

No. 736,646.

PATENTED AUG. 18, 1903.

R. D. STACKPOLE.
TYPE WRITING MACHINE.
APPLICATION FILED DEC. 18, 1902.

NO MODEL.

3 SHEETS—SHEET 1.

Fig. 8.

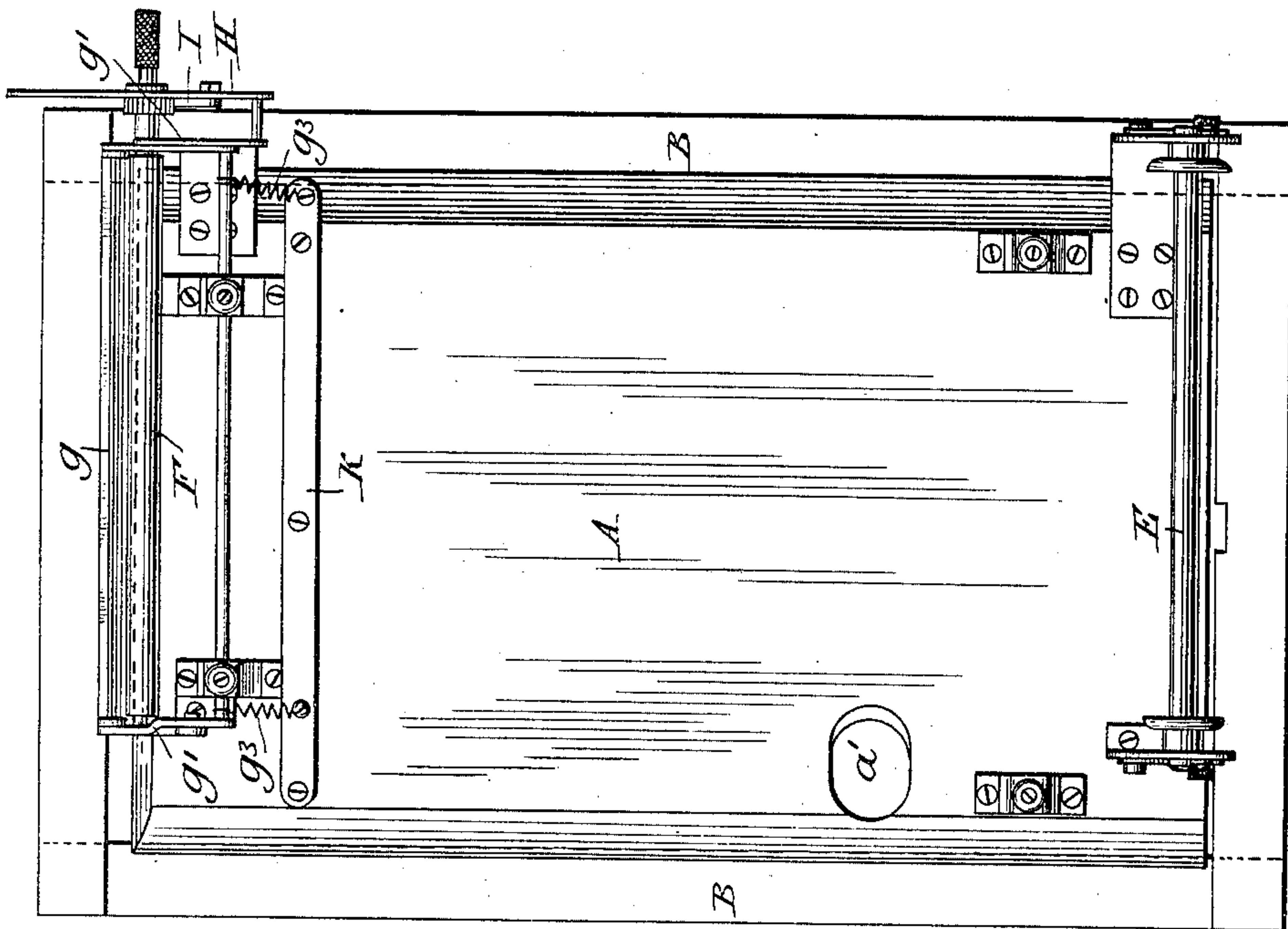
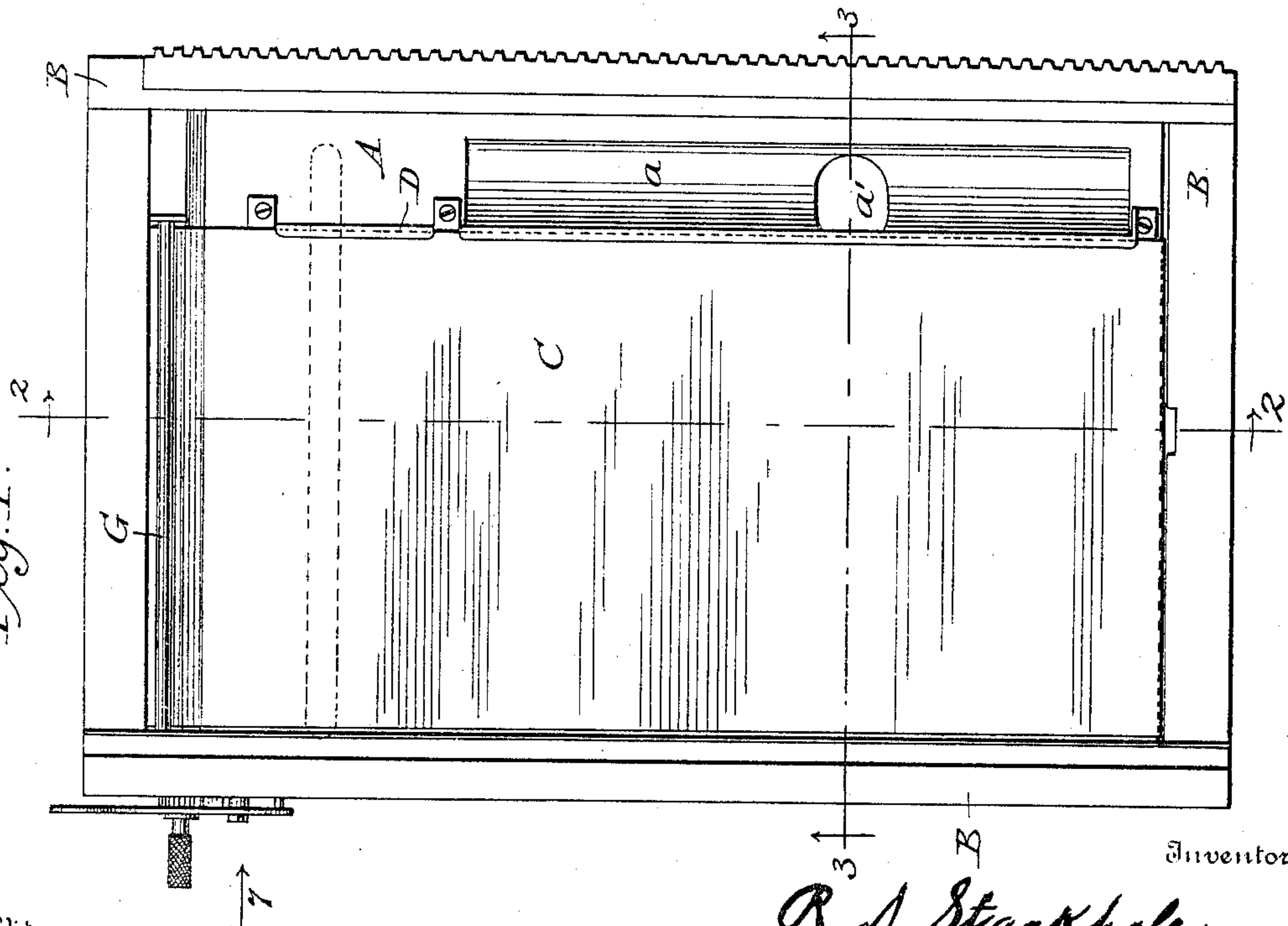


