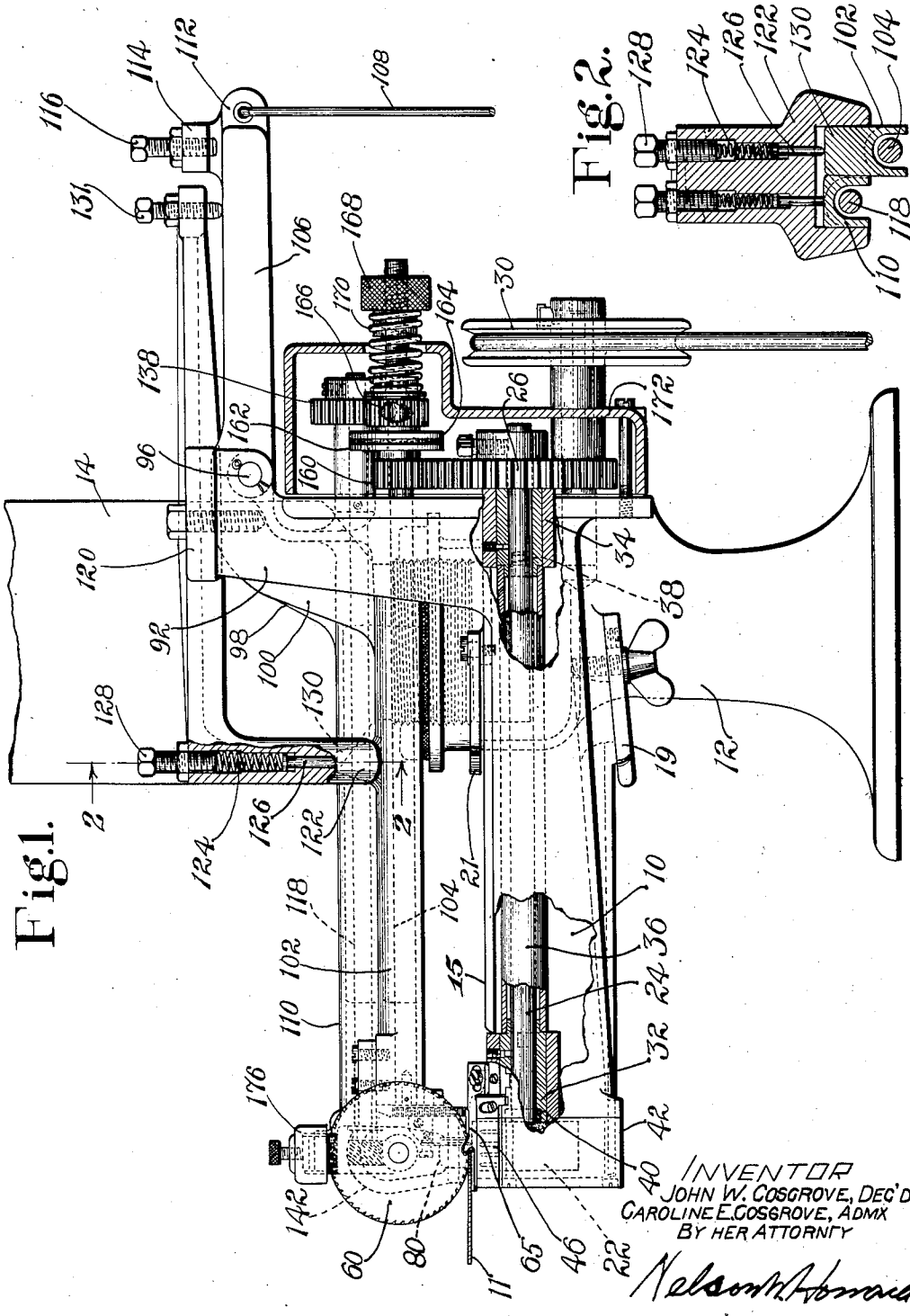
Feb. 3, 1931. J. W. COSGROVE 1,790,901

FRENCH BINDING STRAIGHTENING AND CEMENTING MACHINE

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FRENCH BINDING STRAIGHTENING AND CEMENTING MACHINE

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Fig. 5.

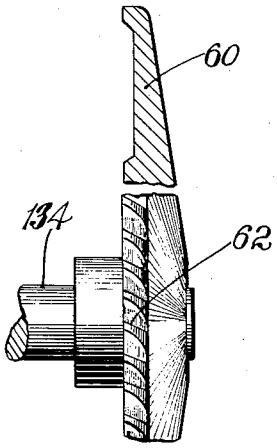


Fig. 3.

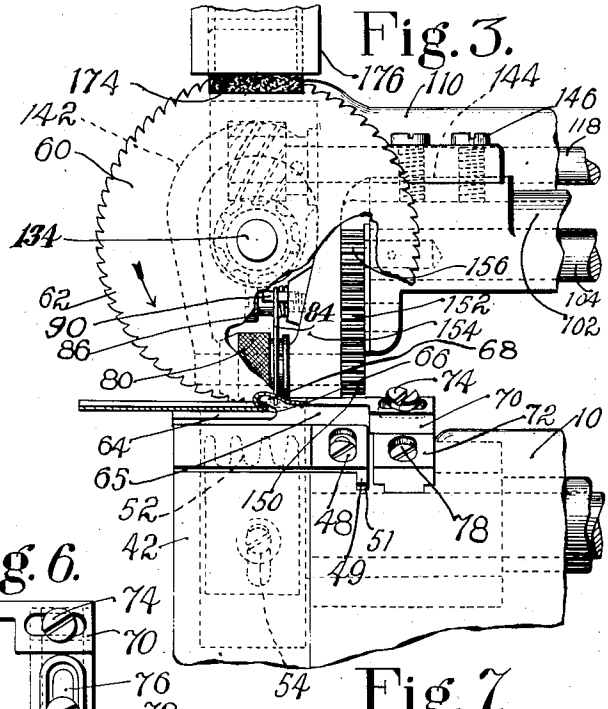


Fig. 6.

