

J. S. DUNCAN.
 INKING MECHANISM.
 APPLICATION FILED JUNE 25, 1908.

970,027.

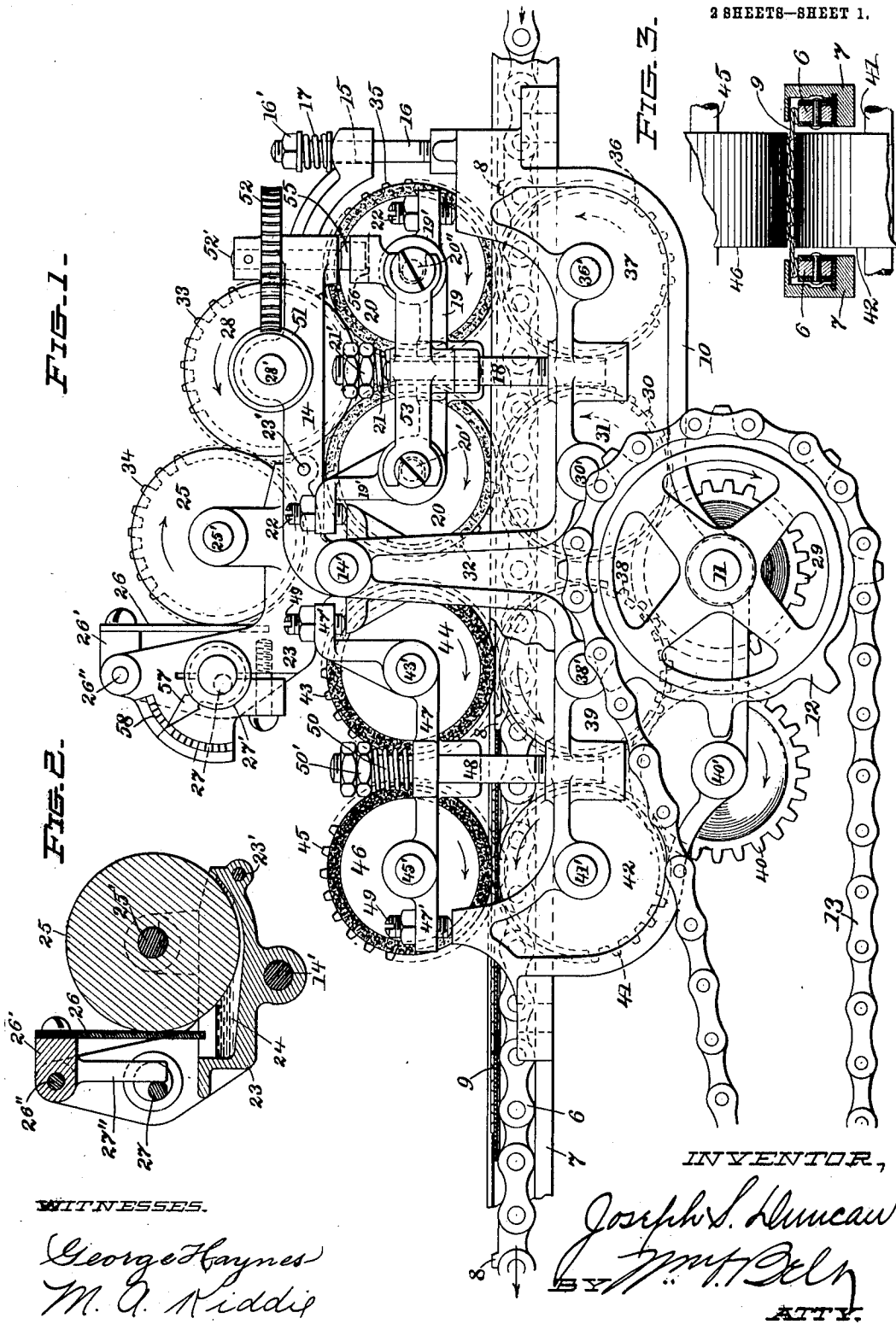
Patented Sept. 13, 1910.

2 SHEETS—SHEET 1.

FIG. 1.

FIG. 2.

FIG. 3.



WITNESSES.

George Haynes
 M. A. Kiddie

INVENTOR,

Joseph S. Duncan
 BY *[Signature]*
 ATTORNEY.

970,027.

Patented Sept. 13, 1910.

2 SHEETS—SHEET 2.

FIG. 4.

