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J. F. PORTER ET AL

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TAPE FEEDING MECHANISM FOR TELEGRAPH PRINTERS

Filed Aug. 3, 1929

2 Sheets-Sheet 1

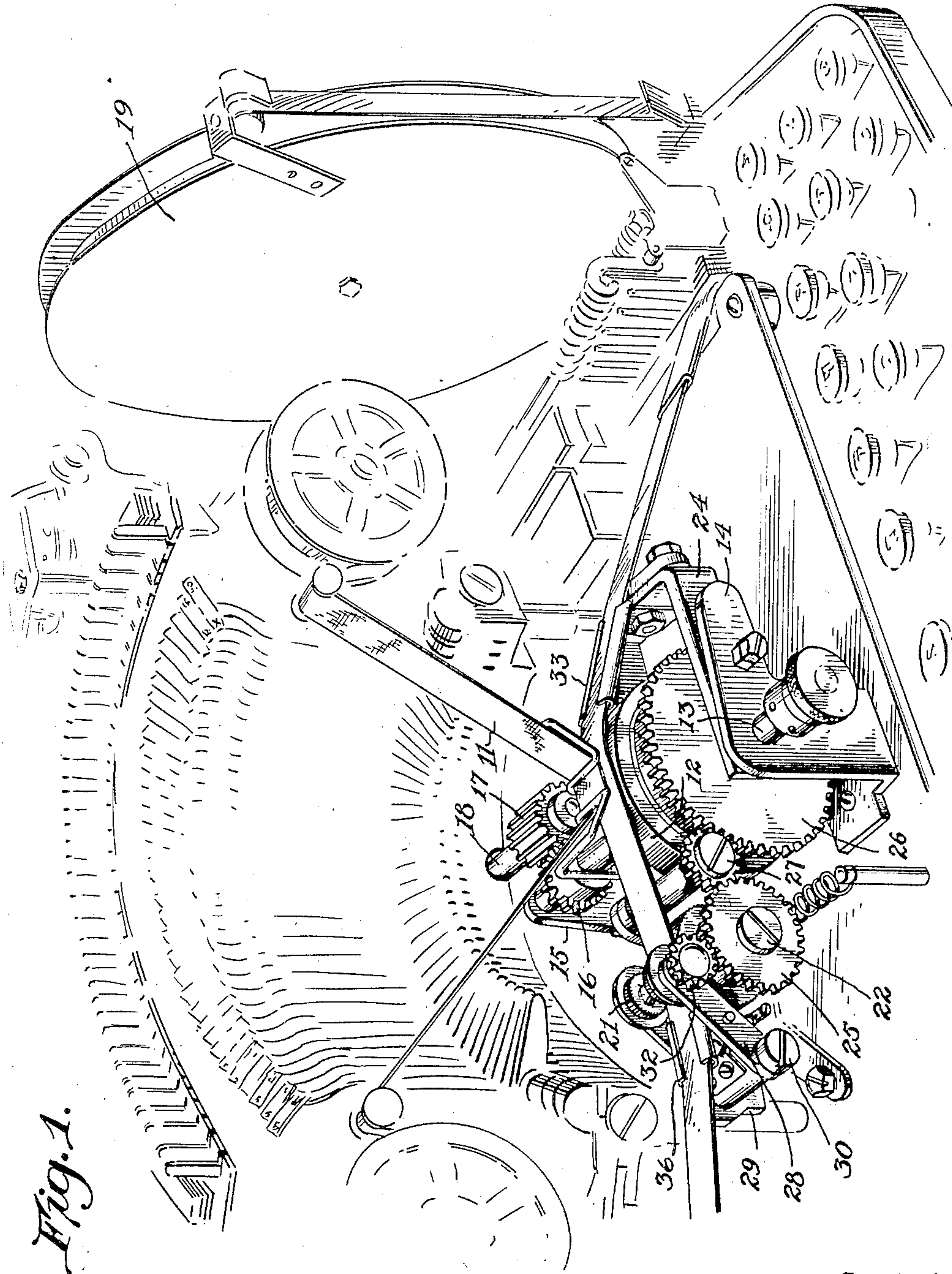


Fig. 1.

