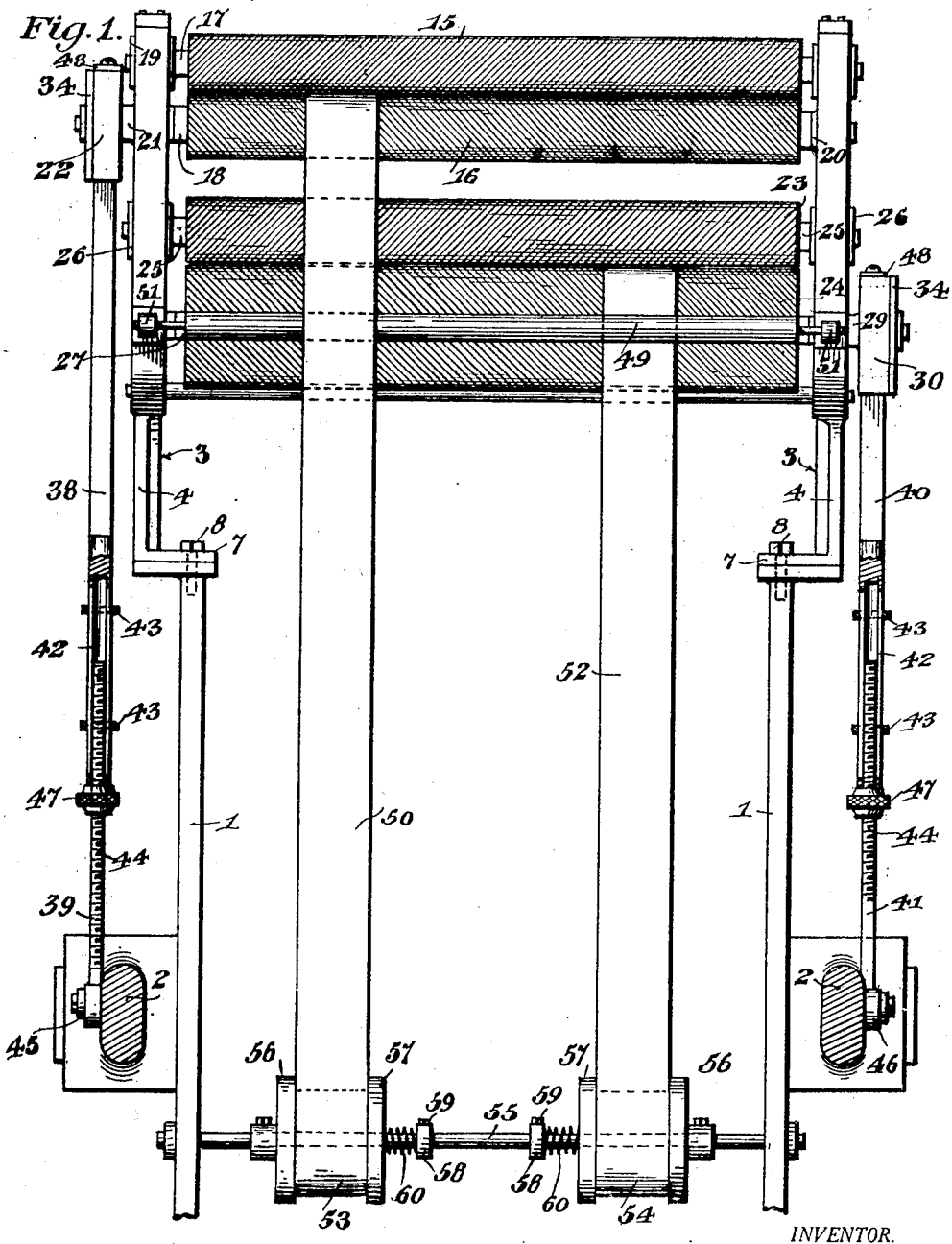
April 26, 1927. 1,626,444

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ATTACHMENT FOR PRINTING PRESSES

Filed Aug. 13, 1926 2 Sheets-Sheet 1

Fig. 1.



