

1,406,873.

2 SHEETS—SHEET 1.

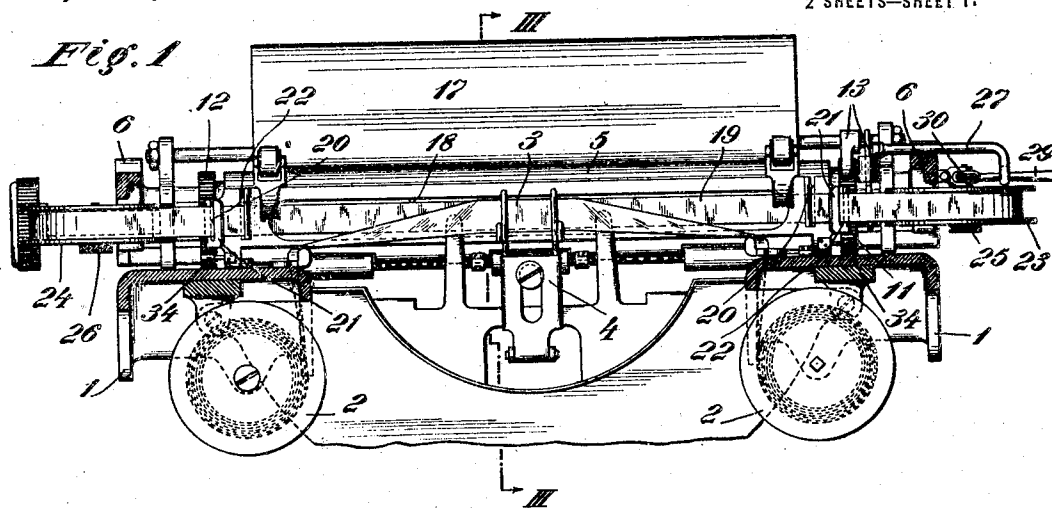
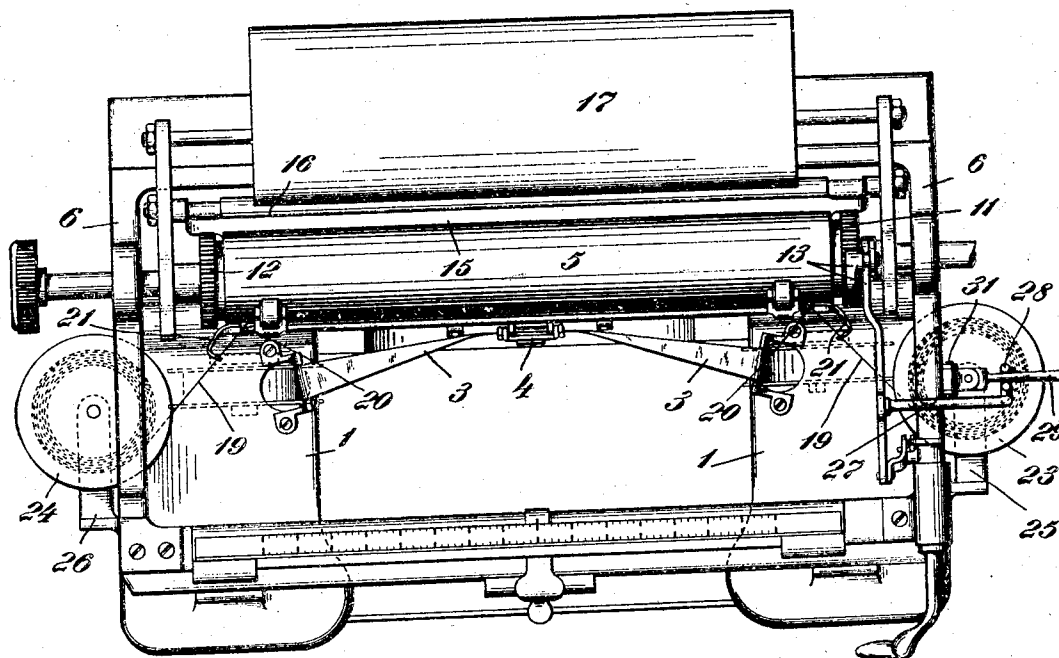


Fig. 2



Inventor:

