

No. 754,454.

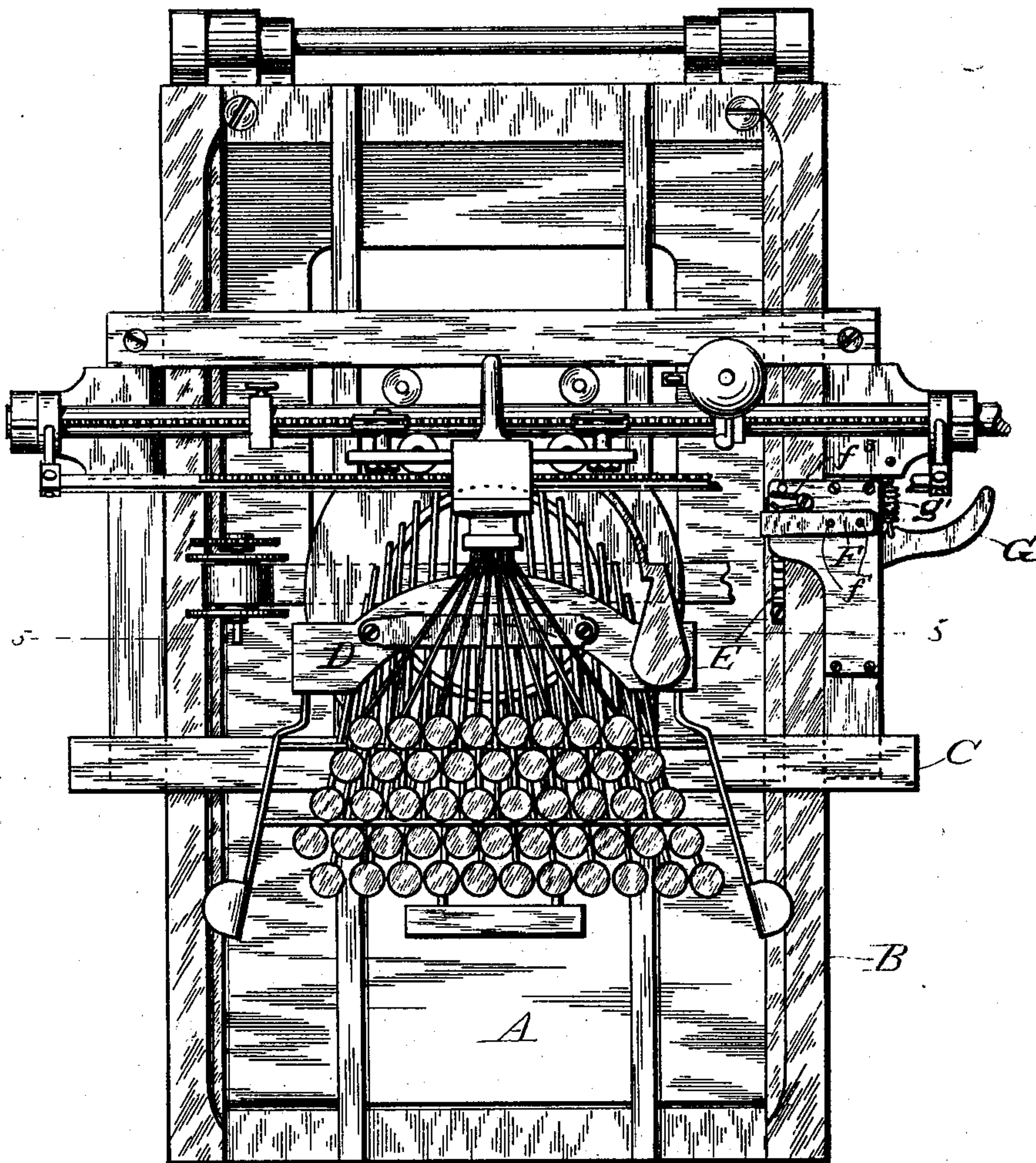
PATENTED MAR. 15, 1904.