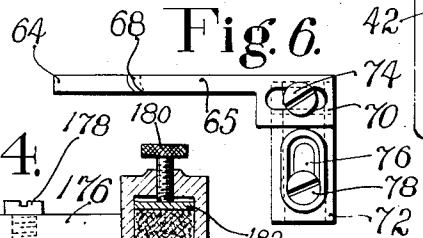


Fig. 4.

Fig. 7.

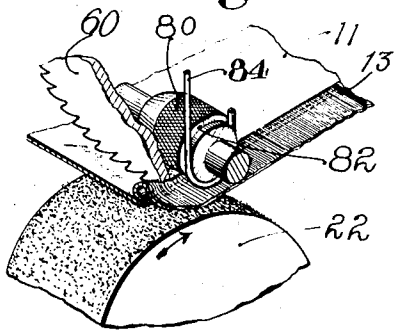
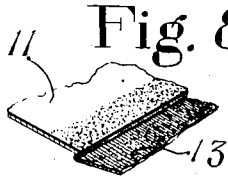


Fig. 8.



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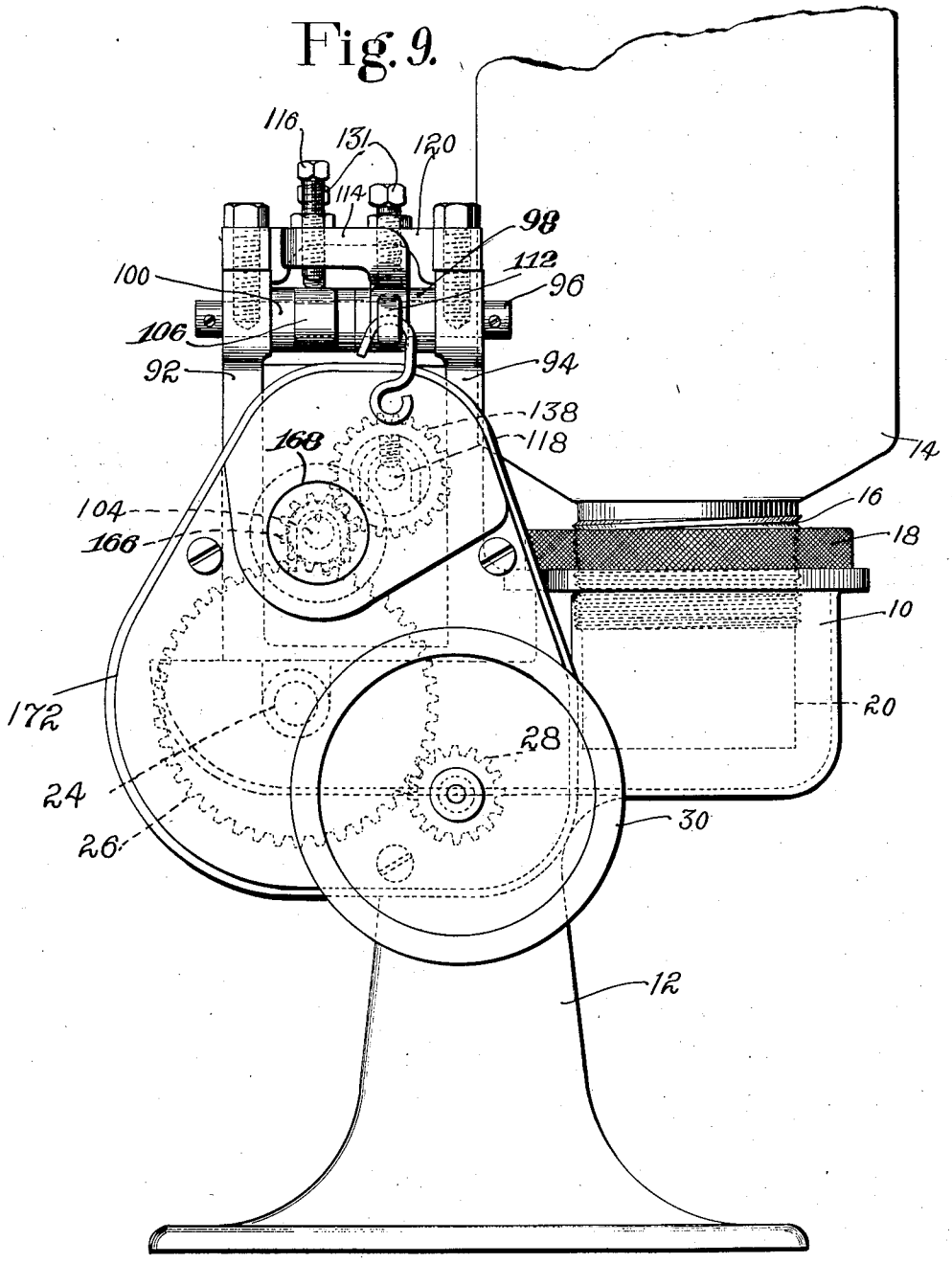
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FRENCH BINDING STRAIGHTENING AND CEMENTING MACHINE

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Fig. 9.