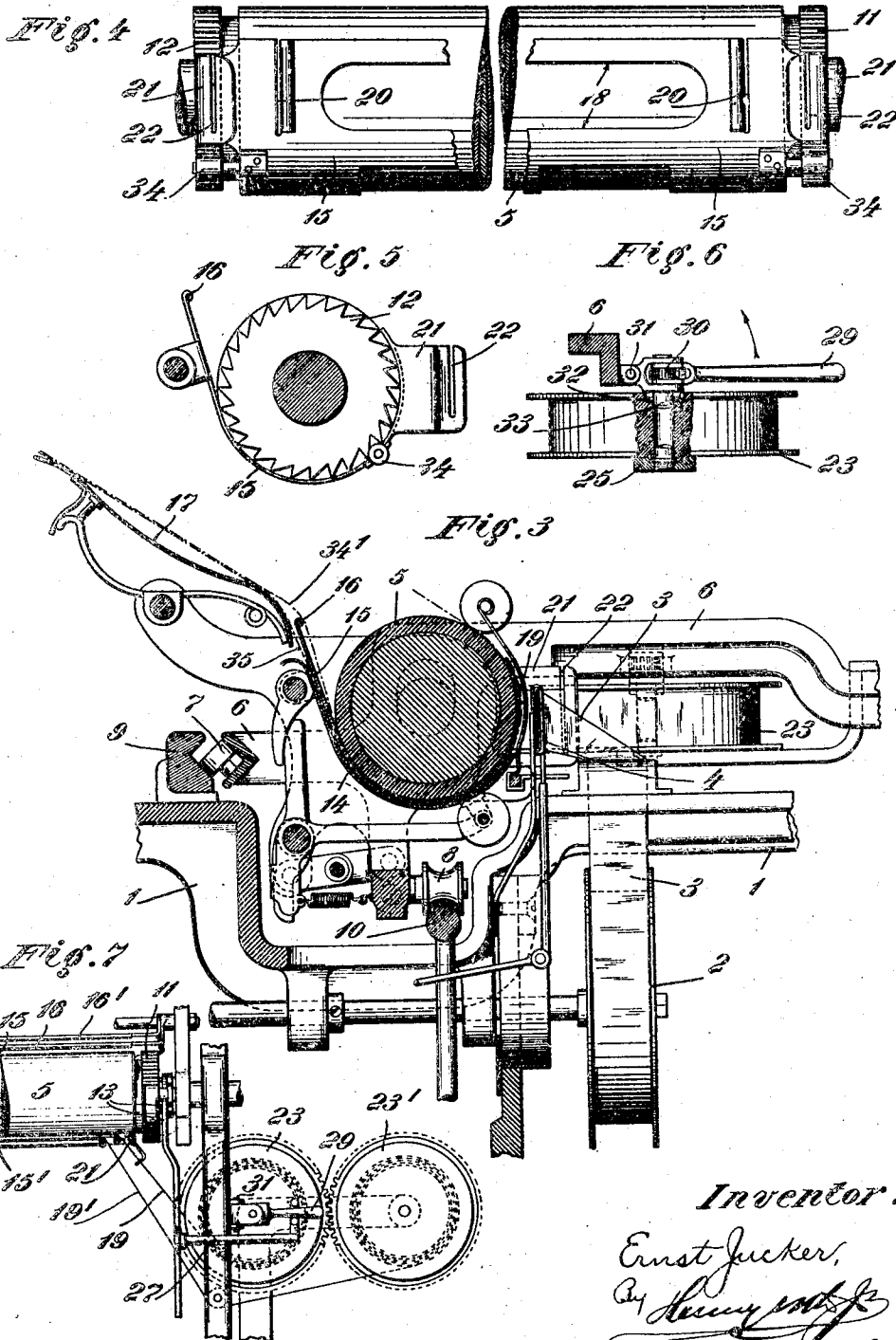
Ernst Jucker,
By Henry J. Jucker atty

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TYPEWRITING MACHINE.
APPLICATION FILED DEC. 9, 1919.

1,406,873.

Patented Feb. 14, 1922.

2 SHEETS—SHEET 2.



Inventor:

Ernst Jucker,
By *Henry J. Jucker* atty

UNITED STATES PATENT OFFICE.

