

A. G. F. KUROWSKI.
TYPE WRITING MACHINE.
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978,902.

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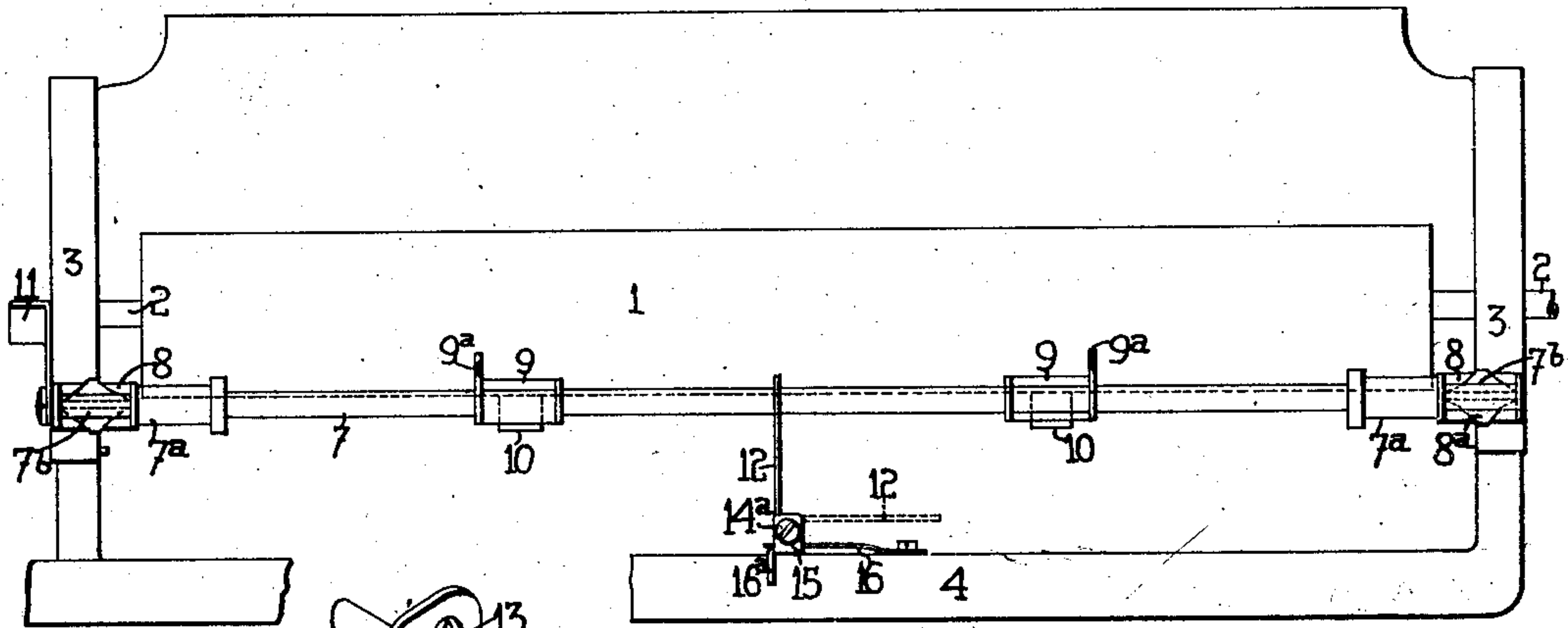


Fig. 1.

