

(No Model.)

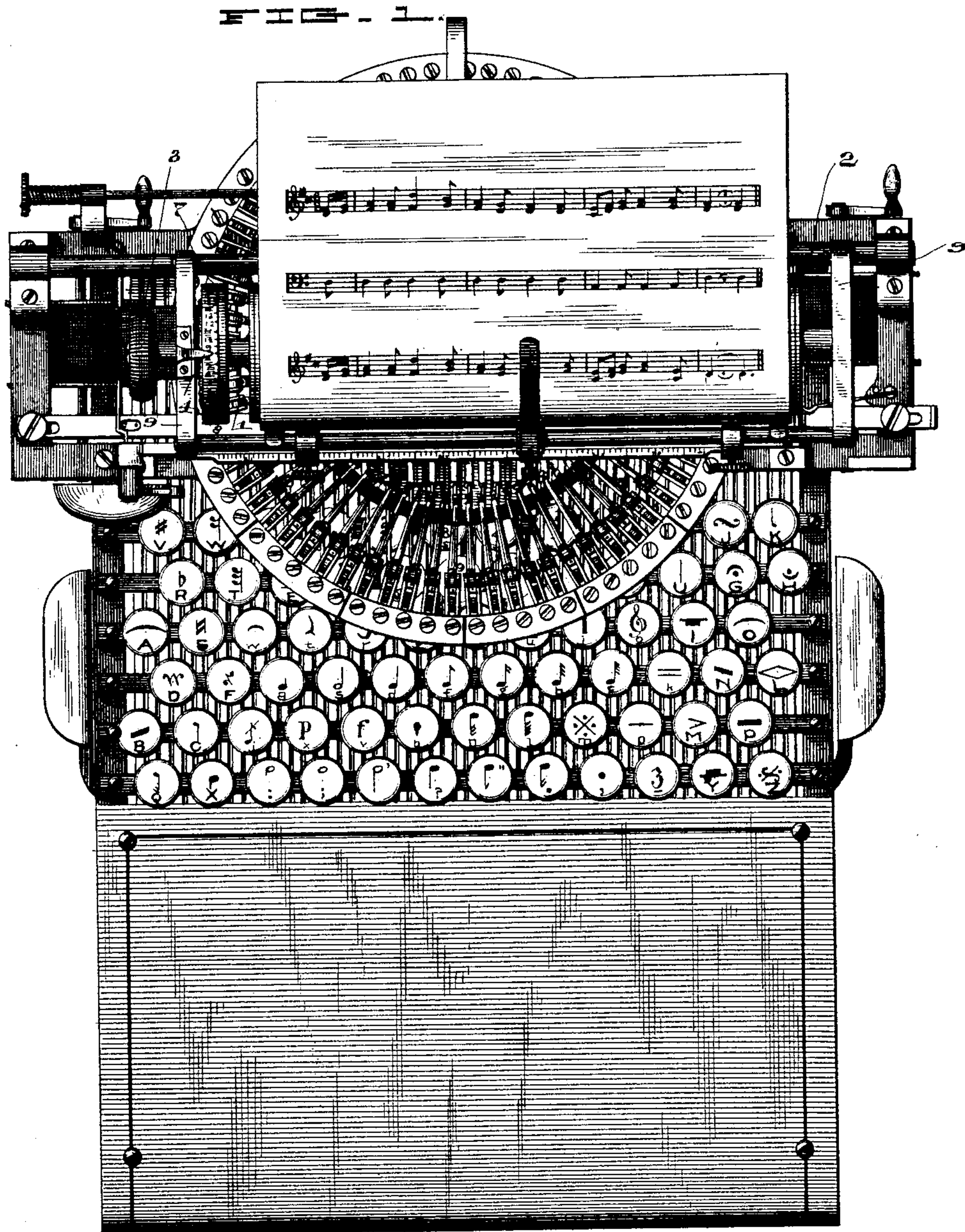
3 Sheets—Sheet 1.

J. H. GREEN.

MUSIC WRITING ATTACHMENT FOR TYPE WRITING MACHINES.

