

**No. 644,266.**

**Patented Feb. 27, 1900.**

**E. VAN DER BELEN.**  
**PAPER CARRIER FOR TYPE WRITERS.**

(Application filed Nov. 7, 1898.)

(No Model.)

**2 Sheets—Sheet 1.**

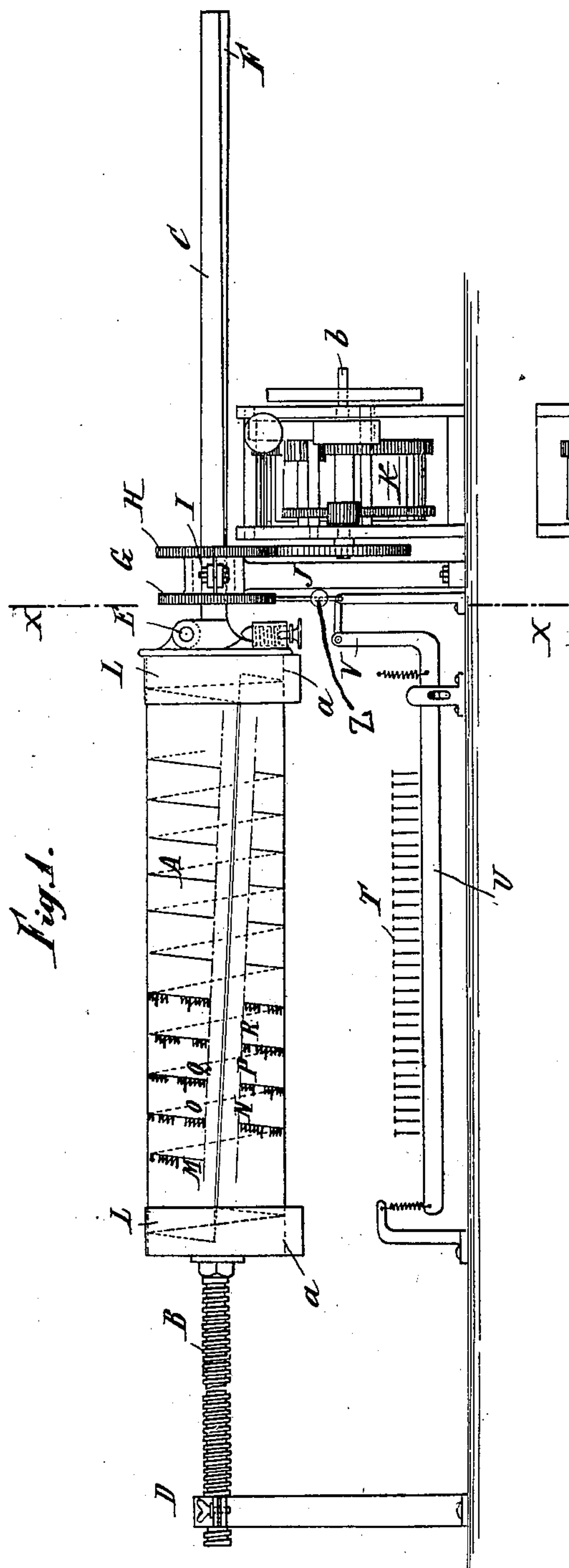


Fig. 1.

