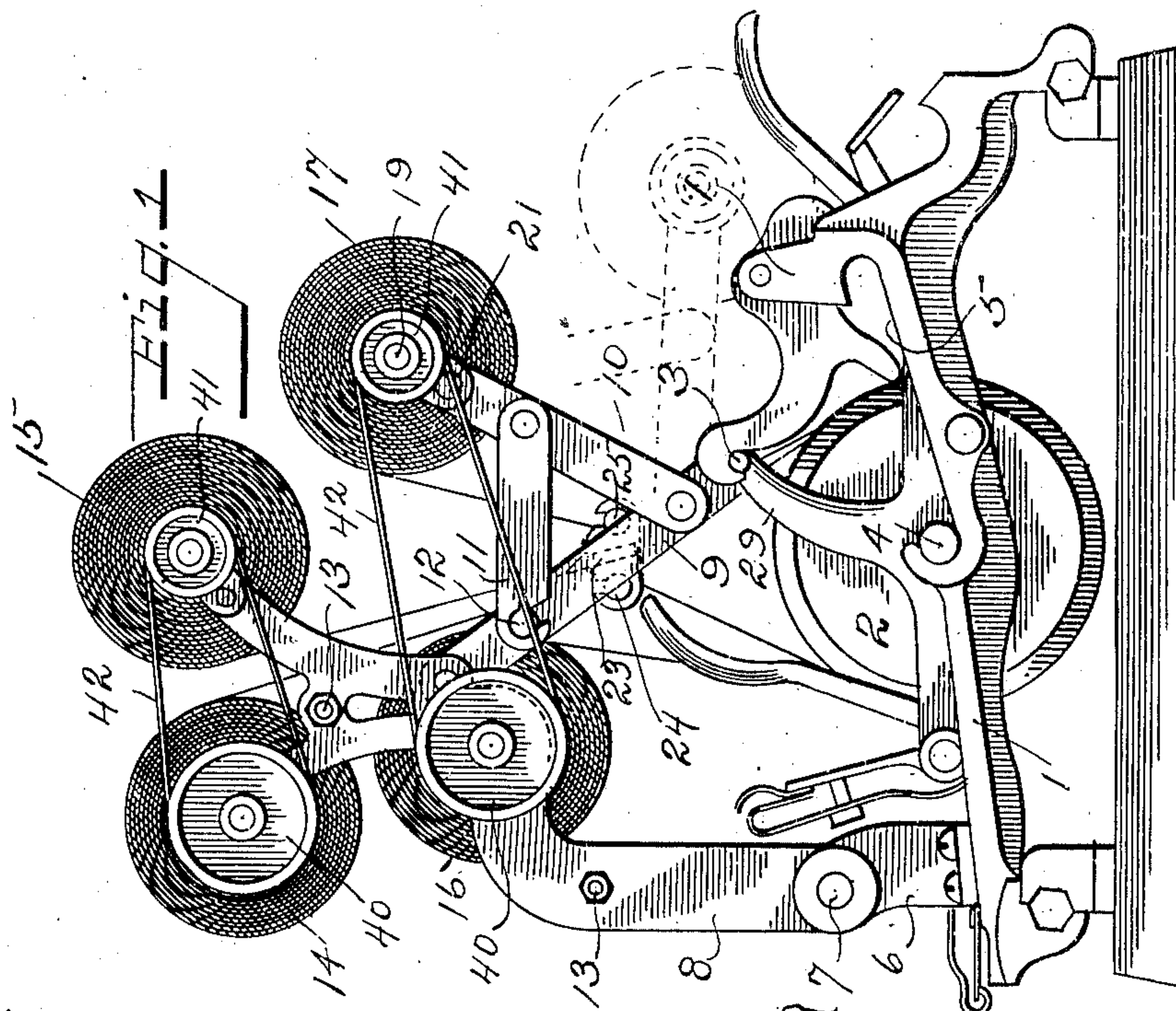
