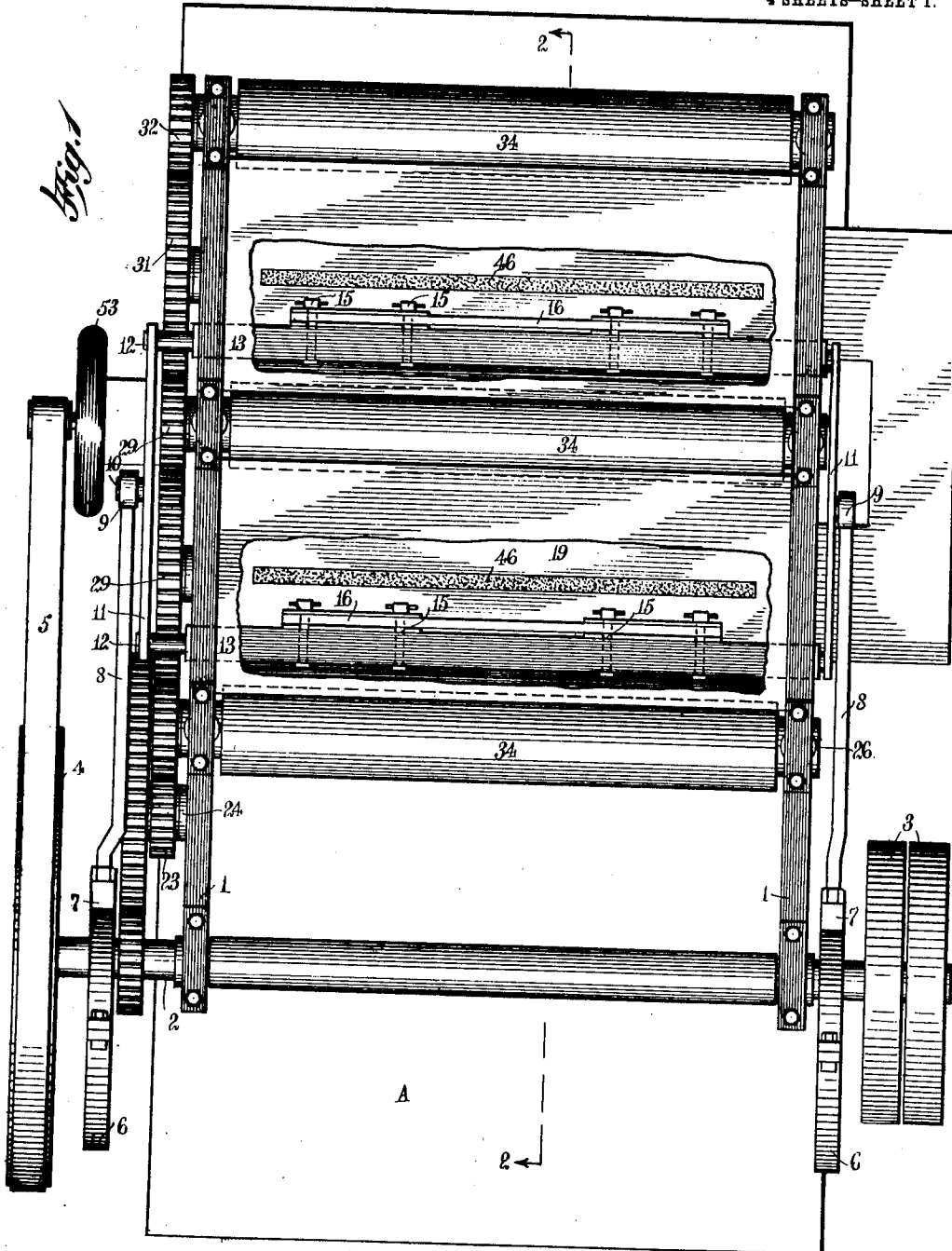


C. J. RICH.
BOOK COVER CLEANING MACHINE.
APPLICATION FILED AUG. 22, 1911.

1,062,505.

Patented May 20, 1913.

