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J. F. PORTER

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PLATEN FOR TAPE PRINTING MACHINES

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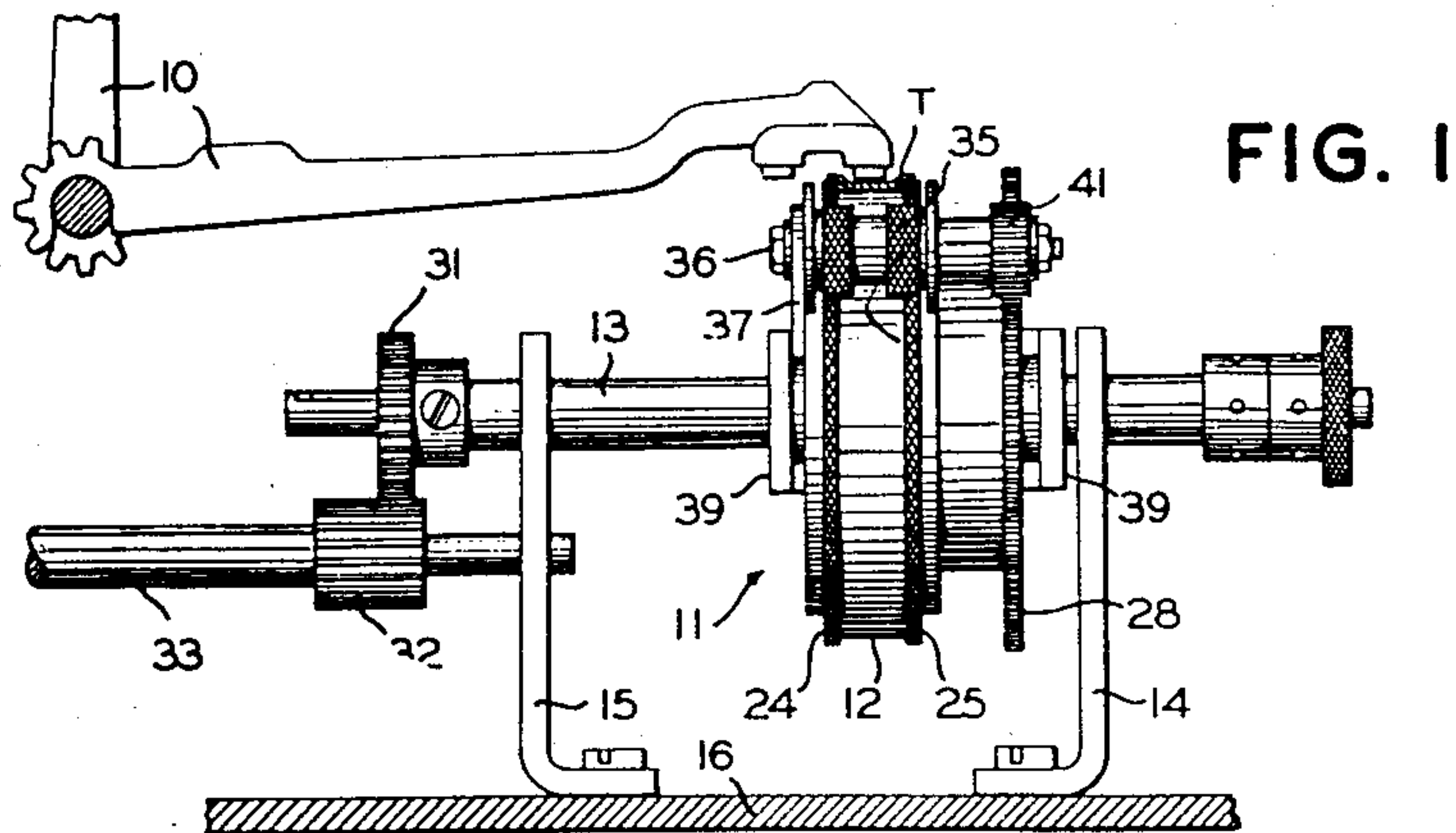