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1,790,901

UNITED STATES PATENT OFFICE

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FRENCH-BINDING STRAIGHTENING AND CEMENTING MACHINE

Application filed March 5, 1928. Serial No. 259,318.

This invention relates to improvements in French binding machines and the invention is herein illustrated as embodied in a machine for rubbing out or straightening a fabric French binding strip attached to a marginal portion of a shoe upper and applying a coating of cement to the margin of the upper and to the binding strip.

In the manufacture of certain classes of work, especially women's shoes, it is desired to bind the edges of the upper with a fabric strip in order to produce so-called French binding or a French edge. In this work, a fabric binding strip is secured to the outer face of the upper in a position wholly overlying the upper by means of a row of stitching located close to the margin of the upper. After the binding has been stitched to the material, the French edge is formed by the three distinct steps of, first, rubbing out or straightening the fabric strip to leave the free portion of the binding extending out from the edge of the piece of work to which the binding is attached in substantially the plane of that piece of work, second, the application of a coating of cement to the inner face of the material along its margin and to the face of the straightened binding strip which is to be folded against the work, and, third, the folding of the free portion of the strip over the edge of the piece of work and pressing it into place to attach it to the inner face of the work.

In carrying out the first of these steps the strip must be wiped out rather vigorously until the stitches "smile", that is, until they can be plainly seen. Some difficulty has been experienced in performing this operation effectively upon pieces of work of delicate material without damaging the material, as by scuffing the surface of the material, especially at points such as at seams where the thickness of the work is considerably greater than elsewhere. The second step of the operation also involves some difficulties for the reason that the straightened binding strip, being attached to the outer surface of the piece of work, necessarily lies in a different plane from the inner face of the work which is to be coated with cement. It is not easy, therefore, to apply the proper coating of cement to both of these parts and to have the machine arranged so that it may be utilized for pieces of work which have sharp corners or narrow indentations.

Accordingly, an object of the invention is to provide an improved machine for French binding work arranged to straighten the binding strip and to apply a coating of cement to the work.

The danger of scuffing the work is eccentuated by the fact that machines of this type customarily employ positive means for feeding or advancing the work past a rotary straightening disk, the tendency of which is to retard the work. An important feature of the present invention resides in the provision of a driven wiper disk which acts to straighten the binding strip and has its peripheral portion constructed and arranged to assist the feeding means in advancing the work instead of retarding it. When, as in the illustrated machine, the feeding means is driven frictionally to assist the operator in handling the work and to avoid the possibility of damage to the surface of the work, then this construction of the wiper disk is of even greater importance because of the fact that it allows lighter engagement of the friction driving means with the work feeding mechanism because the wiper disk is constantly helping the progress of the work. Thus the movement of the work engaging rolls may be more readily interrupted in case of abnormal conditions instead of being forced to scuff the work.

The application of cement to the margin of the work and to the binding strip may best be effected by means of a supporting roll underlying the work and dipping in a suitable receptacle. This roll by reason of properly formed peripheral surface assists to some extent in the feeding of the work and also co-operates in gripping and feeding the work, with a presser or feed roll engaging the upper surface of the leather to which the binding strip is attached. These parts, however, make no provision for holding the binding strip against the cement roll. Still another feature of the invention resides in the

provision of presser means constructed and arranged to force the extended portion of the binding strip toward the cement applying and supporting roll so that substantially the whole width of the binding strip will become coated with cement. Such an arrangement overcomes the natural tendency of the binding strip to hold itself away from the cement on the supporting roll. In the illustrated construction the auxiliary presser means comprises a wire loop received in a groove in the presser roll and pressing against the binding strip in a relation to the margin of the piece which may be varied to suit the needs of different classes of work and to meet the wishes of various operators.

As was mentioned above, the use of such a machine on more delicate leathers presents a particular problem when thicker parts of the work, such as are caused by seams, are encountered and in order to avoid and overcome this difficulty, the illustrated machine has been provided, in accordance with another feature of the invention, with a treadle connection to the rolls which engage the outer surface of the work, which connection is constructed and arranged to allow the operator to relieve the pressure on one of the rolls, here, the wiper disk, as a thicker portion of the work is reached.

Still other features of the invention relating to the organization of the illustrated machine and also to the construction of an adjustable edge gage with which the machine is provided are set forth in the following description and are pointed out in the claims.

In the drawings,

Fig. 1 is a front elevation of a French binding straightening and cementing machine embodying the invention, with parts broken away in section.

Fig. 2 is a section on the line 2—2 of Fig. 1,

Fig. 3 is an enlarged front elevation of the operating parts of the machine with part of the wiper disk broken away,

Fig. 4 is an end elevation of the same parts,

Fig. 5 is an enlarged detail edge view of the wiper disk, partly in end elevation and partly in section,

Fig. 6 is a detailed plan view of the edge gage,

Fig. 7 is a fragmentary perspective view showing the manner in which the operating parts co-act with the work,

Fig. 8 is a perspective view of the under side of a fragment of the completed work, and

Fig. 9 is an end elevation of the machine taken from the right in Fig. 1.

