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Schubert

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[54] **INKING MECHANISM FOR A POSTAGE METER**

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[52] **U.S. Cl.** **101/351**

[51] **Int. Cl.²** **B41F 31/30**

[58] **Field of Search** 101/91, 103, 241, 351, 101/349, 350, 352

[56] **References Cited**

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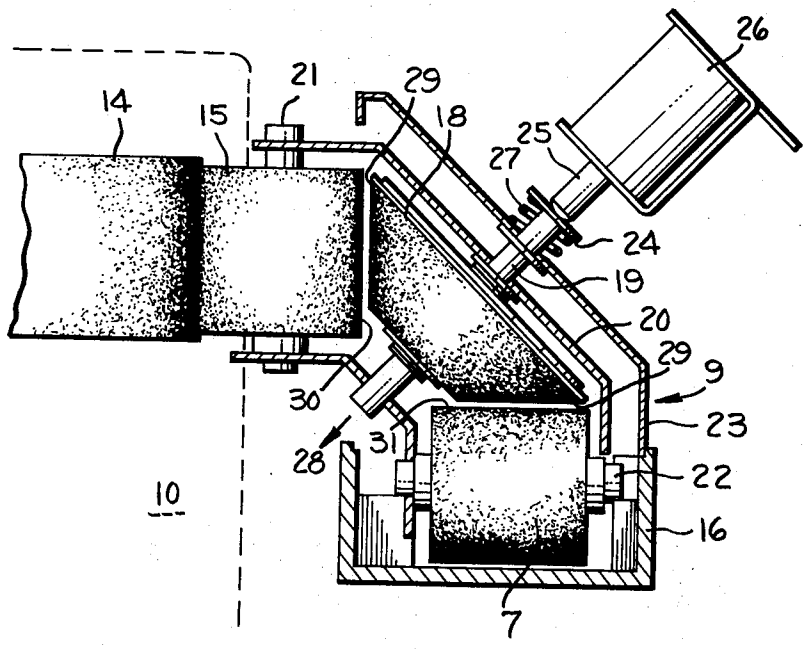
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Attorney, Agent, or Firm—William D. Soltow, Jr.; Albert W. Scribner; Robert S. Salzman

[57] **ABSTRACT**

An inking mechanism for inking the printing drum of a vertically mounted postage meter. A bevel-shaped transfer roller intermittently engages both a vertical inking roller which is in contact with the printing drum, and a horizontal supply roller disposed in an ink filled reservoir. As the printing drum rotates, the inking roller is made to rotate. The transfer roller transmits the rotative motion of the inking roller to the supply roller, which rotatively dips into the ink fluid. As all the rollers rotate, ink is fed from the reservoir to the printing drum.