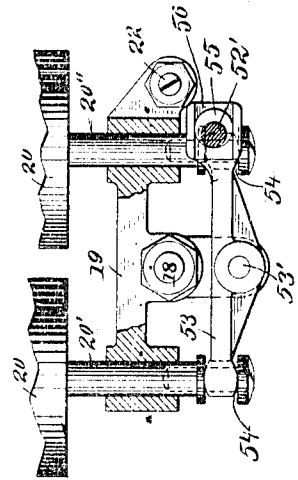
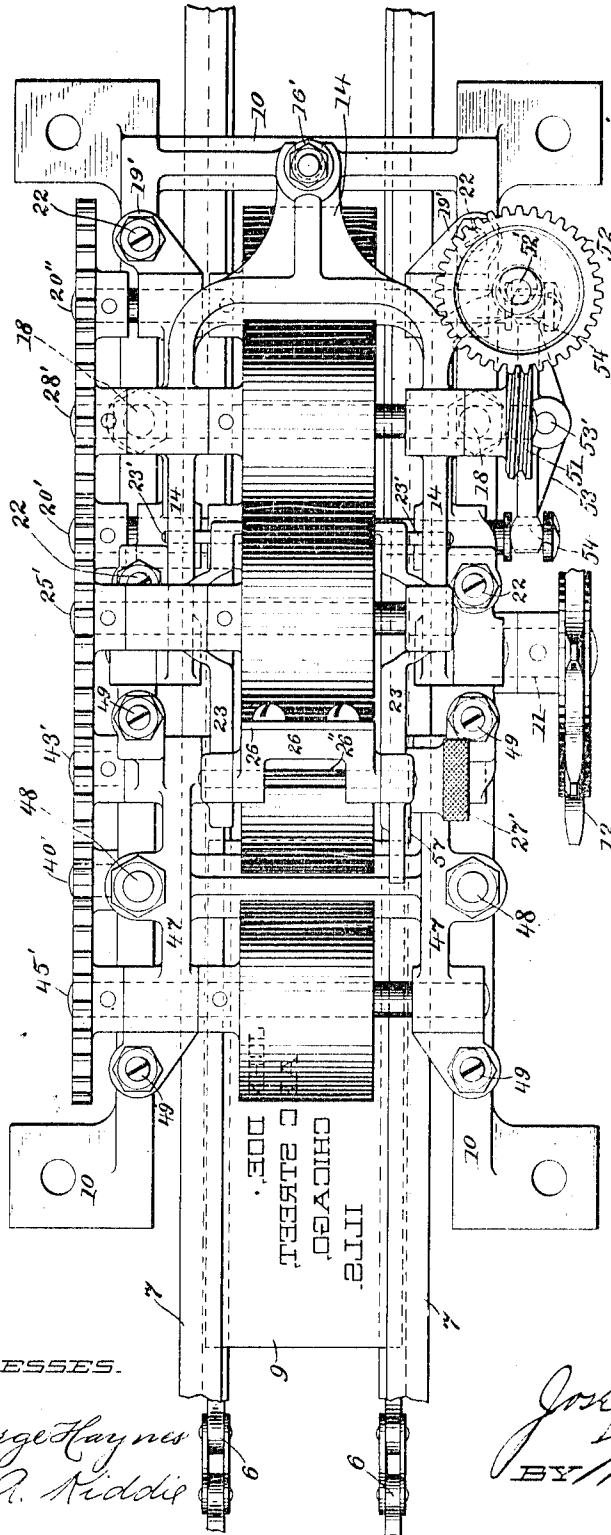


FIG. 5.

WITNESSES.

George Haynes
 M. A. Kiddle

INVENTOR,

Joseph S. Duncan
 BY *Wm. F. Kelly*
 ATTY

UNITED STATES PATENT OFFICE.

JOSEPH S. DUNCAN, OF CHICAGO, ILLINOIS, ASSIGNOR TO ADDRESSOGRAPH COMPANY,
OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

INKING MECHANISM.

970,027.

Specification of Letters Patent. Patented Sept. 13, 1910.

Application filed June 25, 1908. Serial No. 440,219.

To all whom it may concern:

Be it known that I, JOSEPH S. DUNCAN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented new and useful Improvements in Inking Mechanisms, of which the following is a specification.

This invention relates to inking mechanisms and while it is capable of use in a variety of machines I will, for the purpose of this application, illustrate and describe the invention as adapted particularly for addressing machines in which printing devices, consisting of plates bearing addresses stamped in relief thereon or frames carrying type forms, are run through a machine for printing the address on envelopes, letters, etc.

The object of the invention is to apply the ink evenly and uniformly on the face of the printing characters, and to avoid applying the ink elsewhere on the printing devices.

A further object of the invention is to provide for automatically feeding the inking rolls endwise to avoid uneven wear of the face thereof.

The invention has other objects in view which will appear hereinafter in a detail description of the accompanying drawings which show one embodiment of the invention and in which—

Figure 1 is a side elevation showing the invention with as much of an addressing machine as is necessary. Fig. 2 is a transverse sectional view through the ink fountain and its roll. Fig. 3 is a detail transverse sectional view through the plate carrier frame and showing the position of a printing plate relative to the rolls. Fig. 4 is a top plan view of Fig. 1. Fig. 5 is a detail view, partly in section, showing the means for feeding the ink rolls endwise.