4 SHEETS-SHEET 1.



WITNESSES
F. D. Smith
W. S. Orton

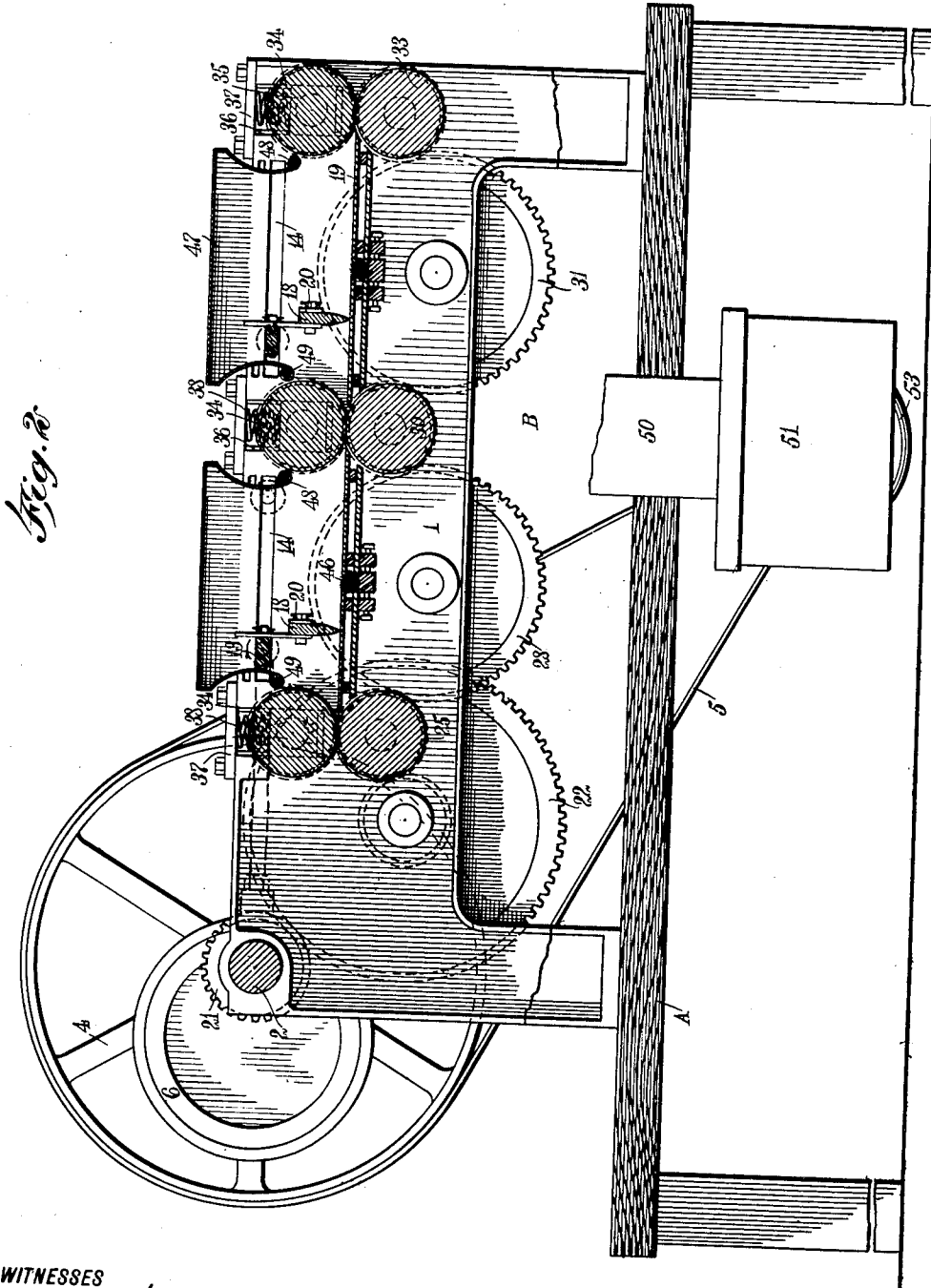
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4 SHEETS—SHEET 2.