Fig. 1.



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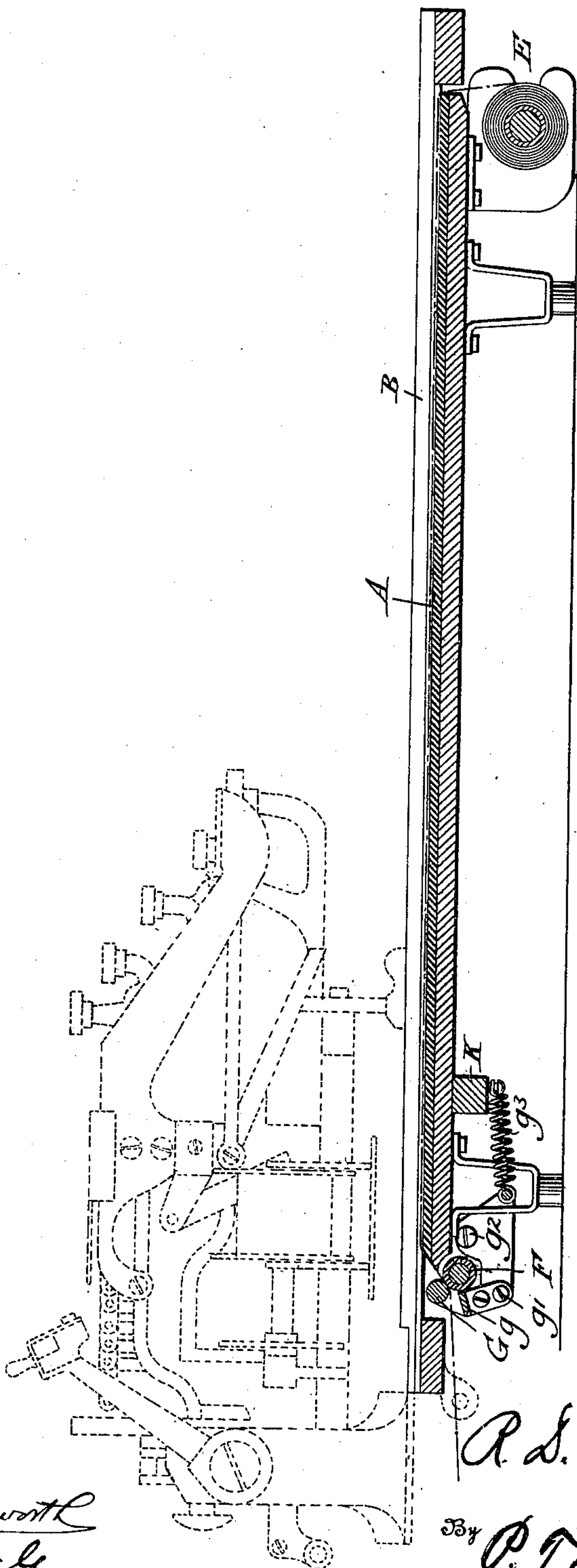
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3 SHEETS—SHEET 2.

Fig. 2.