FIG. 1

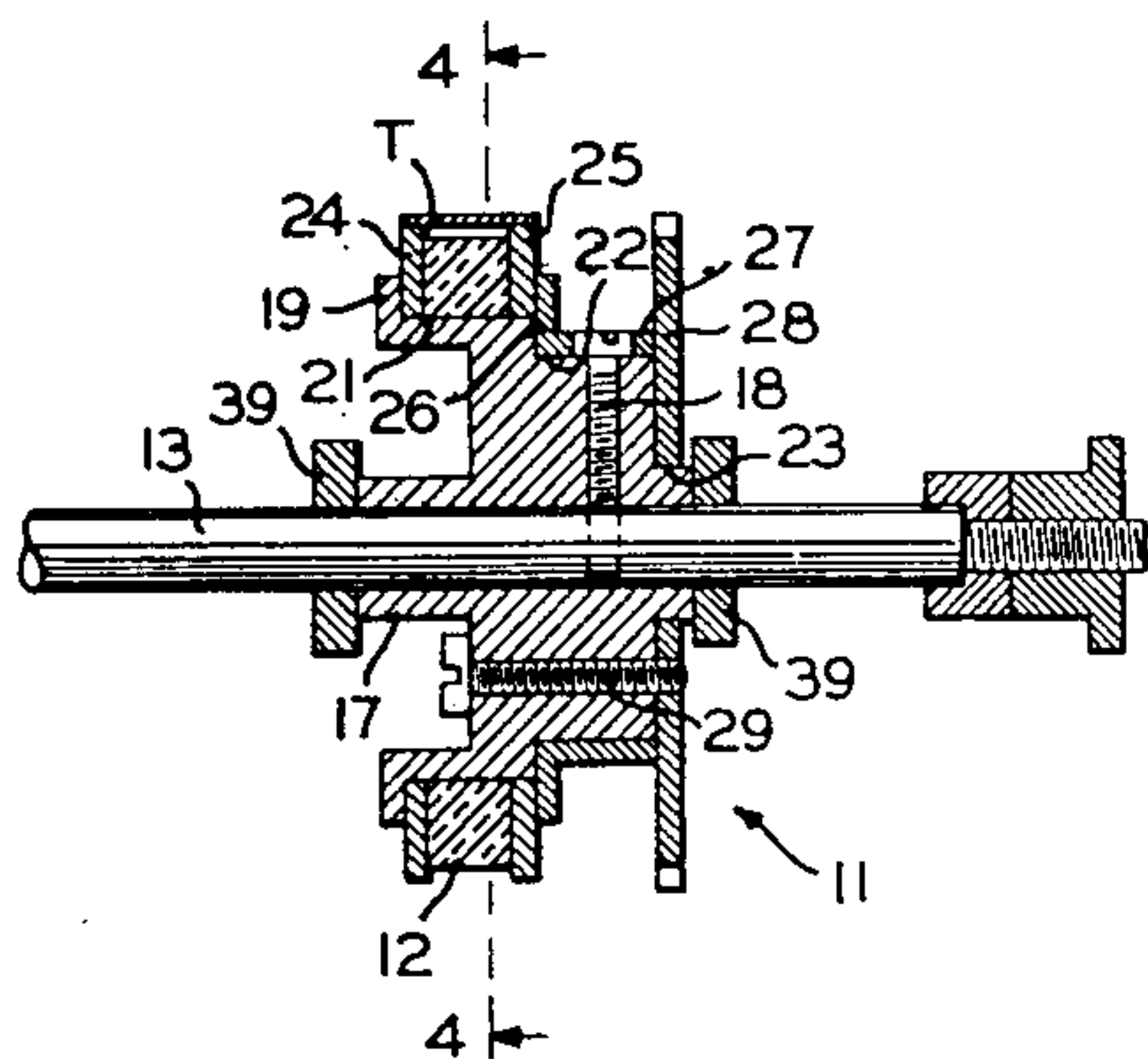


FIG. 2

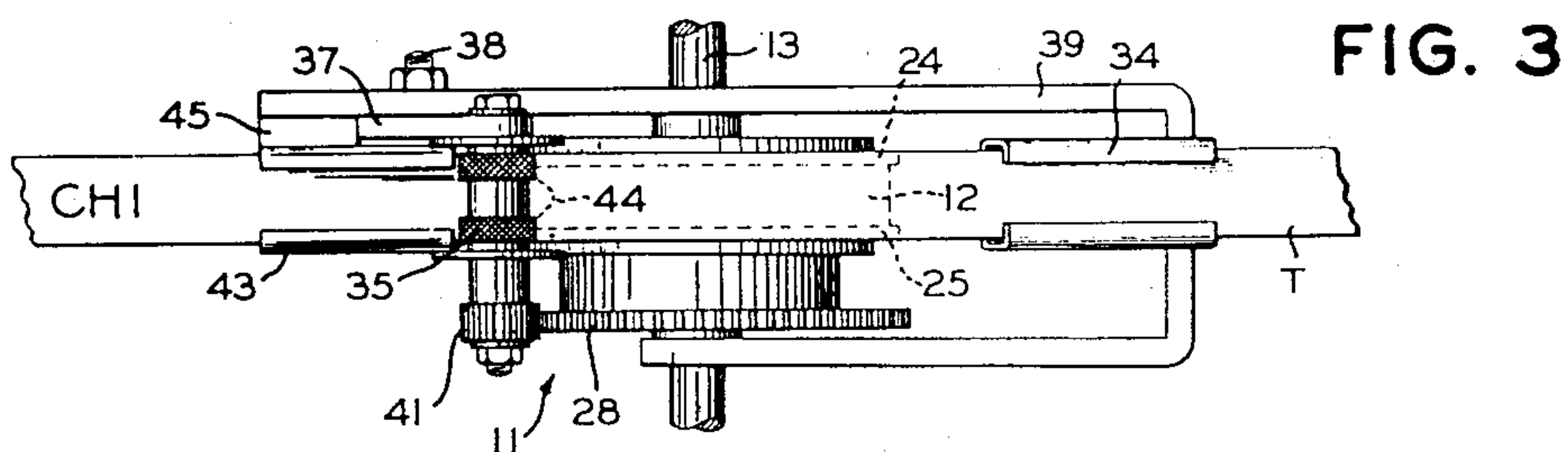


FIG. 3

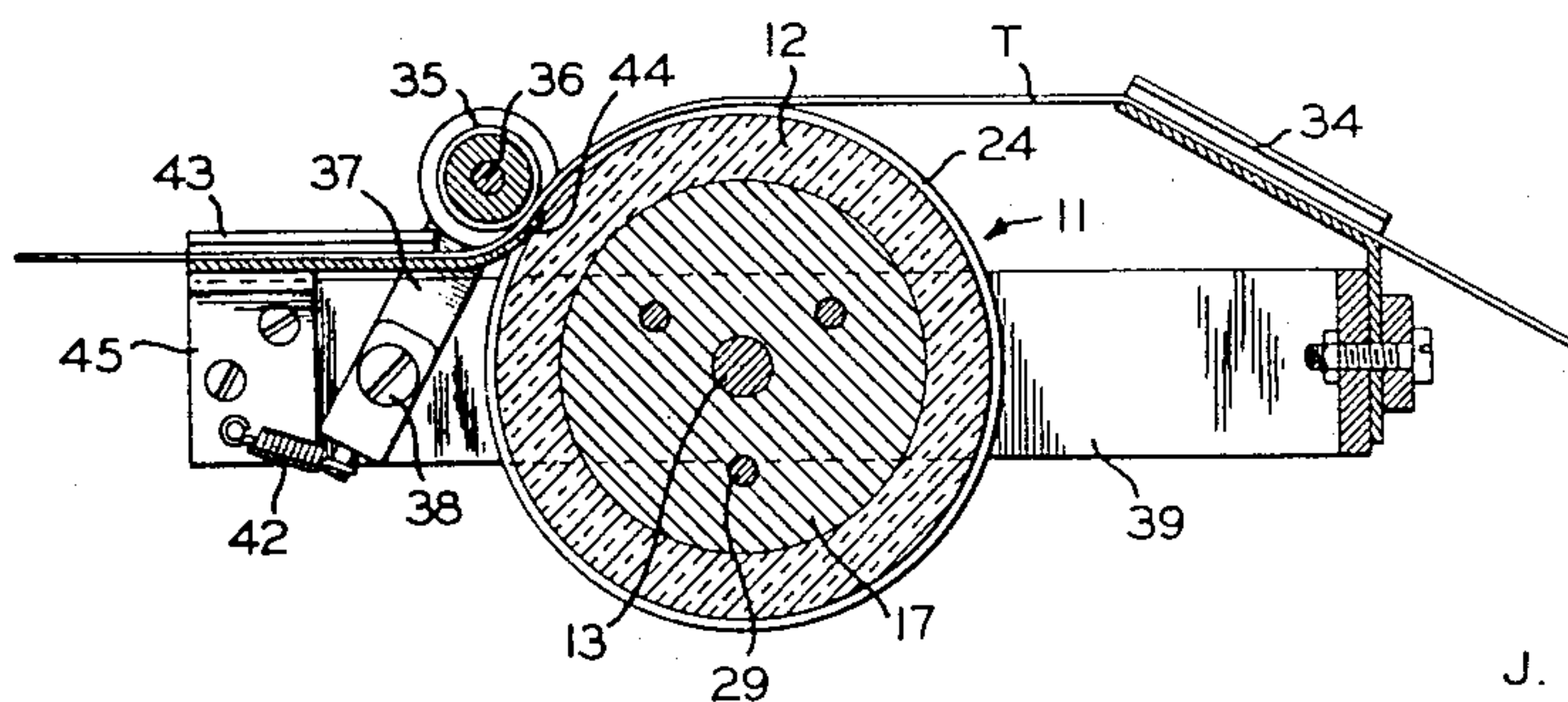


FIG. 4

INVENTOR

J. F. PORTER

BY *his* ATTORNEY

Eugene L. Brown

UNITED STATES PATENT OFFICE

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PLATEN FOR TAPE PRINTING MACHINES

James F. Porter, Yonkers, N. Y., assignor to The
Western Union Telegraph Company, New York,
N. Y., a corporation of New York

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11 Claims. (Cl. 178—42)

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

In tape printing telegraph machines of the type
5 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 the top of the platen and the tape is engaged at the
10 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 this construction the tape is drawn tightly over the platen and is in contact
15 therewith over a considerable part of the periphery thereof. This construction is clearly illustrated in a patent to Kleinschmidt, No. 1,567,599, granted December 29, 1925.

Difficulty has been experienced with this construction, however, when employing gummed tape, particularly in warm, humid 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
25 to employ a stripper in close engagement with the platen to 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 adhering to and following around with the platen.

Another object is to provide a tape feed mechanism in which the tape is normally maintained
35 out of contact with the platen and which is brought into contact with the platen only during the printing stroke.

Another object is to provide a platen construction which may be readily applied to existing machines with a minimum of change and expense.

Other objects and advantages of the invention will hereinafter appear.

