Jan. 13, 1931. E. E. EDMISTON ET AL 1,788,455

INKING ROLLER

Filed Dec. 10, 1928

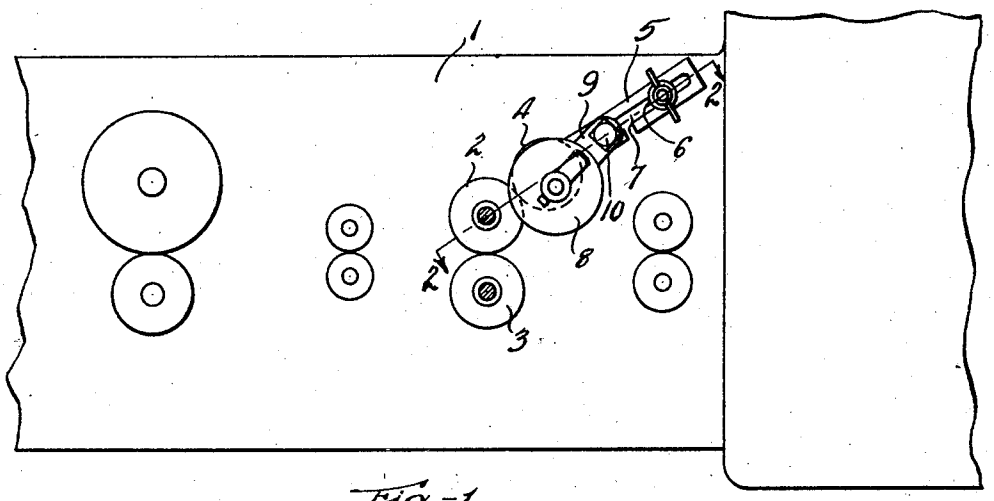


Fig.-1

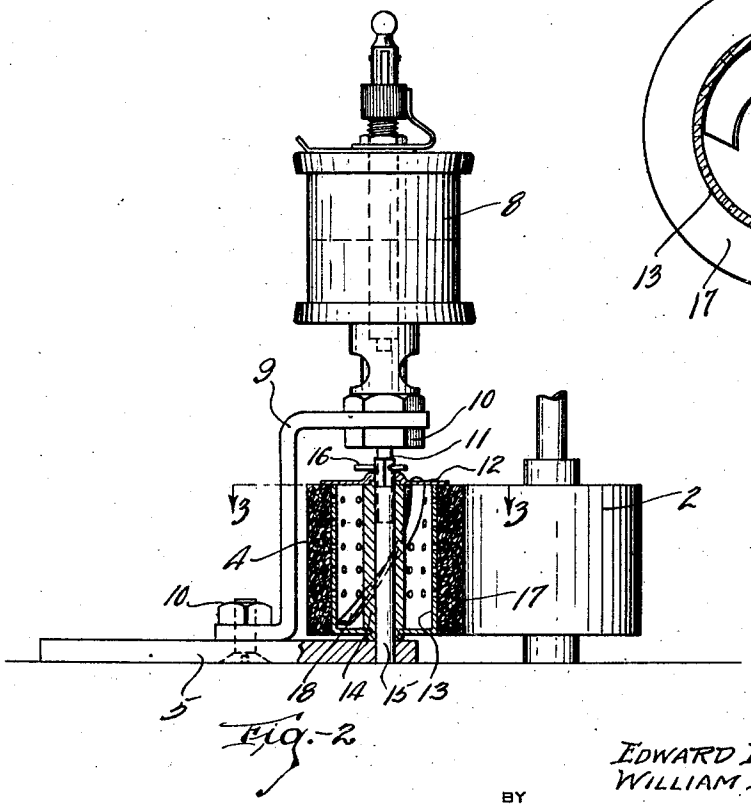


Fig.-2

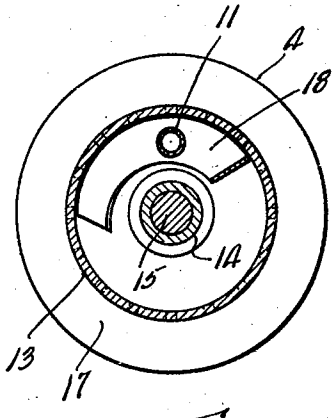


Fig.-3

INVENTORS

EDWARD E. EDMISTON AND
WILLIAM B. READ.