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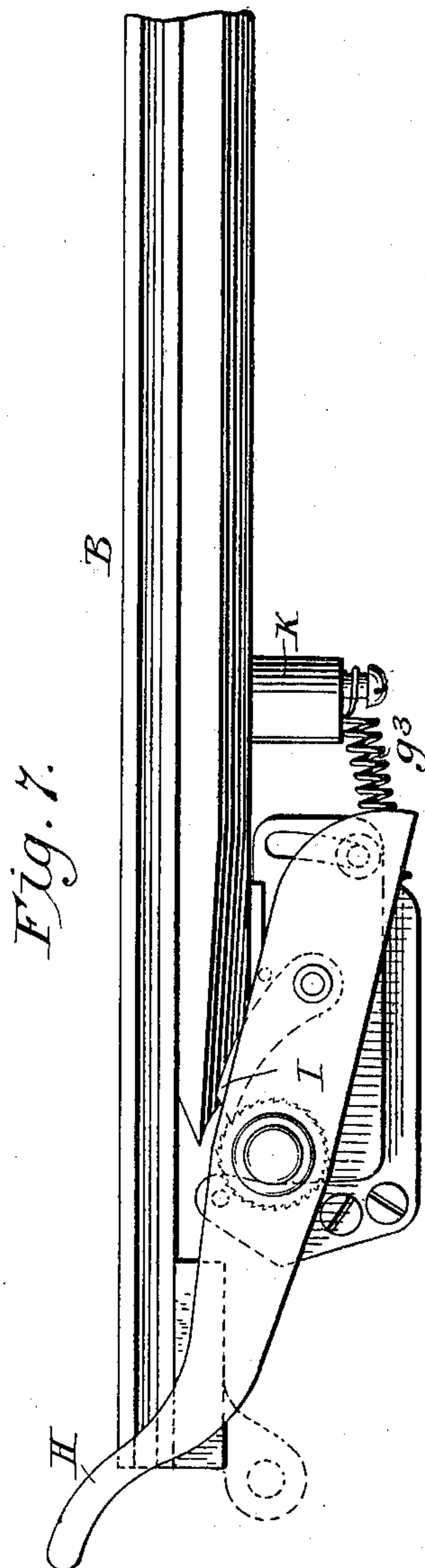
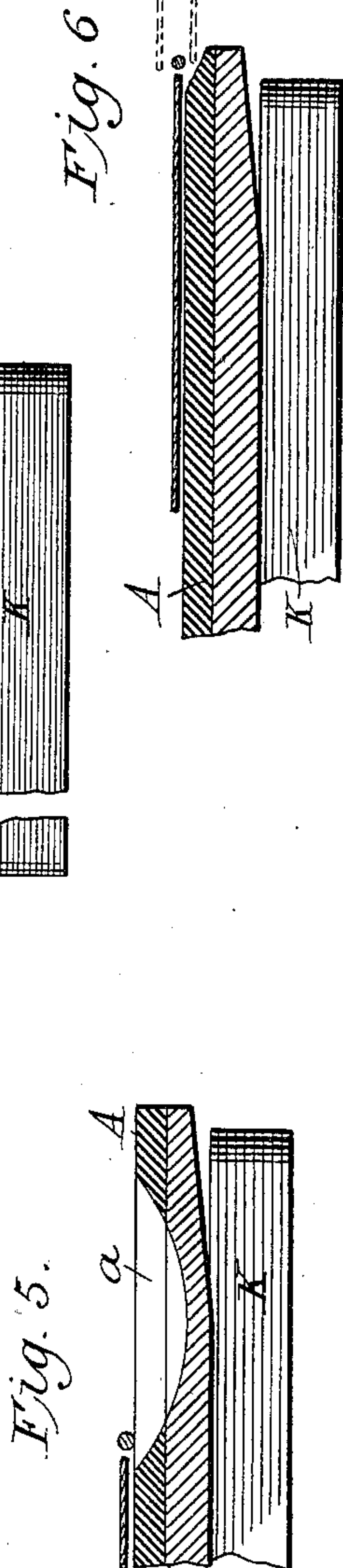
