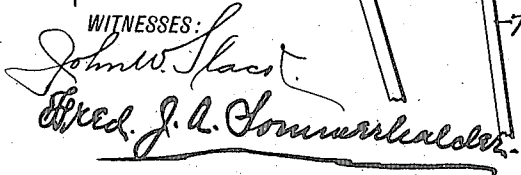


APPLICATION FILED DEC. 18, 1913. RENEWED JAN. 12, 1915.

Patented July 11, 1916.

2 SHEETS—SHEET 1.



INVENTOR
George H. Graham

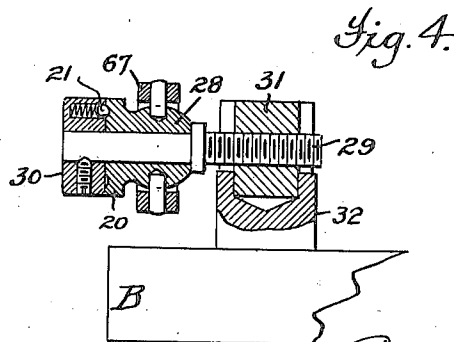
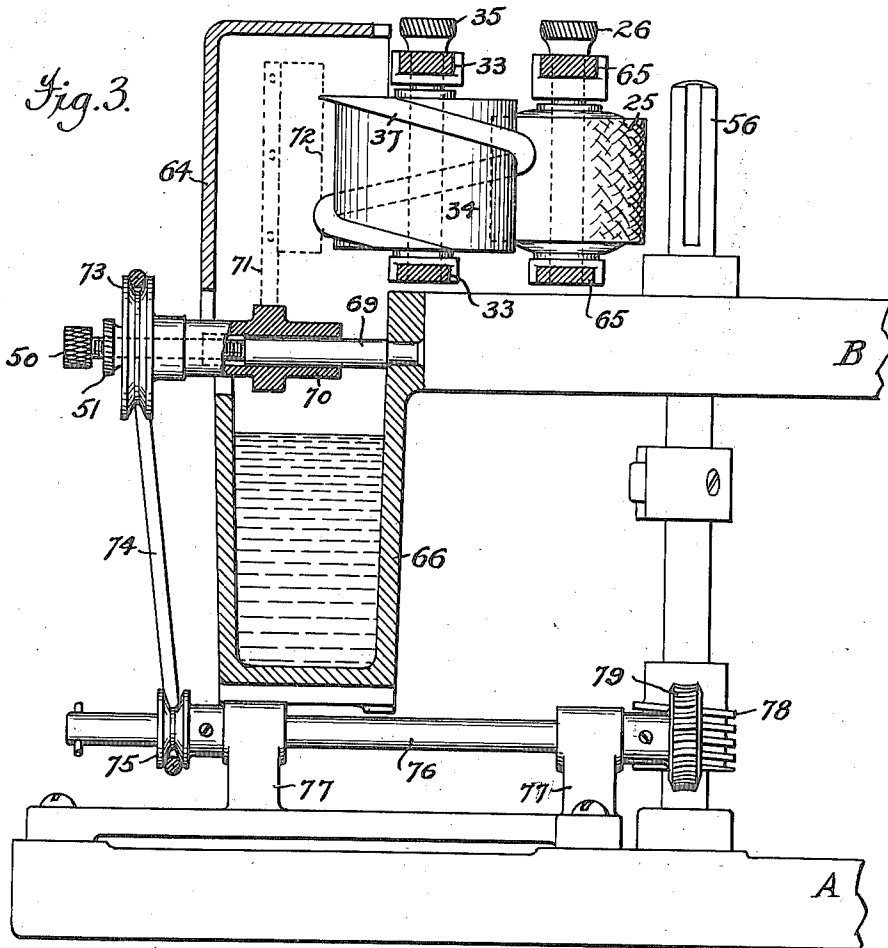
G. H. GRAHAM.
INKING MECHANISM.

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1,190,640.

Patented July 11, 1916.

2 SHEETS—SHEET 2.



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INKING MECHANISM.

1,190,640.

Specification of Letters Patent. Patented July 11, 1916.