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Fig. 2.

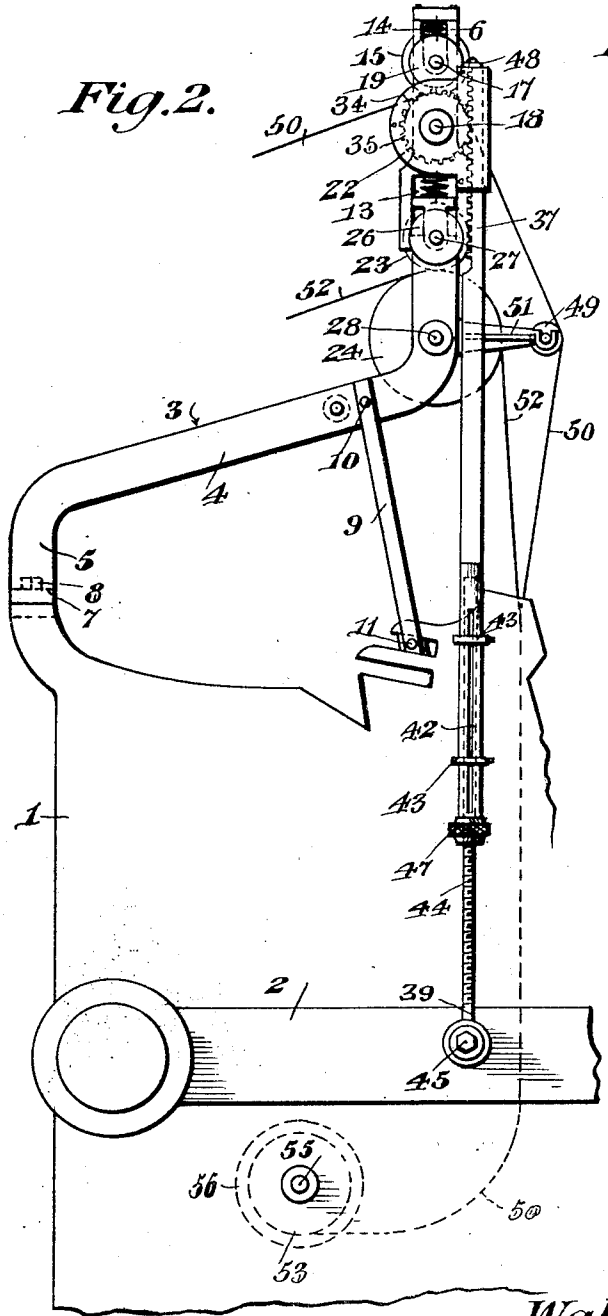


Fig. 3.

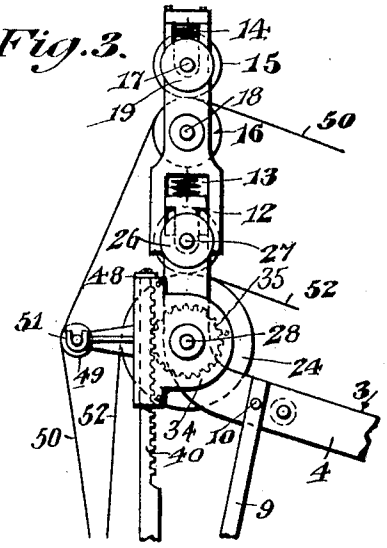
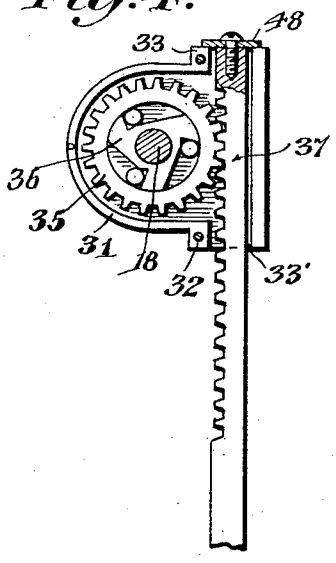


Fig. 4.



