

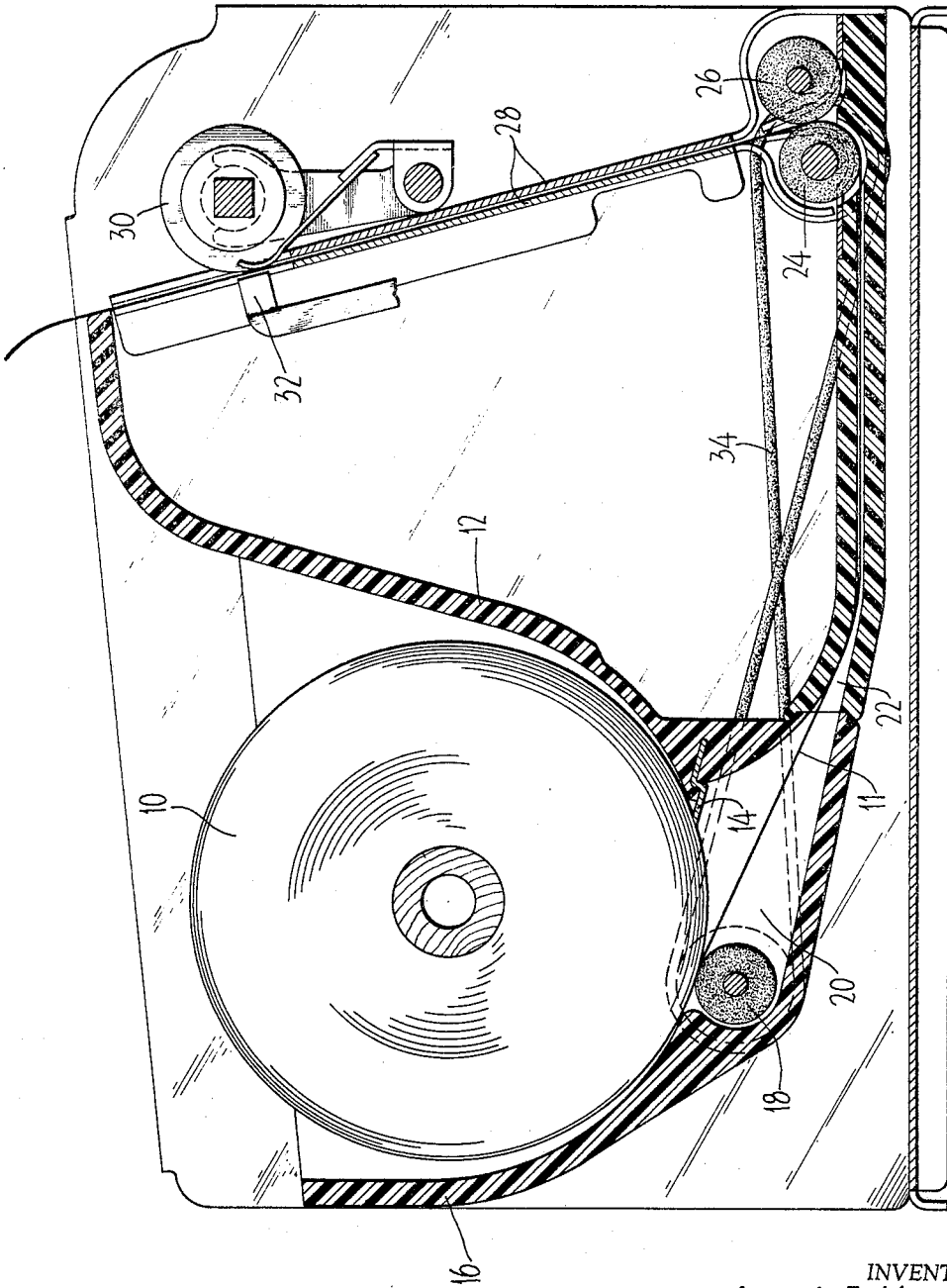
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TAPE FEED

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TAPE FEED

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1 Claim

ABSTRACT OF THE DISCLOSURE

A supply roll of paper tape rests on a knife edge and a powered traction drum. The drum rotates the paper roll against the knife edge which helps to peel the leading edge of the tape from the roll and direct it into a chute.

BACKGROUND

Heretofore it has been necessary to feed the leading end of the tape into the feed chute by hand, as, for example, in the machine of U.S. Patent No. 3,216,657.

