

April 27, 1937.

O. R. WOLF

2,078,520

ADJUSTMENT MECHANISM FOR INKING APPARATUS

Filed May 18, 1935

4 Sheets-Sheet 1

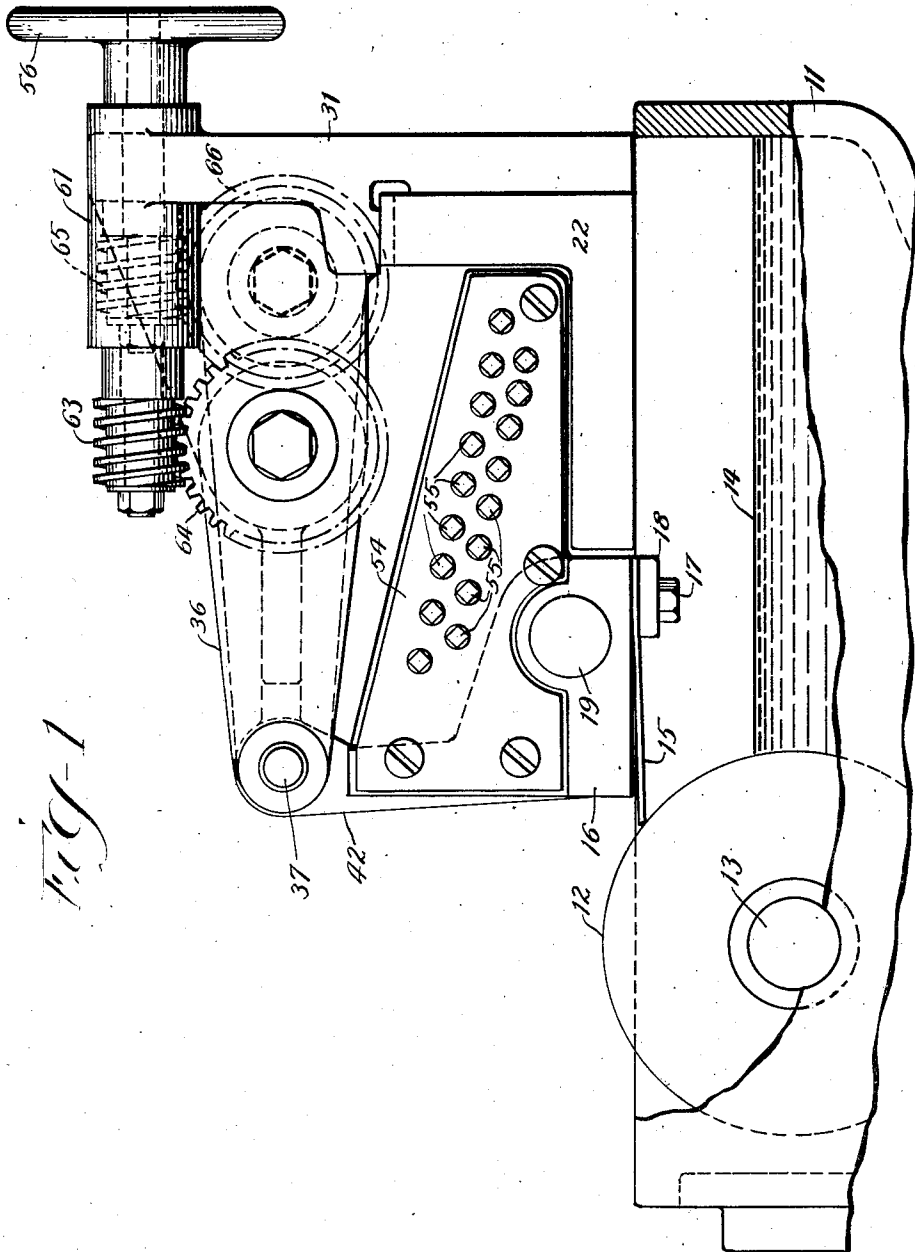


Fig-1

Inventor:
Otto R. Wolf.
By: Carl S. Dwyer

Att'y

April 27, 1937.