A. R. JARMAN.
TYPE WRITING MACHINE.
APPLICATION FILED FEB. 4, 1903.

NO MODEL.

2 SHEETS—SHEET 1.

Fig. 1.



Witnesses
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A. R. Kennedy

Inventor
A. R. Jarman
By his Attorney
P. T. Lodge

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2 SHEETS-SHEET 2.

Fig. 2.

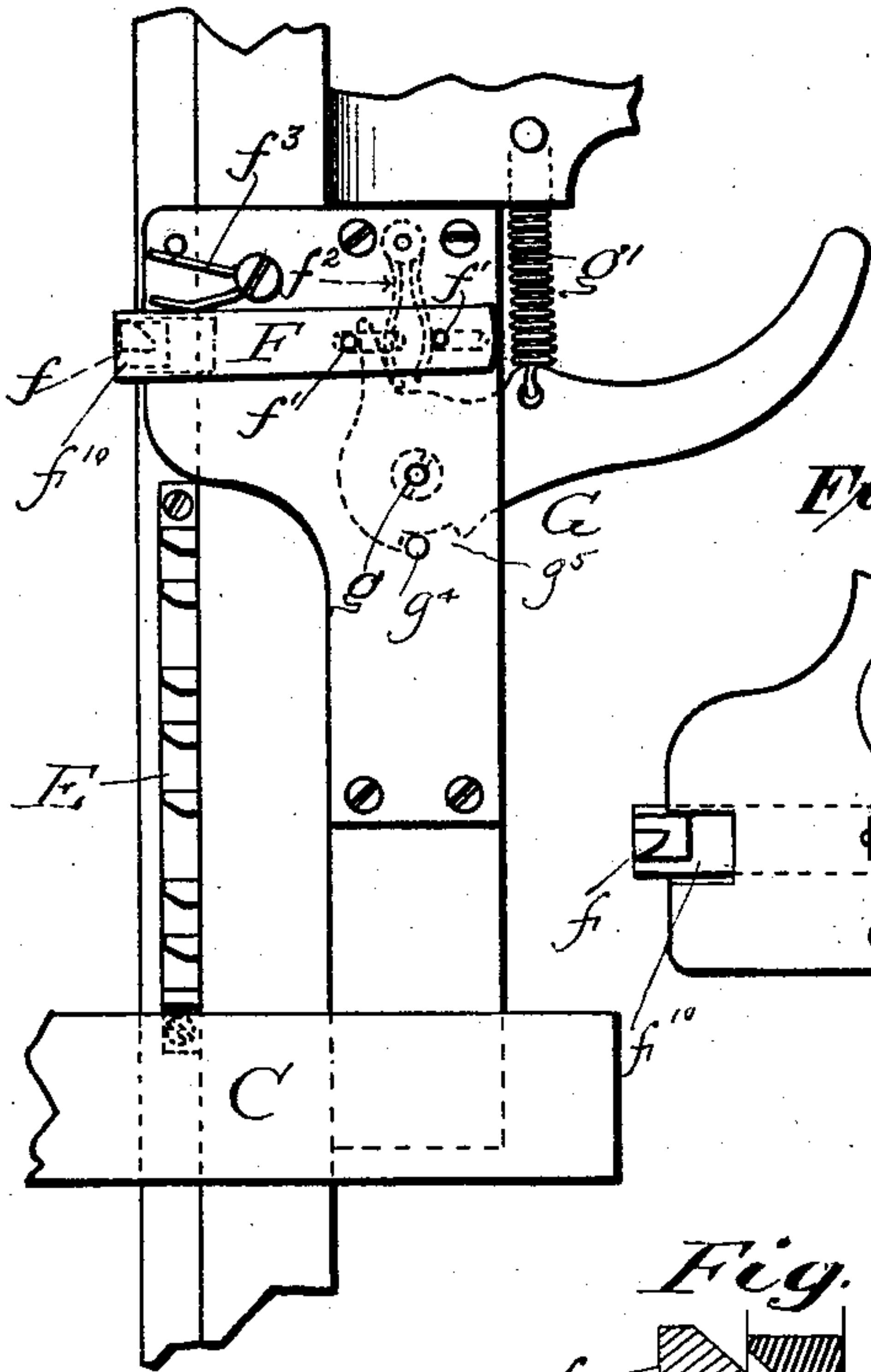


Fig. 3.