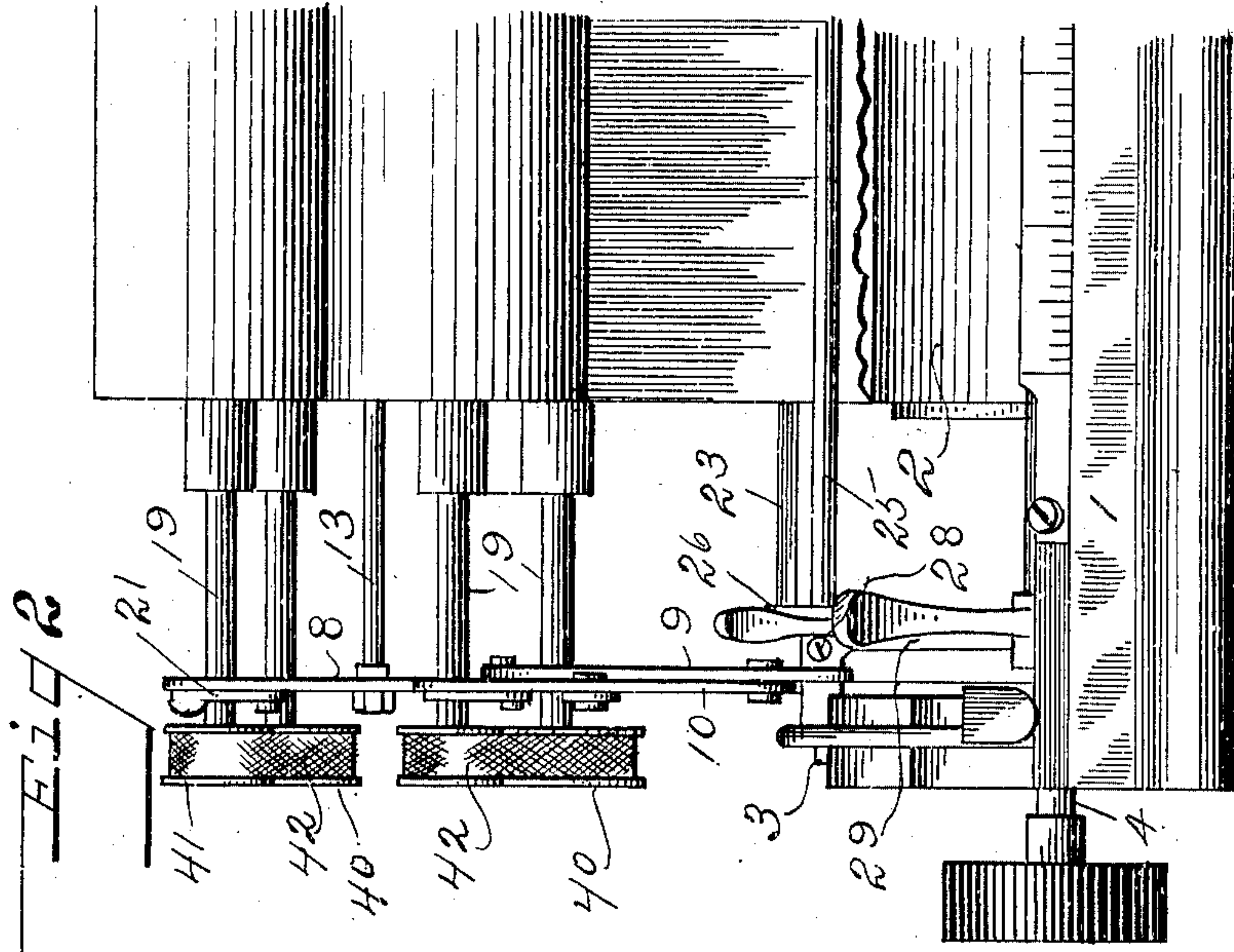