Application filed December 18, 1913, Serial No. 807,384. Renewed January 12, 1915. Serial No. 1,881.

To all whom it may concern:

Be it known that I, GEORGE H. GRAHAM, a citizen of the United States, residing at Upper Montclair, in the county of Essex and State of New Jersey, have invented a new and useful Improvement in Inking Mechanism, of which the following is a specification.

This invention relates generally to mail-marking and other similar machines and particularly to that class of such machines illustrated and described in United States Letters Patent to George H. Graham, No. 1,022,191, dated April 2, 1912, having in the present instance reference to the inker for supplying ink to the marking instrumentalities thereof.

Heretofore difficulties have been encountered in practice in supplying the proper quantity of ink to the ink roll so that a uniform application of ink to the marking die shall be assured to the end that the die will make a clean and legible impression on the passing matter.

The present improvements have for their object to overcome such defective operation, to provide a simple and efficient mechanism for the purpose, to render the same easily removable and adjustable, and further to obviate or materially lessen the wear of the felt ink roll and its becoming ridged or grooved.

The accompanying drawings illustrate so much of the machine referred to, together with the improvements, as is material to the description to follow; in which drawings:

Figure 1, is a plan view, the ink tank cover being removed. Fig. 2, is a front elevation, the said cover being indicated by dotted lines and its holding thumb screws omitted; Fig. 3, is a transverse section partially in elevation; the die hub being removed; and Fig. 4, is a transverse section on the line 4, 4, of Fig. 1.

As in said patent, (using the same reference numbers for corresponding parts as therein,) the upper table plate B, supports bearings for a rotating spindle 16^a carrying the trip pressure roller 16, which in this instance is preferably rubber covered; an opposed rotating spindle 49 carrying trip feed rollers 17; a die and clutch feed rotating spindle 56 carrying in part the die-hub 19, keyed to the spindle and supporting

the usual marking die *d*, and canceling bars *c*, and an opposed rotating spindle 18^a carrying the impression roller 18, also rubber covered.

Associated with the trip feed roller 17, 60 and the die spindle 56, is a trip finger 2, pinned to a short spindle 90, that is mounted in one end of a lever 3, carried by a rock spindle 91; the other connected parts being as shown and described in said patent. The operation of this mechanism is such that 65 when each piece of mail or other matter moving in the direction of the arrow *a*, when passing between the trip feed and pressure rollers 17, 16, encounters the trip finger 2, and moves it in the direction of the arrow *b*, which through its connections thereupon releases the clutch or friction driven die-spindle 56, permits it and the die hub to rotate so that the piece of matter 75 in then passing between the marking die hub 19, and the impression roller 18 is properly impressed by the canceling bars and die thereof to be subsequently delivered.

To properly ink the marking die—in this instance the canceling bars *c*, and die *d*,—there is provided, an inking roll 25, preferably of felt, loosely and rotatably mounted on a knurled headed pin 26, that is held in bearings in the outer ends of an inker carrying arm 65. This arm 65, is supported loosely on a stud 27, projecting from the table B, and has an extension 67, integral therewith, that embraces and has pivoted or trunnioned thereto a ball shaped head 28, forming a bearing for the plain end of an adjusting screw 29, see Fig. 4. The outer end of this screw is fast to a knurled finger-piece 30, for ready turning; and the screw-threaded end engages a nut 31, of cylindrical plug shape that is supported loosely in a counterbore in a stud 32, projecting from the table. The ball shaped head 28, has an enlargement 20, coincident with the finger-piece 30, which on its contacting face has a series of shallow counter-sinks to be engaged by a spring pressed detent or ball 21, carried by the finger piece, to permit the free turning of the finger-piece and its screw 29, and yet hold them on each adjustment against accidental movement. The construction is such that when the finger piece 30, with its screw threaded end is rotated to the right or left, the arm 65, is rocked bodily on its stud 27, so that 110

the inking felt roller 25, is thereby moved with respect to the marking die toward or from it as the need of more or less supply of ink is required.