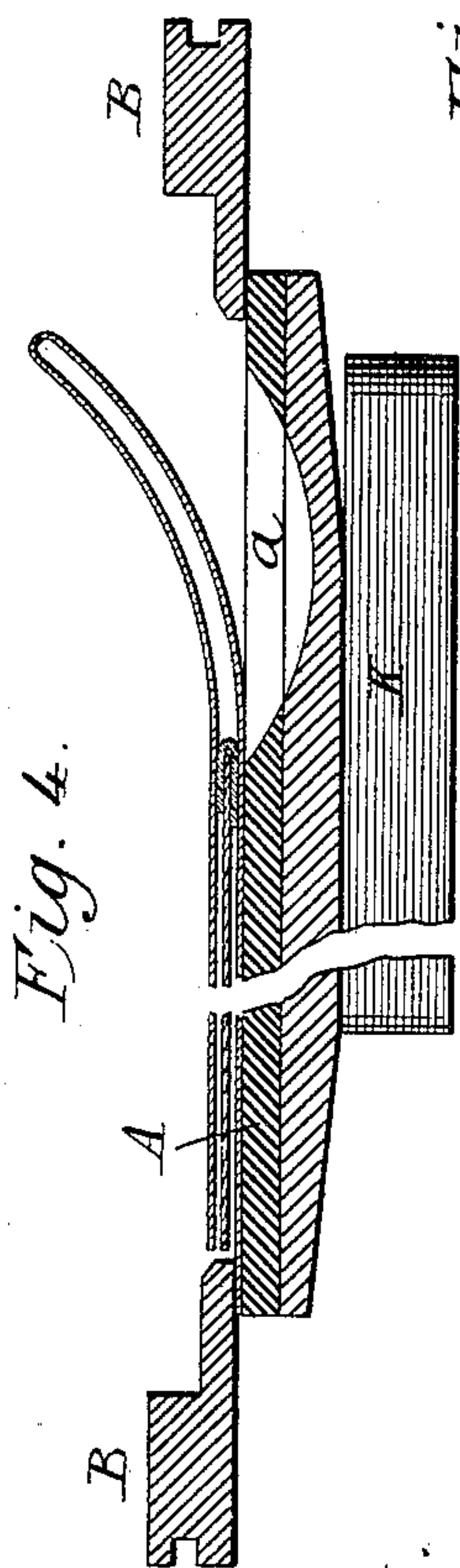
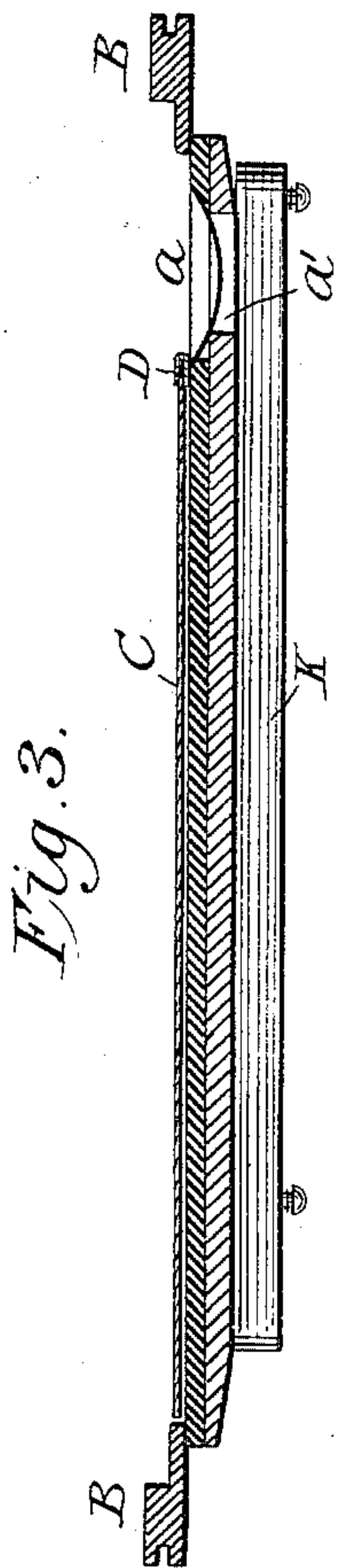
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3 SHEETS—SHEET 3.