T. M. MORGAN.
TYPE WRITER ATTACHMENT.
APPLICATION FILED AUG. 1, 1908.

959,024.

Patented May 24, 1910.

3 SHEETS—SHEET 1.



Inventor

Witnesses
Henry F. Nolan
H. W. Dickinson

By

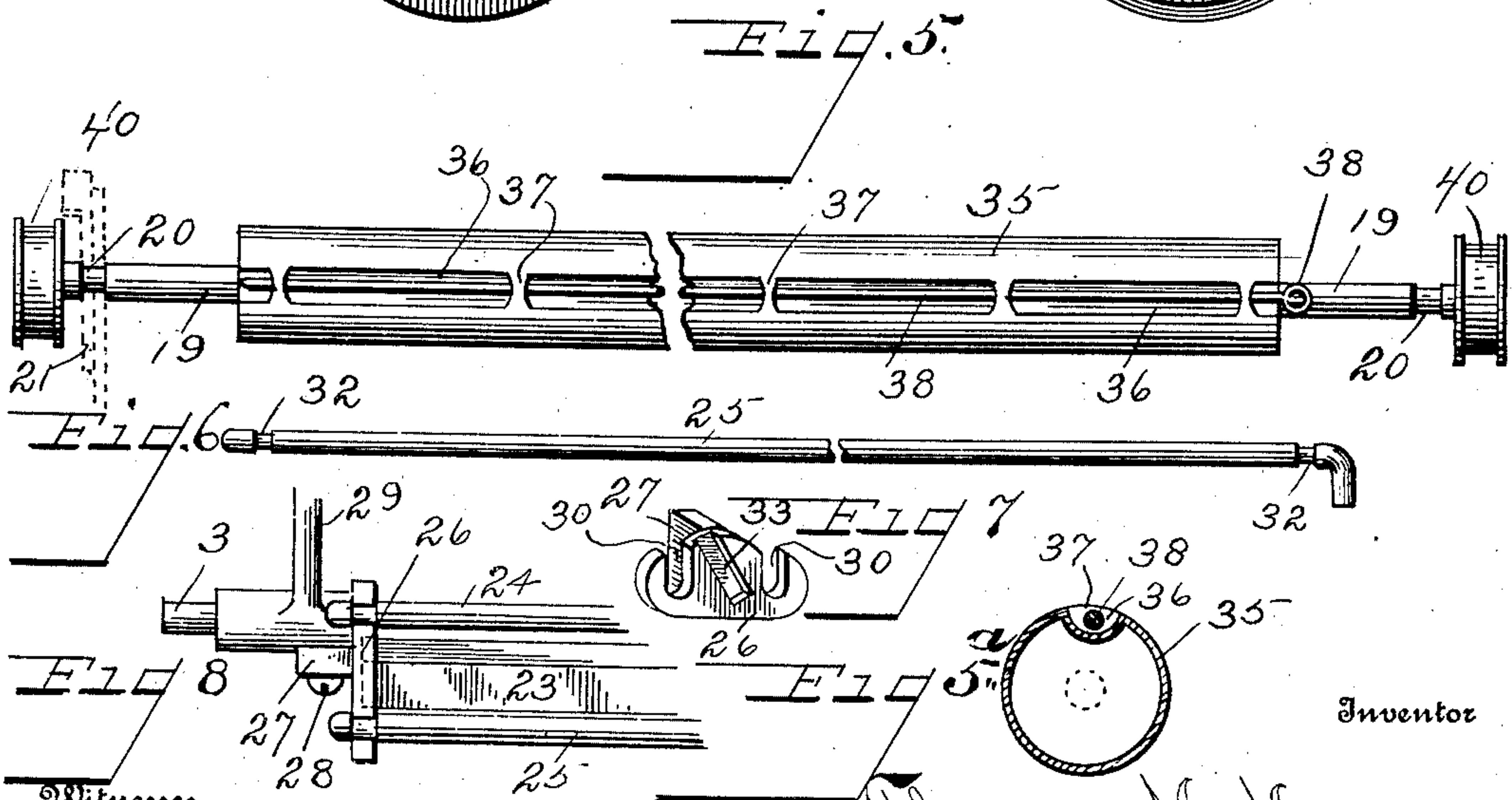
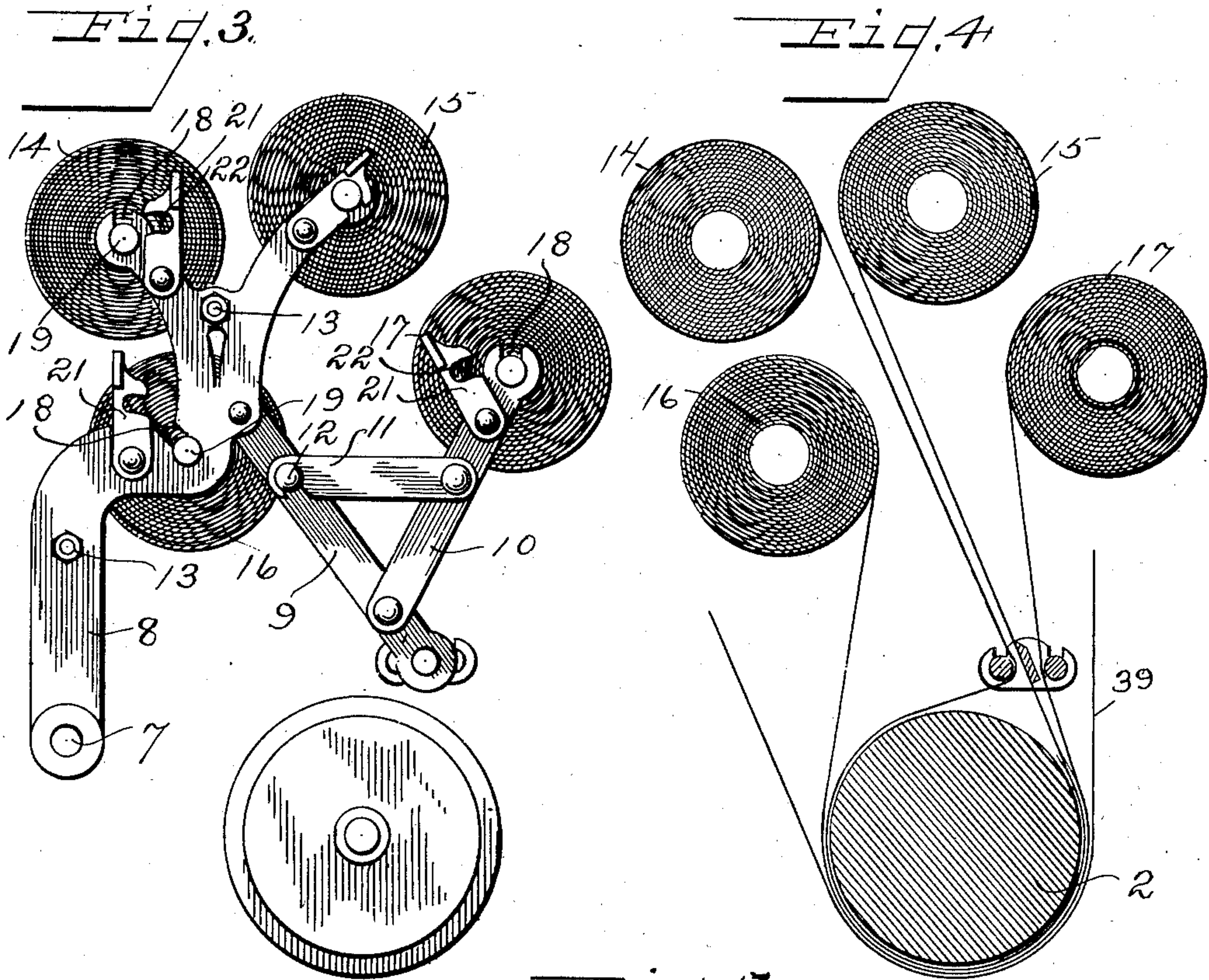
Thomas M. Morgan
J. L. Walker Attorney