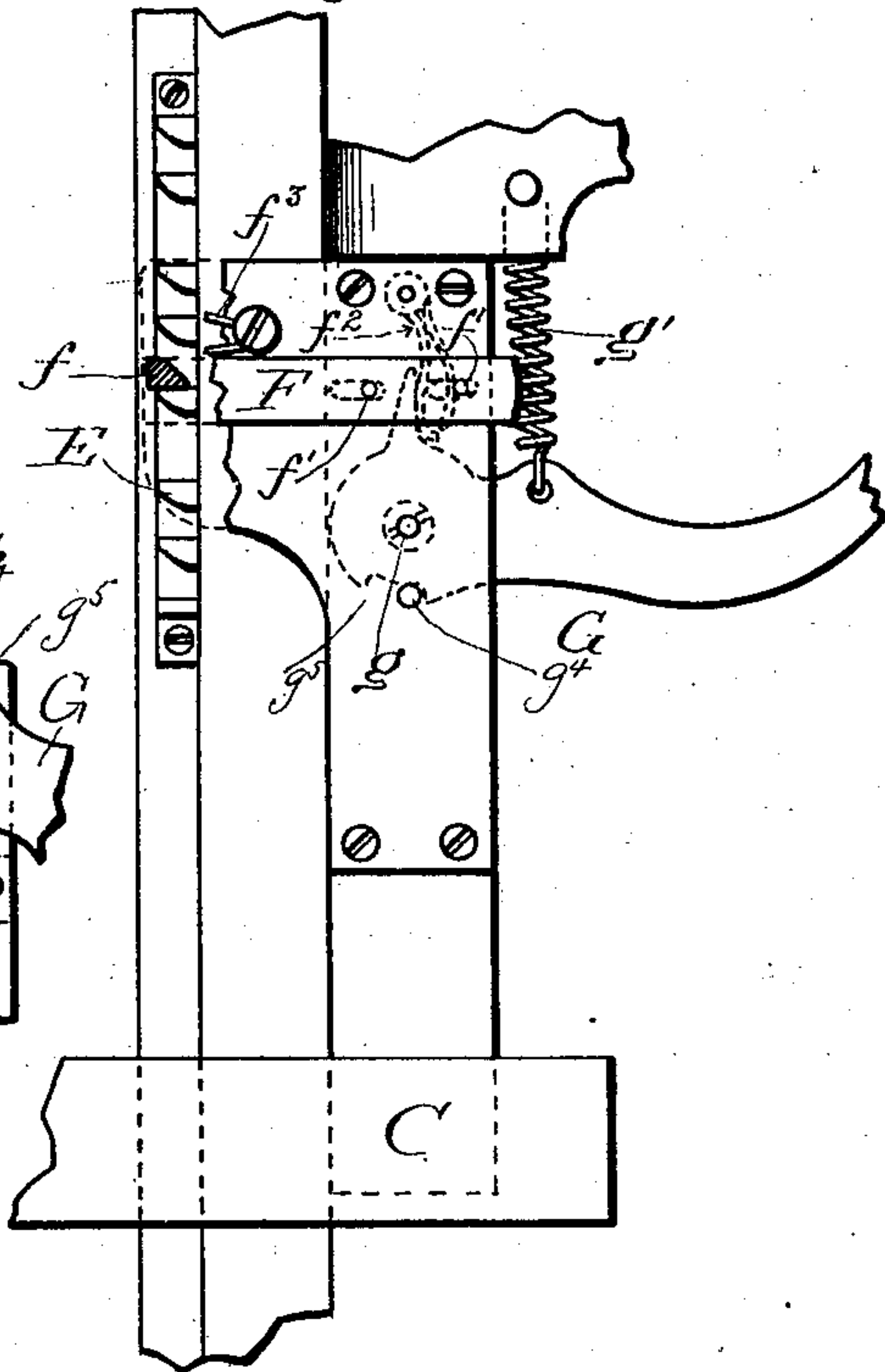


Fig. 4.