1 Claim, 3 Drawing Figures



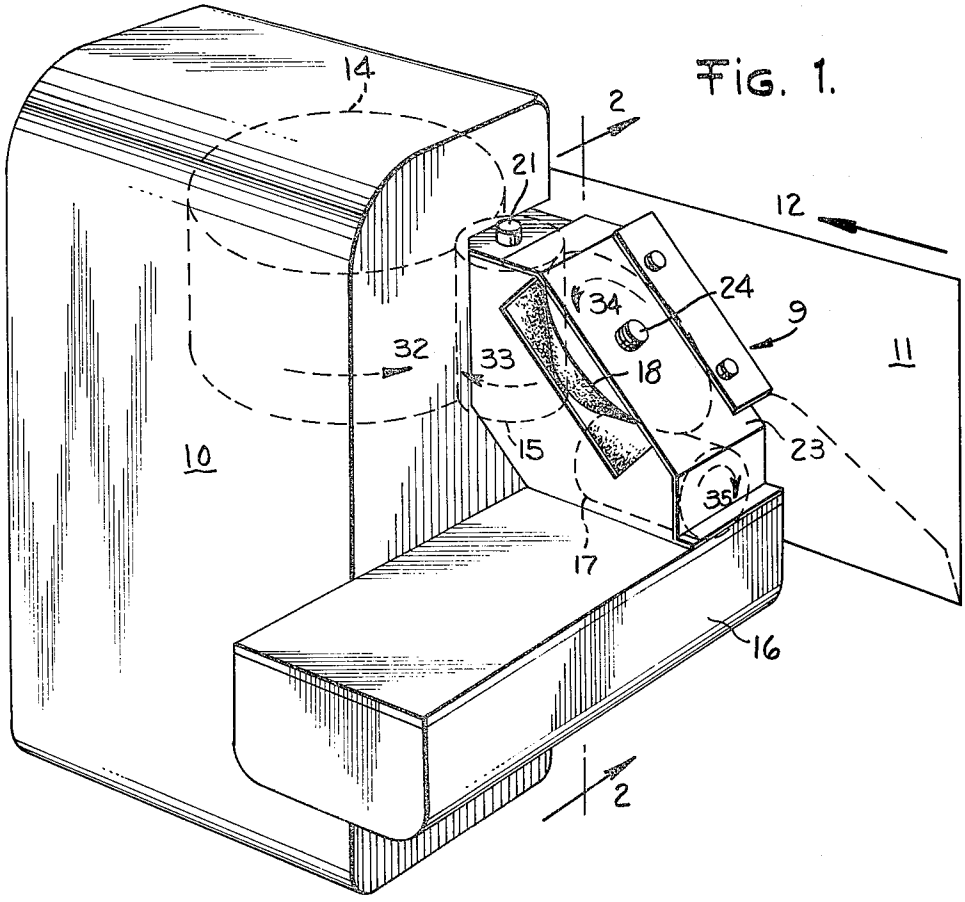

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16
2

Fig. 1.