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3 SHEETS—SHEET 2.



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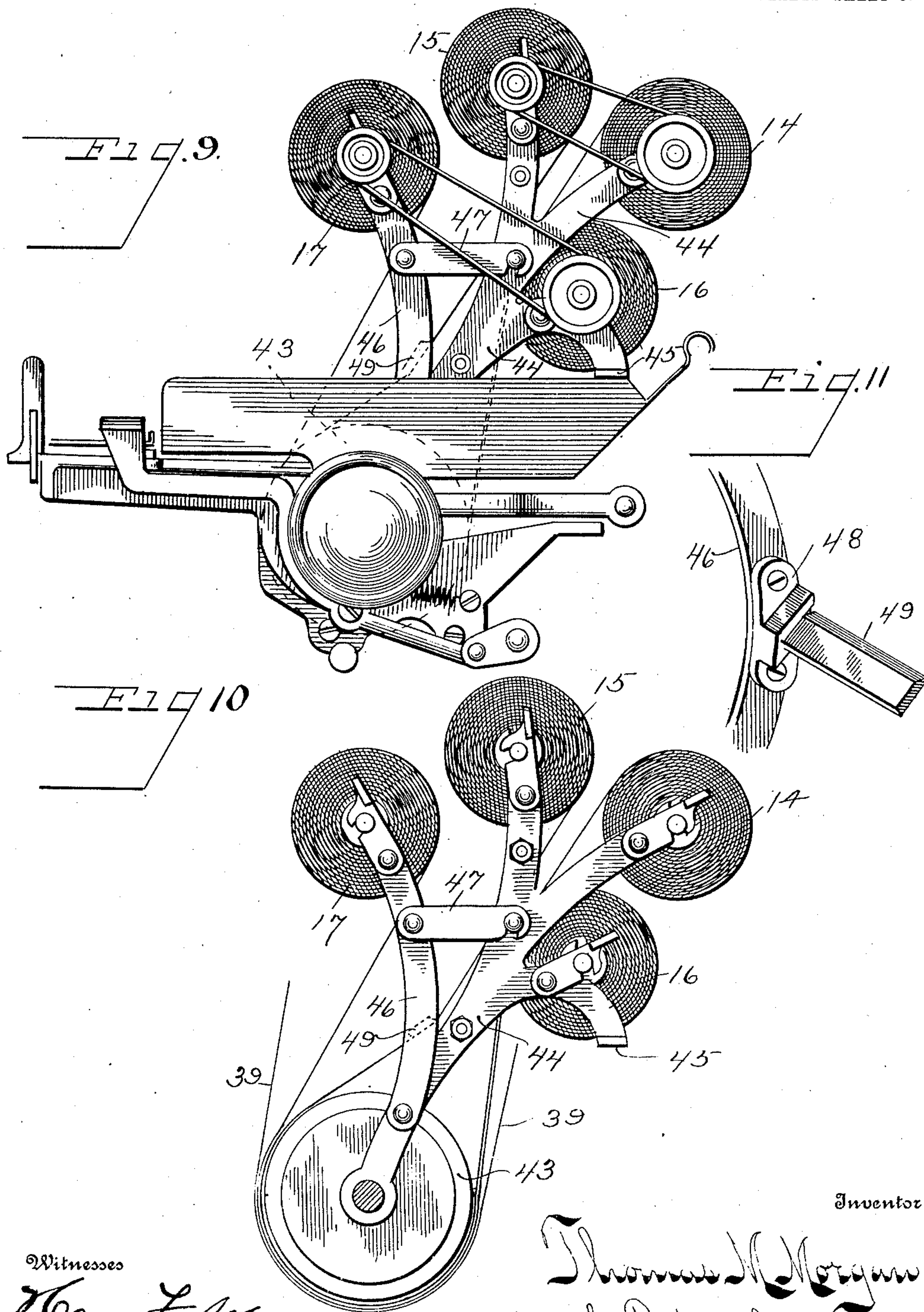
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3 SHEETS—SHEET 3.



Witnesses

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UNITED STATES PATENT OFFICE.

THOMAS M. MORGAN, OF WILLIAMSPORT, PENNSYLVANIA.

TYPE-WRITER ATTACHMENT.

959,024.

Specification of Letters Patent.

Patented May 24, 1910.

Application filed August 1, 1908. Serial No. 446,363.

To all whom it may concern:

Be it known that I, THOMAS M. MORGAN, a citizen of the United States, residing at Williamsport, in the county of Lycoming and State of Pennsylvania, have invented certain new and useful Improvements in Type-Writer Attachments, of which the following is a specification.

My invention relates to type writing machines and particularly to manifolding attachments therefor.

The object of the invention is not only to simplify the structure as well as the means and mode of operation of such devices and attachments whereby they will be cheapened in construction, but will render the machine more efficient and rapid in operation, easily adjusted, and unlikely to get out of repair.

A further object of the invention is to provide a device in which the record will be preserved in the form of a strip or scroll which may be filed as a whole, representing the consecutive transactions or operations for a day or other given period, or may be subsequently separated for filing purposes.

A further object is to provide an attachment in which the record strip other than the original will at all times be in place for instant use, permitting the operator to work more rapidly. The attachment is of especial value for telegraphers' use when "taking" messages direct on the machine when but little time is possible for the placing of copy sheets and carbon paper. It is also useful in keeping records of bills and statements, and other short written communications, and also in preparing lists as mailing lists etc.

While the above are a few of the various uses to which the device may be applied it is to be understood that it is not limited to such use. Further in the drawings the attachment has been illustrated as applied to machines of the general construction known to the trade as "Smith Premier" and "Underwood" machines representing respectively the invisible and visible types of writing machines, but the attachment is not limited to use with these machines but may be applied to other machines equally as well.

With the above primary and other inci-

dental objects in view as will more fully appear from the specification the invention consists of the means, mechanism, construction, and mode of operation or their equivalents hereinafter described and set forth in the claims.