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Fig. 2.

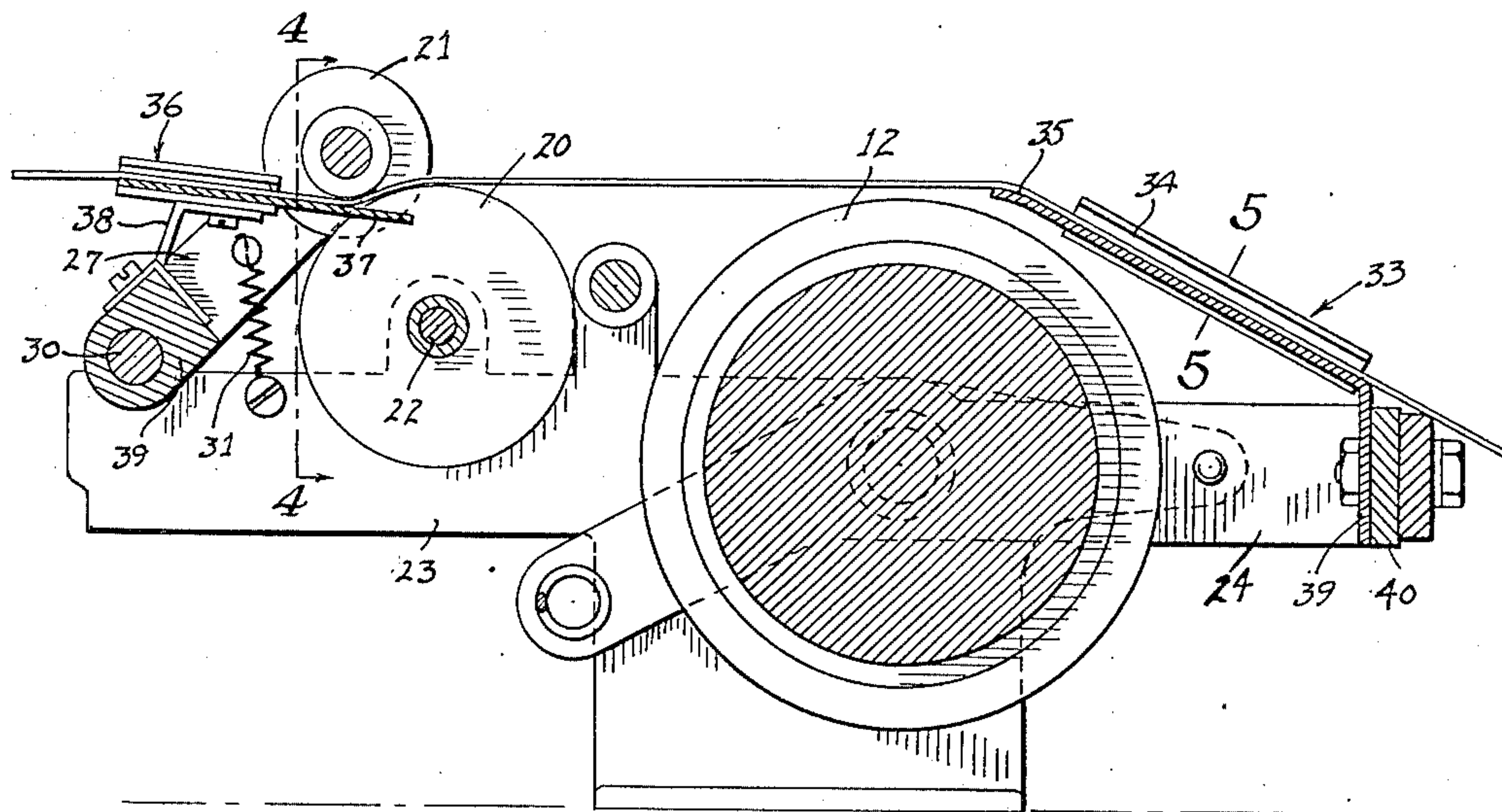


Fig. 3.