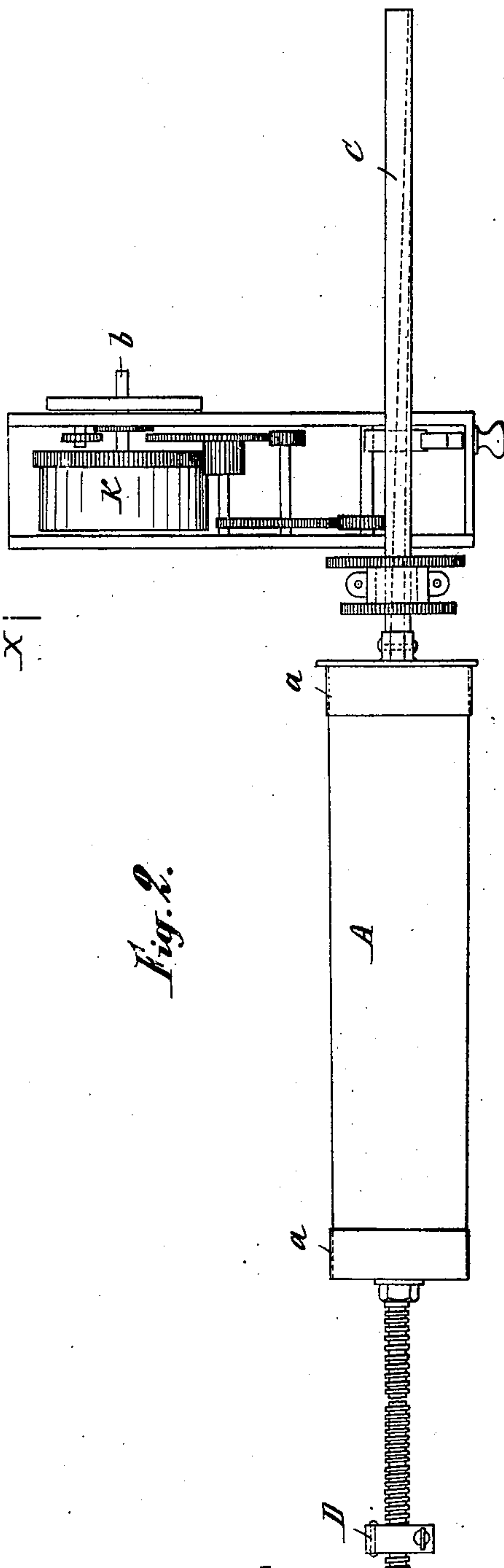


Fig. 2.

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Oldmunk

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Fig. 6.