Witnesses

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UNITED STATES PATENT OFFICE.

RALPH DOW STACKPOLE, OF HARRISBURG, PENNSYLVANIA, ASSIGNOR,
BY MESNE ASSIGNMENTS, TO ELLIOTT-FISHER COMPANY, A CORPORATION OF DELAWARE.

TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 736,646, dated August 18, 1903.

Application filed December 18, 1902. Serial No. 135,726. (No model.)

To all whom it may concern:

Be it known that I, RALPH DOW STACKPOLE, of Harrisburg, county of Dauphin, and State of Pennsylvania, have invented a new and useful Improvement in Type-Writing Machines, of which the following is a specification.

This invention has reference to that class of machines wherein the sheet to be written upon is supported on a flat bed or platen beneath a writing mechanism arranged to travel thereover for letter and line spacing.

The special object of the invention is to provide a simple means whereby bills, statements, and other commercial papers may be speedily produced in duplicate without the employment of complicated mechanism and without the necessity for adjusting the carbon-sheet employed to produce the duplicate copy.

To this end it consists in combining with the bed or platen an overlying normally stationary carbon-sheet having one edge exposed, so that the second sheet or page on which the copy is to appear may be readily thrust thereunder.

It is preferred to make the carbon-sheet of less width than the platen and to form in the latter a longitudinal depression over which the carbon projects at one edge, so that the ingoing sheet, having its forward edge dropped into the cavity, will pass forward instantly and with certainty beneath the carbon-sheet. Along the one edge of the carbon-sheet over the depression in the platen it is preferred to extend a metal guard, which may be of sheet metal, to overlap or embrace the edge of the carbon-sheet.

Bills and statements are commonly made on a sheet folded in the middle for the purpose of producing a copy on the underlying half. These folded sheets may be adjusted in the present machine without special care and without loss of time by thrusting the lower end under the guide and under the carbon-sheets and allowing the upper portion to pass over the upper uninked surface of the carbon on which printing is effected by the writing-machine, as usual. With the platen

it is proposed to employ an overlying vertically-movable frame, as in the ordinary Elliott and Hatch machine, to bear upon and confine in place the edge or edges of the sheet on which the writing is to be performed.