In the drawings 6 designates a carrier which is arranged to travel in a frame 7. The carrier, as shown, consists of a pair of sprocket chains which are provided at intervals with blocks 8 or other suitable devices for pushing the printing devices 9 through the inking mechanism.

A main frame 10 is supported in any suitable manner and a driving shaft 11 is journaled in said frame and carries a sprocket wheel 12 over which travels the

driving sprocket chain 13, the latter being driven by any suitable means.

A yielding frame 14 is pivotally mounted at one end on a rod 14' which is supported in the main frame and the other end of this yielding frame is bored at 15 to receive a post 16 which is mounted on the main frame. A spring 17 is arranged on the post 16 above the frame 14 and is held in place by a nut 16'.

A post 18 is mounted on the frame at each side thereof and bearing blocks 19 are movably arranged on these posts. Inking rolls 20 are mounted on shafts 20', 20'' which are journaled in said bearing blocks. A spring 21 is arranged on each post 18 above the bearing block 19 and below the nut 21'. Each bearing block is provided with projections 19' at its ends, and adjusting screws 22 are secured in said projections and arranged to bear upon the main frame. By adjusting the screws 22 the inking rolls are properly positioned to apply ink to the printing devices which are moved thereunder and the springs 21 hold the inking rolls yieldingly in this position. A fountain frame 23 is also mounted on the rod 14' and 80 made fast to the yielding frame 14 by pins 23'. This fountain frame is provided with a well 24 to receive the ink and a fountain roller 25 is mounted on a shaft 25' in said fountain frame. A scraper 26 is fastened to a support 26' which is pivotally mounted on a rod 26'' in the fountain frame, the scraper being arranged to engage the fountain roller 25 tangentially and remove surplus ink therefrom. This scraper is adjusted relative to the fountain roller by means of an eccentric 27 which is operated by a handle 27' and engages a depending projection 27'' on the support 26'. By operating the eccentric the scraper may be caused to bear with more or less pressure, as required, against the fountain roller.

A transfer roll 28 is mounted on a shaft 28' journaled in the yielding frame. This roll is arranged to contact with the fountain roll 25 and both inking rolls 20, and it transfers the ink from the fountain roll to the inking rolls. A gear 29 on the shaft 11 meshes with a gear 30 on a shaft 30' which carries a roll 31. The gear 30 meshes with a gear 32 on shaft 20' and the latter gear

meshes with a gear 33 on shaft 28'. The latter gear 33 meshes with a gear 34 on shaft 25' and also with a gear 35 on shaft 20' and the latter gear 35 meshes with a gear 36 on a shaft 36' which carries a roll 37. The gear 29 also meshes with a gear 38 on a shaft 38' which carries a roll 39 and the latter gear 38 meshes with a gear 40 on shaft 40' and this gear in turn meshes with a gear 41 on shaft 41' which carries a roll 42. The shafts 30', 36', 38', 40' and 41' are suitably supported in the main frame 10. The gear 38 also meshes with a gear 43 on a shaft 43' which carries a roll 44 and the gear 41 also meshes with a gear 45 mounted on a shaft 45' which carries a roll 46. The shafts 43' and 44' are supported in bearing blocks 47 which are adjustably arranged on posts 48 mounted on the main frame, one at each side thereof. These bearing blocks 47 have projections 47' and adjusting screws 49 operate through said projections and bear upon the main frame. Springs 50 are arranged on the posts 48 above the bearing blocks 47 and beneath the nuts 50'. It will be observed that the distributing or evening rolls 44 and 46 are capable of adjustment relative to the printing devices and are yieldingly held to bear upon the printing devices in a manner similar to the inking rolls 20. The rolls 37, 31, 39 and 42 are made of steel or any other material to form a support for the printing devices and they are located immediately below the inking and distributing rolls. The inking rolls and the distributing rolls are provided with a facing of felt or rubber or other yielding material and the transfer and fountain or supply rolls are preferably made of steel, although I do not limit myself to any particular materials.

The shaft 28' is provided with a worm 51 which meshes with a worm gear 52 on a vertical shaft 52' suitably supported in the yielding frame 14. A lever 53 is pivoted at 53' on one of the bearing blocks 19 and the ends of this lever 53 rest in peripheral grooves 54 formed in any suitable manner on the shafts 20' and 20''. An eccentric disk 55 on the lower end of shaft 52' is arranged to operate in an endwise groove 56 at one end of the lever 53. It will be readily understood that as the vertical shaft 52' is rotated the eccentric disk 55 working in the slot 56 will swing the lever 53 on its pivot 53' and the ends of said lever will shift the inking rolls endwise and alternately in opposite directions. As the printing devices travel in a certain path through the inking mechanism and as the lines of type are generally arranged in a certain position on the printing devices it would naturally follow that the type would constantly engage the surface of the inking rolls at or about the same place and wear these rolls unevenly if no means were provided for adjusting the

rolls endwise. By means of this endwise adjustment of the rolls uneven wear thereof is avoided and they are for this reason better adapted to apply the ink evenly to the type characters.