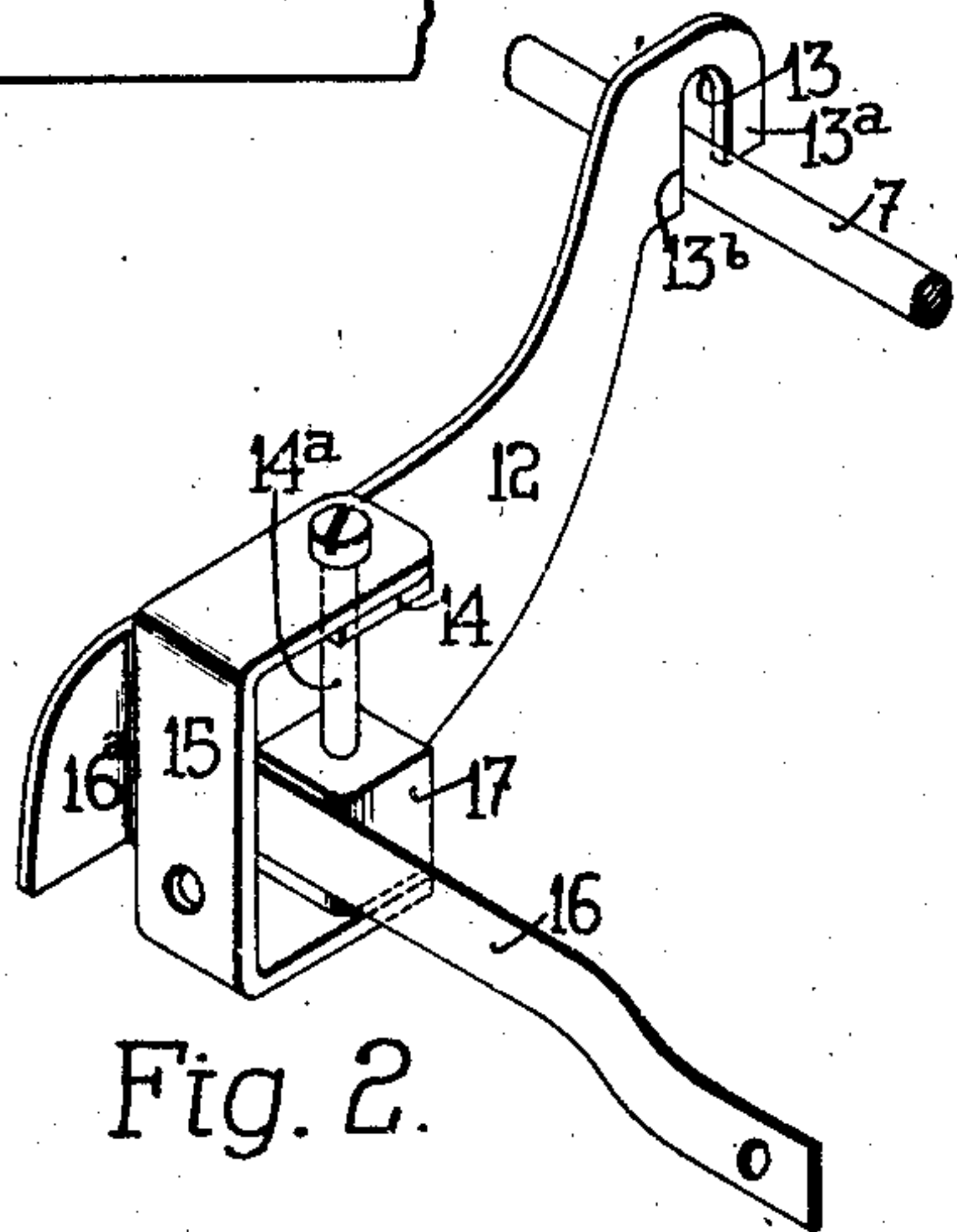


Fig. 2.