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4 SHEETS—SHEET 3.

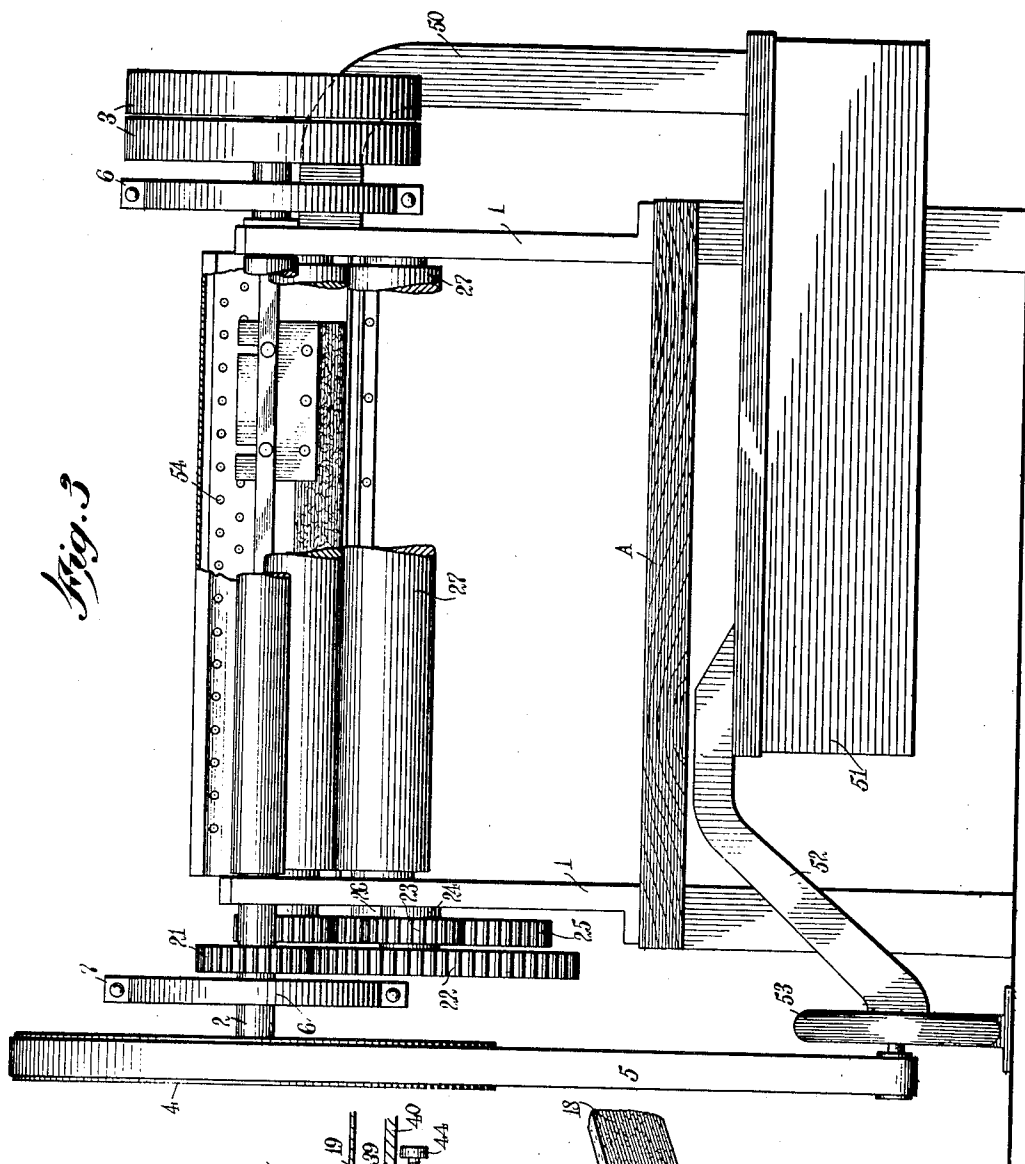


Fig. 3

WITNESSES
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Fig. 4

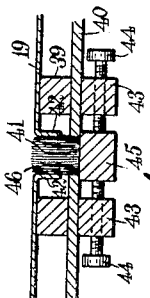
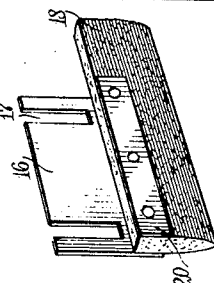