BY

Milburn and Milburn.

ATTORNEYS

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UNITED STATES PATENT OFFICE

EDWARD E. EDMISTON AND WILLIAM B. READ, OF CLEVELAND, OHIO

INKING ROLLER

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This invention relates to an improved form of inking roller for use in connection with check-endorsing machines and the like.

As is well-known to those who are familiar with the art to which the present invention relates, there are devices of this general type in which ink is applied to the inking roller from time to time from the outside and by hand. This process is quite laborious and involves the loss of time which might be saved by the employment of such a device as here set forth.

In other instances, it has been proposed to maintain the inking roller constantly full of ink which finds its way out through perforations in the drum of the inking roller. This type of device is also open to objection since there is danger of the ink being fed too plentifully to the felt covering of the inking roller with consequent blurring and furthermore, there is the objectionable feature of the ink clogging the openings of the apertures in the drum of the roller during periods of idleness.

In other prior devices, the inking roller is filled with ink from time to time, and during operation of the device, the supply of ink is constantly diminished. As a result the ink is not fed uniformly to all parts of the covering of the roller and the impression of the die is not uniform in all parts and at all times.

It is therefore the object of the present invention to devise an inking roller which may be supplied with ink only to an extent commensurate with the use required during operation. That is, according to the present invention, the inking roller does not contain any supply of ink except that which is constantly fed thereto during operation and according to the actual need.

Another object consists in providing such a device with means whereby the ink may be supplied only as required for use during operation, and at the same time, may be automatically fed from the inside of the perforated drum of the inking roller to the outside thereof by centrifugal action.

A still further object consists in the provision of such a device in which a standard type of ink reservoir may be employed for feeding the ink to the inking roller according to the immediate need during operation.

Other objects will appear from the following description and claims when considered together with the accompanying drawing.

Fig. 1 is a diagrammatic plan view illustrating the installation of my present form of device in a check-endorsing machine; Fig. 2 is a detail view taken on line 2—2 of Fig. 1; and Fig. 3 is another detail view taken on line 3—3 of Fig. 2.

The structure and arrangement of the parts comprised in the well-known form of check-endorsing machine are here illustrated only in a general way, as may be necessary to illustrate the relative arrangement of the present improved inking roller with respect to the other parts of the check-endorsing machine. This type of machine comprises the table 1 upon the upper side of which are arranged the series of rollers for feeding the checks for the endorsing operation. These rollers are operated in pairs and are all positively driven from a motor arranged upon the under side of the table 1. The roller which carries the die for endorsing the check is indicated by reference numeral 2 and the presser roller associated therewith is indicated by reference numeral 3. The die roller is likewise positively driven from the motor. The inking roller is indicated in a general way in Fig. 1 by reference numeral 4 and is supported by a bracket 5 which has detachable engagement upon the table 1 by means of any suitable attachment, as for instance, the wing nut 6 engaging the slot 7 in the bracket arm 5. Any suitable means may be further employed for maintaining the bracket arm 5 in proper fixed position. It is understood that the inking roller 4 engages the die roller 2 so as to supply ink thereto. The inking roller 4 is freely mounted for rotation by engagement with the die roller 2 and is not positively driven from the motor which drives the other rollers.

Those who are familiar with this type of machine will understand that all of the rollers herein referred to are mounted for rotation upon vertically disposed axes and that the checks are fed therethrough in vertical

position one at a time. The present form of machine has a speed of operation corresponding to approximately 150 R. P. M. The rate of operation may, however, vary, and according to the present invention, the rate of feeding of the ink to the inking roller may be varied accordingly.

