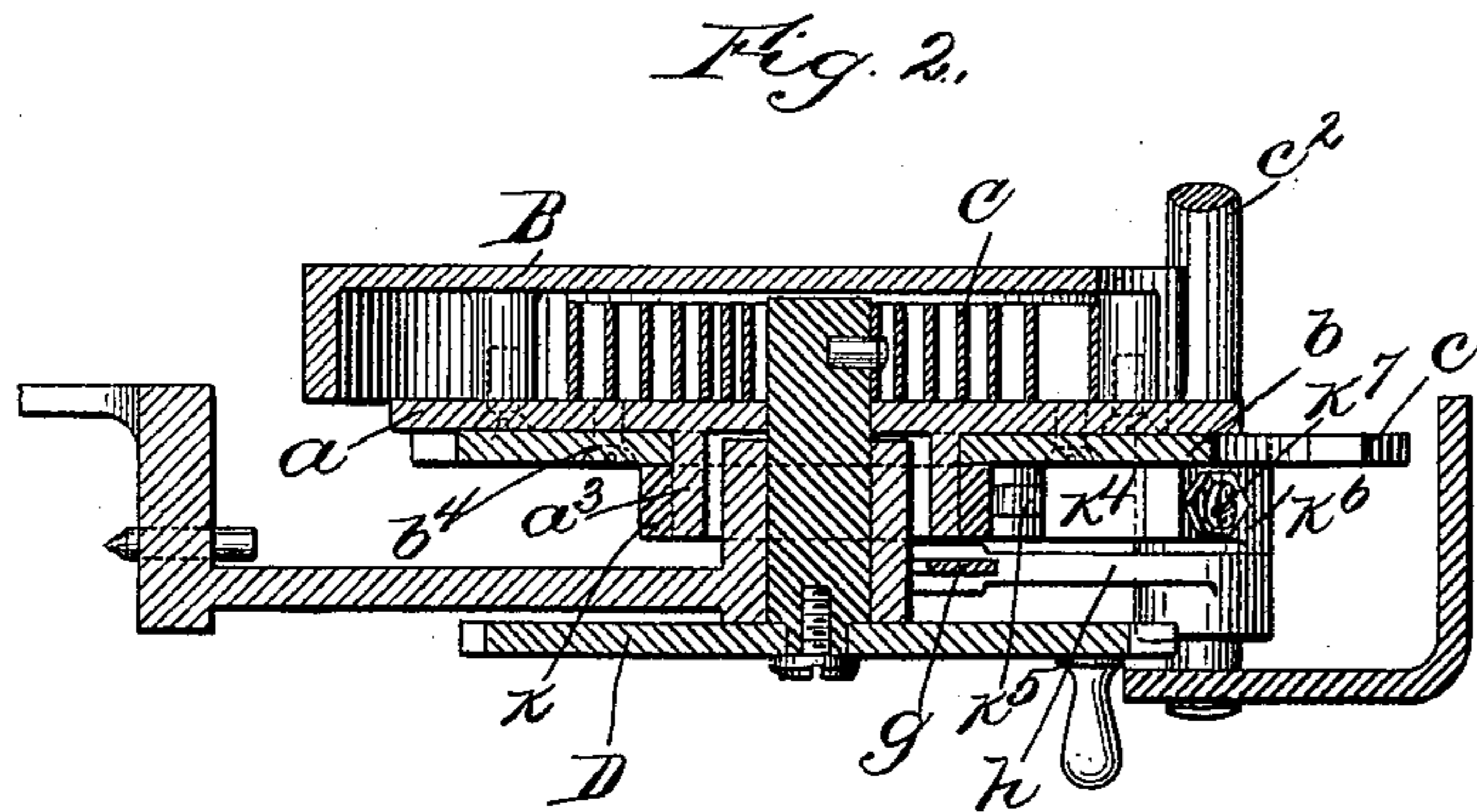
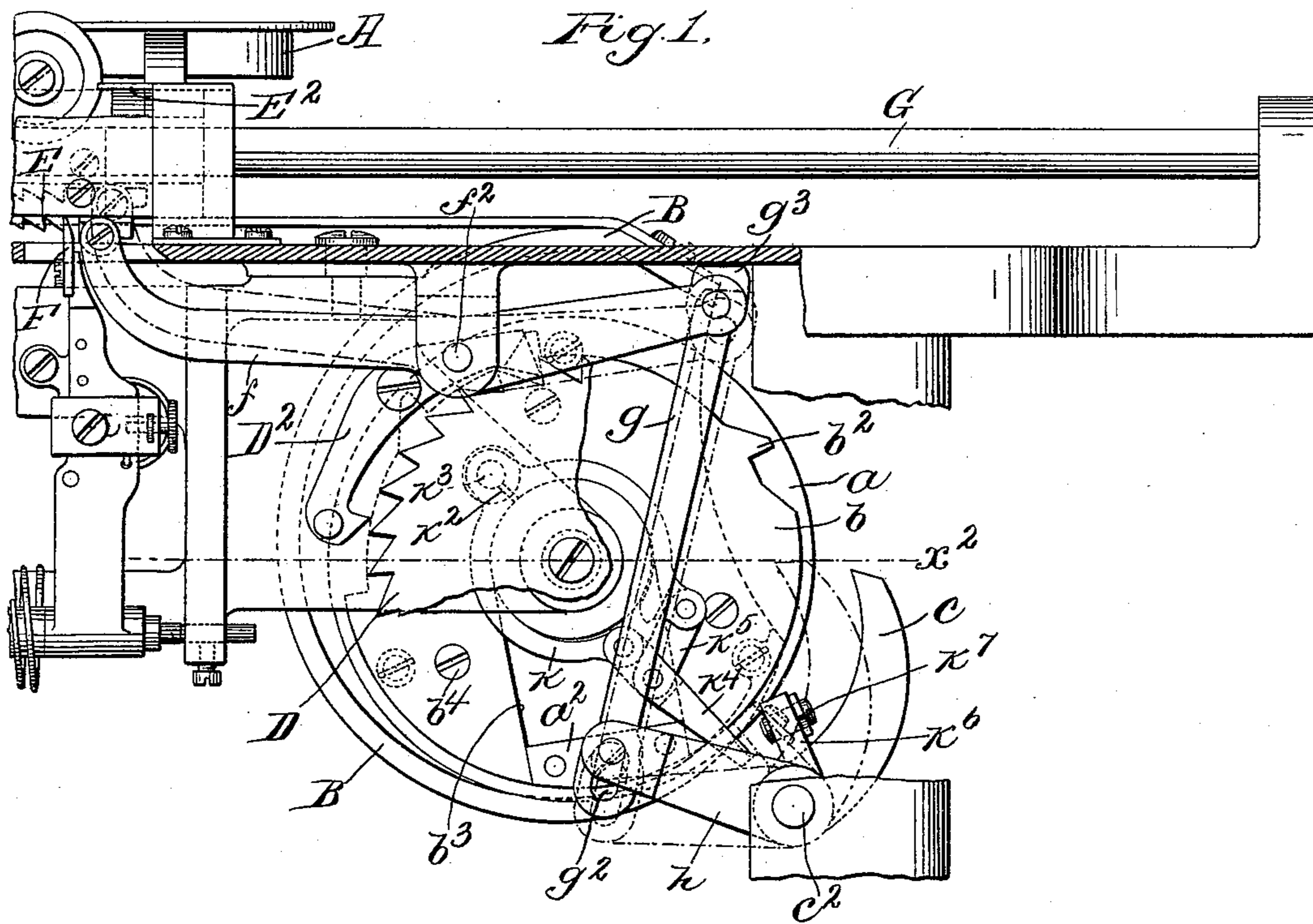
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CARRIAGE FEED MECHANISM FOR TYPE WRITING MACHINES.