The illustrated machine is arranged to apply a coating of cement to the margin of the inner surface of a leather work piece 11 (Fig. 7) and to an attached binding strip 13 on a piece of French binding work as the binding strip is straightened. French binding work is used largely for the uppers of shoes and in most cases the work piece 11 will be a portion of an upper such as a vamp or a quarter, the edge of which is to be finished by being bound with a fabric binding strip 13 which is first superposed on the leather work piece in a position wholly overlying the piece of work so that the peripheries of the two coincide and is attached in that position by means of a row of stitching close to the edge of the upper, prior to being straightened, coated with cement and folded around the edge of the upper for attachment to the inner face thereof. The machine is provided with a cement receptacle 10 having a cover 15. This receptacle is in the form of an arm extending outwardly from a pedestal base 12 parallel to the front of a bench on which the machine is mounted, and cement is maintained at a constant level within this receptacle 10 by an inverted bottle 14 which, by barometric action, supplies cement to the receptacle 10 as it is used from the latter. The inverted bottle 14 has a threaded neck 16 (Fig. 9) on which there is mounted a collar 18 which is used to support it upon the receptacle 10, and adjustably to determine the position of the bottom end 20 of the neck of the bottle. The receptacle 10 is provided (Fig. 1) with a drain opening normally closed by a cover 19, and in the cover 15 there is provided a swinging cover 21 for a dip opening to allow the operator to remove a small quantity of cement for manual application to the work.

A cement applying roll 22 having a roughened surface is positioned in the open outer end of the receptacle 10 and is mounted upon a shaft 24 carrying a gear 26 which meshes with a gear 28 (Fig. 9) secured to the shaft of the driving pulley 30. The detailed construction of this cement applying roll 22 has not been illustrated herein but it may be constructed as shown in Letters Patent of the United States No. 1,242,925, granted October 16, 1917 upon the application of John W. Cosgrove. In that patent, there is shown a cement roll made of a plurality of disk-like sections which are clamped together and some of which have peripheral pockets, while others have outwardly projecting teeth thereby more firmly to engage the work and to feed it along.

The shaft 24 of the cement roll passes through bearing sleeves 32 and 34 suitably supported in the casting of the receptacle 10 and in order that the cement may not work into the bearing surfaces between the shaft 24 and these sleeves 32 and 34 a removable cylindrical casing 36 has been provided which surrounds the shaft 24 and fits tightly and merges into extensions upon the bearing sleeves 32 and 34, it being interlocked with said sleeves by tongues such as is shown at 38 entering recesses in said sleeves. This cylindrical casing is not only advantageous in excluding cement from the bearings but

also excludes cement from contact with the drive shaft, and thereby materially lightens the load upon the driving motor (not shown) at times when the machine is started up after it has been idle over night or over the week-end and cement has had an opportunity to dry out in the receptacle. An additional means is provided for excluding cement from the bearing between the shaft 24 and the sleeve 32 in the form of a felt washer 40 which is located in a recess at the end of the bearing sleeve 32 closely adjacent to the end of the cement applying roll 22. The end of the receptacle 10 is provided with a removable cup-like cover 42 on which is mounted by means of dowel pins a thin scraper plate 44 (Fig. 4) for cleaning the outer end of the cement roll 22. A similar scraper plate (not shown) is provided to clean the other end of the cement roll. The quantity of cement delivered to the work may be adjustably controlled by means of a scraper 46 adjustably secured in position on the top of the receptacle 10 by means of a screw 48. The lower surface of this scraper is approximately tangential to the cementing roll and its rear edge may be brought into the desired proximity to the peripheral surface of the cement applying roll and locked in that position by means of the screw 48.

The scraper 46 is guided for front and back movement on the machine thereby adjustably to control the amount of cement delivered by the roll 22, by means of a depending rib 49 (Fig. 3) which is received in a somewhat deeper groove 51 in the upper surface of the receptacle 10. As noted above, the scraper is clamped in its adjusted position by means of a screw 48 and, by reason of the fact that the rib 49 does not seat in the bottom of the groove 51, the pressure of the screw 48 tends to correct any slight inaccuracies in the manufacture of the parts and to bring the rear edge of the scraper plate firmly into the desired operative relation to the cementing roll along the entire length of said edge.

It will be noted that the upper surface of the cement controlling scraper 46 is cut away at 50 (Fig. 4) thereby to allow a closer approach of the incoming work to the periphery of the cement roll so that the work may contact with a greater portion of the periphery before it is removed therefrom by means of a pick-off fork 52 having a series of prongs which contact with the upper surface of the cement roll. This fork 52 is adjustably secured in position upon the rear side of the cement receptacle 10 by means of a screw 54.