O. R. WOLF

2,078,520

ADJUSTMENT MECHANISM FOR INKING APPARATUS

Filed May 18, 1935

4 Sheets-Sheet 2

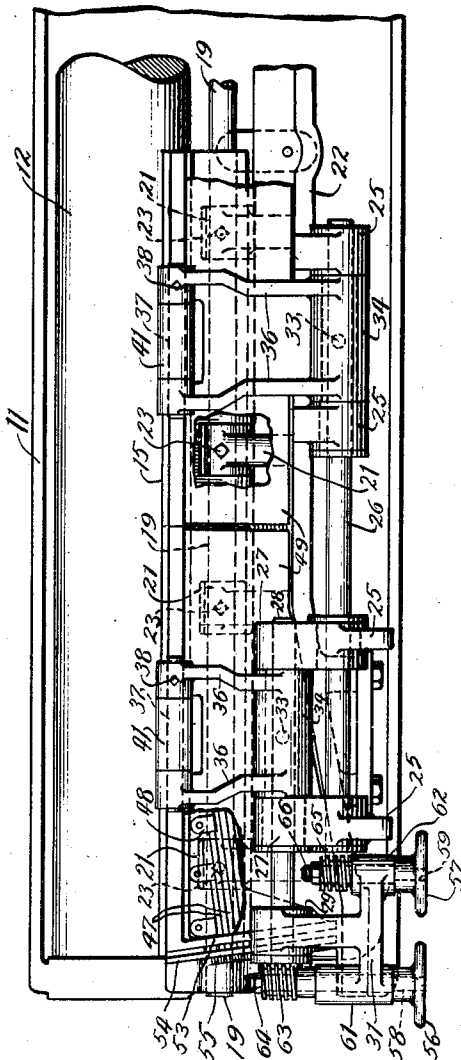


Fig. 2

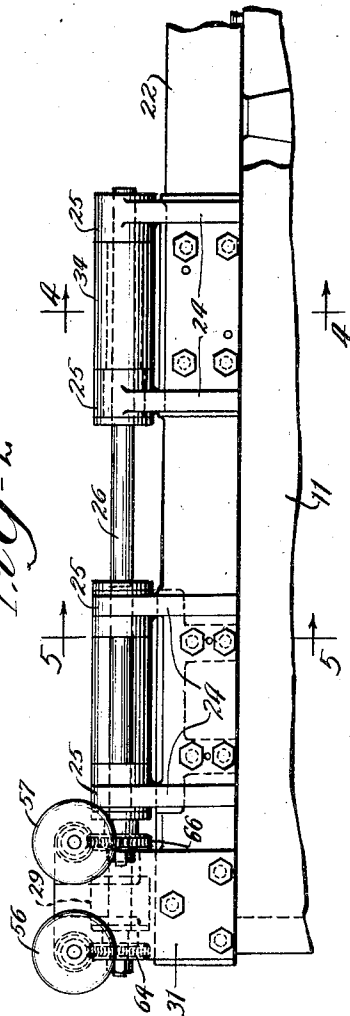


Fig. 3

Inventor.
Otto R. Wolf
By: Carl S. Lloyd
Att'y.

April 27, 1937.

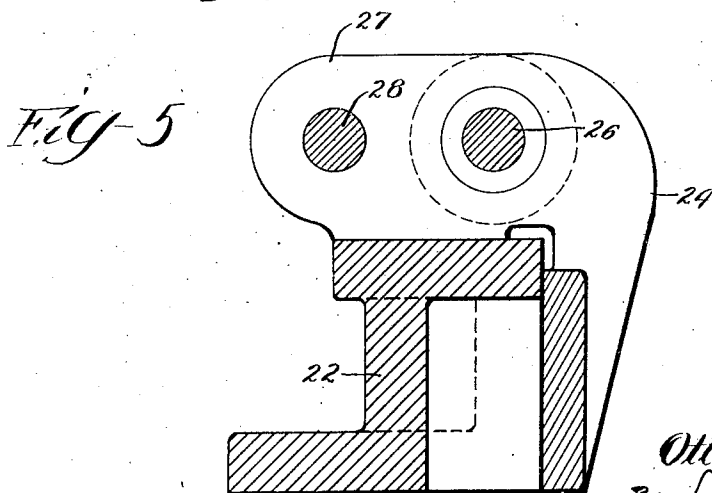
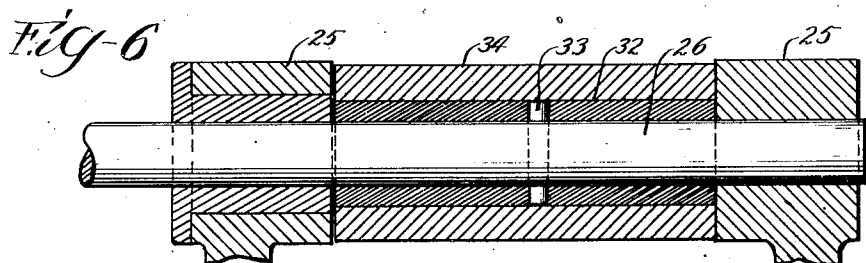
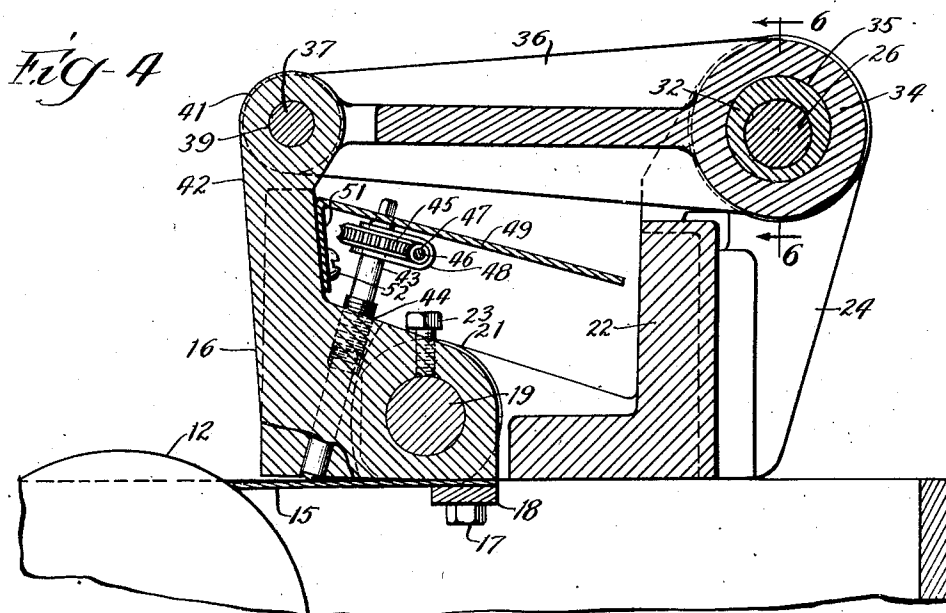
O. R. WOLF