In the present device, there is employed the usual form of ink reservoir 8 which consists of a glass container well known in the art. This reservoir is mounted upon the angular form of bracket 9 which is clamped by means of the bolt and screw 10 to the bracket arm 5. The bracket 9 is so arranged as to position the ink reservoir 8 directly above the inking roller 4 for supplying the ink thereto. The ink from the reservoir 8 is adapted to be fed drop by drop through the depending tube 11 which extends through an opening in the removable top 12 of the inking roller. The tube 11 is positioned off-center with respect to the axis of the inking roller for a reason to be later explained. The inking roller comprises the perforated cylindrical drum 13 which is closed at its lower end and which has an open upper end to receive the cover 12. This drum is provided with the hollow bushing 14 for mounting upon the upright stem 15 provided upon the horizontal bracket 5. The stem 15 is of cylindrical form throughout its entire extent so as to permit rotation of the inking roller thereupon except that the upper end portion of the stem 15 above the inking roller is of squared form so as to receive the squared central opening through the cover 12. A pin 16 extends through an opening in the squared portion of the stem 15 so as to prevent accidental removal of the cover 12. The drum 13 is provided with a felt covering 17 which is adapted to receive the ink through the openings in the drum 13 from the inside thereof.

Depending from the under side of the cover 12, there is provided a finger 18 which is attached to the cover at a point off-center and extends angularly in a substantially curved form toward the bottom corner of the drum 13. This member is so constructed and arranged as to extend under the tubular member 11 so as to receive the ink as it drops therefrom. The outer edge of the finger 18 is sufficiently close to the side wall of the drum 13 to transfer a portion of the ink received thereby to the inner surface of the drum. The remaining portion of the ink drops from the inner edge of the finger 18, is picked up by the bottom end of the finger, and the rotary movement of the drum will cause this ink to be carried up the finger and distributed from the outer edge of the finger to the inner surface of the drum. The lower end of the finger 18 is very close to the bottom of the drum and there is ensured a supply of ink to the entire surface of the drum during operation of the device. According to the present invention, the rotary motion of the drum 13 is depended upon to carry the ink, as it is received upon and distributed by the finger 18, upwardly over the inner surface of the drum 13 so as to form a film of ink entirely thereover.

During periods of idleness, the supply of ink from the reservoir 8 is cut off so that no ink whatever is fed to the inside of the inking roller. When it is desired to operate the check-endorsing machine, the ink supply from the reservoir 8 is opened so as to feed the ink to the inside of the drum. During this time, the ink will be fed drop by drop from the lower end of the tube 11 and received upon the finger 18 which transfers part of the ink directly to the inside of the drum 13, while the other part of the ink is picked up by the finger and transferred to the drum. Rotation of the drum 13 will cause the ink which is supplied in such manner to be spread as a film over the entire surface of the drum and as a result, the ink will be fed to all parts of the drum. As before stated, the ink is supplied only at a rate of speed corresponding approximately to the immediate requirements of the machine during its operation. As a result, the ink is not permitted to accumulate in the drum to any appreciable depth, but is supplied only according to the rate of use. In other words, the ink is transferred through the openings of the drum 13 to the felt covering 17 at substantially the same rate of speed as it is fed to the drum.

As an advantage of the present invention, the ink is supplied automatically to the inking roller and consequently it is not necessary to ink the roller from the outside, as has been the custom in certain machines of this same general type. Furthermore, since there is no appreciable accumulation of ink within the inking roller, the inside of the roller is at all times kept clean and there is no danger of the openings through the drum 13 becoming clogged. Furthermore, the felt covering 17 is preserved in proper porous condition for feeding of the ink thereto and therethrough. With this device, all portions of the felt covering 17 are supplied with ink in the same uniform manner and consequently, the impression of the endorsement presents a uniform appearance throughout. The present device may be readily attached to the present form of check-endorsing machine without involving the change of any other parts, and also the standard form of ink reservoir may be employed for feeding the ink to the inking roller. Hence, the present form of device may be manufactured and sold at comparatively low cost.