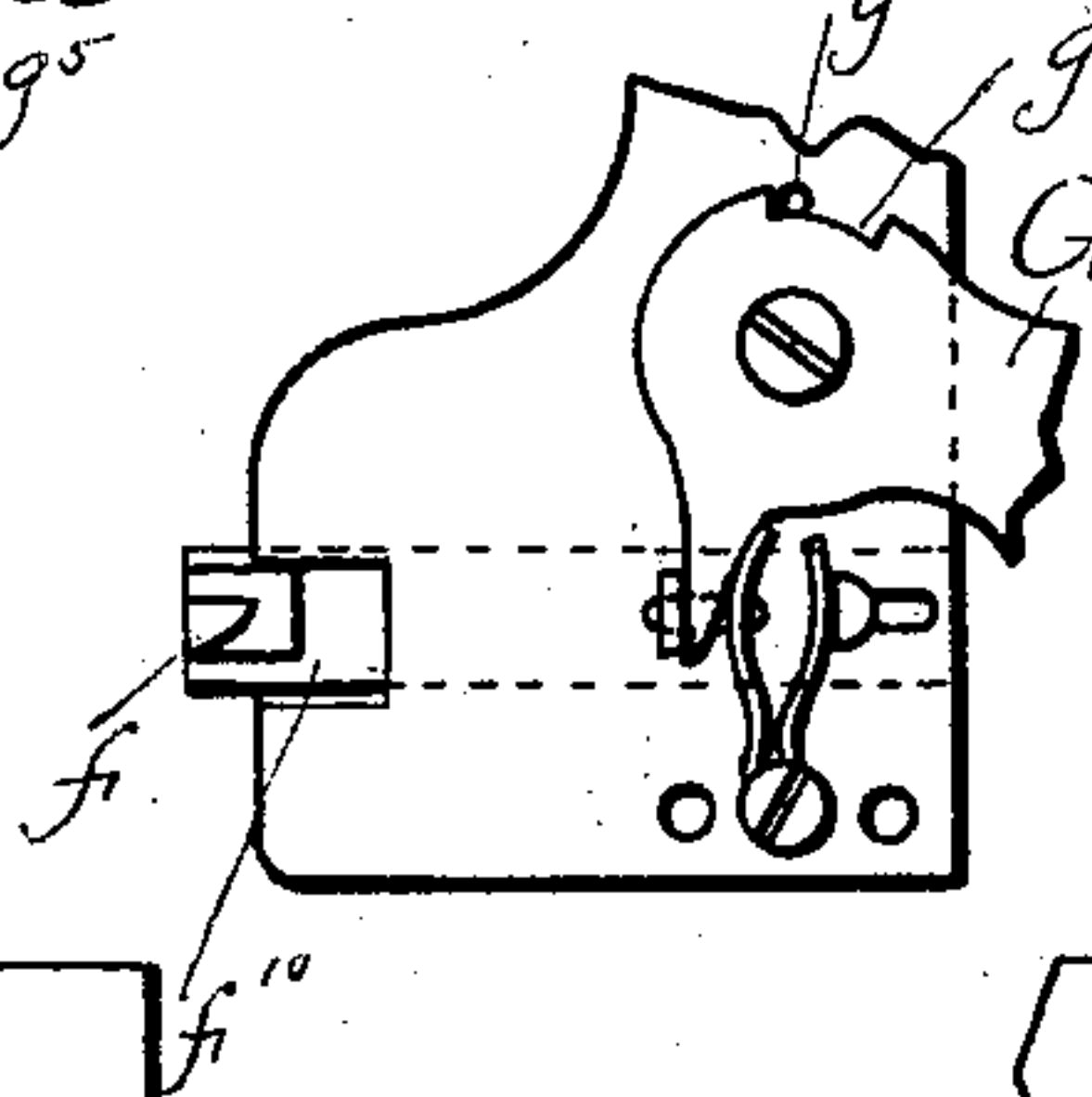


Fig. 6.

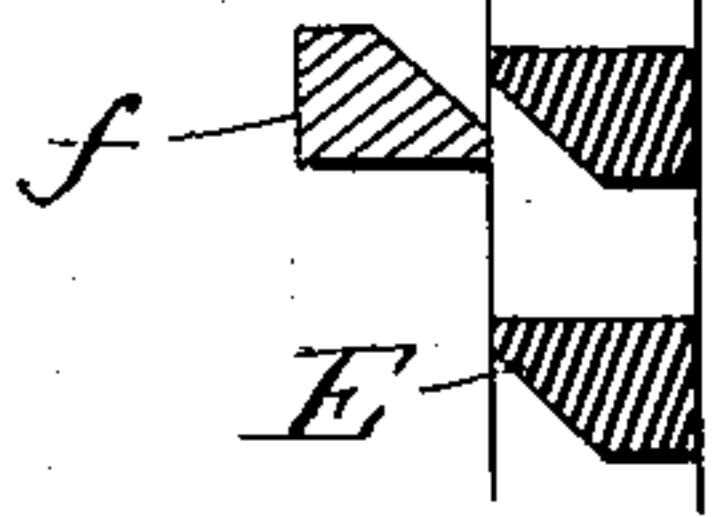


Fig. 7.