2,078,520

ADJUSTMENT MECHANISM FOR INKING APPARATUS

Filed May 18, 1935

4 Sheets-Sheet 3



Inventor:
Otto R. Wolf.
By: Carl S. Lloyd

Kitty.

April 27, 1937.

O. R. WOLF

2,078,520

ADJUSTMENT MECHANISM FOR INKING APPARATUS

Filed May 18, 1935

4 Sheets-Sheet 4

Fig-7

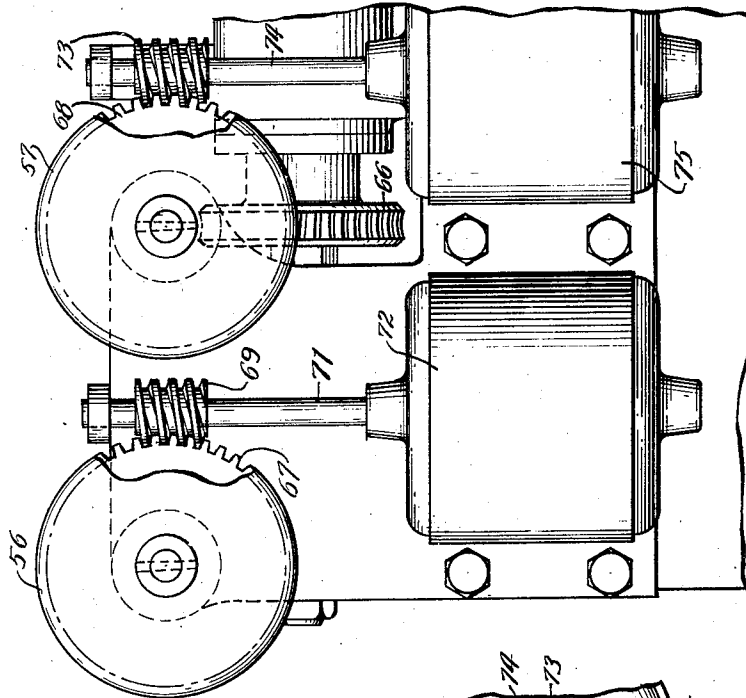
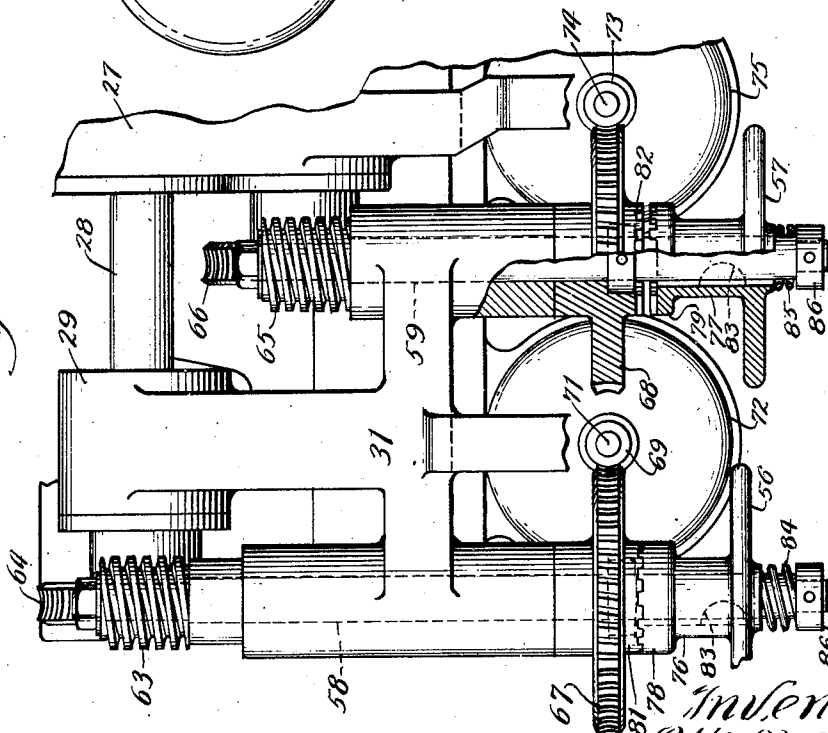