No. 455,319.

Patented July 7, 1891.



Witnesses

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Inventor

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(No Model.)

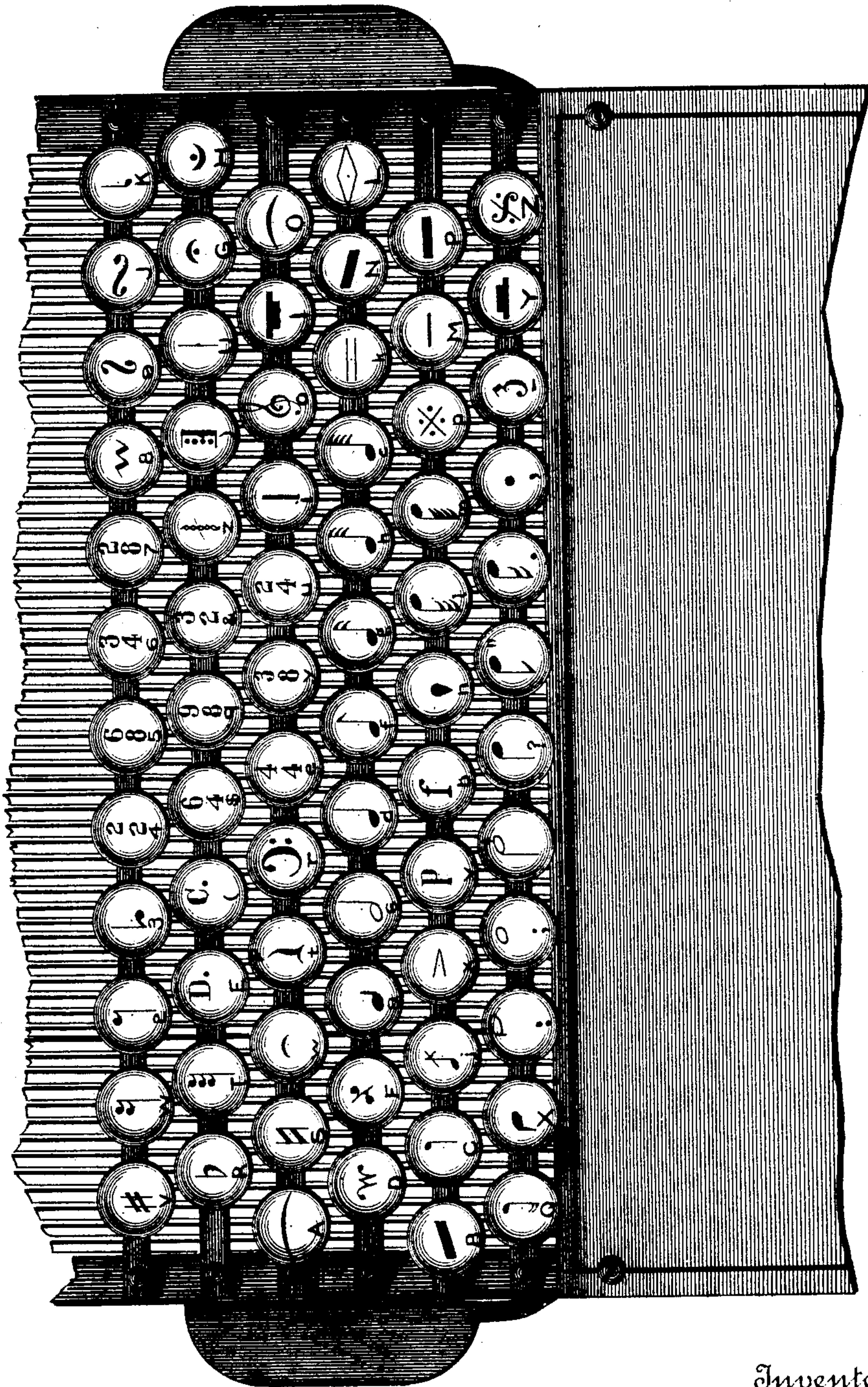
3 Sheets—Sheet 2.