Devices are provided for feeding the carbon-sheet automatically or by hand, as preferred.

Referring to the drawings, Figure 1 is a top plan view of the platen with the carbon-sheet in position thereon, the writing mechanism (indicated by dotted lines) being omitted to expose the parts thereunder to view. Fig. 2 is a longitudinal vertical section on the line 2 2 of Fig. 1. Fig. 3 is a vertical cross-section on the correspondingly-numbered line of Figs. 1 and 2. Fig. 4 is a similar view on a much larger scale in order to show more clearly the relations of the carbon and the paper sheets, the middle of the platen being broken away to reduce the size of the figure. Figs. 5 and 6 are cross-sections illustrating modified or alternative constructions. Fig. 7 is a side view of the rear end of the platen and overlying frame looking in the direction of the arrow 7 in Fig. 1. Fig. 8 is a bottom plan view of the platen.

Referring to the drawings, A represents a flat bed or platen similar to that used in the ordinary Elliott and Hatch machine of commerce, consisting of a flat metal plate with a smooth surface of vulcanized rubber or similar yielding material.

B represents an open rectangular frame having its longitudinal side bars arranged to overlap the edges of the platen to confine the paper thereon, movable, as usual, vertically free of the platen to admit of the removal of the printed sheet and the insertion of a fresh sheet. This frame serves also to support the base-frame of the writing mechanism, which is mounted to slide forward and backward thereon, as usual, this mechanism being indicated by dotted lines. This writing mechanism is constructed and arranged, as usual, to travel laterally and longitudinally for word and line spacing and to print in a downward direction on the paper supported on the platen. It is provided, as usual, with an

inked ribbon, by which the first or original impression is made on the uppermost sheet of paper.

In embodying the improvement in the machine the platen A is constructed, as shown, with a longitudinal depression or channel *a*, preferably near the right-hand margin, and a sheet of carbon-paper or a cloth C, such as commonly employed for producing duplicate print, is extended lengthwise of the platen, permitting one edge to overlap or overhang the depression *a*, so that the paper sheet on which the duplicate copy is to be produced may be dropped into the cavity below the edge of the carbon-sheet and pushed forward to the required position under the latter by a single instantaneous movement of the hand.

In commercial houses for the production of bills and statements in duplicate it is customary to employ a sheet folded or doubled lengthwise near the middle, with the lower sheet or leaf extending somewhat beyond the upper one. In introducing a sheet of this kind it is grasped between the thumb and finger at the folded edge or bight on the right and the lower left edge dropped into the recess in the platen and thrust forward under the carbon-sheet, the same movement carrying the upper leaf into position above the carbon-sheet in order to receive the direct impression from the type and ribbon of the overlying printing mechanism.

In order to properly determine the position of the ingoing sheet and limit its movement without requiring care or delay on the part of the operator, a stop or guide D is used along the right side of the carbon-sheet, as shown in Figs. 1, 3, 4, 5, and 6. This guide or stop is preferably fixed rigidly in position. It may consist, as shown in Figs. 3 and 4, of a strip of sheet metal folded into U form to embrace the edge of the carbon-sheet, or it may consist of a rod or wire lying adjacent to the edge of the sheet, as shown in Fig. 5, the only essential requirement in this respect being that the guide shall lie in such position as to permit the free passage of the paper sheet beneath it to the surface of the platen under the carbon. After the printing is effected the sheet is removed by grasping the right-hand edge and drawing it laterally out of the machine.

In order to facilitate the introduction and removal of the sheet, an opening *a'* is formed through the platen of suitable size and form to permit the introduction of one or more fingers to grasp the edge of the sheet below the guide at the same time that it receives the pressure of the thumb above the guide.

It is manifest that the cavity or depression *a* may be of any suitable form and size and located at any suitable point, provided only it exposes the edge of the carbon-sheet without the latter being raised from the platen, so as to permit the introduction of the paper thereunder.

If the carbon-sheet is extended entirely across the platen, the depression may be made

at one end of the latter, as shown in Fig. 6. The edge of the carbon-sheet overlying or overhanging this depressed or cut-away surface to facilitate the passage of the paper sheet thereunder is indicated in dotted lines.

The carbon-sheet may be fixed in position in any suitable manner, the only requirement being that it shall be held in place during the insertion and removal of the paper.