Fig. 5



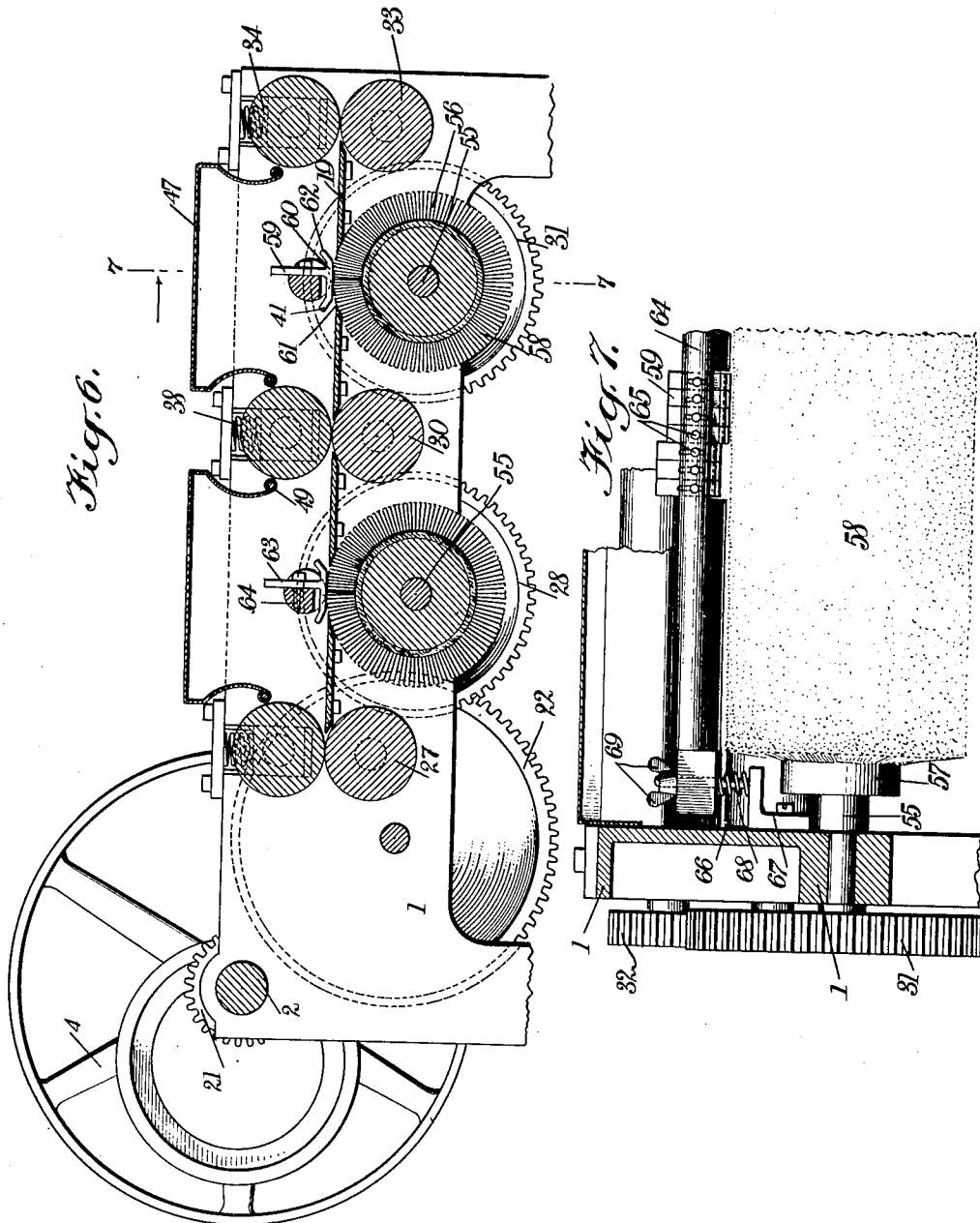
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4 SHEETS-SHEET 4.