Rubbing out or straightening of the binding strip 13, which has been attached to the piece of leather 11 by means of a row of stitching with the binding strip superposed on and wholly overlying the leather, is accomplished by means of a driven wiper disk or roll 60 which is rotated counter-clockwise, as viewed in Figs. 3 and 7 (by means to be described), to pull out or straighten the binding strip till the stitches "smile," so that the strip 13 extends beyond the piece of work 11 (Fig. 7) ready to be folded over the edge of the work and secured in folded position by the cement which is applied at the same time. It will be noted that the wiper disk 60 is provided with peripheral teeth, the corners of which are chamfered on the front face as shown in Figs. 4 and 5, thereby to prevent scuffing the work and possible damage to delicate leathers. The peripheral teeth are cut somewhat saw fashion and the direction of rotation of the disk 60 is such that the disk exerts a series of rapid wiping actions tending to pull out the binding until the fabric binding strip is given a permanent set in its straightened position so that a coating of cement may readily be applied to the under surface of the strip and the strip made ready for the folding operation. In addition, the teeth 62 on the periphery of the wiper disk 60 are sections of a high pitch helical screw thread which is actuated in such a direction that the rotation of the driven wiper disk assists in feeding the work.

The work, being fed into the machine in a direction away from the operator, who stands in front of the machine as viewed in Fig. 1, is supported upon the outwardly extending arm 64 of an edge gage 65. This gage 65 has a gage surface 66 at the bottom of a throat or recess formed by means of the arm 64 and an overhanging finger 68. The forward edge of said recess is relieved as appears in Figs. 3 and 6 to avoid abrasion of the edge of the work. Both the edge of the leather 11 and the edge of the fabric strip 13 enter this recess with the further result that the continual pulling or lateral thrust of the wiper disk 60 in a direction transverse to the direction of feeding movement holds the work against the gage rather than to dislodge the work from the gaging surface 66. The gage 65 is supported by an integral block 70 slotted in a direction transversely of the direction of feeding movement and adjustably held in position upon a sub-base 72 by a screw 74 so that the position of the edge of the work with respect to the cement roll 22 and the other operating parts laterally of the direction of work feeding movement may be adjustably determined in accordance with the wishes of the operator and the needs of any particular class of work.

It is also desirable at times to be able to adjust the work gage to bring it nearer to or farther away from the wiper disk. Such adjustment is provided for by a slot 76 in the sub-base 72. The sub-base is received in a groove in the top of the receptacle 10 and may be held in adjusted position by means of a screw 78. When the machine is being used for rather light, flimsy leathers, it is desirable to move the edge gage up quite close to the

wiper disk 60, but when the machine is used for heavier leathers such as patent leather, for example, it is not possible to operate the machine with the edge gage as close to the wiper disk because of the resulting bend in the work as it passes over the gage and then under the wiper disk.

As has already been brought out, the cement applying roll 22 is moving in the direction of feed of the work and, therefore, helps to carry the work along and the teeth 62 on the wiper disk 60 are cut in such a way that they also help the feed of the work. In order, however, to provide for more positive work feeding movement, a knurled feed roll 80 (Figs. 3, 4 and 7) (driven by means later described) is provided which, as will also be explained, is pressed down against the surface of the leather 11 and presses it into engagement with the upper surface of the cement roll 22. The direction of rotation of this feed roll 80 is indicated by the arrow in Fig. 7 and its outer or left end, as viewed in Fig. 3, is beveled to facilitate the use of the machine upon work parts which are curved to form sharp corners or small recesses.

Since the binding strip 13 is attached to the upper surface of the leather 11, considering the work in operative relation to the machine as shown in Fig. 7, the strip 13 obviously extends out from the leather at a level above the level of the lower surface of the leather 11. It follows, therefore, that the binding strip normally is above the cement roll and the application of a proper coating of cement to the binding strip is hindered by this relation. In order to overcome this difficulty, the feed roll 80 is provided with a peripheral groove 82 which receives the looped lower end of a wire auxiliary presser member 84 the upper end of which, as is more clearly shown in Fig. 4, is bent rearwardly at 85 and is supported by a screw stud 86. To hold the curved lower end of this presser wire 84 in such a position that it will extend below the surface of the feed roll 80, the free outer end 88 of the wire is passed beneath a pin 90 which underlies the rearwardly extending portion 85. By proper adjustment of the edge gage, this presser wire 84 may be brought to bear on the strip at any point transversely of the width of the binding strip 13, depending upon the particular character of the work and the desires of the operator, thereby exerting additional pressure upon the extended strip to force it below the level of the upper surface of the work and pressing the strip against the cement roll and providing for effectively coating the binding strip with cement.

As shown clearly in Figs. 1 and 9 the frame of the machine, and specifically the receptacle 10, is provided with upwardly extending supports 92 and 94. Between these supports are journaled, upon a cross pin 96, a lever 98 which is positioned toward the back of the machine and is arranged to support the wiper disk 60, and another lever 100 which is located nearer the front of the machine and is arranged to support the feed roll 80. The forward lever 100 has at the left (as viewed in Fig. 1) a channeled arm 102 which receives a drive shaft 104 for the feed roll 80, and at the right a flattened arm 106. The lever 98 has a similar channel-shaped arm 110 at the left surrounding and supporting a drive shaft 118 for the wiper disk 60 and also has a flattened arm 112 extending to the right to which a treadle rod 108 is connected, this arm 112 of the lever 98 being also provided with a forwardly extending overhanging lip 114 for the reception of a stop screw 116 which is arranged to contact with the arm 106 of the forward lever 100 after the treadle has been slightly depressed, for a purpose which will later appear. A bridge piece 120 secured to the upper end of the standards 92 and 94 is provided with an extension to the left having a depending forked portion 122 which receives and closely surrounds arms 102 and 110 and is provided with recesses for the reception of springs 124 which bear against pins 126 resting upon the upper surfaces of the arms 102 and 110 of the levers. Adjusting screws 128 are provided for varying the tension of these springs. It will be noted that the arm 102 is provided with a hump 130 to bring its upper surface at this particular point to the level of the upper surface of the lever arm 110. The bridge 120 also has an extension to the right in which are mounted stop screws 131 which are adjustable to determine the limit of downward movement of the wiper disk 60 and the feed roll 80 so as to hold them out of contact with the cement roll 22.

