M. A. SCHMIDT.

BOX PRINTING MACHINE.

APPLICATION FILED APR. 14, 1920.

1,397,881. Patented Nov. 22, 1921.

Fig. 1.

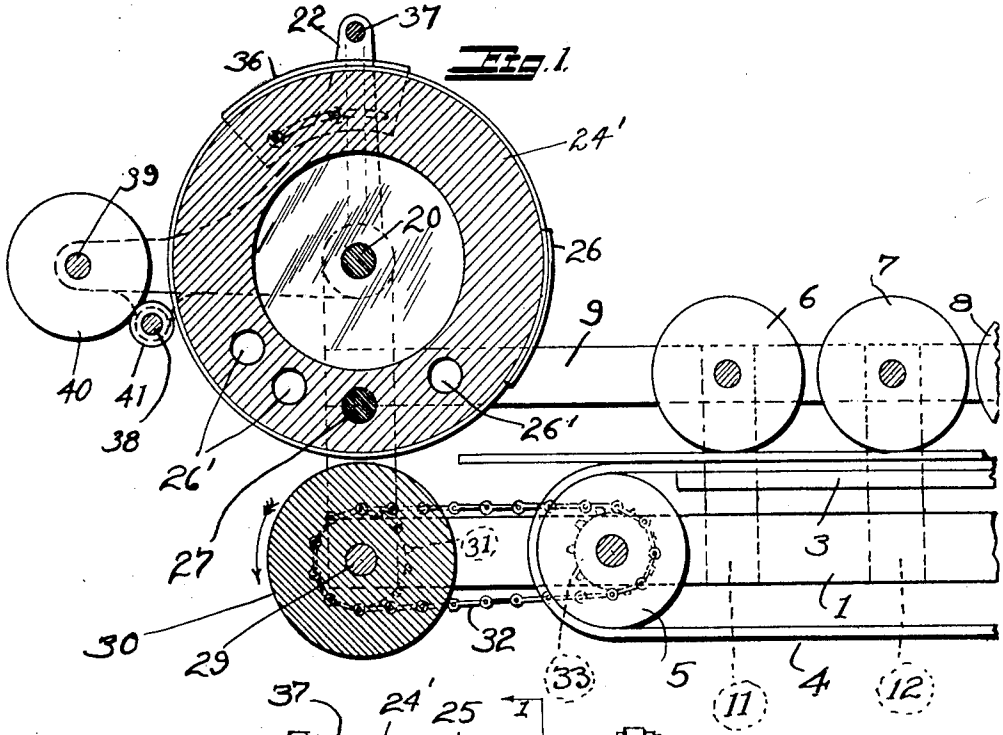
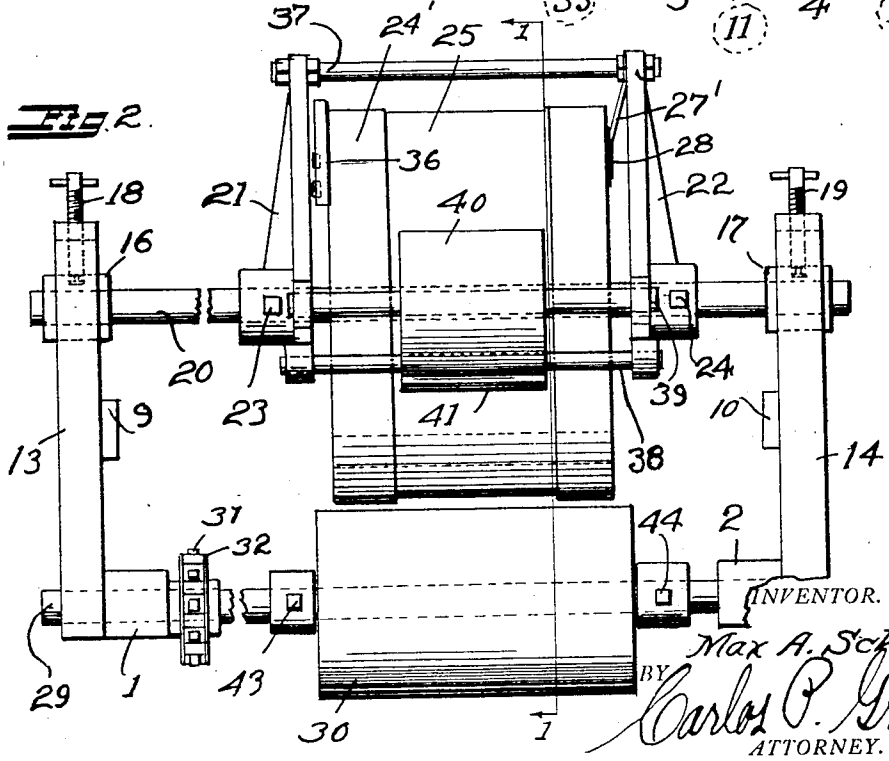


Fig. 2.



INVENTOR.

Max A. Schmidt.

BY

Carlos P. Griffin

ATTORNEY.

UNITED STATES PATENT OFFICE.

MAX A. SCHMIDT, OF SAN FRANCISCO, CALIFORNIA, ASSIGNOR TO SCHMIDT LITHOGRAPH COMPANY, A CORPORATION OF CALIFORNIA.

BOX-PRINTING MACHINE.

1,397,881. Specification of Letters Patent. Patented Nov. 22, 1921.

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To all whom it may concern:

Be it known that I, MAX A. SCHMIDT, a citizen of the United States, residing at San Francisco, in the county of San Francisco, State of California, have invented a new and useful Box-Printing Machine, of which the following is a specification in such full and clear terms as will enable those skilled in the art to construct and use the same.