In the drawings Figure 1 is a side elevation of the attachment as applied to an invisible writer, in which the platen roll must be shifted to exhibit the work. Fig. 2 is a front elevation of the construction shown in Fig. 1. Fig. 3 is a side elevation of the attachment removed from the machine, with the driving belts and pulleys removed. Fig. 4 is a view somewhat diagrammatic showing the direction of travel of the respective strips of paper. Fig. 5 is a detail view of one of the receiving rolls. Fig. 5^a is a transverse sectional view of one of the receiving rolls. Fig. 6 is a detail view of one of the guide rods. Figs. 7 and 8 are detail views of the knife support and the attachment thereof. Fig. 9 is a side elevation of the assembled device mounted on a visible writer in which the platen roll has only revoluble movement. Fig. 10 is a similar view removed from the machine with the drive belts and pulleys removed to exhibit the contour of the frame. Fig. 11 is a detail perspective view of the knife support of the construction shown in Figs. 9 and 10.

Like parts are indicated by similar characters of reference throughout the several views.

Referring to the drawings 1 is the carriage of the writing machine to which the attachment is applied, in this case an invisible writer in which the platen roll 2 must be shifted forward to exhibit the work in which shifting movement the platen support swings about the trunnion 3 and the platen shaft 4 slides on the incline 5.

Attached to the rear portion of the carriage 1 adjacent to each end thereof is a lug 6 to which is pivoted at 7 a frame member 8. The frame member 8 is held upright by a frame bar 9 mounted on the trunnion 3 and engaging a stud on the frame member 9. Pivottally attached to the frame bar 9 is a forwardly and upwardly inclined bar 10, retained in position by a hook bar 11 en-

gaging a stud 12 in the frame bar 9. The frame construction erected at each end of the writing machine carriage are similar and the respective portions are united into one structure by tie rods 13.

Journalled in the frame member 8 are a copy paper supply roll 14, a copy paper receiving roll 15, and a carbon paper supply roll 16, and in the upper end of the inclined bar 10, a carbon paper receiving roll 17. While the respective rolls might be permanently journaled in the frame, but are preferably removable to facilitate the removal and replacing of the paper supply. To this end the respective rolls are journaled in notches or recesses 18. The shaft or trunnions 19 of the respective rolls are of slightly greater diameter than the width of the notches 18, and are provided with grooves 20 adapted to engage in the recesses 18 of the frame and form bearings for the rolls. Pivotaly attached to the frame adjacent to the bearing points of the respective rolls are swinging clips or hook members 21, each having a notch 22 adapted to engage over the trunnion of the roll to retain the roll within the notch 18 of the frame. The notches 18 of the frame, and those 22 of the hook members 21 are arranged at substantially right angles to each other. The grooves 20 of the roll trunnions are of a width substantially equal to the combined thickness of the frame 8 and hook member 21 as indicated in Fig. 5. Carried in suitable bearings and extending across the frame of the attachment are a straight edge knife 23 over which the copy paper strip may be separated into sections, and two guide rods 24 and 25. The knife and guide rods may be supported on any suitable part of the frame as for instance on the frame bar 9 as shown in Fig. 1, but is preferably located as close as possible to the platen roll of the machine.

The most desirable method of supporting the knife and guide rods is that shown in Figs. 7 and 8, in which 26 is a supporting member having an outward projecting lug 27 which is attached by a screw 28 to the upward projecting arm 29 on the platen roll support of the writing machine carriage, which arm also carries the trunnion 3. The supporting member 26 is provided with notches 30 to receive the guide rods 24 and 25 which are provided with grooves 32 to engage the notches 30 in a manner similar to the engagement of the roll trunnions with the notches 18 of the frame. Intermediate the notches 30 in the members 26 are inclined grooves 33 in which is removably located the knife 23, which extends across the machine. The paper rolls and more particularly the receiving rolls comprise a cy-

lindrical body 35, as shown in Fig. 5, in which is an intermittent longitudinal groove 36. The portions 37 of the cylindrical body separating the respective sections of the longitudinal groove 36 are perforated, and a removable pin 38 is located within the groove 36 and projects through the portions 37, for the purpose of securing the end of the paper strip to the roll as hereafter mentioned.