WITNESSES

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UNITED STATES PATENT OFFICE.

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BOOK-COVER-CLEANING MACHINE.

1,062,505.

Specification of Letters Patent.

Patented May 20, 1913.

Application filed August 22, 1911. Serial No. 645,379.

To all whom it may concern:

Be it known that I, CHARLES J. RICH, a citizen of the United States, and a resident of Norwood, in the county of Norfolk and State of Massachusetts, have invented a new and Improved Book-Cover-Cleaning Machine, of which the following is a full, clear, and exact description.

This invention relates to a new and improved device for rubbing the surplus gold off the cover of a book after it has been stamped.

One object of my invention is to provide an improved means whereby the surplus gold or other filling substance may be rapidly and positively rubbed off the finished surface, and the device has for a further object, to provide means whereby the gold or other material adhering to the rubbing tool may be brushed off the tool.

A further object of the device is to provide means whereby this loose material may be drawn away from the working tools and collected in a suitable receptacle.

I attain the above objects by positioning reciprocating rubbers movable over the bed and between movable rollers of the machine, and also I provide a set of brushes in contact with the rubbers. Further, I have provided an exhaust system, whereby the loose material is drawn off the work-board by means of a blower fan.

With the above and other objects in view, as will more fully hereinafter appear, the present invention consists in certain novel details of construction and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and more particularly pointed out in the appended claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views, and in which—

Figure 1 is a plan view looking down upon a preferred embodiment of my invention; Fig. 2 is a cross sectional view taken on the line 2—2 of Fig. 1; Fig. 3 is an end elevation of my device viewed from the left-hand side of Fig. 1; Fig. 4 is a detailed elevation showing the means by which the brushes may be attached to the framework; Fig. 5 is a detailed perspective view of one form of the rubber; Fig. 6 is a view similar to Fig. 2 but showing a modification of the

brushes and their mounting; and Fig. 7 is a fragmentary transverse section taken on the line 7—7 of Fig. 6 and looking in the direction of the arrow.

Mounted upon a suitable support A is the framework B of my machine, comprising side plates 1. Journaled through one end of the plates 1 is a driving shaft 2, actuated by pulleys 3, one of which is loosely mounted and the other of which is rigidly keyed to said shaft. Rigidly keyed to the opposite end of the shaft 2, is a power wheel 4, carrying a belt 5, for a purpose hereinafter more fully described. Positioned between the side plate 1 and the wheel 4 on one side, and between the side plate 1 and the pulleys 3 on the other side, is a strap eccentric 6, rigidly mounted upon the driving shaft 2. Rigidly affixed to a strap 7 on the eccentric 6, is an offset bar 8, the free end 9 of which is pivoted to a stud 10 centrally positioned on a connecting bar 11. The opposite ends of this connecting bar 11 are attached to studs 12, which studs form the projection of a flat bar 13, which bar is adapted to slide in guideways 14 oppositely positioned in the two side plates 1.

Supported on the flat bar 13 by means of bolts 15, is an adjustable plate 16 having therein slots 17, by means of which the rubber 18 may be adjusted vertically and positioned with reference to the bed 19. This rubber 18 may have a reinforcing strip 20 on the face opposite the face to which the plate 16 is attached. It will be noted that by this arrangement, the bolts 15 which pass through the slots 17, may be loosened, the rubber 18 adjusted vertically by moving the plate 16 up or down to the desired distance from the bed 19, and the bolts clamped tight against the face of the plate 16. As the eccentric 7 is mounted on the power shaft, a reciprocating motion will be given to the offset bar 8 and through the offset bar and arm 11, to the bar 13, whereby a reciprocating movement will be given the rubbers 18. Rigidly mounted upon the driving shaft 2 and between the eccentric 7 and the side plate 1, is a gear wheel 21 intermeshing with a reducing gear 22, which intermeshing gear 22 is integrally connected with a gear 23 mounted upon a stud 24 projecting from the outside of the side plate 1. Meshing with the gear 23 is a gear 25 rigidly connected with a shaft 26, upon which and between the two side plates 1 is