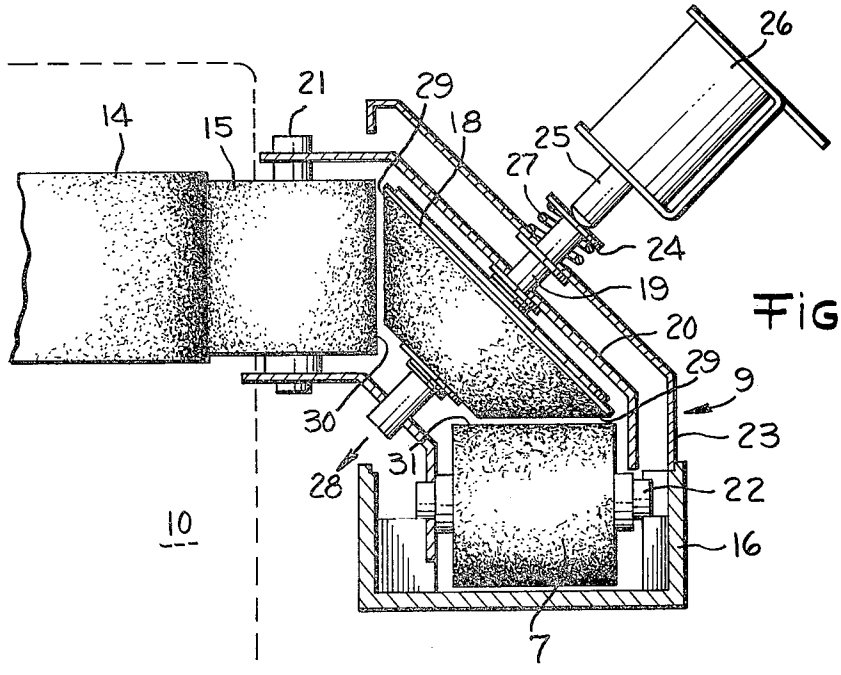
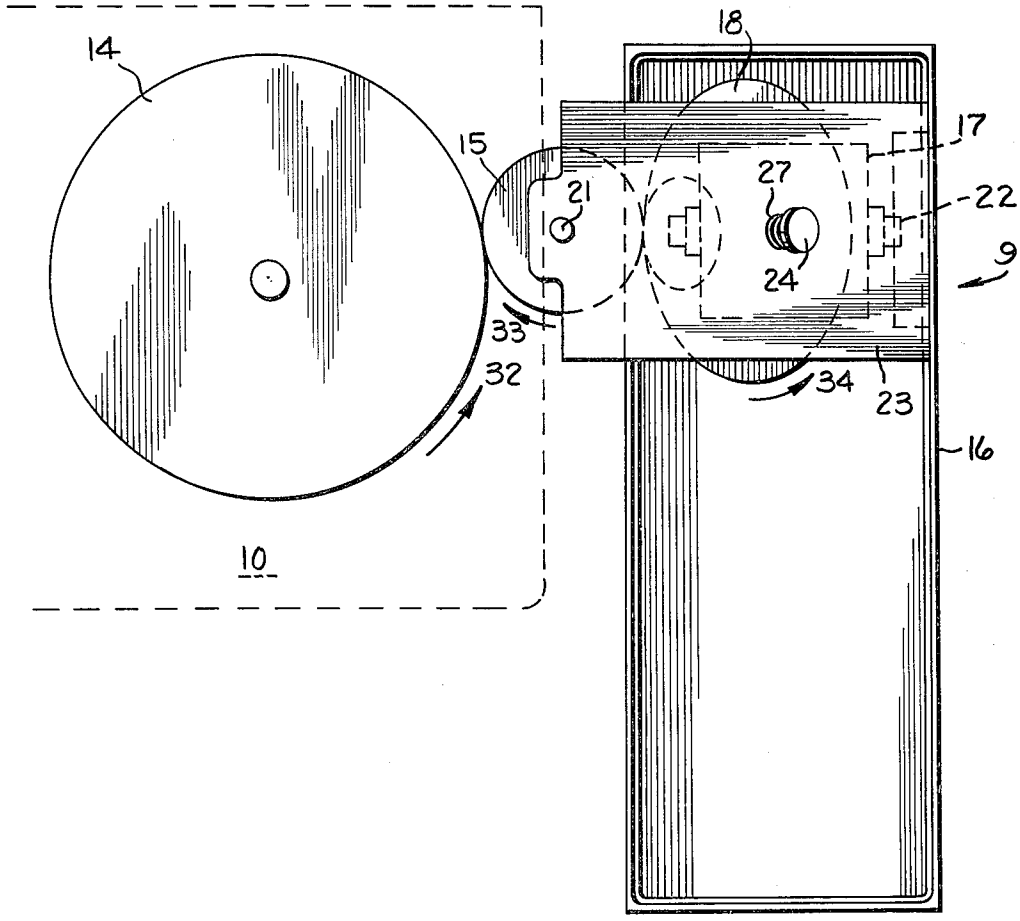

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Fig. 2.

Fig. 3.



INKING MECHANISM FOR A POSTAGE METER

SPECIFICATION AND RELATED APPLICATIONS

This invention relates to inking devices for postage meters, and more particularly to a new and improved inking mechanism for use with a vertically oriented postage meter of the type shown in the patent application, Ser. No. **476,618,** filed June **5, 1974.**

BACKGROUND OF THE INVENTION

In order to achieve high mail handling speeds, it has been determined that letters should be transported with a vertical orientation, i.e., on their edge. Where such systems also employ automatic metering (see application, Ser. No. **476,618**), the postage meter is by necessity also oriented in a vertical manner. When so disposed, the vertical meter cannot be supplied with ink for its print drum in the normal manner. Because of the changed orientation, the supply roller and the inking roller are caused to be rotatively mounted at a **90°** angle with respect to each other. This necessitates that the intermediately disposed transfer roller be designed to accommodate both these rollers, despite their diverse orientation.