Fig-8



Inventor:
Otto R. Wolf.
By: Carl H. Lloyd
Atty.

UNITED STATES PATENT OFFICE

2,078,520

ADJUSTMENT MECHANISM FOR INKING
APPARATUSOtto R. Wolf, Oak Park, Ill., assignor to The
Tribune Company, Chicago, Ill., a corporation
of Illinois

Application May 18, 1935, Serial No. 22,184

20 Claims. (Cl. 101—365)

This invention relates to apparatus for adjusting the scraper blades of ink supply mechanism for printing presses, and has for its object broadly the provision of means whereby the operator of the press may effect an adjustment of a substantial sectional portion of the blade more quickly than has been possible in the past.

In the printing of large metropolitan newspapers pages are often changed from one edition to another, and, inasmuch as certain pages require more ink than others, due to the nature of the matter printed thereon, it frequently becomes necessary to make a complete adjustment for a one-page wide section of the blade. In accordance with the present practice, the operator is required to adjust eight or more screws to make an adjustment for an eight column page, and this takes considerable time as well as being inconvenient and laborious. My invention dispenses with the necessity of this slow and tedious adjustment by providing convenient and effective means whereby a section of the blade corresponding to one page of the paper may be adjusted by a single operation, such for example, as the manipulation of a conveniently located handwheel.

With this and other objects in view, which will appear as the description proceeds, the invention resides in the combination and arrangement of parts, and in the details of construction hereinafter described and claimed, it being understood that various changes in the precise embodiment of the invention herein disclosed may be made within the scope of what is claimed, without departing from the spirit of the invention.

Referring to the drawings:

Fig. 1 is an end elevation, partly broken away, of an ink fountain equipped with blade adjusting mechanism in which my invention is embodied;

Fig. 2 is an elevational view of the apparatus, broken away and showing adjustment devices for two page sections, or half of the mechanism which would be employed with a four page wide press unit;

Fig. 3 is a top plan view of the apparatus shown in elevation in Fig. 2;

Fig. 4 is a transverse sectional view taken substantially on the section line 4—4 of Fig. 2;

Fig. 5 is a detail section taken substantially on the section line 5—5 of Fig. 2;

Fig. 6 is a longitudinal section taken substantially on the section line 6—6 in Fig. 4;

Fig. 7 is an elevational view, partly broken away, of a modified form of the actuating mechanism for the apparatus adapted for either local or remote control; and

Fig. 8 is a plan view, partly in section, of the mechanism shown in Fig. 7.

Upon said drawings, which illustrate a preferred embodiment of the invention, the reference numeral 11 indicates an ink fountain which may be of the type customarily used in newspaper printing presses. A roller 12 is mounted for rotation in said fountain, being carried upon a shaft 13 extending lengthwise of the fountain near one side thereof, said roller, when the press is operating, being partly submerged in the ink 14 contained in the fountain, as shown in Fig. 1 of the drawings. A blade 15 is positioned to engage the surface of the roller 12 to remove a part of the ink therefrom as the roller rotates in counter-clockwise direction (viewing Fig. 1), said blade in the present instance being sectional and each section thereof being mounted on the underside of one of a plurality of brackets 16, to which it is attached by means of screws 17 and a clamp bar 18, it being understood that there is one of said brackets 16 for each section of the blade. The point of attachment of the blade sections is near the rear edge thereof and they are made of springy or resilient material, such as spring steel to permit adjustment thereof relative to their supporting brackets and also to provide a yielding contact with the fountain roller in the well-known manner.