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3 Sheets—Sheet 3.

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FIG. 3.

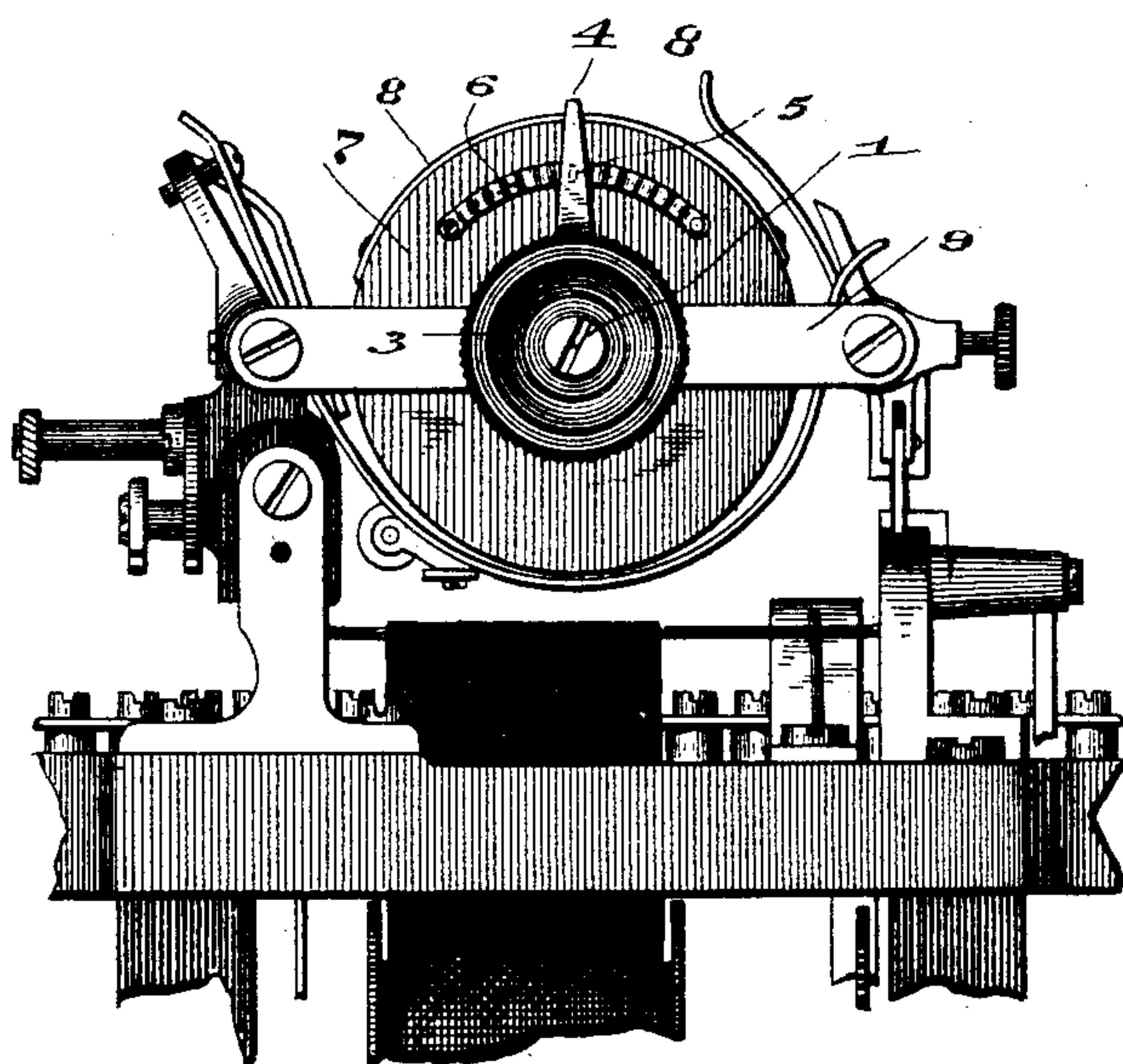


FIG. 4.