Because of the absence of perforations in the lowermost part of the drum 13, as clearly indicated in Fig. 2, there is no danger of any film of ink in the bottom seeping out through

the drum to the covering 4 while the device is idle. As a matter of fact, the ink for the most part is distributed directly from the finger to the drum as it falls upon the finger and without reaching the bottom of the drum.

The present disclosure is merely for purposes of illustration and there may be effected various modifications without departing from the spirit of the present invention.

What I claim is:

1. An inking device comprising a hollow substantially cylindrical roller mounted for rotation upon a substantially vertical axis, said roller being perforated from a point near the bottom throughout substantially the entire height thereof, and means for supplying ink from the inside of the otherwise substantially empty roller through said perforations at a rate corresponding substantially to the rate of use of the ink by the roller.

2. An inking device comprising a perforated, hollow roller mounted for rotation upon a substantially vertical axis, said roller having closed top and bottom means for supplying ink from above to the inside of the otherwise substantially empty roller at a rate corresponding substantially to the rate of use of the ink by the roller, and means for distributing the ink over the surface of the roller in a substantially uniform manner.

3. An inking device comprising a perforated, hollow substantially cylindrical roller mounted for rotation upon a substantially vertical axis, means for supplying ink from above to the bottom part of the inside of the otherwise substantially empty roller at a rate corresponding substantially to the rate of use of the ink by the roller, and means for distributing the ink over the surface of the roller in a substantially uniform manner.

4. An inking device comprising a perforated, hollow roller mounted for rotation upon a substantially vertical axis, means for supplying ink to the bottom part of the inside of the otherwise substantially empty roller at a rate corresponding substantially to the rate of use of the ink by the roller, means for conveying the ink to the surface of the roller and for distributing the same thereover in a substantially uniform manner.

5. An inking device comprising a perforated, hollow roller mounted for rotation upon a substantially vertical axis, means for supplying ink to the inside of the roller at a point removed from the inner surface thereof and at a rate corresponding substantially to the rate of use of the ink by the roller, means for conveying the ink to the surface of the roller and for distributing the same thereover in a substantially uniform manner.

6. An inking device comprising a perforated, hollow roller mounted for rotation upon a substantially vertical axis, means for supplying ink through the top of the roller to the inside thereof at a point removed from the inner surface thereof and at a rate corresponding substantially to the rate of use of the ink by the roller, and inclined means adjacent the inner surface of the roller for conveying the ink to the roller and for distributing the same thereover in a substantially uniform manner.

7. An inking device comprising a perforated, hollow roller mounted for rotation upon a substantially vertical axis, means for supplying ink through the top of the roller to the inside thereof at a point removed from the inner surface thereof and at a rate corresponding substantially to the rate of use of the ink by the roller, inclined means adjacent the inner surface of the roller and terminating in close proximity to the bottom of the roller to receive and convey the ink to all parts of the inner surface of the roller, whereby the ink will be distributed by the rotary movement of the roller in a substantially uniform manner over the entire surface thereof.

8. An inking device comprising a perforated, hollow roller mounted for rotation upon a substantially vertical axis, means for supplying ink through the top of the roller to the inside thereof at a point spaced from the inner surface thereof and at a rate corresponding substantially to the rate of use of the ink by the roller, means depending from the top of the roller in a substantially spiral form in close proximity to the inner surface of the roller and terminating at a point near the bottom of the roller, said depending means being so positioned as to receive the ink and to convey the same to the inner surface of the roller, whereby the rotary motion of the roller will distribute the ink in a substantially uniform manner over the entire surface of the roller.

9. An inking device comprising a perforated, hollow roller mounted for rotation upon a substantially vertical axis, said roller having a removable top, means for supplying ink through the said top at a rate corresponding substantially to the rate of use of the ink by the roller, means fixed to the under side of the top and depending therefrom in an inclined manner and terminating at a point near the bottom of the inner surface of the roller, said depending means being so positioned as to receive the ink and to convey the same to the inner surface of the roller, whereby the motion of the roller will distribute the ink in a substantially uniform manner over the entire surface of the roller.