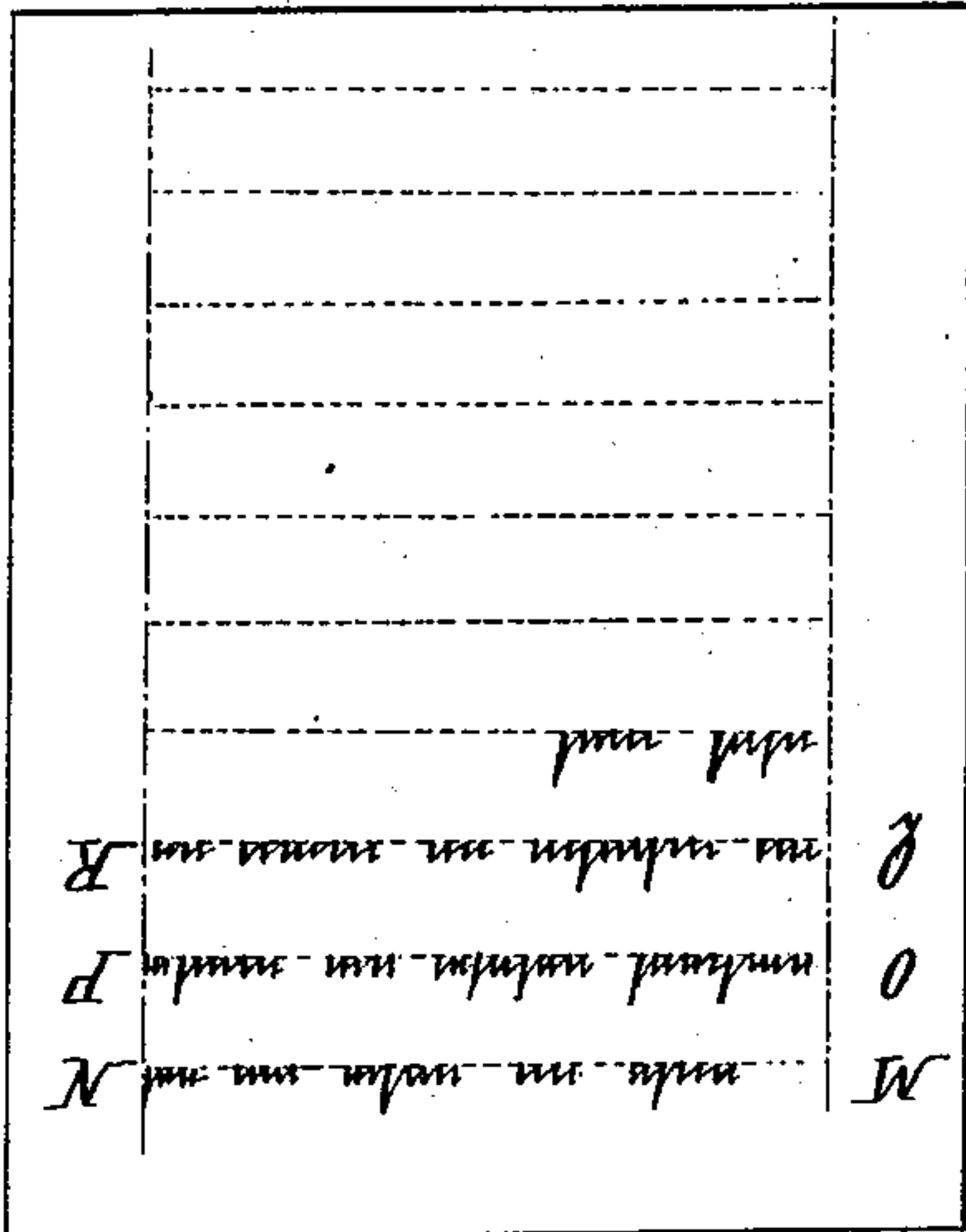


Fig. 7.