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UNITED STATES PATENT OFFICE.

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ATTACHMENT FOR PRINTING PRESSES.

Application filed August 13, 1926. Serial No. 129,052.

This invention relates to a roll leaf feeding mechanism for use in connection with the operation of hot stamping on a job printing or platen press, and has for its object to provide in a manner as hereinafter set forth, a roll leaf feeding mechanism which can be readily installed with respect to and conveniently removed from the press when desired, as well as being driven from the press when installed or attached thereto for use in the operation of hot stamping.

A further object of the invention is to provide, in a manner as hereinafter set forth, a feeding mechanism for the purpose referred to for feeding the leaf in the length desired, or in other words a feeding mechanism including means for adjusting the length of the leaf fed to meet requirements, or for simultaneously feeding different or uniform lengths of leaves to meet requirements during the hot stamping operation.

A further object of the invention is to provide, in a manner as hereinafter set forth, a feeding mechanism for the purpose referred to including a plurality of leaf feed devices and whereby said devices are synchronously operated from the press to which the mechanism is attached, and further whereby each of the feed devices includes a pair of superposed rolls and with the length of the leaf fed controlled by the diameter of the lower roll of each pair.

Further objects of the invention are to provide in a manner as hereinafter set forth, a roll leaf feeding mechanism for use in connection with the operation of hot stamping and which is comparatively simple in its construction and arrangement, strong, durable adjustable, compact, readily installed with respect to a press and quickly removed therefrom when desired, thoroughly efficient in its use, and comparatively inexpensive to set up.

With the foregoing and other objects in view, the invention consists of the novel construction, combination and arrangement of parts as hereinafter more specifically described, and illustrated in the accompanying drawings, wherein is shown an embodiment of the invention, but it is to be understood that changes, variations and modifications can be resorted to which fall within the scope of the claims hereunto appended.

In the drawings wherein like reference characters denote corresponding parts throughout the several views:

Figure 1 is a front elevation, partly in section, of a roll leaf feeding mechanism in accordance with this invention.

Figure 2 is an elevation looking towards one side thereof.

Figure 3 is a fragmentary view, in elevation looking towards the other side thereof.

Figure 4 is a fragmentary view, partly in section, illustrating a driving means for a leaf feed device.

Referring to the drawings in detail 1 denotes the frame of a press and 2 a pair of oscillatory crank arms forming elements thereof and actuated during the operation of the press.

A leaf-feeding mechanism, in accordance with this invention, comprises a pair of upstanding brackets referred to generally by the reference character 3. Each of said brackets includes an upwardly inclined intermediate portion 4, a depending end portion 5 and an upstanding end portion 6. The end portions 5 are flanged as at 7 and extending therethrough are hold fast devices 8 for securing the brackets to the frame 1 of the press. Depending from each bracket 3 is a brace member 9 which is secured at its upper end, as at 10 to an intermediate portion 4 and at its lower end is secured as at 11 to the frame 1 of the press. Each end portion 6, intermediate its ends is enlarged as at 12 and formed with a vertically disposed slot 13. The upper part of each end portion 6 is formed with a vertically disposed slot 14.

The feeding mechanism can be set up with one or more leaf feed devices, preferably two feed devices are illustrated and are carried by the end portion 6 of the bracket 3. The feed devices are arranged in superposed relation. Each feed device consists of a pair of superposed feed rollers or rolls. Each of the rolls or rollers is serrated on its periphery throughout. Each roll is carried by a suitable shaft. The rollers of the upper feed device are indicated at 15, 16, the roller 15 being the upper roller of the upper feed device. The shaft for the roller 15 is indicated at 17 and the shaft for the roller 16 is indicated at 18. Arranged in the end portion 6 of the bracket 3 are spring controlled bearings 19 for the shaft 17. The bearings 19 are slidably mounted in the slots 14. One end of the shaft 18 is journaled in one of the brackets 3 as at 20 and the other end thereof is journaled in the other bracket 3, extends therefrom as at 21, and the ex-

tending end of the shaft 18 is journaled in the housing 22 to be presently referred to.