10. An inking device comprising a perforated, hollow roller mounted for rotation upon a substantially vertical axis, said roller having a removable top, means for supplying ink through the said top at a rate corresponding substantially to the rate of use of the ink by the roller, means fixed to the under side of the top and depending therefrom in an inclined manner and terminating at a point near

the bottom of the inner surface of the roller, said depending means having its outer edge closely adjacent the inner surface of the roller and having its lower end closely adjacent the bottom of the drum, whereby the rotary motion of the drum will cause the ink to be distributed from the outer edge of the depending means so as to cover the entire inner surface of the drum.

11. An inking device comprising a perforated, hollow roller mounted for rotation upon a substantially vertical axis, said roller having a removable top, means for supplying ink through the said top at a rate corresponding substantially to the rate of use of the ink by the roller, means fixed to the under side of the top and depending therefrom in an inclined manner and terminating at a point near the bottom of the inner surface of the roller, said depending means having its outer edge closely adjacent the inner surface of the roller and its inner edge free to permit ink to drop therefrom to the bottom of the drum, whereby a portion of the ink will be transferred directly from the outer edge of the depending means to the drum, and the remaining portion of the ink will drop from the inner edge of the depending means to the bottom of the drum, and the lower end of said depending means being in close proximity to the bottom of the drum, whereby the ink in the bottom of the drum will be picked up by the depending means and distributed from the outer edge thereof to the inner surface of the drum, and whereby the rotary motion of the drum will cause the ink to be distributed from the outer edge of the depending means in a uniform manner to all portions of the inner surface of the drum.

12. An inking device comprising a perforated, hollow roller mounted for rotation upon a substantially vertical axis, means for supplying ink from above to the interior of the said roller, and means for automatically distributing the ink upwardly over the inner surface of the said roller and outwardly through the perforations thereof in a substantially uniform manner.

13. An inking device comprising a perforated, felt-covered hollow roller mounted for rotation upon a substantially vertical axis, means for applying ink from above to the bottom part of the said roller, and means for automatically distributing the ink upwardly over the inner surface of the said roller and outwardly through the perforations thereof in a substantially uniform manner to the felt covering.

14. An inking device comprising a perforated, hollow roller mounted for rotation upon a substantially vertical axis, means for supplying ink to the bottom part of the inside of the otherwise substantially empty roller at a rate corresponding substantially to the rate of use of the ink by the roller, and means for automatically distributing the ink from the bottom part of the roller upwardly thereover and outwardly through said perforations.

15. An inking device comprising a perforated, hollow roller mounted for rotation upon a substantially vertical axis, means for supplying ink to the inside of the roller at a point removed from the inner surface thereof and at a rate corresponding substantially to the rate of use of the ink by the roller, and means for automatically distributing the ink upwardly over the surface of the roller in a substantially unifom manner and outwardly through said perforations.

16. An inking device comprising a perforated, hollow roller mounted for rotation upon a substantially vertical axis, means for supplying ink through the top of the roller to the inside thereof at a point removed from the inner surface thereof and at a rate corresponding substantially to the rate of use of the ink by the roller, and inclined means for automatically distributing the ink upwardly over the surface of the roller in a substantially uniform manner and outwardly through said perforations.

17. An inking device comprising a perforated, hollow roller mounted for rotation upon a substantially vertical axis, means for supplying ink through the top of the roller to the inside thereof at a point removed from the inner surface thereof and at a rate corresponding substantially to the rate of use of the ink by the roller, and inclined means within said roller extending upwardly from the bottom part thereof, whereby the ink will be distributed by the rotary movement of the roller in a substantially uniform manner over the inner surface thereof and outwardly through said perforations.

In testimony whereof, we hereby affix our signatures.

EDWARD E. EDMISTON.
WILLIAM B. READ.