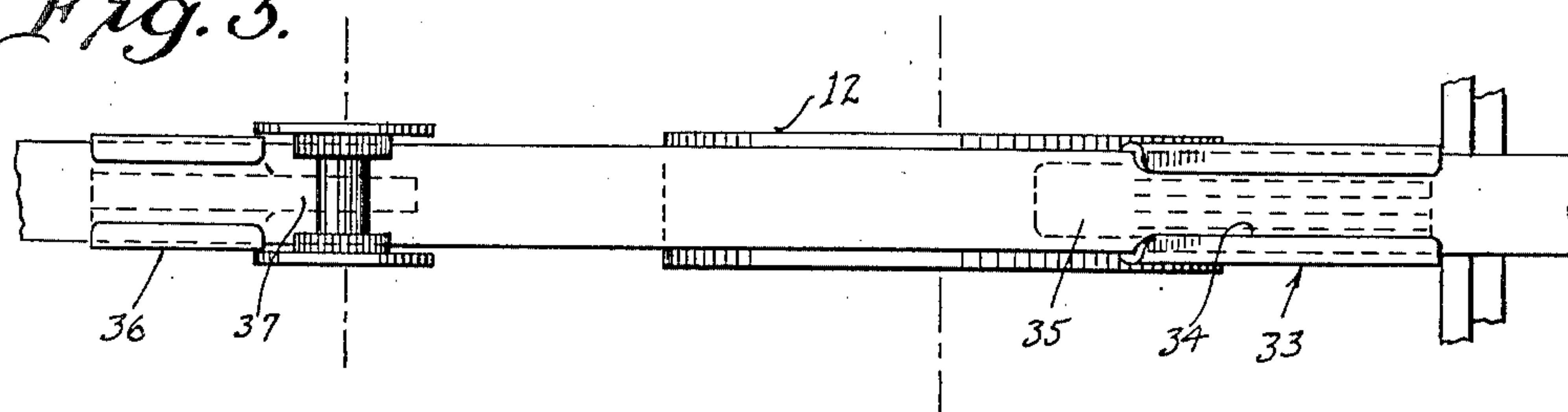


Fig. 4.