5 The inker carrying arm 65, and in this instance its stud 27, carries a secondary arm 33, also loosely mounted on said stud and carrying an ink feed wheel 34, that freely rotates on a knurled headed pin 35, mounted
10 in said arm for ready removal. The arms 65, and 33, are otherwise connected together, as by a coiled spring 36, so that the feed wheel 34, is held in proper contact with the inking felt roller 25, which rotates by frictional contact and by like contact with the
15 marking die when it rotates.

The ink feed wheel 34, instead of having direct surface contact with the inking roller 25, is reduced in diameter and is encircled
20 by a helix or spirally arranged wire 37, extending from top to bottom of the feed wheel and properly secured thereto, which helix in itself makes surface contact with the inking roller; the result being, as the roller and wheel with its helix rotate in
25 frictional contact, the helix being of different diameter to the inking roller, the felt of that roller is constantly being ironed down or smoothed, as well, as hereafter explained, supplying ink thereto.

30 The surface of the helix 37, of the wheel 34, is arranged to receive ink from an ink tank 66, to thereby apply such ink to the surface of the inking roller 25. In the preferred embodiment of the invention the application of ink to the surface of the helix is automatic, power being obtained from
35 some suitable moving part of the machine, as will be presently described.

40 The ink tank 66, is of rectangular form, properly supported on the front edge of the machine plate B, as by integral studs 67, Fig. 1, entering holes in said plate and held by set screws 68, so that by loosening
45 the screws the tank may be bodily removed.

The rear wall of the ink tank 66, supports a horizontal outwardly-projecting stud 69, Fig. 3, on which is loosely and slidingly mounted a sleeve 70, having a hub carrying
50 a radially extending pin or arm 71, that carries a flexible ink carrying blade 72, say of thin leather, which in the rotations of the sleeve 70, dips or sweeps through the body of ink in the ink tank, makes a passing contact with the helix of the feed wheel and applies a suitable quantity or film of ink to the surface of said helix, whether it, at that particular moment, be stationary or rotating.
55 To properly rotate this ink carrying blade 72, its carrying sleeve 70, has secured to its outer end a grooved pulley 73, embraced by a suitable belt 74, receiving motion from a pulley 75, fast to a spindle 76, that in this instance is mounted in bearings
60 77, fast to the bottom plate A of the ma-

chine and receiving motion from a worm 78, on the die spindle 56, and a worm wheel 79, fast to the end of said spindle 76.

The grooved pulleys 73, 75 are out of line so that the driving belt 74 in passing around
70 the pulley 73, imparts a constantly inward thrust or push on the sleeve 70, free to outward movement, but tending to keep the ink feeder 72 toward the inner side of the tank to thus automatically gain any degree of
75 wipe of the feeder against the helix 37 of the feed wheel 34, no matter how the inker carrying arm 65 may be adjusted. The position of the feeder 72, however, against this thrust, is regulated by a thumb headed
80 screw 50 tapped into the end of the sleeve 70 with its end bearing against the end of the stud 69; a jam-nut 51 being provided to lock the adjustment. To prevent spattering of the ink from the feed wheel 34 and its helix
85 37, the carrying arm 65 has a guard or plate 38, Fig. 1, on its inner side.

The ink tank has a lip 65 with its mouth above the normal level of the ink, for conveniently supplying ink thereto; and its
90 cover 64, protecting its contents from dirt and the passage of extraneous substances thereto, has a pair of dowels 63, which enter holes 62 in the tank and fixed by wing-headed screws 61.

Each of the units of the inker as shown, are separately removable without disturbing other parts. Thus, the ink-tank cover 64, may be removed by loosening the wing-headed screws 61; the sleeve 70 with its ink
100 feeder 72 may be removed from their supporting stud 69, by slipping the belt 74 from the pulleys 73, 75 or either of them; the ink-tank 66 may be bodily removed from the table B by loosening the two set screws 68
105 and pulling the tank laterally outward; and the carrying arm 65 with its rollers 25, 34 may be lifted bodily off the stud 27 carrying with it the adjusting screw 29 and lifting its plug shaped nut 31 from the stud 32;
110 and further, each of the rollers 25, 34 may be removed separately from the arms 65 and 33 by lifting their respective knurl-headed pins 26, 35.