(Application filed Dec. 21, 1896.)

(No Model.)

2 Sheets—Sheet I.



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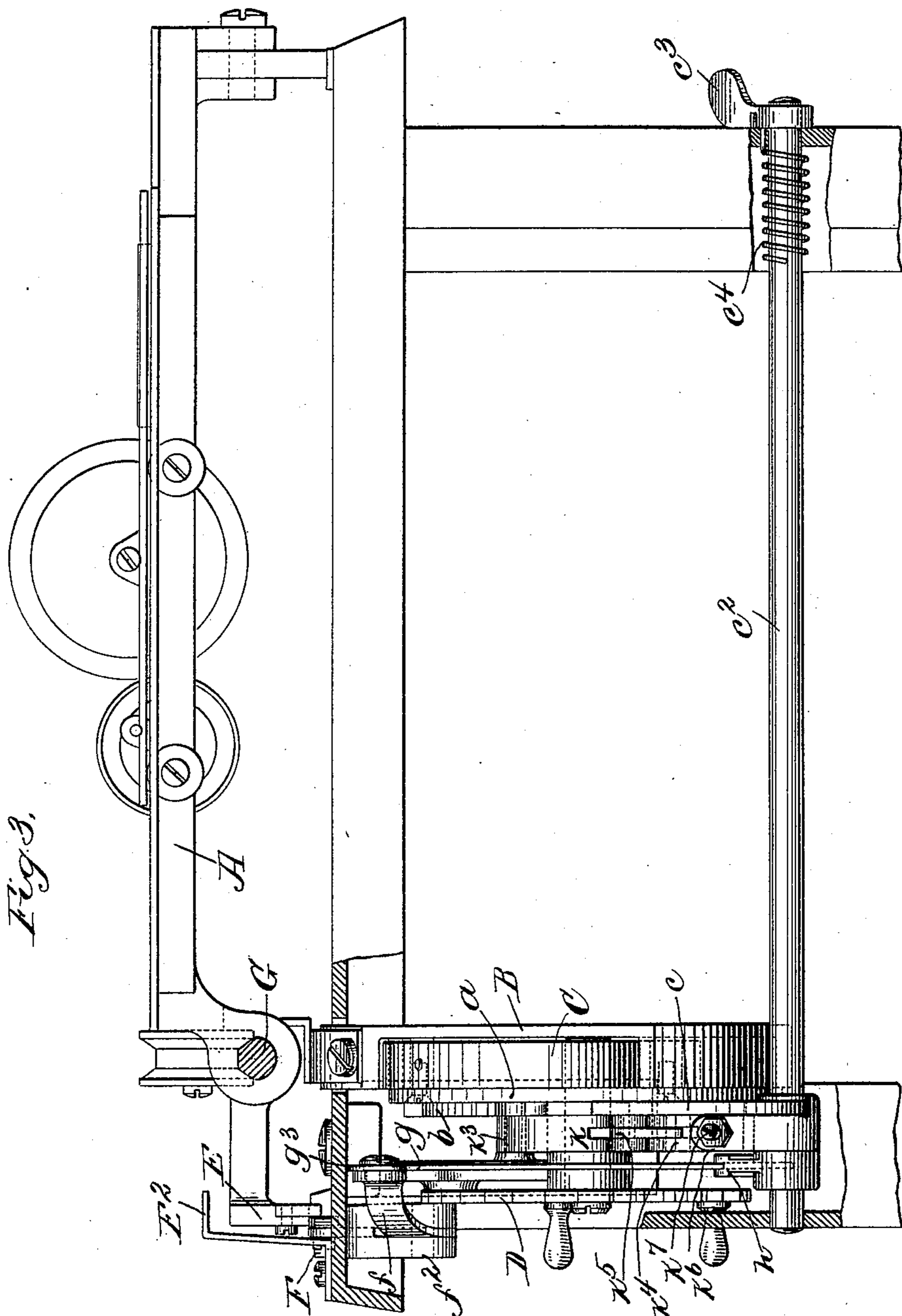
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UNITED STATES PATENT OFFICE.

JOHN B. PRICE, OF WOLLASTON, MASSACHUSETTS, ASSIGNOR TO THE
MANHATTAN TYPEWRITER COMPANY, OF NEW JERSEY.

CARRIAGE-FEED MECHANISM FOR TYPE-WRITING MACHINES.

SPECIFICATION forming part of Letters Patent No. 606,940, dated July 5, 1898.

Application filed December 21, 1896. Serial No. 616,446. (No model.)

To all whom it may concern:

Be it known that I, JOHN B. PRICE, of Wollaston, county of Norfolk, and State of Massachusetts, have invented an Improvement
5 in Carriage-Feed Mechanism for Type-Writing Machines, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

10 The object of my invention is to provide what may be called a "skip-feed" or "jump-feed" for the paper-carriage for use in tabulation of columns of figures and similar work wherein it is desirable in writing each line to
15 skip from the termination of a given word or number to a new starting-point several spaces in advance and to repeat such operation on each line of writing, the starting-points in the broken or interrupted line of writing being
20 at the same distance from the margin of the paper on each line.

The invention is applicable to machines in which the paper-carriage is fed in writing by a constant impelling force, such as that of a
25 spring-actuated barrel or shaft, and is shown as applied to the well-known Remington type-writing machine.