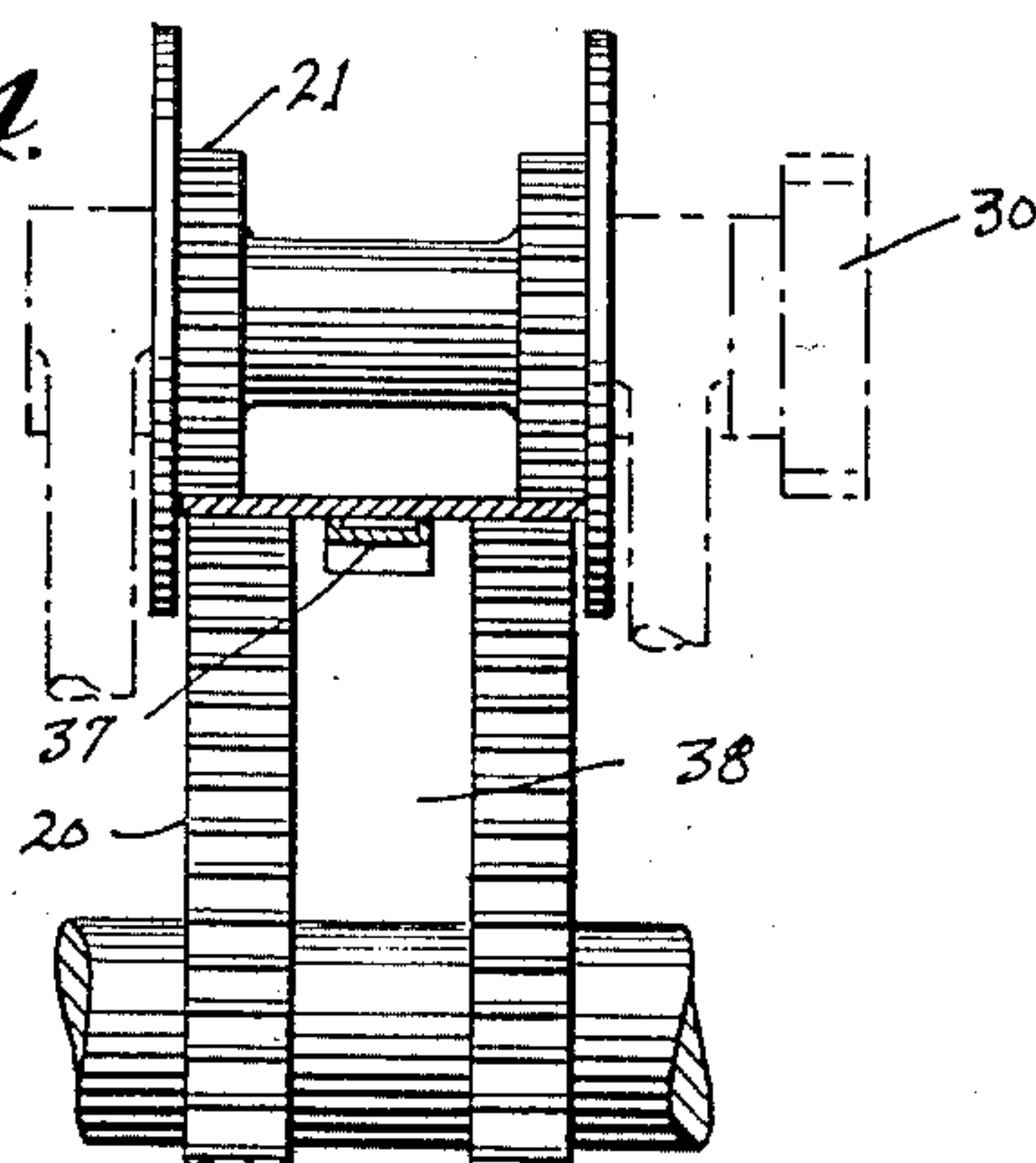


Fig. 5.

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UNITED STATES PATENT OFFICE

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TAPE-FEEDING MECHANISM FOR TELEGRAPH PRINTERS

Application filed August 3, 1929. Serial No. 383,247.

This invention relates to a tape telegraph printing machine and particularly to mechanism for feeding the tape through the machine.

5 In tape printing telegraph machines of the type-bar class, employing a cylindrical platen, as heretofore commonly constructed, the tape approaches the platen from one side through a guide channel disposed somewhat below
10 the top of the platen and the tape is engaged at the opposite side of the platen by a feed roller, which presses the tape firmly against the platen so that it will be fed forward by the rotation of the platen. As a result of
15 this construction, the tape is drawn tightly over the platen and is in contact therewith over a considerable part of the periphery thereof. This construction is clearly illustrated in a patent to Kleinschmidt, No. 1,567,-
20 599, granted December 29th, 1925.

Difficulty has been experienced with this construction, however, when employing gummed tape, particularly in warm, humid
25 weather, due to the tape adhering to the rubber platen and following around with the platen, thus becoming tangled, tying up the machine and in some instances mutilating the tape. It is not feasible to employ a stripper in close engagement with the platen to
30 remove the tape therefrom due to the soft nature of the surface of the platen.

It is one of the objects of the present invention, therefore, to provide tape feed mechanism which will prevent the tape from
35 adhering to and following around with the platen.

Another object is to provide a tape feed mechanism in which the tape is normally maintained out of contact with the platen.

40 A further object is to reduce the length and pressure of the contact of the tape with the platen.

A still further object is to provide a tape feed mechanism for a printing machine which
45 is separate from the platen.

Other objects and advantages will hereafter appear.

In accordance with our invention we feed the tape substantially straight across the
50 platen in a path of travel which is practically

tangent to the printing position of the platen, but slightly thereabove so as to be out of contact therewith. This is accomplished by positioning the tape guide at the approaching side of the platen so that it terminates
55 at substantially the same level as the top of the platen or slightly thereabove and by providing a tape feeding mechanism on the opposite side of the platen separate therefrom, such tape feed mechanism comprising feed
60 rollers having their contacting surfaces at substantially the same level as the top of the platen, so that the tape passes horizontally across the top of the platen and preferably out of contact therewith. Both of the feed
65 rollers may be composed of metal to which the gummed surface of the tape does not readily adhere and a stripping device may be provided for the feed roller with which the gummed surface contacts, to remove the tape
70 from the roller should it tend to adhere thereto.