The paper supply may be wound upon the supply roll by the operator, but is preferably supplied in rolls upon cylindrical or other shaped tubes which may be slipped upon the supply roll and the roll returned to the machine. Referring particularly to Fig. 4 the copy paper strip leads from the supply roll 14 under the guide rod 24, about the platen roll 2, under the knife 23, and thence to the receiving roll 15, to which it is attached by being pressed into the groove 36 and the pin 38 inserted through the paper and portions 37 thus pinning the paper to the roll. The carbon paper passes from the supply roll 16 about the platen roll 2 on top of the copy paper, thence under the guide rod 25 to the receiving roll 17. The "first" sheet or original is inserted in the machine in the usual manner as shown at 39. To facilitate the placing of the copy and carbon paper the rods 24 and 25 and knife 23 may be removed from the support 26, and the carbon paper receiving roll lowered as shown by dotted lines in Fig. 1 by disengaging the hook 11 from the stud 12, to render the parts more accessible. As the writing machine platen roll 2 is rotated in the usual manner in the course of operation, the copy paper and carbon paper are both drawn from the supply rolls 14 and 16, the pull of the paper causing these rolls to revolve. Each of the respective rolls carry pulleys 40, 41 upon the projecting ends of the roll shafts.

The pulleys of the supply rolls are larger than those 41 of the receiving rolls the pulleys of the corresponding rolls are connected by elastic belts 42 whereby the receiving roll will normally be driven at a greater speed than the supply roll to insure that the slack of the paper strips shall be taken up. The comparative sizes of the supply and receiving rolls will constantly vary, the supply roll decreasing and the receiving roll increasing in diameter as the paper is transferred from one to the other. Likewise the speed or number of revolutions of the supply roll will increase in delivering a given length of paper as the size of the roll decreases, and the speed of the receiving roll will decrease as its periphery becomes greater through the excess of paper received from the supply roll. The variation in the size of the drive

and driven pulleys is sufficient to keep the paper stretched at all times and any further variation in the speeds is compensated for by the slipping of the elastic belt 42 on the pulleys. The platen roll 2 is advanced in the usual manner by the operator, which by the pull of the paper drives the supply rolls; the supply rolls in turn drive the receiving rolls through the elastic belts 42. When the carbon paper has been transferred from the supply roll to the receiving rolls the rolls may be reversed in the frame, the pulleys being interchanged, and the carbon paper returned to the original roll as the receiving roll.

On Sheet 3 is shown the attachment applied to a visible writing machine. In as much as the platen roll 43 has only revolvable movement the frame member 44 may be supported on the platen trunnion, together with a suitable lug as 45 adapted to rest on the machine carriage and support the frame member in an upright position.

The various supply and receiving rolls 14, 15, 16 and 17 are similar to those before described and are mounted and driven in the same manner. The roller 17 is mounted in an arm 46 and retained in position by a hook 47 in the manner before described. In Figs. 9 and 10 no guide rods such as 24 and 25 are shown but the paper is conducted direct from the supply rolls to the platen and thence direct to the receiving rolls. It is obvious that in the first described construction the guides 24 and 25 may likewise be omitted and the paper conducted as in Figs. 9 and 10.

In Fig. 11 is shown a perspective view of the knife support 48 provided with an inclined slot for the reception of the knife 49. The support may be attached to either the frame member 44 or to the arm 46 as is shown in the drawings.

In the construction first described the shifting of the platen roll 2 will cause a slight perpendicular movement of the trunnion 3 which necessitates the flexible connection of the frame member 8 at the point 7, to the lug 6.

From the above description it will be apparent that there is thus produced a device of the character described, possessing the particular features before enumerated as desirable, but which obviously is susceptible of modification in its form, proportion, detail construction, and arrangement of parts without departing from the principle involved or sacrificing any of its advantages. It is further obvious the additional carbon paper and copy paper rolls may be added, without departing from the spirit of the invention, thus enabling the operator to make a plurality of copies as is ordinarily done.

Also the supply and receiving rolls may be provided for the original copy, or first sheet 65 if it be desired to prepare typewritten matter in the form of a continuous strip, such as lists of merchandise, or lists of names or when preparing mimeograph stencils of mailing lists etc. 70

The modifications above suggested would not involve any different construction from that shown in the drawings, but would be a mere multiplication of the parts and devices therein shown, therefore it has been thought 75 not desirable to add to the number of drawings views showing such duplication of parts.