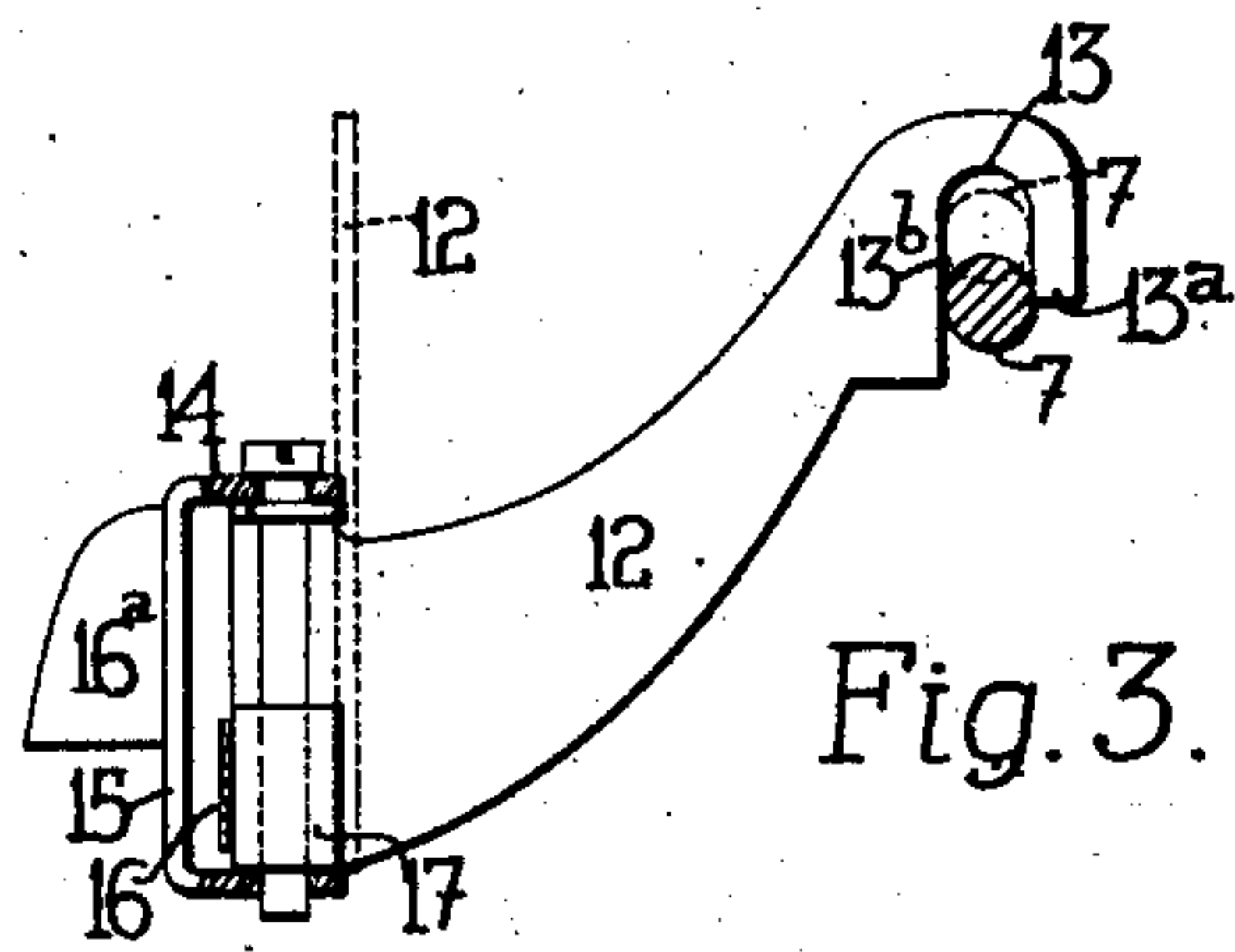


Fig. 3.