The arrangement thus described, therefore, provides for the holding of the operating tools 60 and 80 resiliently in contact with the work and allows the operator to depress the treadle connected to the rod 108, sharply, to lift both rolls when it is desired to enter a piece of work or only slightly so that the screw 116 does not contact with the arm 106 when it is desired thereby to lift the wiper disk 60 merely enough to relieve the pressure of said wiper disk on thickened portions of the work such as are caused by seams or wrinkles. It will be understood that the fact that the wiper disk 60 is rotated in a plane substantially at right angles to the feed of the work makes it impossible for the disk automatically to climb over any thick portions, such as seams, and although the danger of scuffing the surface of work at such places is minimized by reason of a friction drive for the wiper disk, to be described later, still it is found advantageous to help the disk to pass over such thickened portions by lifting it slightly by depression of the treadle, as above

noted. On the other hand, the rolling action of the feed roll 80 is such that its natural tendency is to climb over any thickened portion of the work. It is, therefore, unnecessary to lift the feed roll at the same time that the wiper disk is lifted and it is, of course, advantageous to leave the feed roll in engagement with the work so that the progress of the work will not be interrupted.

The manner of supporting the wiper disk 60 in the outer end of the lever 98 is illustrated in Figs. 3 and 4, from which it will be seen that the channeled arm 110 of said lever is enlarged to provide depending arms 132 (Fig. 4) which furnish bearings for a transverse stub shaft 134 upon which the disk 60 is mounted. Skew gears 136 interconnect the stub shaft 134 and the shaft 118 which extends longitudinally through and is journaled in the lever 98. At the further right end of the shaft 118 is secured a pinion 138 by means of which said shaft is driven.

At the left end of the arm 102 of the forward lever 100 is mounted a horseshoe shaped bracket 142 which has a tongue and groove connection 144 (Fig. 4) with the upper side of said lever arm 102, and is secured in position thereon by means of screws 146 (Fig. 3). The feed roll 80 is mounted on a removable shaft 148 extending between the spaced lower arms of the horseshoe shaped bracket and provided at its right end with a pinion 150. This pinion meshes with an intermediate gear 152 freely rotatable upon a stud which extends between a depending portion of the lever arm 102 and one side 154 of the horseshoe shaped bracket and this gear meshes with another pinion 156 secured to one end of the drive shaft 104. Near the other end of this shaft, there is provided a pinion 160 (Fig. 1) which is loosely mounted thereon and meshes with the gear 26 on the end of the cement roll shaft. The pinion 160 is integral with one plate or disk 162 of a friction drive, the other plate 164 of which is integral with another pinion 166 which is keyed to the shaft 104. The pinion 166 meshes with the pinion 138 on the end of the wiper disk shaft so that both the wiper disk 60 and the feed roll 80 are frictionally driven from power supplied through the driving pulley 30. Provision is made for adjusting the tension on the disks 162, 164 by rotating a knurled nut 168 which bears against a spring 170 resting in turn on the right side of the pinion 166 to hold the disks 162 and 164 in frictional contact. A cover plate 172 is detachably secured to the right end of the frame to cover up this train of gears.

Driving through the friction disks 162 and 164 is advantageous not only because of the fact that parts of the machine are subject to accidental coating with cement which becomes dried on the machine and might, except for the friction drive, cause breakage of parts in case an attempt were made to start the machine up before the dried cement was cleaned off, but is also of substantial utility in preventing damage to the work when the wiper disk encounters an unusually thick work portion or a wrinkle in the work. The tension on this friction drive 162, 164, controlled by rotating the nut 168, is regulated in such a way that the driving force applied is just sufficient to cause a steady progress of the work under normal conditions. It is also to be noted that the natural feed-retarding effect of a disk rotating transversely to the direction of feed in contact with the surface of the work, such as the disk 60, is overcome here by reason of the construction of the periphery of said disk whereby it helps to feed the work. The feeding tendency of the disk constructed as herein illustrated is a sufficient help to the feeding action of the roll 80 so that the tension on the friction drive for said roll 80 adjusted by means of the nut 168 may be lessened below what would be needed in case there were no such feeding tendency. This is advantageous because it allows the machine to operate properly upon the work and at the same time requires less resistance to interrupt the normal action of the wiper disk 60 or of the feed roll 80 and, therefore, renders the machine less likely to damage the work.

Since there is danger that the wiper disk may become accidentally coated with cement a cleaner in the form of a piece of felt 174 is held in contact with the upper surface of the wiper disk. The felt 174 is supported in the desired position by a bracket 176 which is secured to the upper surface of the lever arm 110 by screws 178. The bracket 176 provides a pocket for the piece of cleaner felt 174 and a thumb screw 180 threaded in the upper side of said bracket is arranged to bear against a plate 182 which rests upon the upper surface of the cleaner felt 174.