rigidly mounted a roller 27. The gear 25 meshes with an idler gear 28, which in turn meshes with a second gear 29, which revolves the intermediate lower roller 30. This last-mentioned gear intermeshes with another idler gear 31, which in turn meshes with a gear 32 on the end roller 33. It will thus be seen that revolving the power shaft 2 will set in motion the train of gears above outlined, which in turn will cause the lower set of rollers to revolve in the same direction. Positioned above each of these rollers, is a co-acting roller 34, journaled upon blocks 35, which blocks are slidably mounted in guide ways 36, in the upper portion of the side plates 1. Positioned between the sliding blocks 35 and a strap 37, bridging the guideway 36, is a coil spring 38, which performs the function of exerting a pressure between the lower rollers and their co-acting rollers 34. The bed 19 is positioned between adjacent lower rollers and its plane is tangent to the upper edge of the rollers. Supported from this bed by means of blocks 39 (Fig. 4) is a floor 40, supported from the side plates. Intermediate each of the set of rollers, the bed 19 is slotted to form an opening 41, the ends of the slotted part being bent inward to form a flanged guideway 42. Suspended below the floor 40 and spaced on opposite sides of the opening 41 are blocks 43 carrying oppositely-disposed set screws 44. Positioned within the aperture 41 and supported by a block 45 held between the ends of the set screw 44, is a brush 46, the end of which brush is adapted to be raised a short distance above the plane of the bed 19. It will thus be seen that the rubbers 18 reciprocating back and forth over the bed 19, will pass over the brushes 46 and any substances adhering to the rubber will be pushed off.

In order to collect any refuse material that may be scraped off the article the working parts of the machine are inclosed by hoods 47 positioned between the adjacent sets of rollers and the opposite side plates 1. These raised hoods may be supported in any preferred manner, as, for instance, by inserting a rod 48 within the beaded ends 49, and the ends of the rod may be attached by any preferred means to the side plates 1.

Leading from one side of the side plates 1, is a conduit 50, leading to one side of a box 51. Leading from the other side of the box is a conduit 52 connected to a blower 53, which blower is actuated by the strap 5. It will be seen that air will be sucked in through the apertures 54, in the hoods 47, and that all loose particles will be drawn into the box 51, and held there by any suitable means as by placing a gauze covering over the outlet 52 at the top of the box 51.

An article which has been stamped with gold or any similar material, may be in-

serted between the rollers shown at the left-hand side of Fig. 2, and will then be brought under the rubbers 18, which will remove all loose material and will then be passed under the second rollers on to another roller. After the article has passed the reciprocating rubbers 18, the rubbers will pass back and forth over the brushes 46 and will have all loose material brushed off and the suction of the blower 53 will draw all of this loose material into the box 51, from which it may be collected at will.

Instead of using the rubbers 18, it is found to be desirable in some classes of work, to use brushes revolving at a relatively high rate of speed to brush off the surplus gold or other filling material from the covers of the books, and it has been found preferable to mount these brushes beneath the work instead of above the work, as the rubbers 18 are mounted, particularly in cases where oriental leaf is used. One form of the embodiment in which brushes are substituted for the rubbers, is disclosed in Figs. 6 and 7. In this case, the opening in the bed 19 is made slightly larger than that shown in Fig. 2, and mounted below the opening, preferably on a shaft 55. Integrally connected with the gears 28 and 31 and actuated thereby, are cylindrical brushes 56, which brushes are of any suitable construction, preferably having a wooden core 57, rigidly mounted upon which and extending radially therefrom, are wire bristles 58, to form cylindrical brushes. The upper circumferences of these brushes protrude a short distance into the opening 41 in the bed 19.