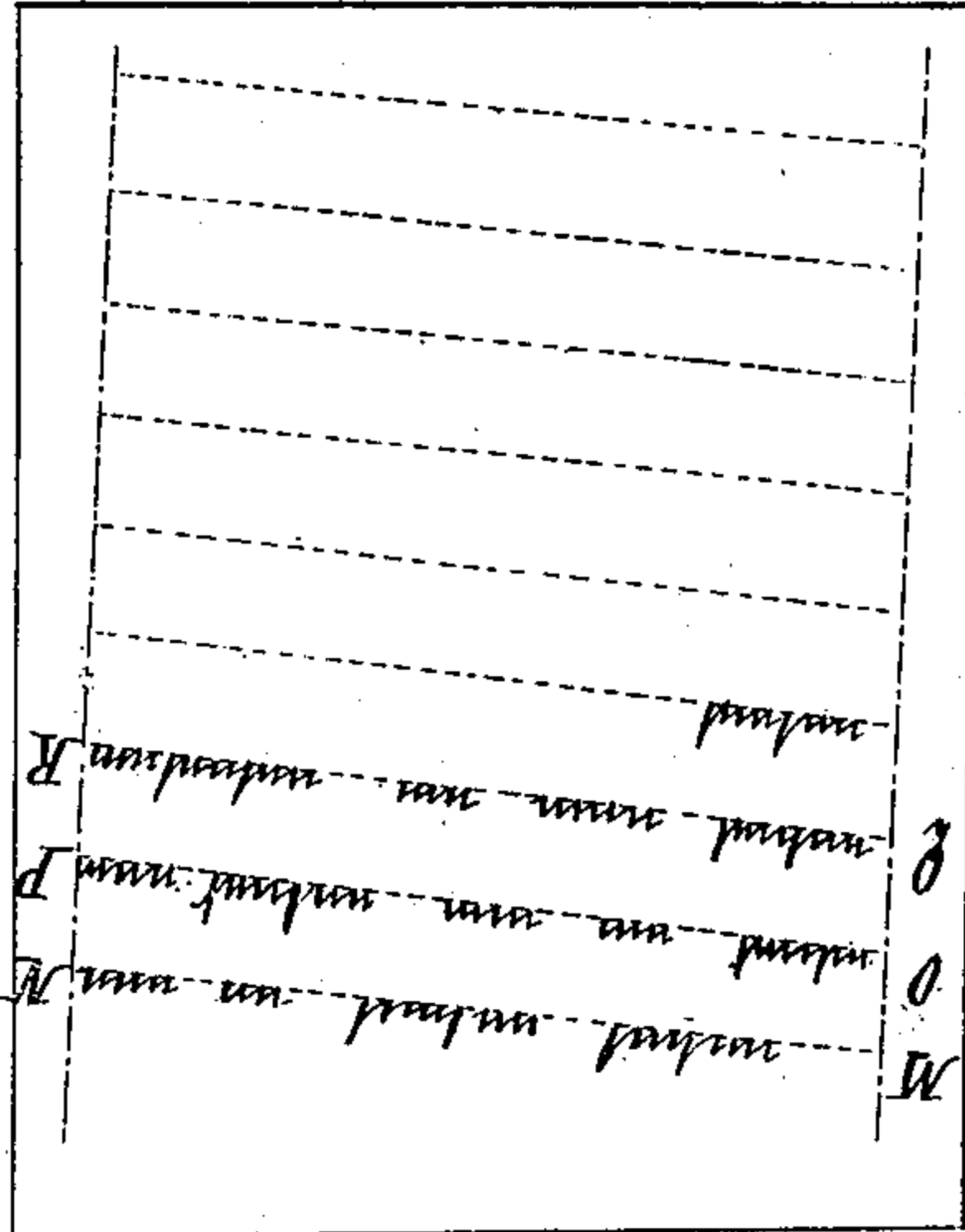


Fig. 4.

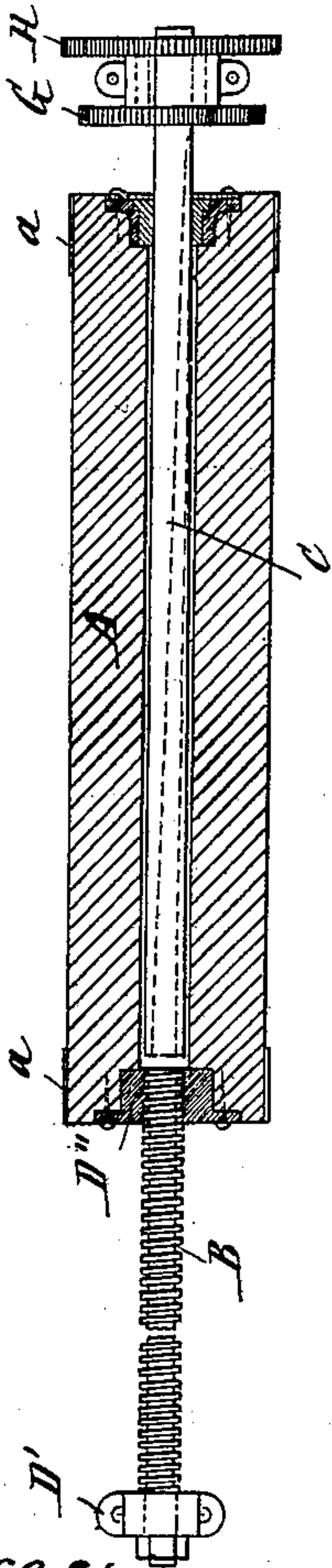


Fig. 5.