It is preferred to wind a long carbon sheet or web on a horizontal roll E, mounted in ears on the under side of the platen at the front, to extend the sheet thence rearward over the platen and between a rubber or other feed-roll F and a pressure-roll G at the rear end of the platen, so that when the roll F is turned the carbon will be drawn rearward in order to expose a fresh surface in the printing-field. In order to effect this movement automatically and gradually, it is proposed to provide the shaft of the roll F at one end with a ratchet-wheel and with a loose lever H, carrying a pawl I, to turn said wheel. The forward end of this lever preponderates and falls by gravity when released. The rear end is turned upward in such manner that when the writing mechanism slides backward to the rear end of the supporting-frame B preparatory to inserting or removing the sheet it encounters the rear end of the lever, depressing the same and causing it through the intermediate parts to move the carbon-sheet.

The roll F is mounted in fixed ears or bearings on the platen, while the roll G and an underlying parallel cross-blade *g* are mounted in a rocking frame *g'*, pivoted to the platen at *g*² and acted upon by a spring *g*³. This spring tends to hold the roll G down upon the sheet passing between it and the roll F, but admits of the roll G being readily raised when the end of a new sheet is to be threaded between the rolls. The essential feature in this respect is the arrangement of the roll-operating device so as to be actuated automatically by the movement of the writing mechanism. It is manifest that the details may be modified at will. The blade *g* aids in guiding the web and serves as a means over or against which to tear off the used portions of the carbon-web.

In practice the machine is found to be operative for most billing operations without clamping or confining the folded sheet otherwise than by the guide D and the carbon. In some cases, however, where the sheet is long and many entries are to be made, it is desirable to hold it firmly in place on the platen, and this is effected by having the carbon-sheet of such width that the underlying paper sheet will extend beyond it on the left with the protruding edge in position to be clamped on the platen by the overlying side bar of the frame B.

Having thus described my invention, what I claim is—

1. In a type-writing machine, and in combination with an overlying printing mechanism,

a flat bed or platen to support the paper, a carbon-sheet overlying the platen and overhanging it at one edge, substantially as described, to facilitate the introduction of the paper between it and the platen.

2. In a type-writing machine, the combination of a flat bed or platen, an overlying vertically-moving frame to confine the paper, a writing mechanism movable on said frame, and a carbon-sheet overlying the platen and having an exposed overhanging edge whereby the introduction of the paper between the carbon and the platen is facilitated, and its confinement by the overlying frame is permitted.

3. In a type-writing machine, and in combination with an overlying carbon-sheet, a flat paper-supporting platen, and a depressed portion to expose the overlying edge of the carbon-sheet.

4. In a type-writing machine, the flat platen having a depressed portion and a guard thereover.

5. In a type-writing machine, the flat platen having the depressed portion, in combination with a rigid guard extended over the edge of said depressed portion, and a carbon-sheet overlying the platen, and extending at one edge lengthwise of the guard.

6. In a type-writing machine, a flat platen provided with a depressed portion, and an opening therethrough in combination with an overlying carbon-sheet.

7. In a type-writer, the flat platen having a depressed portion, in combination with the overlying carbon-sheet and the guard embracing the edge of the sheet.

8. In a type-writer, the flat platen having a depressed portion, in combination with the carbon-sheet overlying the platen and the edge of the depression and the paper-confining frame.

9. In a type-writing machine, the flat platen having a depression therein, a carbon-sheet extended lengthwise of the platen, and overlying the depression, rolls to carry said sheet, supports for said rolls attached to the platen.

10. In a type-writer, the flat platen, a longitudinal carbon-sheet and its supporting-rolls attached to the platen, in combination with the downwardly-acting writing mechanism, and the vertically-movable paper-confining frame whereon the writing mechanism is mounted to slide whereby the paper-confining frame is permitted to rise and fall independently of the platen and the carbon-sheet.

11. In a type-writer, the flat platen, a longitudinal carbon-sheet and its supporting-rolls attached to the platen, in combination with the downwardly-acting writing mechanism, vertically-movable paper-confining frame whereon a writing mechanism is mounted to slide rearward, and a roll-turning mechanism actuated by the sliding movement of the writing mechanism.

In testimony whereof I hereunto set my hand this 3d day of December, 1902, in the presence of two attesting witnesses.

RALPH DOW STACKPOLE.

Witnesses:

CHARLES N. MILLER,
WM. H. MIDDLETON.