SUMMARY

Objects of the invention include the provision of power means, such as a traction drum, for rotating a roll of paper tape in contact with a sharp probe, such as a straight knife edge, for peeling the leading edge of the tape from the roll and directing it into a chute.

DRAWINGS AND DESCRIPTION

These and other objects and advantages of the present invention will be apparent from the following description of a specific embodiment thereof taken in connection with the accompanying drawing, the single figure of which is an elevational cross-section of a paper-tape feed and paper-drive mechanism for a high-speed, electronic calculating machine.

In the drawing, a roll of paper 10 is supported in a cradle molded of synthetic resin plastic material. The fore slope 12 of the cradle carries a knife edge 14 at its lower edge, and a rear slope 16 ends just above a traction drum 18. The roll 10, when dropped or placed in the cradle, cannot rest on either of the slopes 12 or 16, but will necessarily slide or roll to the lowest point where it rests on knife edge 14 and drum 18. The cradle is sufficiently large, and of such shape that a standard, full roll rests on both the drum 18 and knife edge 14, and not on either one, or on the cradle slopes 12 and 16. Preferably, the upper level of the knife, that is, the ground surface flanking the sharp edge, lies tangent to the cylindrical surface of the full roll 10.

The roll-supporting region of the cradle opens between the drum 18 and knife edge 14 down into a converging channel 20, which is aligned with a paper guide chute 22, which is arranged to direct the end of the paper forward and upward into engagement with a drive roller 24 and a pressure roller 26. These rollers additionally drive the paper and direct it up between metal guides 28, past a type wheel 30 and a printing hammer 32 and out of the machine. Preferably, power is applied to the drive roller 24, and a belt 34 from this roller 24 drives the traction drum 18 under the paper roll 10.

The present machine threads the paper automatically. The operator needs to take care that the end of the paper is free, that is, not glued to the turn of the paper under it, and must drop the roll in the cradle so that a counter-clockwise rotation as viewed in the drawing unwinds the roll, that is, so that the end of the paper feeds forward off the bottom of the roll 10. Power may then be applied to rotate the drive roller 24 and traction roller 18. The drum 18 is preferably covered with rubber, which has a higher coefficient of friction with paper than does the metal knife edge 14. Since the weights on the drum 18 and knife edge 14 are approximately equal, the tangential, frictional force exerted by the traction drum 18 exceeds that encountered at the knife edge 14, so that the traction drum 18 rotates the paper roll 10 counter-clockwise as seen in the drawing. The paper in such a roll usually has a set, or curvature, such that the end of the tape tends to lie against the roll. Consequently, the operator generally need not take any special care, when placing the roll in the cradle, to place the end of the paper tape at the bottom, between the drum 18 and the knife edge 14. Rather, as the roll 10 is driven counter-clockwise by the traction drum 18, the end of the tape simply clings to the roll of paper and is carried into contact with the traction drum 18, at which point the drive is applied directly to the end of the paper. The frictional force exerted by the traction drum 18 on the roll 10 is slightly downward, and consequently the operation of the traction drum has no tendency to lift the roll 10 off the knife edge 14. Accordingly, the paper roll 10 is held against the knife edge by approximately half the weight of the roll, and, as the leading edge of the paper is driven against the knife edge, it is peeled off. As the paper roll 10 continues to turn, the projecting end of the paper strip extends down into the converging channel 20, by which it is guided to the chute 22, whence it is guided into the rolls 24, 26 and the guides 28.

Mechanism, not herein described or claimed, turns the drive roller 24 to feed the paper as it is needed. The belt 34 drives the drum 18 at the same time to reduce the tension on the paper strip at 11.

It will be apparent that the preferred specific embodiment herein shown and described is only an example of the structures embodying our invention.

We claim:

1. In combination in a power feed for a roll of paper for a calculating machine or the like,
 - a framework in the form of a hopper-like cradle for the placement of the paper roll therein and having an opening through which the paper passes upon turning the roll,
 - a guideway in register with the opening in said cradle adapted to guide the paper in its path of travel from the roll,
 - a traction drum mounted in said cradle for rotation along one side of the opening therein and axially parallel with the paper roll,
 - a knife secured in the opening in said cradle on the side opposed to said one side having its edge facing said traction drum parallel with the axis thereof,
 - said traction drum and said knife supporting the paper roll that spans the space between them while diminishing in size, the leading edge of the paper being directed toward the edge of said knife, and
 - drive means for rotating said drum to impart rotation to the paper roll thereby moving the leading edge of the paper toward the edge of said knife whereby the

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leading end of the paper is separated from the roll
and directed into said guideway.

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