The brackets 16 are mounted on a longitudinal shaft 19, which is carried in fixed supports 21 extending forwardly from a fixed bracket 22, which extends lengthwise of the fountain. Said shaft is held against rotation by means of screws 23 as clearly shown in Figs. 3 and 4. The brackets 16 and associated parts are adapted to be rocked about this shaft as independent units to effect a collective adjustment of particular blade sections, as will hereinafter appear.

A plurality of pairs of uprights 24 extend upwardly from the fixed bracket 22 and are formed to provide bearings 25 at their upper ends for a shaft 26 extending lengthwise of the assembly. The left hand pair of uprights 24 (viewing Figs. 2 and 3) have forwardly extending portions 27 providing bearings for a second shaft identified by the reference numeral 28, which shaft, however, is of shorter length than the shaft 26, extending merely between said bearings 27 and to the left thereof into a bearing 29 carried by a bracket 31 supported upon the fixed bracket or brace 22 at the left end of the latter.

An eccentric 32 (shown in Figs. 4 and 6) is mounted on the shaft 26 between the bearings 25, shown at the right in Figs. 2 and 3, being secured

to said shaft by means of a pin 33. A sleeve 34, having an eccentric bore 35, is positioned upon said eccentric and is provided with arms 36 extending forwardly and connected at their outer ends by a shaft 37, to which one of said arms is fixedly secured by a set screw 38. Similar parts, which are correspondingly numbered, are mounted on the shaft 28 between the bearings 27, and will not be separately described.

Said shaft 37 also extends through a bore 39 in a cylindrical part 41 of a lug 42 extending upwardly from the movable bracket 16 at the right of Fig. 3, and the bracket at the left of said Fig. 3 is similarly connected to the arms 36 shown at the left of the figure.

The regular adjusting screws 43, one of which is shown in Fig. 4, are mounted in the brackets 16 with which they have a screw thread connection as indicated at 44, the upper end of each screw having a worm wheel 45 in mesh with a worm 46 carried on a diagonal, horizontal rod 47, there being a number of said rods and worms corresponding to the number of said adjusting screws, several of the rods being shown at the left center of Fig. 3 of the drawings. The worms are held in engagement with the worm wheels by means of straps or keepers 48 in the usual manner, and cover plates 49 are provided over said individual adjusting devices, each said plate having a flange 51 secured to the associated bracket 16 by means of screws 52, it being understood of course that there is one of said cover plates 49 for each of the movable brackets 16.

The rods 47 protrude through parallel plates 53 and 54, shown at the left of Fig. 3, the outer ends of said rods being provided with square heads 55 adapted to be engaged by a wrench for individual adjustment of the screws 43 in manner which is well-known in the art. The screws 43 are normally positioned so that the adjustment of one thereof adjusts a section of the blade 15 corresponding in length to the width of a newspaper column, and, in the use of the apparatus of my invention, this adjustment is effected in the same manner that it has heretofore been done, there being sufficient flexibility in the rods and enough play in the connections between the parts to permit the collective or page adjustment hereinafter described.

For the purpose of effecting said collective or page adjustment, I provide means for rotating the shafts 28 and 26, which means may be operated by hand, and, if desired, also by electric control from a remote point as will later appear from the description of Figs. 7 and 8. For purposes of hand operation I provide handwheels 56 and 57 mounted respectively on shafts 58 and 59 extending through bearings 61 and 62 formed in the bracket 31, as clearly shown in Fig. 3. The shaft 58 carries at its inner end a worm 63 meshing with a worm wheel 64 carried at the outer end of the shaft 28 and the shaft 59 carries a similar worm 65 which is in mesh with a worm wheel 66 on the end of the shaft 26. The worms and worm wheels provide a positive connection between the hand wheels 56 and 57 and the shafts 28 and 26, respectively, and serve to hold said shafts and the parts carried thereby in their adjusted positions.

Referring now to Figs. 3 and 4, it will be noted that rotation of the shaft 26 by operation of the hand wheel 57 will cause the eccentric 32 carried on said shaft between the bearings 25 to move correspondingly, and rotation of said eccentric in the bore 35 of the sleeve 34 will move said sleeve

bodily either to the right or to the left (viewing Fig. 4) in accordance with the direction of rotation. Inasmuch as said sleeve is connected by the arms 36 with the shaft 37, the latter will be moved correspondingly and, through the lug 42, will rock the bracket 16 about the shaft 19 in manner which will be apparent from the foregoing description. When said bracket is rocked in counterclockwise direction (viewing Fig. 4), it will obviously move the blade section 15 carried thereby into closer engagement with the fountain roller 12, and this will be accomplished without disturbing the adjustment of the screws 43 with respect to said blade section, since said screws are carried by the bracket 16 and remain in contact with the blade irrespective of the adjusted position of said bracket. Rotation of the bracket in clockwise direction of course will relieve the tension of the blade section 15 against the fountain roller 12, thus permitting a greater amount of ink to be delivered by said roller to the "ink-motion" of the press. If a column adjustment should be desired without changing the adjustment for the entire page, the appropriate screw 43 may be adjusted through the proper rod 47 in the usual manner. Thus the capacity of the apparatus for adjusting the blade for individual columns is not affected in any way by the construction which I employ, but provision is made for saving a great deal of time and effort by adjusting an entire blade section at one time when the occasion requires.