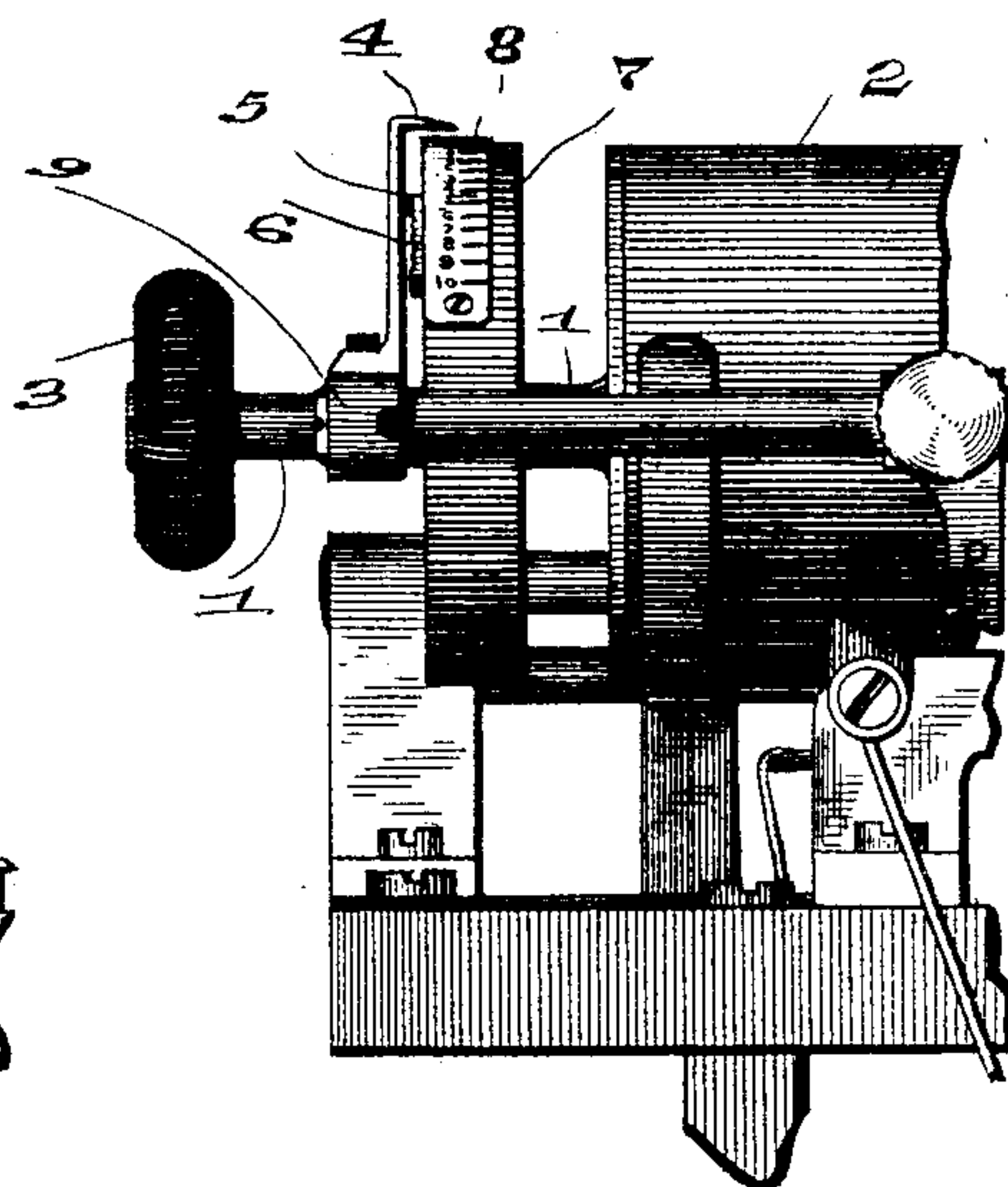


FIG. 5. FIG. 6.