The lower feed device comprises an upper roller 23 and a lower roller 24 and the periphery of each of said rollers is serrated throughout. The roller 24 is of greater diameter than the roller 23. The shaft of the roller 23 is indicated at 25 and which is journaled in a pair of spring controlled bearings 26 slidably mounted in the slots 13 of the portions 12 of the brackets 3. The shaft of the roller 24 is indicated at 27 and which has one end thereof journaled in one of the brackets 3, as indicated at 28 and its other end journaled in the other bracket 3 and extended therefrom as at 29. The extended end 29 of the shaft 27 is journaled in a housing 30 to be presently referred to.

The housing 22 is arranged exteriorly of one bracket 3, that is the end portion 6 of such bracket near the top thereof and the housing 30 is arranged exteriorly of the other bracket 3, that is the end portion 6 of such bracket near the lower end of said end portion. The housing 22 is similar in construction to the housing 30 and with reference to Figure 4 each of said housings consists of an open side body portion 31 formed with an extension 32 having an opening 33 at the top and bottom thereof. The extension 32 is vertically disposed and the openings 33 provide a guide passage for a purpose to be presently referred to. Detachably secured to the open side of the housing 31 and arranged against the extension 32 is a closure plate 34. The projecting ends 21 of the shaft 18 is journaled in the closure plate 34 for the housing 22 and the projecting end 29 of the shaft 27 is journaled in the closure plate 34 of the housing 30.

The projecting end 21 of the shaft 18 as well as the projecting end 29 of the shaft 27, is provided with a slip gear 35, see Figure 4, and which is arranged in the body portion 31 of the housing. A clutching device 36 is mounted on the projecting end of either of the aforesaid shafts for clutching the gear 35 to the shaft on the vertical movement of a rack bar referred to generally by the reference character 37, see Figure 4.

The rack bar 37 which associates with the shaft 18 is formed of an upper section 38 and a lower section 39. The rack bar 37 which associates with the shaft 27 is formed with an upper section 40 and a lower section 41. The lower end of the section 38 is tubular and extending therein is the section 39. The lower end of the section 40 is tubular and extending therein is a section 41. The tubular part of the section 38 as well as the tubular part of the section 40 is formed with an elongated slot 42 extending lengthwise thereof and reinforcing bands 43 are carried by each of the tubular parts of the said sections 38, 40. The section 39 as well as the section 41 is peripherally threaded as at 44. The lower end of the section 39 is pivotally connected to one of the oscillatory cranks 2 as at 45 and the lower end of the section 41 is pivotally connected, as at 46 to the other oscillatory crank 2. Adjustably engaging with the section 39, as well as the section 44, is an adjusting nut 47 for the purpose of controlling the stroke of a rack bar 37. The lengthwise adjusting of the nuts on the sections 39 and 41 will control the stroke of the rack bars 37. The sections 38 and 40 seat on the nuts 47. The rack bars 37 mesh with the slip gears 35 and the upper end of each rack bar carries a stop 48 to prevent the rack bar from sliding downwardly through a housing.

Secured to the intermediate portion 4 of the bracket 3 and spaced from the roll 24 is a revoluble guide roller 49 for maintaining the leaf 50 fed by the upper feed device clear of the rollers of the lower feed device. The securing means between the guide roller 49 and the end portion 6 of the bracket 3 consists of a pair of laterally extending suspension arms 51. The leaf which is fed by the lower feed device is indicated at 52 and passes inwardly with respect to the guide roller 49, see Figure 1.