It will be understood of course that when it is desired to operate the full-page adjusting mechanism shown at the left of Fig. 3, this may be done by operating the hand wheel 56 and associated parts in the same manner as has been described with reference to the parts operated by rotation of the hand wheel 57; also that two additional page-wide units will normally be provided, in the case of a standard newspaper press, at the right of, and as a continuation of the mechanism shown in Figs. 2 and 3, the hand wheels for operation thereof being preferably positioned at the opposite end of the fountain, and the individual adjusting devices will also be duplicated for the right half of the apparatus.

While the eccentrics 32 provide an efficient means for effecting the collective adjustment, as hereinbefore described, and serve to produce a powerful leverage through the exercise of relatively slight force in the operation of the hand wheels 56 and 57, it will be evident that other means, such as screws or equivalent motion-translating devices, could be employed in place of the eccentrics if desired.

Referring now to Figs. 7 and 8, it will be observed that I have made provision for operating the collective adjustment devices electrically, thus making it possible to control the operation from a remote point by means of suitable push buttons or switches, as will be readily understood. As shown in these figures, worm wheels 67 and 68 are loosely mounted on the shafts 58 and 59, respectively, the worm wheel 67 being in mesh with a worm 69 carried upon the upper end of an armature shaft 71 extending upwardly from a vertically positioned motor 72 suitably supported on the frame, and the worm wheel 68 is likewise adapted to be driven by a worm 73 on the upper end of an armature shaft 74 of a motor 75 similarly supported from the frame. The wiring for connecting the motors 72 and 75 with suitable sources of electric current, and the circuit controllers for energizing and deenergizing

the motors, are not shown, since such devices are well-known and a suitable arrangement for this purpose would be obvious to anyone skilled in the art.

5 The hand wheels 56 and 57 have inwardly extending hub portions 76 and 77 terminating in clutch elements 78 and 79 adapted to engage complementary elements 81 and 82 which are integral, respectively, with the worm wheels 67 and 68. Said hub portions of the hand wheels
10 are connected to the shafts 58 and 59 by means of keys 83. Springs 84 and 85 are provided on the shafts 58 and 59, respectively, and tend to hold the clutches normally engaged, as shown at the left in Fig. 8, said springs being positioned
15 between the outer ends of the hubs 76 and 77 and collars 86 secured to the outer ends of the shafts. With the clutch thus engaged, rotation of the worm wheel 67 will rotate the shaft 58 through the hub 76 and key 83 in manner which will be evident from an inspection of said Fig. 8. When it is desired to operate one of the hand
20 wheels by hand, it may be pulled outwardly, as shown at the right of Fig. 8, from which it will be seen that the clutch 79, 82 is disengaged so that the shaft 59 may be rotated through the connection of the hub 77 with said shaft by means of the key 83, the spring at this time being compressed between the outer end of said hub 77
25 and the collar 86 on the outer end of said shaft 59. With this arrangement the collective adjustment devices may be operated by hand or by electric control at the will of the operator, it being evident, however, that the remote control feature can be omitted if it should not be considered
30 necessary or desirable in particular installations.

It is thought that the invention and many of its attendant advantages will be understood from the foregoing description, and it will be apparent
35 that various changes may be made in the form, construction and arrangement of the parts without departing from the spirit and scope of the invention, or sacrificing all of its material advantages, the form hereinbefore described being
40 merely a preferred embodiment thereof.

What I regard as new and desire to secure by Letters Patent is:

1. In an inking apparatus for printing presses, the combination of an ink fountain, a fountain
45 roller, a plurality of scraper blades positioned to engage said roller for controlling the amount of ink thereon and arranged in substantially abutting relationship, a plurality of individual adjusting devices arranged to act on the blades at various
50 points across their width, and collective adjustment devices each operable to adjust as a unit one of said blades while maintaining the blade under the adjustment provided by the individual adjusting devices.