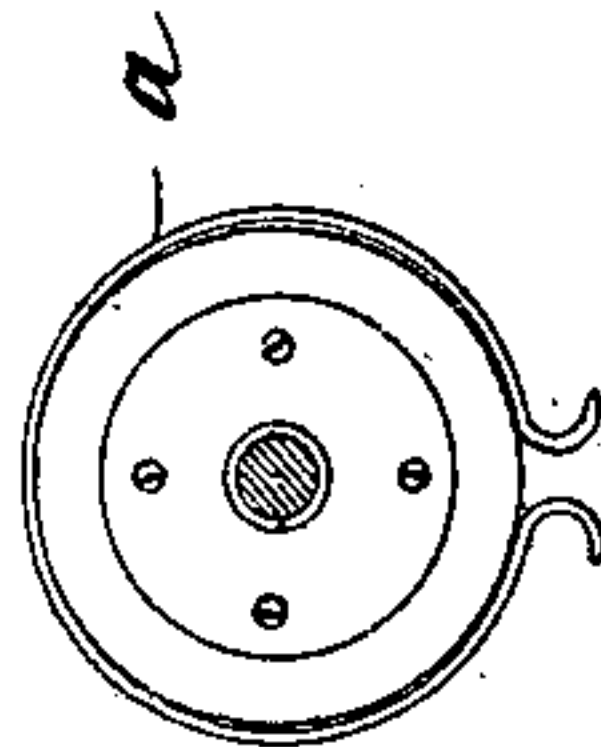
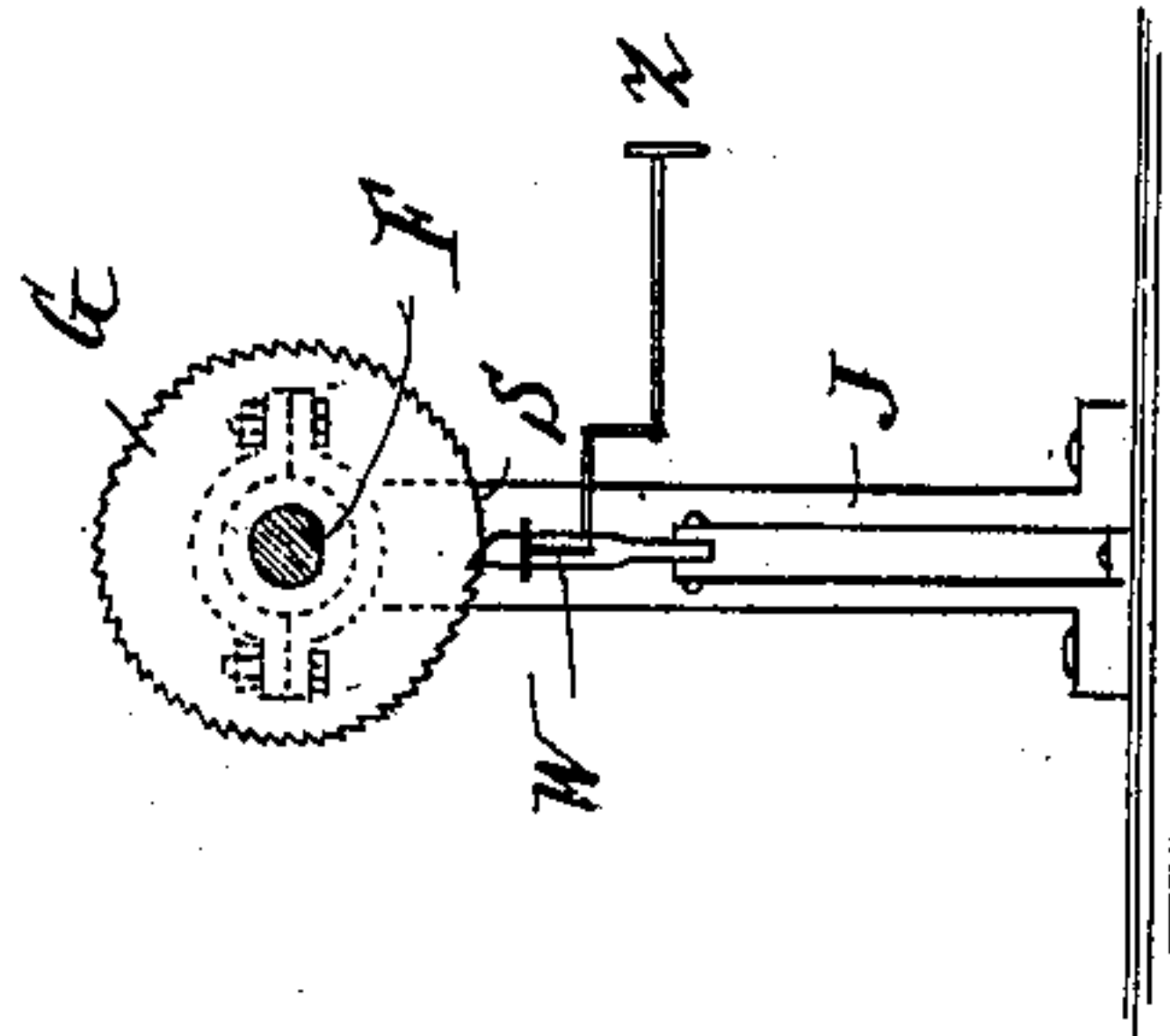


Fig. 3.