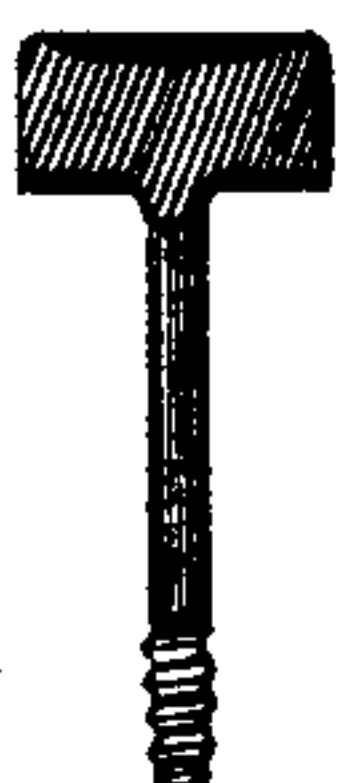
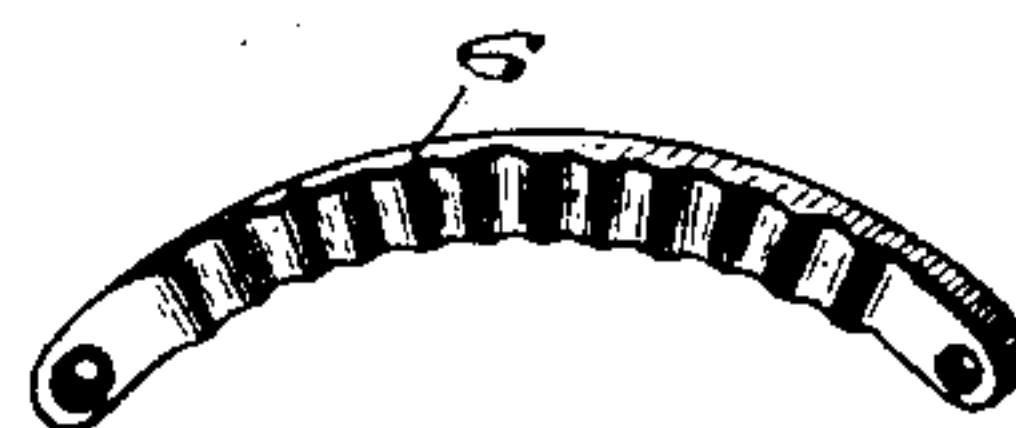


FIG. 7.



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UNITED STATES PATENT OFFICE.

JOHN H. GREEN, OF INDIANAPOLIS, INDIANA.

MUSIC-WRITING ATTACHMENT FOR TYPE-WRITING MACHINES.

SPECIFICATION forming part of Letters Patent No. 455,319, dated July 7, 1891.

Application filed September 15, 1890. Serial No. 365,096. (No model.)

To all whom it may concern:

Be it known that I, JOHN H. GREEN, of Indianapolis, county of Marion, and State of Indiana, have invented certain new and useful Improvements in Music-Writing Attachments for Type-Writing Machines; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which like figures refer to like parts.

My invention relates to the construction of devices for writing music with a machine; and it consists in mechanism which may be attached to an ordinary type-writer for such purpose, and will be understood from the following description.

In the drawings, Figure 1 is a top view of a type-writer with my device attached. Fig. 2 is a top view of the key-board. Fig. 3 is a detail end view of the paper-cylinder and related parts. Fig. 4 is a front view of the same. Fig. 5 is a sectional view of one of the detachable rubber heads for covering the ordinary key. Fig. 6 is a detail view, partly in section, of a detachable key. Fig. 7 is a perspective view of one of the detachable rack-bars.

In the drawings I have shown my device attached to the ordinary caligraph; but it may be readily adapted to other type-writers by slightly modifying the mechanism described.