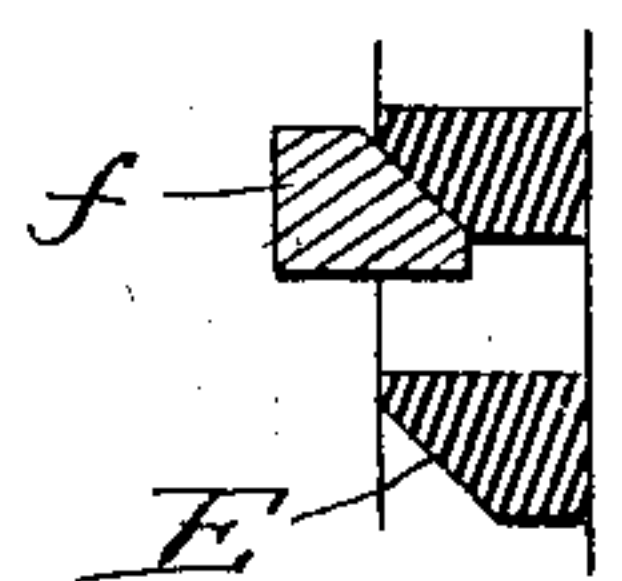
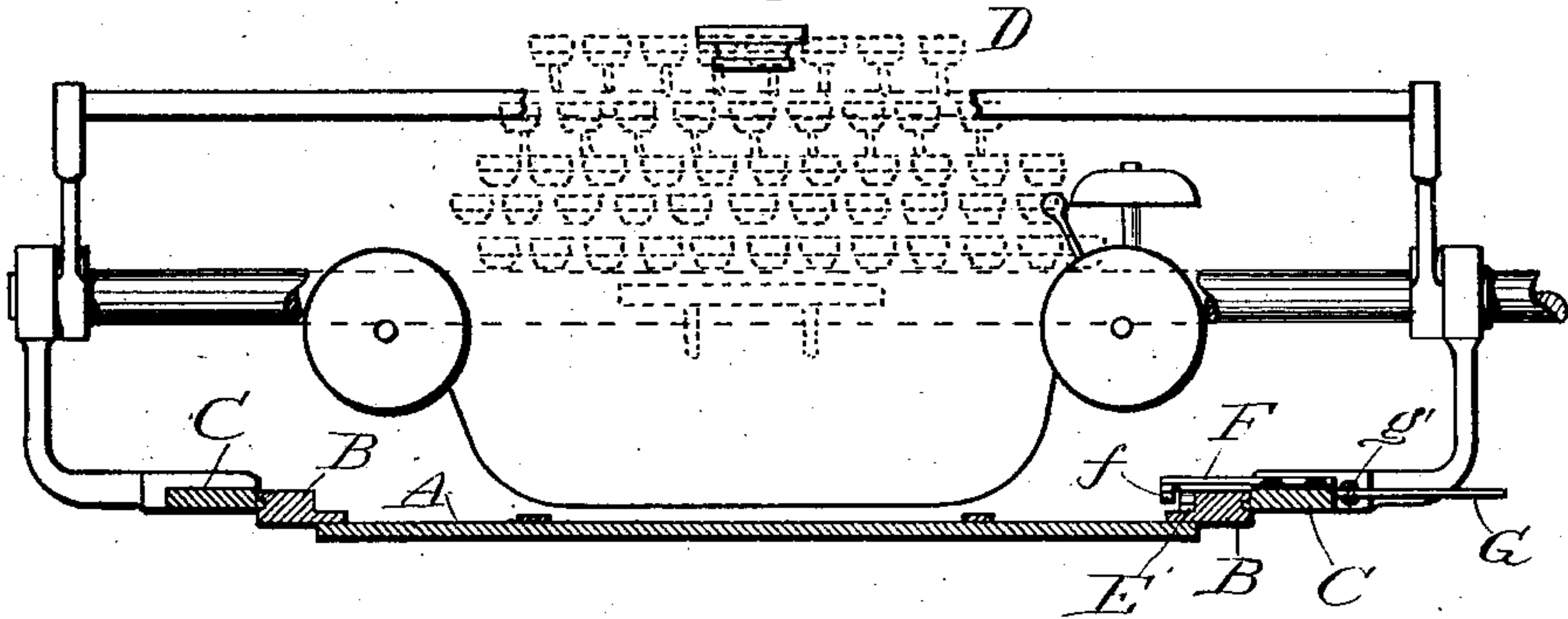


Fig. 5.



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UNITED STATES PATENT OFFICE.

ALFRED R. JARMAN, OF HACKENSACK, NEW JERSEY, ASSIGNOR, BY
MESNE ASSIGNMENTS, TO ELLIOTT-FISHER COMPANY, A CORPORATION OF DELAWARE.

TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 754,454, dated March 15, 1904.

Application filed February 4, 1903. Serial No. 141,872. (No model.)

To all whom it may concern:

Be it known that I, ALFRED R. JARMAN, of Hackensack, county of Bergen, and State of New Jersey, have invented a new and useful
5 Improvement in Type-Writing Machines, of which the following is a specification.

My invention relates to that class of machines in which the cards or sheets to be written upon are supported on the surface of a
10 flat platen beneath a writing mechanism arranged to feed transversely, step by step, for letter and word spacing, and also adapted to be moved longitudinally over the platen from time to time for line-spacing. It is a com-
15 mon practice to use this class of machine—such, for instance, as the Elliott & Hatch machine, shown as to its general organization in United States Patent No. 620,125—for
20 printing parallel lines or entries on cards or sheets having blank forms or lines thereon. The positions of these lines and the distances between them differ, not only on different sheets, but on different parts of the same sheet, in such manner that the ordinary line-
25 feeding mechanism does not admit of the machine being speedily adjusted to print the lines in the exact positions required.