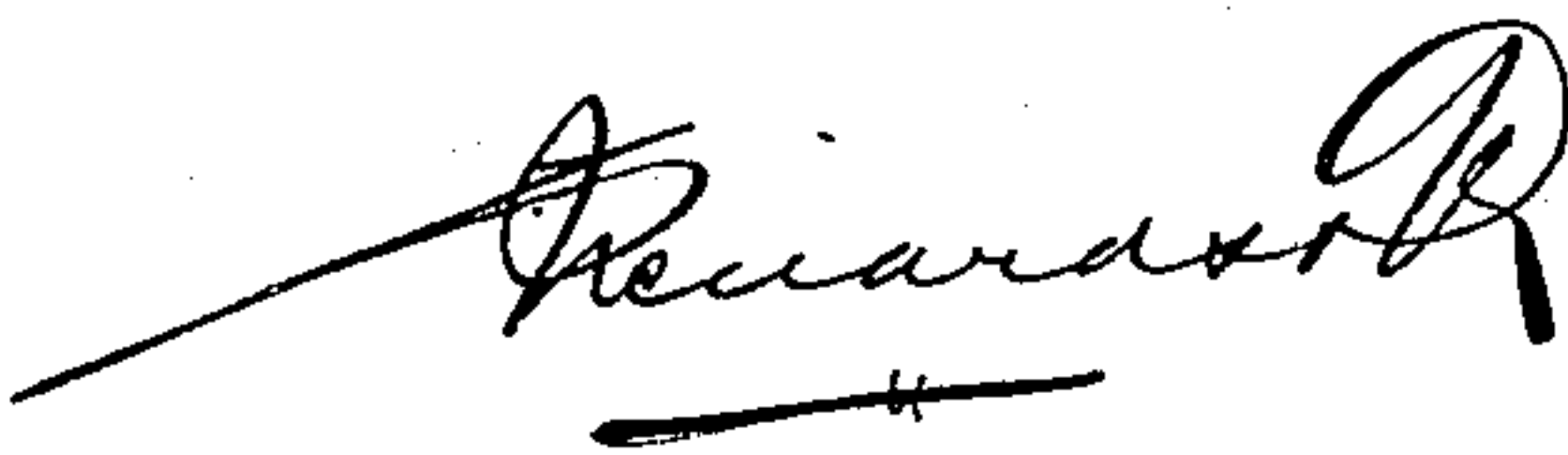


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# UNITED STATES PATENT OFFICE.

EDOUARD VAN DER BELEN, OF BRUSSELS, BELGIUM.

## PAPER-CARRIER FOR TYPE-WRITERS.

SPECIFICATION forming part of Letters Patent No. 644,266, dated February 27, 1900.

Application filed November 7, 1898. Serial No. 695,698. (No model.)

*To all whom it may concern:*

Be it known that I, EDOUARD VAN DER BELEN, abbé, of No. 21 Rue de Ligne, Brussels, in the Kingdom of Belgium, have invented a new and useful Improvement in Paper-Carriers for Type-Writers, of which the following is a specification.

This invention relates to a new kind of paper-carrier for type-writers so arranged that a complete page can be written filling the sheet fixed on the cylinder without requiring to touch the cylinder. Increased speed is thus attained, and the writing or copying is greatly facilitated, as the operator has to perform no working of the paper-carrier and can therefore give his mind entirely to the mental operations of composing or copying.

It is known that in all existing type-writers the carriage and cylinder automatically move longitudinally for each letter written, and when the line is ended the operator has to leave the keyboard and move the carriage by hand to its initial position ready for a fresh line and has, besides, to turn the cylinder sufficiently for such line, this also being generally done either by hand directly or by a pawl-lever actuating a ratchet-wheel or otherwise. According to my invention these operations are completely dispensed with, so that the operator need not leave his keyboard until the page is completed. In order to effect this, I give the cylinder a double motion longitudinal and rotary; but, contrary to the arrangement in existing machines, the longitudinal movement gives the distance from line to line and the rotation gives the spacing of the letters and words.

The new paper-carrying mechanism is represented in the annexed drawings, which show only this mechanism without the other parts of the type-writer—such as the keyboard, the levers, and the other organs, which may be of any known kind—the present invention being confined to the paper-carrying device, which may be applied to any type-writer.

Figure 1 of the drawings is a front view of the paper-carrier. Fig. 2 is a plan, and Fig. 3 is a vertical section on the line  $xx$  of Fig. 1. Fig. 4 shows a modified construction of the cylinder. Fig. 5 shows the fixing for the

paper on the cylinder. Fig. 6 shows the page spread out, and Fig. 7 illustrates matter hereinafter referred to.

An essential part of the invention consists in the placing of the paper. It has been said above that the longitudinal movement of the cylinder regulates the distance from line to line, while the rotation determines the spacing of the letters and words. Consequently the paper is placed on the cylinder in a way contrary to that in ordinary type-writers—that is to say, it is so placed that the line of writing extends around the circumference of the cylinder, so that the writing appears in the direction of the rotation, the letters lying on their sides, whereas in ordinary machines the lines are horizontal or parallel to the axis of the cylinder and the letters are upright.