The main features of the type-writer are unchanged, the actuating and lever mechanism being substantially the same. The keys, however, instead of representing alphabetical characters, are marked with the various characters used in music—such as whole, half, quarter, eighth, sixteenth, thirty-second, and sixty-fourth notes—in the various positions in which they occur, and other musical characters, which will be readily recognized by a musician, on the key-board shown in Fig. 2. For convenience' sake I place below the musical character in smaller size the letter or other character usually represented by that key upon the type-writer selected, and this is done so that in setting up the machine the operator may know at once the place in which each key belongs, and this is true whatever kind of key be used, whether the elastic thim-

ble or cap shown in Fig. 5 or the ordinary screw-key shown in Fig. 6. The cap or thimble shown in Fig. 5 is made of rubber and is intended to be placed over the ordinary key-head of the type-writer, the musical character being indicated on the top in the usual manner, and the key shown in Fig. 6 has its shank threaded, so that it will screw readily into a socket formed in the machine. The ordinary type of course are removed from the type-sockets of the levers, and the musical character is inserted corresponding with that upon the key-head, or in some kinds of typewriters the entire mechanism of the type and levers to which they are connected might be removed and another inserted, which would accomplish the same result in a more expeditious manner.

In arranging the key-board it must be borne in mind that some of the characters have to be printed in a direction parallel with the lines of the music-paper—that is, they do not all, when imprinted, stand at right angles to such lines, as in the case of ordinary matter. It therefore becomes necessary in arranging the key-board, in order to prevent the type from interfering with others, to set the levers which carry such characters—for instance, braces, slurs, rests, and some others—as nearly as possible parallel with the lines upon the music-paper—that is, at the right and left sides of the circular frame in which those levers are carried. I have shown them in Fig. 1 thus arranged, and it may be found in practical use that it would be advisable to change the relative position of one or more of these keys from that shown; but this would not be a departure from the principle of my invention, which consists in arranging characters of this class at the sides of the lever-frame of the machine to prevent interference in operation.

The paper-cylinder is constructed somewhat differently, the pawl-and-ratchet mechanism at the right-hand end being removed, while the revolving mechanism for spacing between the lines is located at the opposite end and will now be described.

Upon the end of the axle 1 of the paper-cylinder 2, which is elongated, is mounted a hand-wheel 3, and at 4 is an indicator on

whose inner face is a lug 5, adapted to engage with notches upon a circular rack-bar 6, which is fastened upon the outside of a disk 7, which is mounted on the axle of the paper-cylinder, and on the upper face of this disk is fastened a gage-plate 8, which is spaced into divisions corresponding with the notches in the rack-bar 6 and also with the various steps upon the staff. There are enough of these spaces to cover an octave above and an octave below and the octave on the staff itself, practically seventeen divisions. Of course any number of these divisions may be made upon the gage-plate. When paper is used of wider-spaced lines the rack-bar 6 and gage-plate 8 may readily be removed and others of proper gage attached. Several of these of different sizes will be provided for this purpose.

The paper being placed in position, as shown in Fig. 1, the operator strikes the proper key and imprints the end bar upon the paper and then strikes the key upon which the treble clef is indicated and imprints such clef upon the paper at the right of the bar. So far no rotary movement of the paper-cylinder is necessary, for the bar and clef whose types have been struck occupy the full width of the staff, and the operator as yet has had no occasion to turn the hand-wheel 3, which, mounted on the axle of the paper-cylinder 2, revolves both it and the disk 7, which carries the gage-plate 8. The indicator 4 is stationary, being rigidly secured to the cross-bar 9, connected with the frame which carries the cylinder 2. For convenience the gage-plate is set upon the disk so that 1 corresponds with the central line of the staff, and thus when the indicator stands at 1 and a key be struck the type or character represented by that key would be struck upon the central line of the staff. Of course, the mechanism might be set so that 1 upon the gage-plate would correspond with any other position—such as the first note of any particular key or the first line of the staff—but this is a matter of convenience for the operator. The operator will then proceed as follows: The next character to be struck, as shown upon the paper, being E-sharp in the fourth space of the staff, or position 4, the operator by the hand-wheel revolves the disk and cylinder until the indicator marks 4, and then strikes the proper key. The next character to be made being C-sharp, which is in position 2, the operator turns the hand-wheel backward until 2 is indicated on the disk and then strikes the key indicating the sharp, and the impression is made in the space above the central line of the staff. The next impression to be made is the time, which is all indicated upon one key 6-8, and as this occupies the full width of the staff, the operator turns the hand-wheel and disk back to 1 and then strikes the proper key. The next character to be made is two eighth notes, respectively, on the first space of the staff and the first space below the staff, and in that case the op-