The spindle 76, utilized for carrying and
115 rotating the grooved pulley 75, is arranged to operate a counter (not shown), for registering each rotation of the die spindle 56 when released by the encounter of a piece of matter with the end of the trip finger 2.
120

The improved inker herein described is obviously adapted in its separate units and collectively for use with machines other than that of the character described, such
125 for instance as those arranged to count as well as to print the passing matter, whether it be mail matter, bank checks, cards, money orders or other slips of paper.

The marking die may be of any desired form and it or an associated part may also
130

be a perforating, puncturing, abrading or embossing die taking ink from an inking roller sufficient to stain such perforation, puncture, abrasion or embossing and thereby render it more legible.

It will be observed that the ink supplying mechanism as described is operated only when the printing roller, or marking and canceling die 56 is actuated; and that it is operated intermittently according to the operation of said marking and canceling die, which latter is operated only as and when mail matter is passing through the machine and according to the amount of mail which is passed through the machine and canceled. Thus the inking mechanism is not operated until and unless mail matter is passing through the machine, and therefore ink is not accumulated on the printing and inking roller when the machine is running idle, and as a result clean clear-cut impressions will be made on all mail matter passing through the machine.

What is claimed is:

1. In a mail marking machine, a normally inactive printing roller or die, and normally inactive ink supplying mechanism therefor, said ink supply mechanism operating only when the die is operating; with means whereby said die and ink supplying mechanism are caused to operate only when mail matter is passing through the machine and according to the amount of such mail matter.

2. In a mail marking machine, a normally inactive printing roller or die, and means for operating said die only when mail is passing through the machine and according to the amount of such mail matter; with normally inactive inking mechanism for said die including a rotatable ink-applying roller adapted to ink the die and a rotatable ink supplying roller frictionally contacting with the ink applying roller, and means whereby such ink applying and ink supplying rollers are operated only upon and in accordance with the operation of the die.

3. In a mail marking machine, a normally inactive printing roller or die; a normally inactive inking mechanism therefor comprising a rotatable ink-applying roller adapted to ink the die, a rotatable ink-supplying roller contacting with the ink applying roller, and an ink feeding mechanism, said inking mechanism operating only when the die is operating; with means whereby said die and inking mechanism are caused to operate only when mail matter is passing through the machine and according to the amount of such mail matter.

4. In combination a normally inactive printing roller or die, a normally inactive ink-roller for applying ink to the die, a normally inactive ink roller supplying ink to

the ink-applying roller; an ink supply and normally inactive ink-feeder conveying ink from the supply to the ink-supplying roller, and means whereby such inking rollers are operated only upon and in accordance with the operation of the die.

5. In combination a normally inactive printing roller or die, a normally inactive ink-roller for applying ink to the die, and a normally inactive ink roller supplying ink to the ink-applying roller, said rollers being mounted on parallel axes, an ink supply and a normally inactive rotatable ink-feeder conveying ink from the supply to the ink-supplying roller; with means whereby such inking rollers and feeder are operated only upon and in accordance with the operation of the die.

6. In combination a rotatable printing roller or die, a rotatable ink-applying roller therefor, a rotatable ink supplying roller having a peripheral helix contacting the ink-applying roller, said rollers being mounted on parallel axes; and means for holding said inking rollers in contact; with an ink-feeder mounted on an axis perpendicular to the axes of said rollers and intermittently applying ink to the helix of the ink supplying roller.

7. In combination a rotatable printing roller, a rock-arm, a rotatable ink-applying roller carried by said rock-arm and in frictional contact with the printing roller, and a rotatable inking device in frictional contact with said ink-applying roller; with an ink-feeder mounted on an axis perpendicular to the axes of said rollers and intermittently applying ink to said inking device.

8. A rotatable printing roller, a rotatable ink applying roller in frictional contact therewith, an inking roller in frictional contact with the ink-applying roller, each of said rollers on vertical axes, and a rotatable ink-feeder on a horizontal axis intermittently applying ink in its rotation to said inking roller.