The leaf fed is in the form of a ribbon and unwound from a roll. The roll from which the leaf 50 is unwound is indicated at 53 and the roll from which the leaf 52 is unwound is indicated at 54. The rolls 53 and 54 are carried by a shaft 55 which is supported in the frame 1 of the press. The shaft 55 is connected to the frame 1 in any suitable manner. Mounted on the shaft 55 is a pair of adjustable guides 56 one associated with the roll 53 and the other with the roll 54. Mounted on the shaft 55 is a pair of spring controlled permanently shiftable guides 57, one of which associates with the roll 53 and the other with the roll 54. A guide 56 associates with a guide 57 for the purpose of holding the ribbon in place in roll like form on the shaft 55. The shaft 55 carries a pair of stop collars 58 each provided with a set screw 59 and between the collar 58 and the guide 57 is the controlling spring 60 for the latter. The springs 60 are mounted on the shaft 55. The spring controlled guides 57 give pressure or tension on the ribbon so that it does not hang and sag in the operation. The leaf 50 extends up between the rollers 15 and 16, the leaf 52 extends up and between the rollers 23 and 24. The serrated or knurled faces of the rollers 15, 16, 23 and 24 do not in any manner impair the leaf but do facilitate the feed thereof when the rollers 16 and 24 are intermittently revolved through the reciprocatory action of the rack bars 37, and said

action is imparted to the bars on the oscillatory movement of the crank arms 2. As each rack bar is formed of a pair of telescopic adjustable sections the length of the stroke of each bar can be adjusted and each bar can be adjusted independently.

The rollers of the feed devices can be of any suitable diameter, but preferably the lower roller of the lower feed device is four and one half inches in diameter and the upper roller thereof as well as the rollers of the upper feed device are two inches in diameter. By this arrangement one set of rollers is given a much greater pulling stroke than the other set and this allows a long pull and a short pull at the same time as they may be needed and furthermore the number of feed devices can be increased over those shown, by extending the bracket to a height to provide for superposing another feed device over the rollers 15, 16.

The feed of the leaves or ribbons is had synchronously and simultaneously with the operation of the press and the attachment owing to the manner in which the ribbons or leaves are fed provide greatly superior results and at the same rate or cheaper than ordinary bronzing and further the cloth work can be done at less than one half the cost of the regular bindery stamping now in use, as the attachment requires only one attendant in both operations against three or four as is the case at present and the attachment provides for a greater production per hour than can be obtained now by the present method and further the production will depend in accordance with the speed of the machine attached or the operator's ability, therefore it is thought that the many advantages of a leaf feeding mechanism, in accordance with this invention, and for the purpose referred to, can be readily understood, and although the preferred embodiment of the invention is as illustrated and described, yet it is to be understood that changes in the details of construction can be had which will fall within the scope of the claims hereunto appended.

What I claim is:

1. A leaf feeding mechanism for use in hot stamping comprising a pair of superposed feed rollers for intermittently feeding a leaf in the form of a ribbon for a portion of its length, a sectional lengthwise adjustable reciprocatory rack bar, and means mounted on one end of said lower roller and engaged by said bar to provide for the intermittent operation of the rollers to feed the leaf, the adjustability of said bar controlling the duration of the drive of said means thereby providing for varying the length of that portion of the leaf fed by the rollers.

2. A leaf feeding mechanism for use in hot stamping comprising a pair of superposed feed devices each consisting of a pair of superposed rollers for intermittently feeding the leaf in the form of a ribbon from a roll for a portion of its length, a pair of reciprocatory rack bars operating synchronously, means mounted on one end of the lower roller of each pair of rollers and engaged by a rack bar to provide for the intermittent operation of said devices simultaneously to feed the leaf from its respective roll, the rollers of said upper feed device being of the same diameter and the lower roller of the lower feed device being of greater diameter than the upper roller of said device.

3. A leaf feeding mechanism for use in hot stamping comprising a pair of superposed feed devices each consisting of a pair of superposed rollers for intermittently feeding the leaf in the form of a ribbon from a roll for a portion of its length, a pair of reciprocatory rack bars operating synchronously and one co-acting with the lower roller of one pair and the other co-acting with the lower roller of the other pair, means mounted on one end of the lower roller of each pair of rollers and engaged by its co-acting rack bar to provide for the intermittent operation of said devices simultaneously to feed the leaf from its respective roll, and each of said rack bars being lengthwise adjustable for controlling the stroke thereof thereby providing for varying the lengths of the portions of the leaves fed by said devices.