ERNST JUCKER, OF ZURICH, SWITZERLAND.

TYPEWRITING MACHINE.

1,406,873.

Specification of Letters Patent. Patented Feb. 14, 1922.

Application filed December 9, 1919. Serial No. 343,681.

(GRANTED UNDER THE PROVISIONS OF THE ACT OF MARCH 3, 1921, 41 STAT. L., 1313.)

To all whom it may concern:

Be it known that I, ERNST JUCKER, a citizen of the Republic of Switzerland, residing at Zurich, Stampfenbachstrasse 75, Switzerland, have invented certain new and useful Improvements in Typewriting Machines, (for which an application for patent has been filed in Switzerland, December 6, 1918, Patent No. 84,273;) and I do hereby declare the following to be a clear, full, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to figures of reference marked thereon, which form a part of this specification.

In producing with a type-writing machine an original of a writing and a copy thereof the procedure with the hitherto known typewriting machines is to use besides the sheet on which the original is produced a second sheet for producing the copy thereon and to insert between these two sheets a so-called carbon-sheet by means of which the printing of the copy is effected.

It would result in a simplification if this carbon-sheet could be dispensed with when simultaneously making the original and a copy.

The solving of this task has been the object of the present invention.

This invention relates to type-writing machines with a platen in which means are provided to guide a number of ribbons parallel to the platen and guiding the sheets in such a way that they are in positions on either side of the ribbons for the purpose of allowing the production of an original simultaneously with a number of copies without inserting carbon-sheets between the sheets.

The accompanying drawings illustrate one embodiment of this invention applied to the carriage-truck of a known-make of a "visible" type-writing machine.

Fig. 1 is a front view,

Fig. 2 is a plan,

Fig. 3 is a section on a line III—III of Fig. 1,

Fig. 4 is a detail view of a platen fitted with the second paper guide,

Fig. 5 is a detail showing a detent in engagement with the line spacing wheel,

Fig. 6 shows a ratchet arrangement for rotating the reel,

Fig. 7 is an arrangement of two ribbons mounted on the carriage-truck.

The frame of a type-writing machine for visible writing is partly shown in Fig. 1. On the top plate 1 of said frame are rotatably mounted in a known manner the reels 2 for winding on and off a ribbon 3. The operating mechanism for said reels is not shown on the drawings as it is well known. 4 is the guide of said ribbon mounted in front of the platen 5 and adapted to be raised and lowered. The platen 5 is mounted in a well known manner on the carriage 6, which moves on rollers 7 and 8, running along guide bars 9 and 10. To the right of the platen 5 a line-spacing wheel 11 is fixed to the platen in a known manner for the purpose of rotating the platen on writing. To the left of the platen a similar toothed wheel 12 is mounted. The spacing lever 13 for the line-spacing is operatively connected to the line-spacing wheel 11. Below the platen 5 the usual sheet-metal paper guide 14 in guiding the sheet is arranged. The parts so far described are known and generally used for type-writing machines if not in exactly the same form. Between said paper guide 14 and the platen 5 a second paper guide 15 is arranged, consisting of a curved sheet of metal and being provided at the end where the paper is introduced hereinafter called the paper-guiding end with a rounded off edge. The edge 16 extends beyond the corresponding edge of the paper guide 14 by a small amount for the purpose of easily separating the two sheets to be introduced. An ordinary shelf 17 for supporting the work sheet is also mounted on the carriage. The other ribbon guiding end of paper-guide 15 is provided with an opening through which a second ribbon 19 is made accessible to the types. On either side of the opening 18 are slots 20 and laterally of each of said slots hooks 21 are provided at the outer edge of the paper guide plate 15, forming ribbon guide-slots 22 open at the top. These slots 22 serve in connection with the slots 20 to guide a second ribbon 19, for instance the carbon replacing ribbon, which is wound on and off the reels 23 and 24. Said two reels are rotatably journaled in bearings 25 and 26 respectively on the carriage 6. A lever 27 is rigidly connected with the feeding lever for the line-spacing of the platen. The free end 28 of said lever 27 is forked,

the fork engaging a lever 29. The latter operates a small ratchet wheel 30 (Figs. 1 and 6) by means of which the reel 23 is turned at every operation of the line-spacing device of the platen. Lever 27 may be dispensed with if the lever 29 were actuated by hand at every line-spacing action. The ratchet-wheel 30 may be swung round a pivot 31 fixed to the carriage 6 in an upward direction, so that it may easily be disengaged from the reel 23. The hub of said reel is provided with a recess 32 with which the axle 33 of the ratchet and two pins fixed to it engage, so that the reel 23 is turned round when the axle 33 is rotated (Fig. 6).