The aim of my invention is to enable the operator to adjust the machine instantly to
30 print in the exact position required on duplicate cards or blanks.

To this end it consists in the combination of a feed-dog with a rack or stop bar, which is arbitrarily constructed or adjusted to meet
35 the requirements of the particular matter in hand, the teeth of this bar being spaced either regularly or irregularly to conform to the required spaces between the lines.

Figure 1 is a top plan view of an Elliott & Hatch machine provided with my improve-
40 ment. Figs. 2 and 3 are top plan views of the line-spacing device with its dog in different positions. Fig. 4 is a bottom plan view of the feed-dog and adjacent parts. Fig. 5 is a cross-
45 section of the machine on the correspondingly-numbered line of Fig. 1. Figs. 6 and 7 are diagrams illustrating the action of the stop-dog as viewed from the top.

Referring to the drawings, A represents the flat platen; B, an overlying base-frame 50 to support the machine; C, a secondary frame mounted to slide forward and backward on the main frame B for line-spacing purposes, and D the writing mechanism, arranged to print in a downward direction and mounted 55 to move transversely on the frame C. It is provided with the usual feed devices, controlling its movement from left to right, step by step, as successive letters and spaces appear in the line. 60

The foregoing parts are all of ordinary construction and constitute no part of the present invention.

The invention has reference to means for moving the frame C and the writing mechanism thereon forward step by step that the machine may print the successive lines at the required distances apart. 65

In carrying my invention into effect I secure to the frame B the platen or to any other fixed 70 part of the machine near the right side a longitudinal toothed bar E. The teeth are for convenience arranged on the upper surface of the bar and are beveled or inclined on their front sides. The distance between the flat or 75 rear sides of the teeth corresponds with the distances demanded between the successive lines of print. Ordinarily the distance between the successive teeth differs, those at one end of the bar being frequently farther apart 80 than those at the opposite end. On the frame C, I mount the stop-dog F, lying transversely and having its inner end extended over the toothed bar E and provided on the under side with a tooth f . The dog F is slotted longitudinally and guided by pins f' on the frame, the parts being so fitted that the dog is permitted not only a longitudinal reciprocation, but also at the inner end a limited vibration 85 lengthwise of the machine. This vibration is limited by a slot f^{10} in the frame, through which the tooth projects, as shown in Fig. 4. A spring f^2 tends to slide the dog F onward to the left, so that its teeth f will stand beyond or out of the path of the teeth on bar E. 95 A second spring f^3 , secured to the frame, acts

on the end of the dog F and tends to push the same forward when it is out of engagement with the teeth. For the purpose of operating the dog and shifting the frame C the lever G is pivoted to the frame at g and provided with a finger engaging a pin on the dog F. The pivotal motion of the lever is limited by pins g^4 , fixed on the frame in position to engage the walls of a recess g^5 in the edge of the lever.

A spring g' connects the lever G with the sliding frame and tends to draw it forward, thereby releasing the dog F, so that it may slide onward and disengage its teeth from the bar E, as shown in Fig. 2. This is the normal position of the parts. Their operation is as follows: The frame C and the writing mechanism are first pushed backward beyond the printing-field and the card or sheet placed in a definite position on the platen, ordinary guides or stops being employed to determine the position. The operator seizes the handle G and pulls the same forward. Owing to the frictional resistance of the frame, the spring g' yields, and the lever turning on its pivot slides the dog F onward, bringing its tooth f into position to engage the first teeth on the bar E. As soon as the dog reaches the end of this movement the lever G becomes rigid in relation to the frame, so that a continued pull thereon serves to slide the frame and writing mechanism forward until the dog F encounters the first teeth at the rear end of the bar E. This serves to arrest the mechanism in position to print the first line in the required position on the card. When the operator releases the lever G, it is turned rearward on its pivot and the dog F moves to the left until its tooth f disengages from the teeth of the bar E, whereupon the end of the dog F is thrown forward by the spring f^3 until its tooth f stands opposite the beveled end of the next tooth on bar E. After the first line has been printed the lever is again operated. The dog F first slides onward, carrying its tooth to the right between the first and second teeth of the bar E, after which the parts move bodily forward until the tooth f engages the rear face of the second tooth on the bar E. This operation is repeated after the printing of each line.