In order that the invention may be more fully understood, reference will be had to the accompanying drawings in which:
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Figure 1 is a front perspective view of the tape feed mechanism embodying the present invention associated with a printing telegraph machine;

Figure 2 is a longitudinal sectional view
80 through the platen and tape feed mechanism;

Figure 3 is a plan view of the tape and tape guides showing their relative positions with respect to the feed rollers and platen;

Figure 4 is a sectional view on the line
85 4—4 of Figure 2, and

Figure 5 is a sectional view on the line 5—5 of Figure 2.

In the drawings the invention is shown applied to a telegraph printing machine but
90 it is not necessarily limited thereto, being equally applicable to other devices wherein it is desired to feed a tape or similar strip of material over a roller which moves with the tape and with which the tape engages.
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The printing telegraph machine, the construction of which is indicated in light lines in Figure 1, includes a number of type bars
100 which strike downwards against the tape as it passes over the top of the platen, and

an inkling ribbon 11 disposed immediately above the printing position of the tape. The platen, designated as 12, comprises the usual rubber surfaced roller mounted upon a platen shaft 13, bearing in brackets 14 and 15 secured to the base plate of the machine. The platen is driven by gears 16 and 17 from a shaft 18, actuated after each printing operation by mechanism not shown. The tape is drawn from a reel 19 through suitable guides across the top of the platen substantially tangent thereto but slightly thereabove, by a pair of contacting feed rollers 20 and 21.

The feed roller 20 is mounted upon a stub shaft 22 carried by a bracket 23 forming an extension of the U-shaped platen carriage frame 24. A gear 25 is fixed to the feed roller 20 and drives the roller from a gear 26 secured to the platen shaft 13, through an intermediate idler gear 27. The gear 27 is also mounted upon a stub shaft carried by the bracket 23 and is adjustable relative to the gears 25 and 26 by virtue of its shaft being somewhat smaller than the opening in the bracket, through which it extends. The idler feed roller 21 is mounted between a pair of arms 28 of a U-shaped lever 29 pivoted at 30 on a shaft carried by the bracket 23. The roller 21 is pressed against the feed roller 20 by a spring 31 so as to hold the tape in positive engagement with the feed roller. The idler roller is driven from the feed roller by a gear 22 meshing with the gear 25.

A guideway 33 is provided for the tape on the advancing side of the platen, the guideway being supported from the platen carriage frame 24. The guideway comprises a channel 34, having a lip 35 extending from the lower side thereof and terminating at about the same level as the top of the platen or slightly thereabove.

A second guideway 36 is provided on the opposite side of the platen beyond the feed rollers 20 and 21 and has a lip or stripping member 37 extending therefrom into a central annular recess 38 formed in the feed roller 20. The member 37 prevents the tape from adhering to and following around with the feed roller. The guide 35 is supported by a bracket 39 from the cross member 40 of the U-shaped lever 24.

The contacting surface of the feed rollers 20 and 21 and the end of the guide 33 are disposed on a line substantially tangent to the platen but slightly thereabove, so that the tape is normally entirely out of contact with the platen and is forced into contact therewith only over a small area, by the type-bar during the printing operation.

The guides 31 and 33 may be ribbed or fluted as shown in Figure 5 to reduce the area contact with the paper and thus reduce adherence of the gummed surface of the tape therewith and the feed rollers 20 and 21 may be milled or roughened to insure better grip-

ping of the tape. The idler feed roller 21 is cut away at the center so as to correspond to the face of the feed roller 20.

It will be noted that with our construction the tape engages the platen only during the actual printing operation and is not pressed against the platen by the feeding mechanism. Moreover, the feed rollers are disposed at substantially the same level as the top of the platen so as to exert a pull on the tape in such direction as to tend to remove it from the platen as the platen rotates around, thus preventing the tape from adhering to and following around with the platen.