2. In an inking apparatus for printing presses, the combination of an ink fountain, a fountain
55 roller, a plurality of scraper blades positioned to engage said roller for controlling the amount of ink thereon and arranged in substantially abutting relationship, a plurality of individual adjusting devices arranged to act on the blades at various
60 points across their width, and collective adjustment devices each operable to adjust as a unit one of said blades while maintaining the blade under the adjustment provided by the individual adjusting devices, both said individual adjusting devices and said collective adjustment device being operable from an end of the fountain.

3. In an inking apparatus for printing presses, the combination of an over-shot ink fountain, a

fountain roller, a plurality of scraper blades positioned to engage said roller for controlling the amount of ink thereon and arranged in substantially abutting relationship, a plurality of individual adjusting devices arranged to act on the
5 blades at various points across their width, and collective adjustment devices each operable to adjust as a unit one of said blades without separating the blade from said individual adjusting devices.

4. In an inking apparatus for printing presses, the combination of an ink fountain, a fountain
10 roller, a plurality of scraper blades positioned to engage said roller for controlling the amount of ink thereon and arranged in substantially abutting relationship, a plurality of individual adjusting devices arranged to act on the blades at various
15 points across their width, collective adjustment devices each operable to adjust as a unit one of said blades, independently movable supports, one for each group of said devices, and a plurality of collective adjustment devices, each
20 operatively connected with one of said supports and adapted to move the same and the individual adjusting devices carried thereby as a unit, to thus adjust by a single operation a selected blade without separating the blade from said individual adjusting devices.

5. In an inking apparatus for printing presses, the combination of an ink fountain, a fountain
25 roller, a plurality of scraper blades positioned to engage said roller for controlling the amount of ink thereon and arranged in substantially abutting relationship, a plurality of groups of individual adjusting devices, each group comprising
30 a plurality of devices arranged to act on one of said blades at various points across the width thereof, independently movable supports, one for each group of said devices, and a plurality of collective adjustment devices, each operatively connected
35 with one of said supports and adapted to move the same and the individual adjusting devices carried thereby as a unit, to thus adjust by a single operation a selected blade without separating the blade from said individual adjusting devices, said individual and collective adjustment devices being operable from an end of the fountain.

6. In an inking apparatus for printing presses, the combination of an ink fountain, a fountain
40 roller, a plurality of scraper blades positioned to engage said roller for controlling the amount of ink thereon and arranged in substantially abutting relationship, a plurality of adjusting screws, a plurality of blade and screw holders, and means
45 associated with each holder for adjusting the same independently of the adjustment of the screws relative to the blade, whereby to regulate the amount of ink on the roller over the entire portion thereof which is engaged by a particular scraper blade.

7. In an inking apparatus for printing presses, the combination of an ink fountain, a fountain
50 roller, a plurality of scraper blades positioned to engage said roller for controlling the amount of ink thereon and arranged in substantially abutting relationship, a plurality of adjusting screws, a plurality of blade and screw holders, and means
55 associated with each holder for adjusting the same independently of the adjustment of the screws, while maintaining the blade under the adjustment provided by said screws, whereby to regulate the amount of ink on the blade over the entire portion thereof which is engaged by a particular scraper blade.

8. In an inking apparatus for printing presses, the combination of an over-shot ink fountain, a fountain roller, a plurality of scraper blades positioned to engage said roller for controlling the amount of ink thereon and arranged in substantially abutting relationship, a plurality of adjusting screws for each blade, combination blade and screw holders, one for each blade, and means for adjusting said holders independently of each other while maintaining the blade under the adjustment provided by said screws.

9. In an inking apparatus for printing presses, the combination of an ink fountain, a fountain roller, a plurality of scraper blades positioned to engage said roller for controlling the amount of ink thereon and arranged in substantially abutting relationship, a plurality of adjusting screws for each blade for adjusting portions of such blade, and means for adjusting each of said blades and the screws therefor as a unit.

10. In an inking apparatus for printing presses, the combination of an ink fountain, a fountain roller, a scraper blade positioned to engage said roller for controlling the amount of ink thereon, a plurality of adjusting screws, a combination blade and screw holder, and means for adjusting said holder independently of the adjustment of the screws relative to the blade, said holder being pivoted and said adjusting means including a shaft and an eccentric thereon for imparting pivotal movement to said holder upon rotation of the shaft.

11. In an inking apparatus for printing presses, the combination of an ink fountain, a fountain roller, a plurality of scraper blades positioned to engage said roller for controlling the amount of ink thereon and arranged in substantially abutting relationship, a plurality of adjusting screws for each blade, a plurality of blade and screw holders, means associated with each holder for adjusting the same independently of the adjustment of the screws relative to the blade whereby to regulate the amount of ink on the roller over the entire portion thereof which is engaged by a particular blade, each said holder being pivoted and each said adjusting means including a shaft, means operable by said shaft for moving said holder to adjust the position of said blade, and manually operable means for rotating said shaft.