SUMMARY OF THE INVENTION

The inking mechanism of this invention comprises a reservoir containing ink fluid. The reservoir is generally horizontally mounted with respect to the vertically oriented postage meter. A supply roller is rotatively mounted within the reservoir, and is caused to pick up the ink as it turns. A vertically oriented inking roller is continuously in rotative contact with a vertically disposed printing drum of the postage meter. A transfer roller is intermittently engageable with both the supply roller and the inking roller. The transfer roller has a beveled ink transferring surface, so as to resemble a frustum of a cone. This conical surface accomplishes a transition in rotative direction between the vertically oriented inking roller and the horizontally oriented supply roller.

When the transfer roller comes in contact with the inking roller and the supply roller, it assumes the rotation of the inking roller and transfers this rotation to the supply roller. The supply roller rotatively dips into the ink fluid in the reservoir. As all the rollers rotate, ink is transferred from the reservoir to the inking roller, and hence, to the printing drum of the postage meter.

The transfer roller is spring biased out of contact with the inking and supply rollers in the quiescent condition. A solenoid acts upon the transfer roller to move it against the spring during the inking condition. The solenoid is intermittently actuated.

It is an object of this invention to provide an improved inking mechanism for a postage meter;

It is another object of the invention to provide an inking device for a vertically oriented postage meter;

These and other objects of this invention will become more apparent and will be better understood with respect to the following detailed description, taken in conjunction with the accompanying drawings, in which:

FIG. **1** is a perspective view of the inking mechanism of the invention disposed in situ with a vertically oriented postage meter;

FIG. **2** is a side view of the inking mechanism of FIG. **1**; and

FIG. **3** is a top view of FIG. **1.**

DETAILED DESCRIPTION

Generally speaking, the invention is for a postage meter inking mechanism for a vertically oriented meter. The mechanism comprises a reservoir containing an ink fluid. The reservoir is generally oriented in a horizontal plane with respect to the vertically oriented postage meter. A supply roller is rotatively mounted within the reservoir, and is also generally horizontally disposed. A vertically oriented inking roller is mounted for rotative engagement with the printing drum of the postage meter. A transfer roller is disposed between and intermittently engageable with both of the inking and the supply rollers. When engaged, the transfer roller is caused to rotate when the inking roller rotates, and thereby causes the engaged supply roller to rotate. The supply roller will thus obtain ink from the reservoir as it turns, and the transfer roller will transfer this ink to the inking roller. Means are provided to engage the transfer roller with the inking and supply rollers.

Now referring to FIGS. **1** through **3,** and particularly to FIG. **1,** the inking device **9** of this invention is shown in situ with a vertically oriented postage meter **10.** The meter **10** receives each letter **11** moving by as shown by arrow **12.** A printing drum **14** is shown in contact with an inking roller **15** of the inking mechanism. The inking mechanism also comprises a reservoir **16** filled with ink fluid, and a supply roller **17** rotatively mounted within the reservoir. A transfer roller **18** is secured to shaft **19,** which is rotatively mounted within frame members **20** (FIG. **2**). The frame members **20** also rotatively support the shaft **21** of the inking roller **15** and the shaft **22** of the supply roller as shown in FIG. **2.**

Shaft **19** of the transfer roller **18** has a flange **24,** which receives a push rod **25** of solenoid **26.** A coil spring **27** is disposed between the flange **24** and the outer frame member **23.**

OPERATION OF THE INKING MECHANISM

The transfer roller **18** is biased out of engagement with inking roller **15** and supply roller **17** by means of coil spring **27.** Spring **27** is in compression between flange **24** and outer frame member **23,** thus maintaining the transfer roller **18** disengaged from the inking and supply rollers.