It is obvious that numerous changes may be made in the construction of the feeding and guiding mechanism within the scope of the invention as defined by the appended claims and it is to be understood that all such changes are contemplated.

What is claimed is:

1. A tape feeding mechanism for a printing machine comprising a stationary frame, a platen mounted thereon, a guide for the tape positioned on the advancing side of the platen, and a tape feeding mechanism also mounted on said stationary frame and disposed on the opposite side of the platen, said guide and feeding mechanism being positioned relative to the platen so as to draw the tape across the platen substantially tangent thereto but out of contact therewith.

2. A tape feeding mechanism for a printing machine having a platen and printing means movable into and out of contact with said platen comprising a feed roller separate from said platen, said feed roller having its surface of contact with said tape on a line substantially tangent to the printing position of the platen and means independent of the movement of the printing means into contact with the platen, for rotating said feed roller to advance the tape across the platen.

3. A tape feeding mechanism for a printing machine having a rotating platen comprising a feeding roller independent of said platen, said feeding roller having its surface of contact with said tape on a line substantially tangent to the printing position of the platen, and means for driving said feed roller in unison with said platen.

4. A tape feeding mechanism for a printing machine having a platen comprising a tape feeding roller independent of said platen, said feeding roller having its surface of contact with said tape on a line substantially tangent to the printing position of the platen, and means for preventing adhesion of said tape to said feeding roller.

5. A tape feeding mechanism for a printing machine comprising a platen, a shaft therefor, a feeding roller, means for pressing said tape into contact with said feeding roller, said point of contact being on a line substantially tangent to the printing position

of the platen, means for rotating said platen shaft, a gear on said shaft, a gear secured to said feed roller and an intermediate idler gear for driving said feeding roller in unison with the platen.

6. A tape feeding mechanism for a printing machine comprising a platen, a shaft therefor, a tape feeding roller and an idler roller for pressing said tape into contact with said feeding roller, the surface of contact of said rollers being on a line substantially tangent to the printing position of the platen, means for rotating the platen shaft, a gear on said shaft, a gear secured to the feeding roller, an intermediate idler gear for driving said feeding roller in unison with said platen, and a gear secured to said idle roller meshing with said feeding roller gear.

7. A tape feeding mechanism for a printing telegraph machine having a rotating platen comprising a guide for the tape disposed on the advancing side of the platen, a feed mechanism positioned on the opposite side of the platen so as to draw the tape across the platen substantially tangent to the printing position thereof, said feed mechanism comprising a feeding roller, an idler roller for pressing the tape into contact with the feeding roller and a stripping device for removing the tape from the feeding roller should it adhere thereto.

8. A tape feeding mechanism for a printing telegraph machine having a platen comprising a guide for the tape positioned on the advancing side of the platen and a feed mechanism disposed on the opposite side thereof, said guide and feed mechanism being positioned relative to the platen so that the tape is normally held out of contact therewith.

9. A tape feeding mechanism for a printing telegraph machine having a platen comprising a guide for the tape positioned on the advancing side of the platen, a feed mechanism on the opposite side of the platen positioned so as to draw the tape across the platen substantially tangent to the printing position thereof, said feed mechanism comprising a feeding roller, and an idler roller for pressing the tape into contact with the feeding roller, one of said rollers having an annular recess on its periphery and a stripping device extending into said recess for removing the tape from the roller should it adhere thereto.

10. A tape feeding mechanism for a printing telegraph machine having a platen comprising a guide for the tape positioned on the advancing side of the platen, a feed mechanism on the opposite side of the platen positioned so as to draw the tape across the platen substantially tangent to the printing position thereof, said feed mechanism comprising a feeding roller, and an idler roller for pressing the tape into contact with the feeding roller, one of said rollers having an

annular recess in its periphery, a tape guide for said tape as it emerges from between said rollers, and an extension of said guide projecting into said recess for stripping the tape from the roller should it adhere thereto.

In testimony whereof we affix our signatures.

JAMES F. PORTER.
LAURENCE W. FRANKLIN.

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