12. In an inking apparatus for printing presses, the combination of an ink fountain, a fountain roller, a plurality of scraper blades positioned to engage said roller for controlling the amount of ink thereon and arranged in substantially abutting relationship, a plurality of adjusting screws for each blade, a plurality of blade and screw holders, means associated with each holder for adjusting the same independently of the adjustment of the screws relative to the blade, whereby to regulate the amount of ink on the roller over the entire portion thereof which is engaged by a particular blade, each said holder being pivoted and each said adjusting means including a shaft, means operable by said shaft for moving said holder to adjust the position of said blade, and electrically operable means for rotating said shaft.

13. In an inking apparatus for printing presses, the combination of an ink fountain, a fountain roller, a plurality of scraper blades positioned to engage said roller for controlling the amount of ink thereon and arranged in substantially abutting relationship, a plurality of adjusting screws for each blade, a plurality of blade and screw

holders, means associated with each holder for adjusting the same independently of the adjustment of the screws relative to the blade, whereby to regulate the amount of ink on the roller over the entire portion thereof which is engaged by a particular blade, each said holder being pivoted and each said adjusting means including a shaft, means operable by said shaft for moving said holder to adjust the position of said blade, and means having provisions for operation either manually or electrically at the will of the operator for rotating said shaft.

14. In an inking apparatus for printing presses, the combination of an ink fountain, a fountain roller, a plurality of scraper blades positioned to engage said roller for controlling the amount of ink thereon, a plurality of adjusting screws for each blade, combination blade and screw holders, one for each blade, and means for adjusting said holders independently of each other, the adjusting means for each holder including a shaft and an eccentric thereon for moving said holder to adjust the position of the blade carried thereby when said shaft is rotated.

15. In an inking apparatus for printing presses, the combination of an ink fountain, a fountain roller, a plurality of scraper blades positioned to engage said roller for controlling the amount of ink thereon and arranged in substantially abutting relationship, a plurality of adjusting screws for each blade, combination blade and screw holders, one for each blade, and means for adjusting said holders independently of each other, whereby to regulate the amount of ink on the roller over the sectional portions thereof which are engaged by a particular blade, the adjusting means for each holder including a shaft, means operable by said shaft for moving said holder to adjust the position of the blade section carried thereby when the shaft is rotated, and means for rotating the shaft.

16. In an inking apparatus for printing presses, the combination of an ink fountain, a fountain roller, a plurality of scraper blades positioned to engage said roller for controlling the amount of ink thereon and arranged in substantially abutting relationship, a plurality of adjusting screws for each blade, combination blade and screw holders, one for each blade, and means for adjusting said holders independently of each other, whereby to regulate the amount of ink on the roller over the sectional portions thereof which are engaged by a particular blade, the adjusting means for each holder including a shaft, means operable by said shaft for moving said holder to adjust the position of the blade section carried thereby when the shaft is rotated, and means having provisions for operation either manually or electrically at the will of the operator for rotating the shaft.

17. In an inking apparatus for printing presses, the combination of an ink fountain, a fountain roller, a plurality of scraper blades positioned to engage said roller for controlling the amount of ink thereon and arranged in substantially abutting relationship, a plurality of adjusting screws, a plurality of blade and screw holders, and means associated with each holder for adjusting the same, whereby to regulate the amount of ink on the roller over the entire portion thereof which is engaged by a particular blade, said means including a worm and worm gear for moving said holder and locking the same in adjusted position.

18. In an inking apparatus for printing presses, the combination of an over-shot ink fountain, a

fountain roller, a plurality of blades positioned to act upon said roller to control the amount of ink delivered from the fountain thereby, said blades being arranged in substantially abutting relationship, a plurality of independently operable devices for adjusting narrow portions of the blade, and means operable independently of said adjusting devices for adjusting a complete blade while maintaining the latter under the adjustment provided by said first mentioned adjusting device.

19. In an inking apparatus for printing presses, the combination of an over-shot ink fountain, a fountain roller, several scraper knives for scraping the ink off the roller, a plurality of individual adjusting devices for each scraper knife, and means for adjusting the scraper knives with their

adjusting screws independently of each other while maintaining the adjustment of the knives provided by the individual adjusting screws.

20. In an inking apparatus for printing presses, the combination of an over-shot ink fountain, a fountain roller, several scraper knives for scraping the ink off the roller, a plurality of individual adjusting devices for each scraper knife, means for adjusting the scraper knives with their adjusting screws independently of each other while maintaining the adjustment of the knives provided by the individual adjusting screws, and a cross brace upon which the several scraper knife and adjusting screw assemblies are pivotally mounted.

OTTO R. WOLF.