My machine differs from those now in use in that the writing mechanism instead of being fed forward step by step through the action of feed devices, as usual, is mounted freely on the frame, so that the operator may push it forward or backward to any required extent, except as its forward motion is limited or arrested by my improved stop devices. A clear distinction is to be drawn between my stop devices, which serve to arrest the advance of the writing mechanism, and the ordinary feed devices, which act to cause the advance of the mechanism.

It will be observed that the dog is merely a stop device; that the lever G is a means for

bringing the dog into operative position and for advancing the frame after the dog is thus adjusted. It will be observed that the distance between the teeth on the bar E in no manner affects the operation of the stop device. This permits the teeth to be spaced arbitrarily to conform to the spacing on the card or sheet, whether regular or irregular.

The advantage of my device lies in the fact that a single pull on the lever G enables the operator to bring the printing mechanism to the various positions required, so that the printing of words or lines in definite positions and at irregular intervals may be carried on without loss of time. When a change in the form of blanks occurs, it is only necessary to remove the bar E and substitute another adapted to the new work.

If desired, the teeth of the bar E may be made adjustable, or teeth or pins or stop devices of any suitable form, adjustable independently of each other, may be employed.

I believe myself to be the first to provide a line-spacing mechanism which will without change or adjustment permit the writing mechanism to be advanced step by step unequal distances each movement by a single impulse.

It is manifest that the details may be modified at will, the essential requirements being simply a series of stop-teeth suitably spaced and a dog or stop engaging these teeth automatically to limit the advance of the mechanism.

Having described my invention, what I claim is—

1. In a flat-platen type-writer, printing mechanism mounted to slide freely forward and backward for line-spacing, in combination with a series of stop-teeth and a dog adapted to engage the teeth successively to limit the advance.

2. In a flat-platen type-writer, the printing mechanism movable for line-spacing, a series of stop-teeth unevenly spaced and a stop-dog adapted to engage the teeth successively, whereby the lines of print may be arbitrarily and unevenly spaced.

3. In a flat-platen type-writer, the writing mechanism mounted to slide freely for line-spacing, in combination with the lever thereon, the stop-dog actuated by the lever, and the fixed toothed stop-bar.

4. In a flat-platen type-writer, the freely-sliding writing mechanism, in combination with a stop-bar having teeth to arrest the advance of the mechanism, a movable dog on the writing mechanism to engage said teeth, and a lever or handle serving the twofold purpose of advancing the mechanism and controlling the dog.

5. In a flat-platen type-writer, its freely-sliding frame for line-spacing, the lever thereon, the longitudinally and laterally movable dog controlled by the lever, and fixed stop-teeth to engage the dog.

6. In a flat-platen type-writer, the writing mechanism movable freely forward and backward for line-spacing, in combination with stop-teeth to arrest its advance, a normally disengaged dog, and means for moving the writing mechanism and actuating the dog.

7. In a flat-platen type-writer, the writing mechanism normally free to slide forward and backward for line-spacing, in combination with a series of stop-teeth and a stop-dog co-

operating therewith to repeatedly arrest the advance of the writing mechanism.

In testimony whereof I hereunto set my hand, this 22d day of January, 1903, in the presence of two attesting witnesses:

ALFRED R. JARMAN.

Witnesses:

CHAS. FLINT,
P. S. HALLECK.