This invention relates to a box printing machine and its object is to provide a printing roll which will be capable of impressing a stamp upon fiber board boxes as they leave the box forming machine.

It will be understood by those skilled in the art that in the production of fiber board boxes they are put through a machine forming no part of the present invention, which places a gummed tape along two adjoining edges of the box blank to form the complete box or carton. These cartons must thereafter be stamped to show that they comply with the weight and strength schedule of the railroad companies, and since the boxes are of variable sizes it is a difficult matter to have the stamp placed on the boxes in just the desired position by hand, while if done by machine, special apparatus must be provided to place the stamp on the box in the desired position when changing box sizes.

Other objects of the invention will appear as the description proceeds.

An embodiment of the invention is shown in the accompanying drawings in which the same reference numeral is applied to the same portion throughout, but I am aware that there may be modifications thereof.

Figure 1 is a vertical sectional view through this printing device and through a portion of the box making machine, which latter forms no part of the present invention.

Fig. 2 is an end elevation of this printing device as it appears attached to the box making machine.

The numerals 1 and 2 indicate the side frames of the box making machine, said frames supporting floor 3 over which an endless belt 4 passes. This belt extends around a roller 5 and passes under a series of rollers 6 to 8 inclusive in such number as may be desired.

The rollers 6 to 8 inclusive are journaled in longitudinally extending rails 9 and 10, which are supported by suitable posts 11 and 12 and which are also connected to the end posts 13 and 14. The end posts 13 and 14 have vertically adjustable boxes 16 and 17 supported by screws 18 and 19 which carry a transversely extending shaft 20. This transverse shaft has two L-shaped arms 21 and 22 mounted thereon, said arms being held in a fixed position by means of the set-screws 23 and 24. The shaft 20 is fixed in the boxes 16 and 17 so that it cannot be rotated.

Revoluble on the shaft 20 is a large roller 24′, said roller being provided with an annular depression 25 to enable the printing plate 26 to be placed in any desired position, and to prevent the inking roll from touching the roller. The printing roller is made of any suitable light material and has several holes bored therethrough as indicated at 26′, in any one of which a lead or iron bar 27 may be placed to counterbalance the roller and cause it to return to the same position each time an impression has been made.

In order to prevent the roller from spinning too rapidly when a box has passed thereunder, a spring 27′ supported by the arm 22 bears upon the end of the roller and a stop 28 prevents the roller from rotating reversely.

Below the roller there is a shaft 29 which is journaled in the end of the side bars 1 and 2 and which carries a roller 30. The roller 30 is rotated by means of a sprocket wheel 31 and sprocket chains 32 from the sprocket wheel 33 on the shaft carrying the drum 5.

The roller 24′ is normally out of contact with the roller 30 so that it is free to remain in the position indicated in Fig. 1, with the weight 27 on the bottom but since it is often used with short boxes, means to turn the roller over is necessary, and an adjustable segment member 36 is provided on one end of the roller, which will contact with the roller 30 and thereby turn the roller 24′ completely over, should the boxes printed on be too short to do that.

The arms 21 and 22 are connected together at their upper ends by means of a rod 37 and they have two other rods 38 and 39 connected thereto, which carry the inking rollers 40 and 41, the latter engaging the printing plate 26 each time the roller turns over. It is also to be noted that on account of the transverse width of the machine forming the boxes, being variable, it is frequently

necessary to move the printing roller to a different position along its shaft 20, which is accomplished by releasing the set-screws 23 and 24 and moving the roller as may be required, at the same time the set-screws 43 and 44 may be released to shift the position of the roller 30 to correspond with the position of the printing roller.

What I claim is as follows, but various modifications may be made in the construction shown in the drawings and above particularly described form, within the purview of my invention.

1. A box printing machine comprising a support, a freely swinging printing roll, a printing plate thereon, means to ink the printing plate, means to feed independent sheets to the printing roll and a driven roll below the printing roll to pass the boxes under the printing roll.

2. A box printing machine comprising a support, a freely swinging printing roll, means to restore said printing roll to a given position after each impression thereof, a printing plate on the roll, means to ink the printing plate and a positively driven roll below the printing roll to cause the rotation of the printing roll, means to feed a box thereto.

3. A box printing machine comprising a support, a freely swinging printing roll, a weight for restoring the printing roll to a given position after each impression, a printing plate thereon, rolls to ink the printing plate after each impression, and a spring bearing on the printing roll to retard the rotation thereof after an impression has been made.

4. A box printing machine comprising a freely swinging printing roll, a printing plate thereon, a driven roll out of contact with the printing roll to hold a sheet to be printed on in contact with the swinging printing roll, means to pass a sheet up to both rolls, a spring bearing on the printing roll to retard the rotation thereof, means to ink the printing plate after each impression, and an adjustable segment to turn the printing roll over if the sheet printed upon is too short to do so.

5. A box printing machine comprising a suitable frame, a printing roll freely revoluble thereon, a weight capable of being moved to several positions with respect to the printing roll for bringing the printing roll to a given position after each impression thereof, a printing plate carried by the roll, a roller for holding a box against the printing roll and out of engagement with the printing roll, means to ink the printing plate after each impression, and means to completely turn over the printing roll if the box is too short.

6. A box printing machine comprising a frame, a printing roll freely revoluble therein, a weight for restoring the printing roll to a given position after each impression, a printing plate upon each roll, means to ink the printing plate after each impression, a driven roll out of engagement with the printing roll for holding a sheet to be printed on in engagement with the printing roll, means to feed a sheet thereto, means bearing on the printing roll to retard its rotation, a stop for preventing the printing roll from turning backward, and means to turn the printing roll over one complete turn if the sheet printed upon is too short to effect that object.

In testimony whereof I have hereunto set my hand this 3 day of April, A. D. 1920.

MAX A. SCHMIDT.