erator turns the hand-wheel and disk backward to 4 (the first of the notes being in position 4, counting down) and then strikes the key. This stroke causing the paper-cylinder to move one space to the left, the operator now moves it one space back again, and then strikes the key which indicates a short-stem quarter-note, imprinting it directly below the eighth before struck and in the space below. The next characters to be made are the two bars or hooks which connect the pairs of notes, which are made by duplicating the single-bar key on the key-board, and the operator turns the hand-wheel and disk forward first to 1 and then to 3. This process is continued until the end of the line is reached, it being remembered always that in ascending from any position the disk is turned forward, and descending from any position the disk is turned backward in every case. When the end of the line is reached, the operator turns the paper-cylinder completely around once, and this will bring it in position to begin the next line.

Of course within the compass of the ordinary key-board every musical character cannot well be contained, and any ones not often used may readily be added by a pen, or a larger key-board might be constructed; but this would be more expensive and is not therefore desirable. The principle of my invention is, however, the same, whatever the capacity of the key-board. Thus one type might be used for two or even three notes above each other; but such impression can be made from the key-board shown, the notes being separately made one above another, as hereinbefore described.

The mechanism which revolves the paper-cylinder (shown in detail in Figs. 3 to 7) may be used for ordinary type-writing, and by removing the musical type and replacing them with the ordinary kind, and taking off the rubber caps shown in Fig. 5, the type-writer is again ready for ordinary work.

What I claim as my invention, and desire to secure by Letters Patent, is as follows:

1. In a type-writer, a series of operating-levers, musical type removably connected to such levers, keys whose buttons indicate similar characters, also connected to such levers, a revoluble paper-cylinder mounted on an axle, a frame-work hinged to the machine providing bearings for such axle, an indicating-disk provided with a gage-plate with suitable numbers on its face, also mounted on such axle, means for rotating the cylinder and disk by one and the same movement, an indicator secured to the cylinder-frame for marking spaces upon the disk, a circular rack-bar connected to the side of the disk and having notches spaced to correspond with the width of the lines on the paper to be impressed, and a projection on the inside of the indicator adapted to engage with the notches on the rack-bar, all combined substantially as shown and described.

2. In a type-writer, a series of keys indicating musical characters, actuating-levers connected with such keys, removable type whose faces correspond with the marks upon the key-heads connected to such levers, the type whose characters are to be impressed substantially or nearly parallel with the lines upon the paper, and their keys being arranged upon the sides of the lever-frame, a paper-cylinder mounted on the axle, a frame-work hinged to the machine providing bearings for such axle, a disk provided with a gage-plate with suitable numbers on its face, also mounted on such axle, and means, such as a hand-wheel, for rotating the cylinder and disk by one and the same movement, an indicator secured to the cylinder-frame for marking the spaces upon the disk, a circular rack-bar connected to the side of the disk and having notches spaced to correspond with the width of the lines upon the paper to be impressed, and a projection on the inside of the indicator adapted to engage with the notches of the rack-bar, all combined substantially as shown and described.

3. In a type-writer, a paper-cylinder mounted on an axle, a frame-work hinged to the machine providing bearings for such axle, a disk provided with a gage-plate with suitable numbers on its face, also mounted on such axle, and means, such as a hand-wheel, for rotating the cylinder and disk by one and the same movement, an indicator secured to the cylinder-frame for marking the spaces upon the disk, a circular rack-bar connected to the side of the disk and having notches spaced to correspond with the width of the lines upon the paper to be impressed, and a projection on the inside of the indicator adapted to engage with the notches of the rack-bar, all combined substantially as shown and described.

In witness whereof I have hereunto set my hand this 9th day of September, 1890.

JOHN H. GREEN.

Witnesses:

E. B. GRIFFITH,
H. D. NEALY.