When the solenoid **26** is actuated, push rod **25** is caused to push against flange **24.** This in turn causes shaft **19** and the transfer roller **18** to move downwardly as shown by arrow **28** in FIG. **2.** When this occurs, the beveled surface **29** of the transfer roller **18** comes into simultaneous contact with the inking roller surface **30** and the supply roller surface **31** as shown in FIG. **2.**

When postage is to be printed by the printing drum **14,** it rotates, as shown by arrow **32** of FIGS. **1** and **3.** As the drum rotates, it causes the inking roller, which is in contact with the printing drum **14,** to rotate as shown by arrow **33.** If the transfer roller **18** is in contact with roller **15,** it is likewise caused to turn as shown by arrow **34.** Because the transfer roller **18** is also in contact with roller **17** as well as roller **15** in its engaged position, supply roller **17** is also made to turn as shown by arrow **35** of FIG. **1.** When the supply roller **17** rotates, its surface **31** dips into the ink fluid in reservoir

16, thus coating surface 31 with ink. As all the rollers 15, 17 and 18 continue to rotate, the ink on surface 31 of the supply roller 17 is transferred to surface 29 of the transfer roller 18, and hence, to the surface 30 of inking roller 15. Because the inking roller 15 is now coated with ink it will supply ink to the printing drum 14, which is in rotative contact with the inking roller as aforementioned.

The solenoid 26 is actuated only intermittently, i.e., only for a short period between a number of printing drum 14 rotations. In other words, several letters 11 will be printed with postage, before the solenoid 26 will be caused to actuate. The solenoid 26 will then remain actuated until a sufficient quantity of ink is transferred from the reservoir 16 to the printing drum 14. The solenoid 26 will then be caused to deactuate until the drum 14 becomes dry again (due to a number of printings), at which time the solenoid will reactuate. The circuitry associated with the actuation of the solenoid 26 is the subject of another application, and will not be dealt with herein.

As will be noted, the reservoir 16 and the supply roller 17 are disposed generally within a horizontal plane with respect to the vertically disposed postage meter 10, printing drum 14, and inking roller 15. Because the inking roller 15 and the supply roller 17 are mounted approximately 90° with respect to each other, the transfer roller 18 is caused to be designed with a beveled surface 29 in order to accommodate the transfer of rotative motion and ink.

While a particular design is shown for the disclosed inking mechanism of this invention, it is to be understood that the spirit and scope of the invention is encompassed by the appended claims.

What is claimed is:

1. A postage meter inking mechanism for a vertically oriented postage meter having a vertically oriented printing drum, comprising:

a reservoir containing ink fluid, said reservoir generally oriented in a horizontal plane with respect to the vertically oriented postage meter;

a vertically oriented inking roller mounted for rotative engagement with a vertically oriented printing drum of said postage meter, said inking roller supplying ink to said drum as it rotatively engages therewith;

a supply roller generally horizontally mounted for rotation within said reservoir, said supply roller obtaining a supply of ink as it rotates within said reservoir;

a bevel-shaped transfer roller mounted for axial movement along a diagonal axis between said inking roller and said supply roller, said bevel-shaped transfer roller being intermittently engageable with said inking roller and said transfer roller, and when so engaged being caused to rotate when the inking roller is caused to rotate, and thereby causing the engaged supply roller to likewise rotate, whereby the supply roller will obtain ink from said reservoir as it turns, and said bevel-shaped transfer roller will transfer the obtained ink to said inking roller;

a spring mounted along said diagonal axis of the transfer roller, in biasing opposition to the movement of said transfer roller into engagement with said inking roller and said supply roller; and

engaging means mounted in operative contact with said transfer roller for causing said transfer roller to move in an axial direction along said diagonal axis, and against the biasing of said spring for engaging said inking roller and said supply roller, said engaging means comprising a intermittently energized solenoid having a push rod in operative engagement with said bevel-shaped transfer roller for causing said transfer roller to move axially into intermittent engagement with the supply roller in order to supply the vertical printing drum with ink.

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