The invention consists, mainly, in the combination, with the carriage-actuator, of a series of stop projections at the desired points,
30 so that when the carriage-actuator is stopped at a given one of said points the carriage is in the position required for one of the starting-points of the broken line of writing, and
35 a movable stop-key to cooperate with said stops. Said stop-key also has suitable connections with the usual space-feed mechanism, so that when said stop-key is operated by the person using the machine it dis-
40 engages the usual escapement or feed mechanism, leaving the carriage free to travel under the influence of its actuating-spring and at the same time places a stop in the path of the nearest stop projection on the carriage-
45 actuator, so that the latter is arrested after it has advanced the carriage to the desired point. Upon the release of the movable stop-key by the operator the parts resume their normal operative position, the coacting mem-
50 bers of the feed-escapement being in engage-

ment and the carriage-actuator being free to move under the action of its actuating-spring, so that the carriage is fed step by step as each type-key is operated in the usual manner until the word or number begun at that
55 point is completed, when the carriage may be advanced to the point determined by the next stop projection by the manipulation of the movable stop-key, as before described.

A suitable brake or retarding device is ap-
60 plied either to the carriage or to the carriage-actuator, or to both, to prevent undue acceleration of the feed movement of the carriage when the feed-escapement is disengaged.

By applying the stop mechanism to the car-
65 riage-actuator instead of to the feed-rack of the carriage itself the feed-escapement is not subjected to any shock or strain beyond that of the usual normal operation, as would be the case if the jump-feed were controlled pri-
70 marily by the feed-escapement, as is usually the case.

Figure 1 is a rear elevation of a sufficient portion of a type-writing machine to illus-
75 trate the application of this invention thereto, a part of the spring-winding ratchet and portions of the frame being broken away to show other parts; Fig. 2, a horizontal sectional detail on line x^2 , Fig. 1; and Fig. 3, an
80 end elevation of a portion of the machine provided with a jump-feed mechanism embodying this invention.

The invention is shown as applied to the well-known Remington type-writing machine, a sufficient portion only of which is shown to
85 illustrate the application of the present improvement thereto.

The carriage A is actuated in its feed movement by a spring-barrel B, connected with one end of a spring C, the other end of which
90 is connected with the usual winding-ratchet D, controlled by the double pawl D², by which the tension of the spring is adjusted to suit the operator.

The normal feed movement of the carriage
95 is controlled by the rack E and feed-dogs F in the usual manner, the said rack being pivotally supported and longitudinally movable along the guide-rod G and being adapted to be disengaged from the feed-dogs when the
100

carriage is to be moved independently of the control thereof.

In order to provide for a feed of the carriage for an indefinite number of spaces, but to a definite new starting-point the same on each line, the cover-plate *a* of the spring-barrel is adapted to have connected with it a stop-plate *b*, the periphery of which is provided with stop projections *b*², located in accordance with the points desired for starting-points in the tabulated writing. Said stop-plate is preferably detachable, so that others with different arrangement of stop projections for a different style of tabulation may be substituted, if desired, and, as herein shown, the said stop-plate *b* is provided with a radial slot or opening *b*³ to enable it to be applied and removed laterally to the spring cover-plate *a*, which is provided with a lateral projection or tongue *a*², that fits within the slot *b*³ of the stop-plate to accurately locate the same on the plate *a*, to which the said plate *b* may be secured in any suitable manner, as by screws *b*⁴.

A movable stop *c* coöperates with the teeth or stop projections *b*² of the stop-plate, said stop *c* being shown in the form of a pawl or arm connected with a rock-shaft *c*², supported in suitable bearings in the frame-uprights of the machine and extending to the front of the machine, where it is provided with a handle *c*³ in convenient position to be manipulated by the operator, said device comprising the handle, rock-shaft, and stop proper, being for convenience called the "stop-key." The said stop-key is acted upon by a suitable spring *c*⁴, tending to retain the stop *c* out of engagement with the periphery of the stop-plate *b*; but when the key-handle is properly manipulated by the operator the said stop *c* is carried in toward the periphery of the stop-disk *b*, so that its end is in the path of the stop projection *b*² and will by its engagement with the next stop projection arrest the movement of the spring-barrel, and consequently of the carriage, at the point determined by the position of said stop projection until the stop-key is released by the operator, when the said projections will be disengaged and the carriage-actuator again free to move except as controlled by the usual feed-escapement of the carriage.