In order to press the work into engagement with these revolving brushes, there is disposed above the brushes, a series of inverted T-shaped bearing plates 59, the heads 60 of which have their forward and rear ends slightly inclined upward, as shown at 61 and 62, in order to permit of a beveled incline meeting the work, to facilitate the feeding of the same to the brushes. The stem 63 of each bearing plate is adjustably mounted upon a rod 64 extending transversely across the machine and in the same plane with and above the shaft 55. These variable adjustments of the bearing plates may be obtained by a pin-and-slot connection 65, Fig. 7.

In order to vary the pressure of the bearing plates upon the brushes, each end of the rod 64 is slidably mounted upon a pin 66 rigidly fastened on a bracket 67, which bracket is in turn rigidly affixed to the side plate 1 at each transverse side of the machine. Interposed between the top of the bracket 67 and the under side of the bar 64 and surrounding the pin 66, is a compression spring 68. In screw-threaded engagement with the upper end of the pin 66 and

bearing upon the top of the rod 64, is a wing nut 69, the turning of which nut will permit the spring to raise or lower the rod 64, thereby varying the pressure between the bearing plates and the brushes.

In the modification shown in Figs. 6 and 7, it is to be understood that the stamped articles are to be fed upside down, that is, with the stamping facing the revolving brushes 56.

While a preferred embodiment of the invention has been described, it is to be understood that many changes could be made in the above construction and many apparently widely different embodiments of this invention could be made without departing from the scope thereof. It is intended that all matters contained herein in the above description or shown in the accompanying drawings, shall be interpreted as illustrative and not in a limiting sense. It is also to be understood that the language used in the following claims is intended to cover the full scope of the invention and is not to be given any narrower construction than the prior art demands, and that materials, sizes and relativities of parts are non-essential, except as called for in the claims.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. In a book-cleaning machine, a bed having an opening extending vertically therethrough, a cylindrical wire-bristle brush revolubly mounted below said bed, the top of said brush extending through said opening slightly above the top of said bed, inverted T-shaped bearing plates disposed above said brush, the heads of which bearing plates are slightly inclined upward at the forward and rear ends to form a beveled incline to meet the work as it is advanced between said bearing plates and brush, and a support on which the stems of said bearing plates are adjustably mounted.

2. In a book-cleaning machine, a bed having an opening extending vertically therethrough, a cylindrical wire-bristle brush revolubly mounted below said bed, the top of said brush extending through said opening slightly above the top of said bed, a spring-supported rod disposed parallel with and above said brush, and a series of inverted T-shaped bearing plates adjustably

mounted on said rod adapted to maintain the work in engagement with said brush, as the work is fed between the brush and bearing plates.

3. In a book-cleaning machine, a bed having an opening extending vertically therethrough, a cylindrical wire-bristle brush revolubly mounted below said bed, the top of said brush extending through said opening slightly above the top of said bed, a supporting means disposed parallel to and above said brush, and a plurality of independent bearing plates, each adjustably mounted on said supporting means adapted to bear on the work fed between said plates and brush, to bring said work in contact with said brush.

4. In a book cleaning machine, a supporting framework, a driving shaft mounted on said framework, a bed having a plurality of openings extending therethrough, a series of feed rollers journaled in said framework, a gear train actuated by said driving shaft and rotating said rollers, cylindrical brushes on shafts of members of the gear train, the said shafts being located below the bed and the tops of said brushes extending through the openings in said bed slightly above the top of the bed, a supporting means disposed parallel to and above each of the said brushes, and a plurality of independent bearing plates, each adjustably mounted on said supporting means and adapted to bear on the work fed between said plates and brushes to bring the work in contact with said brushes.

5. In a book cleaning machine, a bed having an opening therethrough, a cylindrical brush revolubly mounted below the bed, the top of said brush extending through said opening slightly above the top of said bed, a rod spring-supported at each end and disposed parallel with and above said brush, and bearing plates for engaging the work and having stems adjustably mounted on said rod.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES J. RICH.

Witnesses:

JAMES B. CUFF,
CARROLL NEAD.