In accordance with my invention I feed the tape across the platen normally slightly out of
45 contact therewith, the tape being pressed into engagement with the platen by the type bar during the printing stroke. For this purpose I have shown in the present embodiment a pair of metal rings secured to each side of the platen and of slightly larger diameter, upon which the margins of the gummed surface of the tape ride. The periphery of each of the metal rings is knurled and cooperates with a knurled feed roller to draw the tape around with the platen as it revolves.
50 The tape approaches the platen through a guide-

way which directs it on to the spaced rings and at the opposite side of the platen the tape enters a second guideway which preferably is provided with a stripping member extending beneath the tape between the knurled rings to strip the tape
60 therefrom should it tend to adhere to the rings or to the platen. There is little tendency for the tape to adhere, however, since the rings are narrow, engaging only a small area of the tape and the surface of contact is further reduced by the knurled surface.
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The paper is stretched across the periphery of the rollers slightly out of contact with the platen but sufficiently close thereto so that it may be readily forced against the platen during printing without mutilation. After the printing stroke the paper springs back, due to its natural resiliency, out of contact with the rubber surface of the platen.

In order that the invention may be more fully understood reference will be had to the accompanying drawing in which:

Figure 1 is a side elevation of a platen and feeding mechanism embodying the present invention;
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Figure 2 is a sectional view of the platen assembly;

Figure 3 is a plan view of the tape and tape guides; and,

Figure 4 is a longitudinal sectional view through
85 the platen and tape feed mechanism.

In the drawing, the invention is shown applied to a telegraph printing machine but it is not necessarily limited thereto, being equally applicable to other devices wherein it is desired to feed
90 a tape or similar strip of gummed material over a roller that moves with the tape and with which the tape engages.

The printing telegraph machine shown includes a number of type bars 10 normally disposed vertically and striking downwardly through an inking ribbon, not shown, against the tape as it passes over the top of the platen assembly. The platen, designated as 11, includes the usual rubber surfaced roller 12 mounted upon a platen shaft 13,
100 bearing in brackets 14 and 15 secured to the base 16 of the machine.

The complete platen assembly comprises a central hub member 17 secured to the shaft 13 by a screw 18. The hub 17 has a peripheral flange 19
105 and a series of stepped cylindrical surfaces 21, 22 and 23 upon which the remaining elements of the assembly are mounted. These elements comprise the rubber platen ring 12 and two metal rings 24 and 25 disposed on opposite sides thereof.
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The rings have a sliding fit on the surface 21 and are clamped tightly to the hub against the flange 19 by a ring 26 having a hub portion 27 fitting upon the surface 22 of the member 17. A gear wheel 28 fits over the collar 23 and the entire assembly is clamped together by screws 29.

The platen is driven by gears 31 and 32 from a shaft 33 actuated after each printing operation, by mechanism, not shown.

The tape is drawn from a suitable reel, not shown, through a guide 34 across the top of the platen, by a feeding roller 35, having knurled surfaces contacting with the periphery of each of the rings 24 and 25. The margins of the lower gummed surface of the tape T are in contact with the periphery of the rings 24 and 25 and its midportion is spaced slightly above the platen 12 as shown in Figure 2.

The feed roller 35 is mounted upon a stub shaft 36, carried by a bracket 37, pivoted at 38 to an extension of the U-shaped platen carriage frame 39. A gear 41 fixed to the feed roller shaft engages with the gear 28 secured to the platen shaft 13 so as to drive the feed wheel in unison with the rings 24 and 25. The roller 35 is pressed against the rings 24 and 25 by a spring 42, so as to grip the tape.

A second guideway 43 is provided on the left side of the platen, as viewed in Figure 4, beyond the feed roller 35 and has a lip or stripping member 44 extending beneath the tape between the rings 24 and 25 so as to prevent the tape from adhering to and following around with the platen. The guide 43 is supported by a bracket 45 from the U-shaped frame member 39.

The guides 34 and 43 may be ribbed or fluted, if desired, to reduce the area of contact with the paper and thus reduce adherence of the gummed surface of the tape therewith and the periphery of each of the rings 24 and 25 is knurled to reduce the area of contact with the tape and to effect a better gripping of the tape in cooperation with the feed roller 35.