In the operation of the machine the operator, having applied power to the driving pulley 30, depresses the treadle rod 108 sharply, thereby to separate the treating rolls by lifting both the wiper disk 60 and the feed roll 80 away from the cement roll 22 to facilitate the insertion of a piece of work, the edge of the work being brought against the gage surface 66 and beneath the overhanging finger 68 with the fabric strip 13 turned over this finger in straightened position. The operator then releases the treadle and the action of the wiper disk progressively pulls out and straightens the binding strip as the work is fed along by the combined action of the wiper disk, the cement roll 22 and the feed roll 80. The feed roll also serves as a presser roll, tending to effect proper engagement of the lower surface of the work with the upper surface

of the cement roll 22. In addition, the binding strip 13 is held down against the cement roll by means of the presser wire 84, the roll 80 and wire 84 insuring the application of a coating of cement not only to the under surface of the leather 11, but as well to the binding strip 13 as indicated in Fig. 8. When a corner in the work is reached, the operator can readily shift the work laterally around the gaging surface 66 of the gage 65 because of the narrow bearing surface of the feed roll 80 resulting from the fact that the roll 80 is beveled at its outer end, while if a relatively thick work portion, such as that resulting from a seam or a wrinkle, is encountered, the operator may, by a slight depression of the treadle rod 108, lift the wiper disk 60 to allow this thicker portion of the work to pass beneath the wiper disk without injury to delicate leathers or to the polished surface of a patent leather. By properly adjusting the nut 168 the tension on the friction drive 162, 164, may be adjusted to such a point that the wiper disk 60 and the feed roll 80 will operate with the greatest efficiency.

Having thus described the invention, what is claimed as new and desired to be secured by Letters Patent of the United States is:

1. In a machine for treating French binding work, means for supporting a piece of work to which a binding strip has been attached, means for feeding the work, and a driven wiper disk having peripheral engagement with the piece of work to straighten the binding strip, the peripheral portion of said wiper disk being constructed and arranged to have an independent feeding action upon the work, thereby to assist the feeding means in advancing the work.

2. In a machine for treating French binding work, means for supporting the work, frictionally driven means for feeding the work, and a wiper disk adapted to contact at its periphery with the work to straighten the binding strip, said wiper disk having its periphery constructed and arranged to act separately upon the work in a manner to assist the feeding means.

3. In a machine for treating French binding work, a cement roll for supporting and applying a coating of cement to the inner face of a piece of work to the outer face of which a binding strip has been attached, frictionally driven means for feeding the work, and a wiper disk adapted to contact at its periphery with the work to straighten the binding strip, said wiper disk having its periphery constructed and arranged to exert an independent feeding action thereby to assist the feeding means.

4. In a machine for treating French binding work, means for supporting and carrying forward a piece of work to which a binding strip has been attached, and a wiper disk provided with teeth around its periphery and arranged to co-act with the surface of a piece of work to straighten the binding strip, the teeth on said disk being sections of a helical screw thread so disposed with respect to the direction of rotation of the disk that said teeth draw the work along and hence assist the feeding of the work.

5. In a machine for treating French binding work, a roll for supporting the margin of a piece of work, a wiper disk, rotating transversely to the direction of feed of the work and contacting with the surface of the work, and a driven feed roll mounted adjacent to said wiper disk and constructed and arranged to engage the outer surface of the leather to which the binding strip is attached directly above the point where said leather is supported by the first-mentioned roll to press it against the latter, said feed roll having its axis parallel to the axis of the supporting roll.

6. In a machine for treating French binding work, a roll for supporting the margin of a piece of work, means for supplying cement to said supporting roll, a wiper disk, rotating transversely to the direction of feed of the work and contacting with the outer surface of the work, and a driven feed roll mounted adjacent to said wiper disk and constructed and arranged to engage the surface of the leather to which the binding strip is attached directly above the point where said leather is supported by the first-mentioned roll to press it against the latter, said feed roll having its axis parallel to the axis of the supporting roll.

7. In a machine for treating a piece of work to the margin of which a binding strip has been attached, a supporting roll constructed and arranged to apply cement to one surface of said work, presser means co-acting with the other surface of the piece of work and tending to hold it in contact with the supporting roll, and auxiliary presser means constructed and arranged to force the binding strip toward the cement-applying and supporting roll to a point below the level of the upper surface of the piece of work.

8. In a machine for treating a piece of work to the margin of which a French binding strip has been attached, a supporting roll constructed and arranged to apply cement to one surface of said work and to the binding strip after the latter has been straightened to extend beyond the work, presser means co-acting with the other surface of the piece of work to hold it in contact with the supporting roll, and an auxiliary presser bearing only against the binding strip at a point beyond and closely adjacent to the margin of the work to press said binding strip into contact with the supporting roll at that point so that substantially the whole width of said binding strip will become coated with cement.

9. In a machine for treating a piece of work

to the margin of which a French binding strip has been attached, a supporting roll constructed and arranged to apply cement to one surface of both the strip and the work after the strip has been straightened to extend beyond the work, a feed roll co-acting with the other surface of the work to hold it in contact with the supporting roll to feed it through the machine, and an additional presser member near the feed roll and constructed and arranged to bear against the binding strip lengthwise of said strip close to the edge of the work to which said binding has been attached to hold that portion of the binding which extends beyond the work in engagement with the supporting roll.