I claim—

1. In a structure as described, a writing 80 machine including a platen, a frame supported on said machine, a plurality of supply rolls, and a plurality of receiving rolls, mounted in said frame, arms pivoted on said frame in which one of said rolls is journaled and whereby said roll is movable, independent of the other rolls, continuous 85 paper strips mounted on the supply rolls and leading thence about said platen to the receiving rolls, and means to advance said 90 paper strips from the supply to receiving rolls by the movement of said platen, substantially as specified.

2. In a structure as described, a writing 95 machine, a platen, a frame mounted on said machine comprising a frame member located at each end of the machine, arms pivoted to said members, rods connecting said frame members into a rigid structure, a plurality of rolls mounted in said frame 100 members, and an additional roll mounted in said pivoted arms and movable relative to the remaining rolls about the pivotal point of the supporting arms, and having paper strips passing from one set of rolls about 105 the platen to corresponding rolls, means for advancing said paper strips, substantially as and for the purpose specified.

3. In a structure as described, a writing 110 machine, a platen, a frame mounted on said machine, said frame having a plurality of corresponding notches or recesses therein, paper supply and receiving rolls removably journaled in said recesses, hook members pivoted to said frame adjacent to said 115 notches and having notches therein arranged angular to the frame notches when the hook members are in normal position and adapted to engage the roll trunnions to retain said rolls in adjusted position and means for ad- 120 vancing the paper from the supply to receiving rolls and about the platen, substantially as specified.

4. In a structure as described, a writing 125 machine, a platen, a frame mounted on said machine, said frame having a plurality of

notches or recesses therein, paper supply and receiving rolls, trunnions on said rolls of greater diameter than the width of said notches, said trunnions having peripheral grooves therein of a diameter substantially equal to the width of the notch and adapted to engage therein to form a bearing for the roll, a hook member pivoted to the frame, the recess of which is arranged angular with the bearing notch, the groove of the trunnion being of such width that the hook member will likewise engage in said groove to retain said roll in position and means to advance the paper from the supply to the receiving rolls, substantially as specified.

5. In a structure as described, a writing machine, a platen, a frame on said machine, paper supply and receiving rolls journaled in said frame, said rolls comprising a cylindrical body having therein a longitudinal groove divided into a plurality of sections by continuous peripheral portions of said cylindrical body and a removable pin extending within said longitudinal groove and projecting through perforations in the dividing portions between the sundry sections of said groove, substantially as specified.

6. In a structure as described, a writing machine, a platen, a frame supported on said machine, paper supply and receiving rolls journaled on said frame comprising a cylindrical body having a plurality of longitudinal aligned depressions in the surface thereof, and a removable pin projecting through said depressions and the intervening portions of the roll, substantially as specified.

7. In a structure as described, a writing machine, a platen, paper supply and receiving rolls, a frame in which said rolls are journaled, arms pivoted on said frame in which one of said rolls is carried and whereby said roll is movable, independent of the other rolls, a pulley on each roll the pulleys of the respective rolls being of different diameters and a belt connecting the cor-

responding supply and receiving rolls whereby the receiving rolls will be driven by the rotation of the supply roll at a greater rate of speed, substantially as specified.

8. In a structure as described, a writing machine, a platen, a frame supported on said machine, paper supply and receiving rolls journaled in said frame having a paper strip leading from each supply roll about said platen to the corresponding, receiving roll, a supporting member carried on each end of the frame having recesses or notches therein, and a groove intermediate said notches, guide rods for the paper strip removably located in said notches, over which the paper travels intermediate the platen and rolls, and a removable knife blade carried in said grooves and between the guide rods by which the strip may be separated into sections, substantially as specified.

9. In a structure as described, a writing machine, a platen, a frame supported on said machine, paper and duplicating material supply rolls mounted in the frame, paper and duplicating material receiving rolls also mounted in the frame to which the material is transferred from the supply rolls passing about the platen roll during such transfer, a transverse knife member mounted in the frame and forming a guide for one of the strips, supporting brackets located adjacent to the extremities of the knife member, and projecting in opposite directions from said knife member, guide rods detachably carried in the supporting brackets and extending parallel with and adjacent to the knife member over which other strips of material are guided, substantially as specified.

In testimony whereof, I have hereunto set my hand this 23rd day of July A. D. 1908.

THOMAS M. MORGAN.

Witnesses:

J. F. KATZMAIER,
H. G. DAVIS.