9. A rotatable printing roller, a rotatable ink-applying roller in frictional contact therewith, a rotatable helix in frictional contact with the ink applying roller, each of said rollers on vertical axes, and a rotatable ink-feeder on a horizontal axis intermittently applying ink in its rotation to the rotatable helix.

10. A rotatable printing roller, a rock-arm, a rotatable ink-applying roller carried by said rock-arm and in a frictional contact with the printing roller, a rotatable inking roller in frictional contact with said ink-applying roller, each of said rollers on vertical axes, and a rotatable ink-feeder on a horizontal axis intermittently applying ink in its rotation to said inking roller.

11. A rotatable printing roller, a rock-arm, a rotatable ink-applying roller carried

by said rock-arm and in frictional contact with the printing roller, another rock-arm, an inking roller carried by said latter rock-arm and frictionally engaging said ink-applying roller, each of said rollers on vertical axes, and a rotatable ink-feeder on a horizontal axis intermittently applying ink in its rotation to said inking roller.

12. A rotatable printing roller, a rock-arm, a rotatable ink-applying roller carried by said rock-arm and in frictional contact with the printing roller, another rock-arm having a pivot common to the first named rock-arm, a rotatable helix carried by said other rock-arm in frictional contact with the ink-applying roller, each of said rollers mounted on vertical axes, and a rotatable ink-feeder on a horizontal axis intermittently applying ink to the helix.

13. A rotatable printing roller, two rock-arms mounted on a common pivot, a rotatable ink-applying roller carried by one rock-arm and in a frictional contact with the printing roller, a rotatable inking roller carried by the other rock-arm and in a frictional contact with the ink-applying roller, each of said rollers and rock-arms on vertical axes, means for simultaneously adjusting said rock-arms with their respective rollers toward or from the printing roller, and a rotatable ink-feeder on a horizontal axis for applying ink to the inking roller.

14. A rotatable printing roller, two rock-arms mounted on a common pivot, a rotatable ink-applying roller carried by one rock-arm and in a frictional contact with the printing roller, a rotatable inking roller carried by the other rock-arm, a spring connecting both of said arms whereby the inking roller of one arm is held in frictional contact with the ink-applying roller of the other arm, each of said rollers and rock-arms on vertical axes, means connected with one rock-arm for simultaneously adjusting both of said rock-arms with their respective rollers toward or from the printing roller, and a rotatable ink-feeder on a horizontal axis for intermittently applying ink to the inking roller.

15. A rotatable printing roller, two rock-arms mounted on a common pivot, a ro-

tatable ink-applying roller carried by one rock-arm and in frictional contact with the printing roller, a rotatable inking roller carried by the other rock-arm, a spring connecting both of said arms whereby the inking roller of one arm is held in frictional contact with the ink-applying roller of the other arm, each of said rollers and rock-arms on vertical axes, means for adjusting both of said arms with their respective rollers simultaneously toward or from the printing roller, and a rotatable ink-feeder laterally adjustable on a horizontal axis to and from the inking roller for intermittently applying ink to said latter roller.

16. A rotatable printing roller, two rock-arms mounted on a common pivot, a rotatable ink applying roller carried by one rock-arm and in frictional contact with the printing roller, a rotatable inking roller carried by the other rock-arm, means connecting both rock-arms whereby the roller of one arm is held in frictional contact with the roller of the other arm, a fixed stud, a nut seated in said stud and an adjusting screw supported by one of said rock-arms engaging said nut.

17. The hereindescribed inker, comprising a rotatable inking roller on a vertical axis, an ink tank, and a rotatable ink-feeder mounted on a horizontal axis for applying ink to the inking roller and laterally movable on its axis to vary its contact with the roller and to compensate for the wear.

18. The hereindescribed inker, comprising a rotatable inking roller, an ink tank, a fixed stud, a rotatable ink-feeder laterally movable on said stud and passing through the ink tank and contacting with the inking roller, means for constantly pressing the ink-feeder toward the said roller, and a limiting stop for controlling the amount of contact of the ink-feeder with the inking roller.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

GEORGE H. GRAHAM.

Witnesses:

JOHN W. CLARK,

FRED. J. A. SOMMERHOLDER.