10. In a machine for treating a piece of French binding work, along the margin of which a binding strip has been stitched in a position wholly overlying the work and then straightened to extend beyond the work, a supporting roll arranged to apply a coating of cement to one margin of the inner surface of the work, a driven co-acting feed roll engaging the outer surface of the work and provided with a peripheral groove, and a looped presser member positioned in said groove and arranged to bear against the straightened binding strip after the binding strip has been rubbed out to extend beyond the margin of the piece of work.

11. In a machine for treating a piece of French binding work, to the margin of which a binding strip has been stitched in a position wholly overlying the work, a supporting roll constructed and arranged to apply cement to the inner surface of the work near the margin to be bound, a wiper disk arranged to straighten the binding strip and cause it to extend beyond the margin of the piece of work, a driven feed roll engaging the upper side of the work at a point over the supporting roll, said feed roll being provided with a peripheral groove, and a wire presser member resiliently supported in a position to lie in the groove of the presser roll and extending below said presser roll to bear against the binding strip to hold the strip in contact with the cement-applying and supporting roll.

12. In a machine for treating French binding work, a supporting roll adapted to engage one face of a piece of work to the margin of which a binding strip has been attached, a treating roll adapted to engage the other surface of the work and to hold the work in contact with the supporting roll, a gage supported adjacent to the bite of said rolls and having a surface to support a substantial portion of the margin of a piece of work, said gage being provided with a finger overlying the margin of the work and of the binding strip, and means for adjusting said gage toward and away from said treating roll.

13. In a machine for treating French binding work, a supporting roll adapted to engage one face of a piece of work to the margin of which a binding strip has been attached as said work is fed along, a driven wiper roll adapted to engage the other surface of the work and operating transversely of the direction of movement of the work, a gage member supported in front of said rolls and having a throat to receive the peripheral edge of the piece of work and of the binding strip, said gage member being provided with a finger at the side of said throat constructed and arranged to overlie a small portion of the margin of both the piece of work and the binding strip to oppose the thrust of the wiper roll transversely of the direction of movement of the work.

14. In a machine for treating French binding work and feeding it along, a supporting roll adapted to engage one face of a piece of work to the margin of which a binding strip has been attached, a cooperating roll adapted to engage the other surface of the work to press it into contact with the supporting roll, and a gage having an overhanging finger adapted to overlie the margin of the work and of the binding strip, said gage being supported for adjustment laterally with respect to the direction of movement of the work and also toward and away from said rolls.

15. In a cementing machine, a cement receptacle, a bearing in said receptacle, a cement applying roll in said cement receptacle adjacent to said bearing, a drive shaft for said roll extending through said bearing, means for excluding cement from said bearing comprising a felt washer surrounding the shaft at the end adjacent to the cement roll, and a removable cylindrical casing adjoining said bearing and surrounding said shaft.

16. In a cementing machine, a cement receptacle, bearings in said receptacle, a cement applying roll in said receptacle, a drive shaft for said roll extending through said receptacle and journaled in said bearings, and means for excluding cement from contact with said drive shaft, said excluding means comprising a removable cylindrical casing interlocked with said bearings.

17. In a machine for treating French binding work having thicker portions, such as seams, a supporting roll, engaging one surface of the work, a plurality of rolls arranged for engagement with the other surface of the work, individual arms pivoted to the frame of the machine supporting said rolls, and a treadle connection to one of said arms constructed and arranged to allow the operator to relieve the pressure on one roll as a thicker portion is reached.

18. In a machine for treating French binding work, a supporting roll, a plurality of rolls arranged for engagement with one surface of the work, individual arms pivoted to

the frame of the machine and supporting said rolls, a treadle connection to one of said arms, and means for interconnecting the two arms constructed and arranged to allow a slight lifting movement of one of the arms without disturbing the other arm to relieve the pressure on the first-named arm and to allow a substantial lifting movement of both arms, by further depression of the treadle to permit a piece of work to be inserted between the supporting roll and the other roll.

19. In a machine for treating a piece of French binding work, along the margin of which a binding strip has been stitched in a position wholly overlying the work and then straightened to extend beyond the work, a supporting roll arranged to apply a coating of cement to one margin of the inner surface of the work and to the extended strip, and presser means constructed and arranged to force the binding strip toward the cement-applying and supporting roll to a point below the level of the upper surface of the piece of work.

20. In a machine for treating a piece of French binding work, along the margin of which a binding strip has been stitched in a position wholly overlying the work and then straightened to extend beyond the work, a supporting roll arranged to apply a coating of cement to one margin of the inner surface of the work and to the extended strip, and presser means contacting with the work and the strip constructed and arranged to exert additional pressure upon the straightened strip outside the work, thereby to hold both the margin of the work and the extended portion of the binding strip in cement-receiving relation to the supporting roll.

21. In a machine for treating a piece of French binding work to the margin of which a binding strip has been stitched in a position wholly overlying the work, a supporting roll constructed and arranged to apply cement to the inner surface of the work near the margin to be bound, means for straightening the binding strip to cause it to extend beyond the margin of the piece of work, a driven feed roll engaging the upper side of the work at a point over the supporting roll, and a presser member cooperating with the feed roll and extending lengthwise of the work to apply additional pressure to the binding strip at a point beyond and closely adjacent to the margin of the work to hold the extended portion of the binding strip in cement receiving relation to the supporting roll.

In testimony whereof I have signed my name to this specification.

CAROLINE E. COSGROVE,
Administratrix of the Estate of John W. Cosgrove, Deceased.