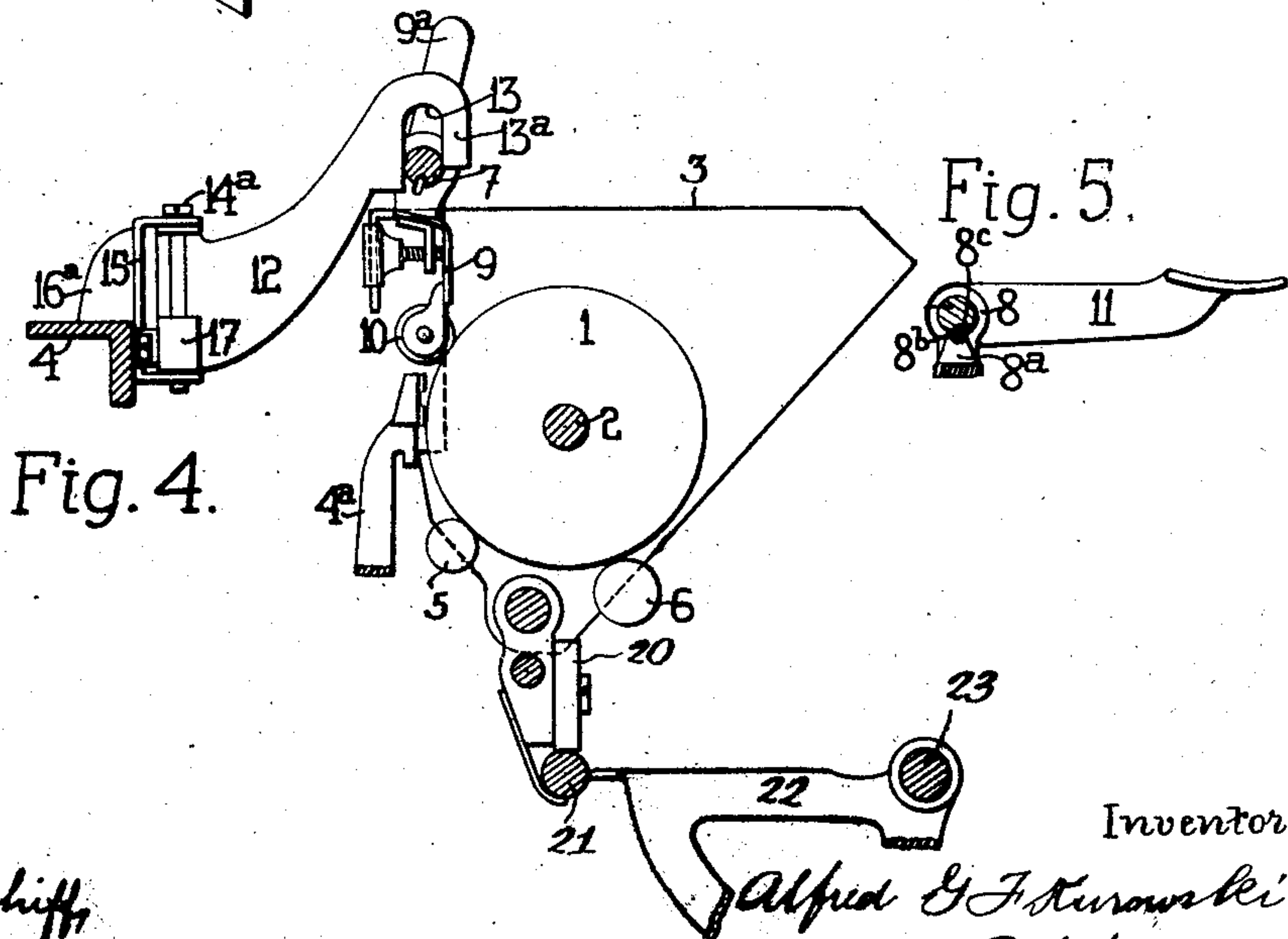


Fig. 4.

Fig. 5.

Witnesses.
Ignace Schiff
Ralph Warfield

Inventor
Alfred G. Kurowski
By *W. H. Hickney*
Attorney.

UNITED STATES PATENT OFFICE.

ALFRED G. F. KUROWSKI, OF NEW YORK, N. Y., ASSIGNOR TO UNDERWOOD TYPE-WRITER COMPANY, OF NEW YORK, N. Y., A CORPORATION OF DELAWARE.

TYPE-WRITING MACHINE.

978,902.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ALFRED G. F. KUROWSKI, a citizen of the United States, residing in borough of Brooklyn, city of New York, in the county of Kings and State of New York, have invented certain new and useful Improvements in Type-Writing Machines, of which the following is a specification.

This invention relates to paper-feeding devices for typewriting machines, and particularly to the rod extending lengthwise of the usual typewriting carriage to carry paper-feeding rolls which run upon the platen.

The main object of the invention is to prevent springing of the rod, and the consequent liability of displacement or loss of pressure and efficiency of the rolls carried thereby.

I provide the carriage with an arm having a bearing engaging the pressure roll-carrying rod at a point about midway of its ends, whereby to support the rod and prevent flexure thereof; and I provide for moving said arm to a position of disuse where it will be out of the way when not required, the arm being preferably foldable against the front bar of the paper carriage.

In the accompanying drawings, Figure 1 is a plan showing the invention applied to an Underwood writing machine. Fig. 2 is a perspective view of the arm removed from the machine, showing it engaged with the roll-carrying rod. Fig. 3 is a detail side view, partly in section, showing the arm swung to operative position, dotted lines showing its position of disuse. Fig. 4 is a cross-sectional view showing the arm applied to a typewriting machine. Fig. 5 is a detail cross-sectional view, showing the means tending to rotate the roll-carrying rod.

A platen 1 is journaled by an axle 2 in the ends 3 of a platen frame mounted on a carriage 4, said platen frame being shiftable up and down to enable different types on the type bars 4^a to strike the platen. The usual front and rear pressure rolls 5 and 6 cooperate with the platen to feed the sheets. A roll-carrying rod 7 is firmly mounted in sleeves 7^a having grooved journals 7^b turning in bearings 8 on the ends 3 of the platen frame, and extends across the latter. Depending pressure roll-carrying arms 9

equipped with pressure rolls 10 are adjustable along the rod, by the finger pieces 9^a the rolls engaging the cards or other sheets at points adjacent the printing line, to hold the sheets against the platen. The paper holding rolls 10 are held against the platen by springs 8^a on the platen frame which tend to press the roll 8^b into the grooves 8^c in the journals 7^b, and rotate the rod 7, the operative positions of the parts being shown in Fig. 5. The rotation of the rod 7 is arrested by the engagement of the pressure rolls 10 with the platen, and consequently, the rod tends to bend or flex. A finger-piece 11 on the rod enables the operator to throw off the rolls. An arm 12 is supported on the main carriage 4 and has a bearing 13 fitting over the rod at a point intermediate its ends, said arm operating to support or stiffen the rod and prevent lateral springing or yielding thereof. The arm 12 is hinged, as at 14, to a bracket 15 fast on the carriage, and the bearing 13 is open at its lower end to permit the arm to be disengaged from the rod, to permit the adjustment of the pressure rolls along the rod. The rod is sufficiently yielding to enable it to be sprung down to enter or escape from the slot 13. Said arm 12 is held in either operative or inoperative position by a spring 16, engaging either of two faces of a knuckle 17 on the arm, through which the pivot pin 14^a passes. The bracket may be braced against vertical swinging movement by a lug or rib 16^a engaging the carriage.