The second paper guide 15 is provided with detents 34, each of which enters between any two teeth of the toothed wheels 11 and 12 respectively (Fig. 5). Every time the platen 5 is turned by the line spacing lever acting on the teeth of the line-spacing wheel, the detents 34 are pressed in an outward direction by the teeth of the wheels 11 and 12; the elasticity of the sheet-metal of paper-guide 15 provides for such a small amount of deflection. As soon as one tooth has passed, said detent enters again between the following two teeth of the wheels 11 and 12 respectively. Together with this deflection of the second paper-guide 15 caused at its lateral ends, the whole ribbon-guiding front part of it is lifted to small extent off the platen and at the same time the second ribbon is likewise lifted off the platen, on account of the slots 20 and 22 tending to pull the ribbon towards the front. In this way the ribbon is placed at such a distance from the platen that the work-sheet nearest to the platen is not in touch with the ribbon whilst the platen is turned. The detents 34 which are shown best in Fig. 4, consist of small turnable rolls, which are fixed laterally to the paper-guide 15.

On inserting into the shown type-writing machine a work sheet and at the same time a sheet intended for the copy, one has to take care, that, as shown in Fig. 3 in dash and dot lines, the sheet 34¹ intended for the copy is inserted above the end 16 of the second paper guide 15 and the work sheet 35 below said end 16. In this manner the work sheet is placed in front of the carbon replacing ribbon 19 and the sheet for the copy in rear of the carbon replacing ribbon 19. On writing, the type produce impressions by means of ribbon 3 on the work sheet for the original and, if the carbon replacing ribbon 19 is only prepared at the back, a print of said ribbon on the work sheet for the copy.

This type-writing machine may also be used without ribbon 3 and reels 2 on making

use of a ribbon 19 prepared on both sides and of a work sheet 35, which is transparent, in this way the letters printed on the back of the work sheet may be read through the transparent paper and sheet 34¹ serves in this case as the original.

More than one ribbon may be fixed to the carriage-truck in order to produce several copies without making use of carbon sheets. Fig. 7 shows in plan the right hand part of the machine with an arrangement of two ribbons 19 and 19¹ guided parallel to the platen by means of two paper guides 15 and 15¹. The rotating movement of reel 23 is derived from the movement of the feed-lever 13 in the same manner as previously described and the rotation of reel 23 is imparted to reel 23¹ by the two reels being provided with a toothed circumference and being in mesh. The reel 23¹ is, as well as the reel 23, mounted on the carriage-truck. The other details of this modification are not shown on the drawings as they correspond to those described with the first embodiment of having one ribbon guided parallel to the platen.

This invention is specially suited for type-writing machines using paper on rolls, the paper rolls being directly mounted on the carriage.

I claim:

1. In a type-writing machine, the combination with a cylindrical platen, ratchet wheels at each end thereof and a main paper guide; of an auxiliary paper guide included between said platen and main guide, and detents at the ends of said auxiliary guide engaging the teeth of said wheels.
2. In a type-writing machine, the combination with a cylindrical platen and a main paper guide; of an auxiliary paper guide extending peripherally beyond the main guide, ribbon guide books extending laterally from the auxiliary guide and in front of the main guide, said auxiliary guide having a longitudinal slot extending substantially the length of a printing line, and ribbon slots adjacent the ends of said long slot.
3. In a type-writing machine, the combination with a carriage, a cylindrical platen therein, and a main paper guide; of an auxiliary paper guide between the platen and main guide, auxiliary ribbon reels arranged on vertical pins on said carriage and means on the auxiliary guide to guide the auxiliary ribbon from said reels in a substantially vertical plane.

In testimony that I claim the foregoing as my invention, I have signed my name.

ERNST JUCKER.