When the stop-key is operated, the usual feed-escapement *E* *F* is disengaged, so that the carriage may advance under the action of its spring-actuator until the latter is arrested by the stop, as above mentioned. This disengagement of the escapement-feed is effected by lifting the feed-rack *E* by a lifter, shown as a lever *f*, pivoted at *f*² upon the framework and having one arm in position to engage the under side of the rack or rack-holder near the feed-dogs *F* and its other arm connected by a link *g* with an arm *h*, secured to the rock-shaft *c*² of the stop-key, so that the operation of the stop-key lifts the rack.

Lost motion is provided in the connection between the rack-lifting or feed-disengaging

lever *f* and the stop-key, as herein shown, by a slotted connection at *g*² between the link *g* and arm *h*, so that the feed-rack is not disengaged from its dogs until the stop *c* has been moved far enough inward to lie in the path of the next projection *b*² of the stop-wheel, and in the reverse movement of the stop-key when released the rack *E* is lowered into engagement with the dogs *F* before the stop *c* is disengaged from the projection *b*², on which it has just acted. The upper end of the link *g* is extended, as shown at *g*³, so as to serve by its engagement with the top plate of the machine to limit the return movement of the feed-disengaging lever *f*. The end of said lever *f* which engages with the rack is preferably made as a shoe, so as to develop some friction as the rack moves along it in the jump-feed of the carriage, and the said lever may be so set as to press the upper surface of the rack-carrier *E* against the usual stop *E*², that overhangs it, so as to develop sufficient friction to prevent too rapid movement of the carriage, which might cause it to travel by momentum beyond the point reached when the spring-actuator is stopped.

As a further prevention against too rapid movement and overthrow of the carriage a brake is provided for the spring-barrel, shown as a ring *k*, spring-jointed at *k*² and engaged with a projection *k*³ from the frame that supports the actuating-spring and coöperating parts, said ring being discontinuous opposite the spring-joint and having connected with one end thereof a lever *k*⁴, connected by a link *k*⁵ with the other end of the ring, so that pressure on the lever tends to close the ring upon the tubular hub *a*³ of the spring cover-plate, (see Fig. 2,) so as to retard the movement thereof. Said brake-lever *k*⁴ is operated by an arm or projection *k*⁶ upon the rock-shaft *c*² of the stop-key, said arm being provided with an adjustable engaging point, shown as a set-screw *k*⁷, which regulates the pressure exerted on the brake when the stop-key is moved to operate the carriage for the jump-feed.

The brake-pressure is thus readily controlled by the operator, who when it is desired to jump the carriage to the next starting-point in writing tabulated work merely manipulates the handle *c*³ of the stop-key, thus throwing the stop projection *c* into the path of the stop projections on the stop-plate, the latter part of the movement of the stop-key disengaging the feed-rack of the carriage from the dogs, and thus leaving the carriage free to travel under the impulse of its actuating-spring. The stop-key at the same time applies the brake, which prevents too rapid movement of the spring and carriage and may be easily regulated by the operator, so that the carriage is permitted to travel rapidly, but without acceleration, to the point determined by the stop-wheel, when the stop-key is released and the carriage again placed under control of the normal feed mechanism until

the writing at that point is finished and another jump movement made, as before, preparatory to beginning the writing at the next point desired.

5 While the invention has been shown and described as applied to the Remington typewriter, it is obvious that it is applicable to any type-writing machine having a carriage-actuator for feeding the carriage under control of a suitable feeding mechanism, and the invention accordingly is not limited to the specific construction herein shown and described, it being believed to be novel to combine with the carriage-feed actuator a stop mechanism adapted to arrest the same at determined points when it is removed from the control of the normal feed-controlling mechanism.

I claim—

20 1. In a type-writing machine, the combination of the carriage-feed actuator provided with predetermined stops, of a movable stop-key normally held disengaged from said stops and adapted to be moved into position to en-

gage said stops, substantially as and for the purpose described. 25

2. The combination of the carriage and carriage-actuator provided with stops, and an escapement-feed for said carriage, with a stop-key cooperating with the stops of the feed-actuator, and mechanism controlled by said stop-key for disengaging the escapement-feed, substantially as described. 30

3. The combination of the carriage and carriage-actuator provided with stops, and an escapement-feed for said carriage, with a stop-key cooperating with the stops of the feed-actuator, and mechanism controlled by said stop-key for disengaging the escapement-feed, and a brake operated by said stop-key, substantially as described. 35 40

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

JOHN B. PRICE.

Witnesses:

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NANCY P. FORD.