It will be noted that with the present construction the tape is normally held out of contact with the platen 12 and is forced into engagement therewith only during the actual printing operation, as shown in Figure 1. After the type bar 10 is returned to its upright position the tape springs away from the platen due to its inherent resiliency. Consequently, if the operation of the machine is discontinued for an interval there is no tendency for the tape to adhere to the rubber surface of the platen. Due to the metallic nature of the rings 24 and 25 and to the small area of contact thereof with the tape, the tape does not easily adhere thereto. Should such a tendency exist the stripping member 44 readily removes the tape from the rings as they rotate around, thus preventing the tape from adhering to and following around therewith.

The type bar 10 is shown with both upper and lower case characters, the platen 12 being positioned in Figure 1 to receive the impact of the upper or outermost character. The platen shaft 13 is shiftable to the left, along the gear 32 by case shift mechanism, not shown, to position the platen beneath the lower or inner character. It will be noted that the type slug is recessed between the characters so as to straddle the ring 24 or 25, depending on the case position of the platen, at the instant of impression.

Obviously, various modifications and changes in the details of the apparatus shown can be made without departing from the invention and,

therefore, I do not desire to be limited to the exact construction shown except as required by the terms of the appended claims.

What I claim is:

1. A tape feeding mechanism for a printing machine having a rotating platen assembly comprising a platen, a tape feed roller disposed at each side of the platen and arranged to hold the tape concentric with, but entirely out of contact with, the platen.

2. A tape feeding mechanism for a printing machine having a rotating platen assembly comprising a platen, a tape support arranged to hold the tape concentric with, but entirely out of contact with, the platen.

3. A tape feeding mechanism for a printing machine having a rotating platen assembly comprising a platen, a supporting ring disposed on one side of the platen and of slightly greater diameter than the platen and means for guiding the tape over the platen with its margin supported on the periphery of said ring the difference in diameter of said platen and ring being such relative to the width of the platen as to maintain the tape spaced a substantial distance from the platen.

4. A tape feeding mechanism for a printing machine having a rotating platen comprising means for feeding the tape partially around the platen and means coaxial with the platen for engaging the margins only of the tape for retaining the midportion thereof a substantial distance out of contact with the platen.

5. A tape feeding mechanism for a printing machine having a rotating platen comprising means for feeding the tape partially around the platen and means coaxial with the platen for engaging the margins only of the tape for retaining the midportion thereof a substantial distance out of contact with the platen, said last means being arranged to permit the tape to be pressed against the platen during the printing stroke.

6. In a tape printing machine, a platen having a raised outer portion and a depressed central portion, means for guiding a tape across said platen normally a substantial distance out of contact with said depressed portion and means for forcing the tape against said central portion during the printing stroke.

7. In a tape printing machine, a rotatable platen having raised outer peripheral portions and a central depressed peripheral portion, means for guiding a tape partially around said platen and means extending into the central depression for preventing the tape from following around with the platen beyond a predetermined point.

8. In a tape printing machine a platen having a central resilient portion and raised outer metallic portions, and means for guiding the tape across the platen with its margins supported on said outer metallic portions and its midsection held a substantial distance out of contact with said resilient portion.

9. In a tape printing machine, a rotatable platen having a narrow knurled ring disposed on each side thereof, means for guiding tape across the platen with its margins supported on said knurled rings and its midsection concentric with and spaced a substantial distance from the platen.

10. In a tape printing machine, a rotatable platen having a narrow knurled ring disposed on each side thereof, means for guiding tape across the platen with its margins supported on said knurled rings and its midsection concentric with and spaced from the platen, and means extending

beneath the tape between said rings for stripping the tape therefrom.

11. In a tape printing machine, the combination of a rotatable platen having raised outer peripheral portions and a centrally depressed portion, means for guiding a tape across said platen, a type carrying element having spaced characters

thereon, and means for positioning the centrally depressed portion of the platen beneath either character, the type carrying element being recessed between the characters to enable the same to straddle said raised outer peripheral portions of the platen. 80

JAMES F. PORTER.

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