Fig. 1 indicates the arrangement of the written lines. Fig. 6 shows the sheet laid out flat.

As stated above, the cylinder A has a simultaneous longitudinal and rotary movement. For this purpose it has at one end a screw-threaded spindle B, with slow pitch, suited to the desired distance from line to line, and at the other end it has a spindle C, not threaded, but of special form, hereinafter referred to. The threaded spindle B works in a nut-bearing having a removable cap, so that the spindle and cylinder can be lifted off. The other spindle C is attached to the cylinder by a hinge E, which allows the lifting of the cylinder in order to facilitate the fixing and removal of the paper. On the spindle C, which has a flat side F, as shown in Fig. 3, is fitted a ratchet-wheel G and a toothed wheel H, connected to G by a sleeve I, carried in a bearing J, the spindle C sliding with moderate friction in the sleeve. The wheel H is caused to rotate by clockwork K, which is wound up by a key at  $b$ , and the wheel H turns the spindle C and the cylinder A, while the screw B in rotating in the nut D causes the cylinder to move longitudinally. The cylinder A having these two movements, longitudinal and rotary, it follows that unless a special precaution, which I am about to explain, be taken, the writing would not be as shown in Fig. 6, but as in Fig. 7, not parallel and perpendicular to the edges of the sheet, but



inclined. To prevent this, the paper is fixed obliquely on the cylinder, as shown in Fig. 1, this obliquity being determined by an inclined shoulder L at each end of the cylinder, so that the paper of itself takes the required position. Under these conditions the lines take the proper direction. If the line begins at M, Figs. 1 and 7, this line will end at N after a revolution of the cylinder, and as the rotation continues the next line will begin at O, and so on by P Q R, &c.

In order to produce a margin, the ratchet-wheel G has a part S without teeth. When the operator depresses one of the keys T, this moves a lever U, connected at V to a pawl W, which, as in all other type-writers, lets the wheel G turn one tooth, corresponding to the width of a letter. When the part S without teeth reaches the pawl, the wheel freely turns the extent of S, producing the margin.

When a passage ends before the end of a line and the rest of the line has to be left blank, the cylinder is allowed to turn without any impression being made, and this is done by moving a button Z or otherwise withdrawing the pawl W.

The paper is held on the cylinder by two spring-bands a, one at each end.

It has been explained above how the advance from line to line is made. The space from line to line can be varied by varying the pitch of the screw B, and the width of margin may be varied by varying the extent of the arc S, which has no teeth.

As in the arrangement described the types all strike at the same place and height, obviously, in consequence of the obliquity of the paper, there would be an unequal margin. This could be obviated by giving a twist to the flat part F of the spindle C. This twist, combined with the obliquity of the paper, necessarily modifies in advancing the relative positions of the cylinder and starting-point

relatively to the axis of the cylinder, thus making the width of the margin uniform.

Fig. 4 shows a modification of the spindle C, which in this case passes along the interior of the cylinder A, the working mechanism remaining the same as before; but for the nut-bearing D is substituted a mere support D', the nut D'' being in the end of the cylinder. It may be readily understood that as the cylinder moves to the left the screw B enters farther and farther into the cylinder while the spindle C retires.

It is to be understood that the diameter and length of the cylinder have to be suited to the dimensions of the paper employed, so that the type-writer should be provided with several cylinders of different sizes.

The movement of the cylinder, instead of being effected by clockwork, as above described, might obviously be effected by any suitable motor. Also the mechanical details might be largely varied without departing from the fundamental principles of the invention. Thus, without limiting myself to details,

I claim—

In a type-writer, the combination with the horizontal spindle having a threaded portion engaging a nut-bearing, and the platen carried by said spindle, with means for clamping the paper obliquely thereon, of a motor for rotating said spindle, a ratchet-wheel having mutilated portion in line with the edge of the paper to form the margin, and an escapement-pawl cooperating with said ratchet-wheel, substantially as described.

In witness whereof I have hereunto set my hand in presence of two witnesses.

EDOUARD VAN DER BELEN.

Witnesses:

AUGUSTE DE CEURTER,  
CHARLES KENOTTE.