To apply the bracing arm to the rod, it is swung on its hinge until its free end engages the rod, which latter may be sprung slightly in a vertical direction, to enter it in the straight walled slot 13; a reversal of this process serving to disengage the arm from the rod. The outer wall 13^a of the slot may be shorter than the opposite wall 13^b which extends past one extreme limit of movement of the rod 7, to enable the rod to be engaged by the arm without undue strain. The rod can, of course, turn freely in the bearing in the arm, which bearing is of sufficient length to maintain its engagement with the rod when the latter is shifted with the platen, from full-line lower-case position to dotted-line upper-case position, at Fig. 3; the walls of the slot being parallel and fitted to the rod sufficiently closely for the purpose.

The invention is of especial value in extra wide carriages, in which the rod 7 is so long in proportion to its diameter as to be relatively weak.

5 The platen frame 3 usually has a roll 20 to run upon a shift rail 21, the latter mounted upon the usual shift frame 22 pivoted at 23, whereby the platen frame and platen are shifted up and down to enable different types
10 to print.

Variations may be resorted to within the scope of the invention, and portions of the improvements may be used without others.

Having thus described my invention, I
15 claim:

1. In a typewriting machine, the combination with a platen and a paper-feeding device including a tensioned rod extending across the machine and carrying pressure
20 rolls to engage the platen, of an arm connected to the machine, and releasably engaging the rod intermediate its ends to support the latter.

2. In a typewriting machine, the combination with a platen and a paper-feeding device including a spring-pressed rod tending
25 to rotate, said rod extending across the machine and carrying pressure rolls adjustable along the rod to engage different widths of paper, of an arm pivotally connected to the machine and releasably engaging the rod to prevent springing thereof and movable to a position of disuse to enable the pressure rolls
30 to be adjusted to either end of the rod.

3. In a typewriting machine, the combination with a shiftable platen frame and platen, and a paper-feeding device including a rod tensioned to rotate, said rod extending
35 across the platen frame and carrying pressure rolls to engage the platen, of an arm relative to which the platen frame shifts, and having an elongated bearing, in which is fitted the rod to accommodate the latter when the platen frame is shifted.

4. In a typewriting machine, the combination with a platen frame and platen, and a paper-feeding device, including a rod tensioned to rotate, said rod extending across
45 the platen frame and carrying the pressure rolls to engage the platen, of an arm pivoted

to the machine and having a recess open at one end in which the rod is loosely fitted.

5. In a typewriting machine, the combination with a shiftable platen frame and platen, and a paper-feeding device including
55 a rod tensioned to rotate, said rod extending across the platen frame and carrying pressure rolls to engage the platen, of an arm having an elongated bearing in which the rod is fitted, and a bracket to which the arm
60 is attached, the bracket being secured to the machine independently of the platen frame and having a brace engaging the machine to resist strain imparted by the rod to the arm.

6. In a typewriting machine, the combination with a platen and a paper-feeding device including a tensioned rod extending
65 across the machine and carrying pressure rolls to engage the platen, of a bracing device relative to which the rod is shiftable, to engage the rod intermediate its ends and stiffen the latter to prevent flexure thereof.
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7. In a typewriting machine, the combination with a platen, a platen frame, paper feeding mechanism including a rod extending
75 across the machine and mounted in supports on the platen frame, and having a tension device to rotate the rod in one direction, and pressure rolls carried by the rod to engage the platen, of a stiffening member
80 secured to the machine and having a bearing in line with the rod supports to prevent the rod from springing under the strain.

8. In a typewriting machine, the combination with a platen, a platen frame, paper feeding mechanism including a rod extending
85 across the machine and mounted in bearings on the platen frame, a spring tending to rotate the rod in one direction, and pressure rolls carried by the rod to engage the
90 platen and arrest the rotation of the rod, whereby said rod is placed under tension, of a supporting member to releasably engage the rod about midway of its ends to prevent flexure thereof.

ALFRED G. F. KUROWSKI.

Witnesses:

K. FRANKFORT,
C. RIPLEY.