To facilitate the adjustment of the eccentric 27 to secure the proper position of the scraper relative to the fountain roll I may provide an indicator 57 rigid with the handle 27' to travel over a scale 58 on the fountain frame. My invention also provides for adjusting the inking and distributing or evening rolls so that the ink will be applied and distributed on the face of the type characters in a proper manner and without smudging the plate or frame carrying said type characters, and the inking rolls are supported so that they will yield as may be required.

What I claim and desire to secure by Letters Patent is:

1. In an inking mechanism, the combination of a frame, bearing blocks supported in said frame, shafts mounted in said bearing blocks, rolls carried on said shafts, means for positively limiting the movement of the blocks in one direction, means for yieldingly limiting the movement of the blocks in the opposite direction, a pivotally mounted lever connected at either end with said shafts, and means for oscillating said lever on its pivot whereby to feed said rolls longitudinally back and forth in opposite directions.

2. In an inking mechanism the combination of a frame, posts on the frame, bearing blocks movably mounted on said posts, a plurality of shafts journaled in said bearing blocks, inking rolls carried by said shafts, means for positioning said rolls relatively to the work, and means engaging said blocks to yieldingly retain said rolls in adjusted position.

3. In an inking mechanism, the combination of a frame, a pair of inking rolls, shafts carrying said rolls and supported in the frame, peripheral grooves on said shafts, a lever pivotally mounted between said shafts and having its ends arranged to engage said grooves, a lengthwise groove on said lever at one end thereof, an eccentric disk arranged to work in said lengthwise groove, a shaft carrying said eccentric disk, and means for rotating said shaft to oscillate said lever and feed the inking rolls back and forth in opposite directions.

4. In an inking mechanism, the combination of a frame, posts on the frame, bearing blocks movably mounted centrally on the posts, shafts journaled in the ends of said bearing blocks, inking rolls on said shafts, springs arranged on the posts to bear on said blocks projections on the ends of said blocks, and adjusting screws on said projections to engage the frame.

5. In an inking mechanism, the combina-

tion of a main frame, a bearing frame yieldingly mounted on said main frame, means for limiting the movement in one direction of the bearing frame, a plurality of inking
5 rolls mounted therein, a yielding frame pivotally mounted on the main frame, and a transfer roll mounted on said yielding frame and arranged in contact with the inking rolls.

10 6. In an inking mechanism, the combination of a main frame, a plurality of inking rolls yieldingly supported in said frame, means for imparting to said rolls a longitudinal movement, a yielding frame pivotally
15 mounted on the main frame, and a transfer roll mounted in said yielding frame in engagement with the inking rolls.

7. In an inking mechanism, the combination of a main frame, a pair of inking rolls
20 mounted in the main frame, a yielding frame pivotally mounted on the main frame, a transfer roll mounted in the yielding frame in engagement with the inking rolls, an ink fountain frame, and a fountain roll
25 mounted in the fountain frame in engagement with the transfer roll.

8. In an inking mechanism, the combination of a main frame, a pair of inking rolls yieldingly supported in the main frame, a
30 yielding frame pivoted on the main frame, a transfer roll mounted in said yielding frame in engagement with the inking rolls, a fountain frame rigid with the yielding frame, and a fountain roll mounted in the
35 fountain frame in engagement with the transfer roll.

9. In an inking mechanism the combination of a fountain frame, a roll mounted in said frame, a support pivoted between its ends in said frame, a scraper mounted upon
40 one end of said support and disposed tangentially to said roll, eccentric means comprising a pair of circular bearings and a rod eccentrically mounted on said bearings for engaging the other end of said support
45 to adjust said scraper relatively to said roll and a manual device for actuating said eccentric means.

10. In an inking mechanism, the combination of a driving shaft, a pair of inking
50 rolls, a transfer roll, a fountain roll, a pair of distributing rolls, a supporting roll beneath each of the inking and distributing rolls, and a train of gearing between said driving shaft and said rolls for operating
55 the latter.

11. In an inking mechanism, the combination of a main frame, a pair of supporting rolls revolubly mounted in fixed position in said frame, a pair of posts on said frame,
60 bearing blocks movably mounted on said supporting rolls, shafts journaled in said blocks, rolls on said shafts above the supporting rolls, yielding means for pushing
65 said rolls, and means for limiting the movement of said rolls toward said supporting rolls.

JOSEPH S. DUNCAN.

Witnesses:

PAUL SCHMECHEL,
M. A. KIDDIE.