4. A leaf feeding mechanism for use in hot stamping comprising a pair of superposed feed devices each consisting of a pair of superposed rollers for intermittently feeding the leaf in the form of a ribbon from a roll for a portion of its length, a pair of reciprocatory rack bars operating synchronously, means mounted on one end of the lower roller of each pair of rollers and engaged by a rack bar to provide for the intermittent operation of said devices simultaneously to feed the leaf from its respective roll, the rollers of said upper feed device being of the same diameter and the lower roller of the lower feed device being of greater diameter than the upper roller of said device, and each of said rack bars being lengthwise adjustable for controlling the stroke thereof.

5. A leaf feeding mechanism for use in hot stamping comprising a pair of superposed feed devices each consisting of a pair of superposed rollers for intermittently feeding the leaf in the form of a ribbon from a roll for a portion of its length, a pair of reciprocatory rack bars operating synchronously and one co-acting with the lower roller of one pair and the other co-acting with the lower roller of the other pair, means mounted on one end of the lower

roller of each pair of rollers and engaged by its co-acting rack bar to provide for the intermittent operation of said devices simultaneously to feed the leaf from its respective roll, and each of the rollers being serrated throughout and the upper one of the rollers of each of said devices being spring controlled.

6. A leaf feeding mechanism for use in hot stamping comprising a pair of superposed feed devices each consisting of a pair of superposed rollers for intermittently feeding the leaf in the form of a ribbon from a roll for a portion of its length, a pair of reciprocatory rack bars operating synchronously, means mounted on one end of the lower rollers of each pair of rollers and engaged by a rack bar to provide for the intermittent operation of said devices simultaneously to feed the leaf from its respective roll, the rollers of said upper feed device being of the same diameter and the lower roller of the lower feed device being of greater diameter than the upper roller of said device, and each of the rollers of each of said devices being serrated throughout and one of the rollers of each of said devices being spring controlled.

7. A leaf feeding mechanism for use in hot stamping comprising a pair of superposed feed devices each consisting of a pair of superposed rollers for intermittently feeding the leaf in the form of a ribbon from a roll for a portion of its length, a pair of reciprocatory rack bars operating synchronously, means mounted on one end of the lower roller of each pair of rollers and engaged by a rack bar to provide for the intermittent operation of said devices simultaneously to feed the leaf from its respective roll, supporting means common to said rolls of leaf, an adjustable and a spring controlled guide mounted on said means for each of said rolls, and each of the rollers of each of said devices being serrated throughout and one of the rollers of each of said devices being spring controlled.

8. A leaf feeding mechanism for use in hot stamping comprising a pair of superposed feed devices each consisting of a pair of superposed rollers for intermittently feeding the leaf in the form of a ribbon from a roll for a portion of its length, a pair of reciprocatory rack bars operating synchronously, means mounted on one end of the lower roller of each pair of rollers and engaged by a rack bar to provide for the intermittent operation of said devices simultaneously to feed the leaf from its respective roll, the rollers of said upper feed device being of the same diameter and the lower roller of the lower feed device being of greater diameter than the upper roller of said device, supporting means common to said leaf rolls, an adjustable and a spring controlled guide mounted on said means for each leaf roll, and each of the rollers of each of said devices being serrated throughout and one of the rollers of each of said devices being spring controlled.

9. A leaf feeding mechanism for use in hot stamping comprising a pair of superposed feed devices each consisting of a pair of superposed rollers for intermittently feeding the leaf in the form of a ribbon from a roll for a portion of its length, a pair of reciprocatory rack bars operating synchronously, means mounted on one end of the lower roller of each pair of rollers and engaged by a rack bar to provide for the intermittent operation of said devices simultaneously to feed the leaf from its respective roll, the rollers of said upper feed device being of the same diameter and the lower roller of the lower feed device being of greater diameter than the upper roller of said device, each of said rack bars being lengthwise adjustable for controlling the stroke thereof, and each of the rollers of each of said devices being serrated throughout and one of the rollers of each of said devices being spring controlled.

In testimony whereof, I affix my signature hereto.

WALTER D. BARNES.