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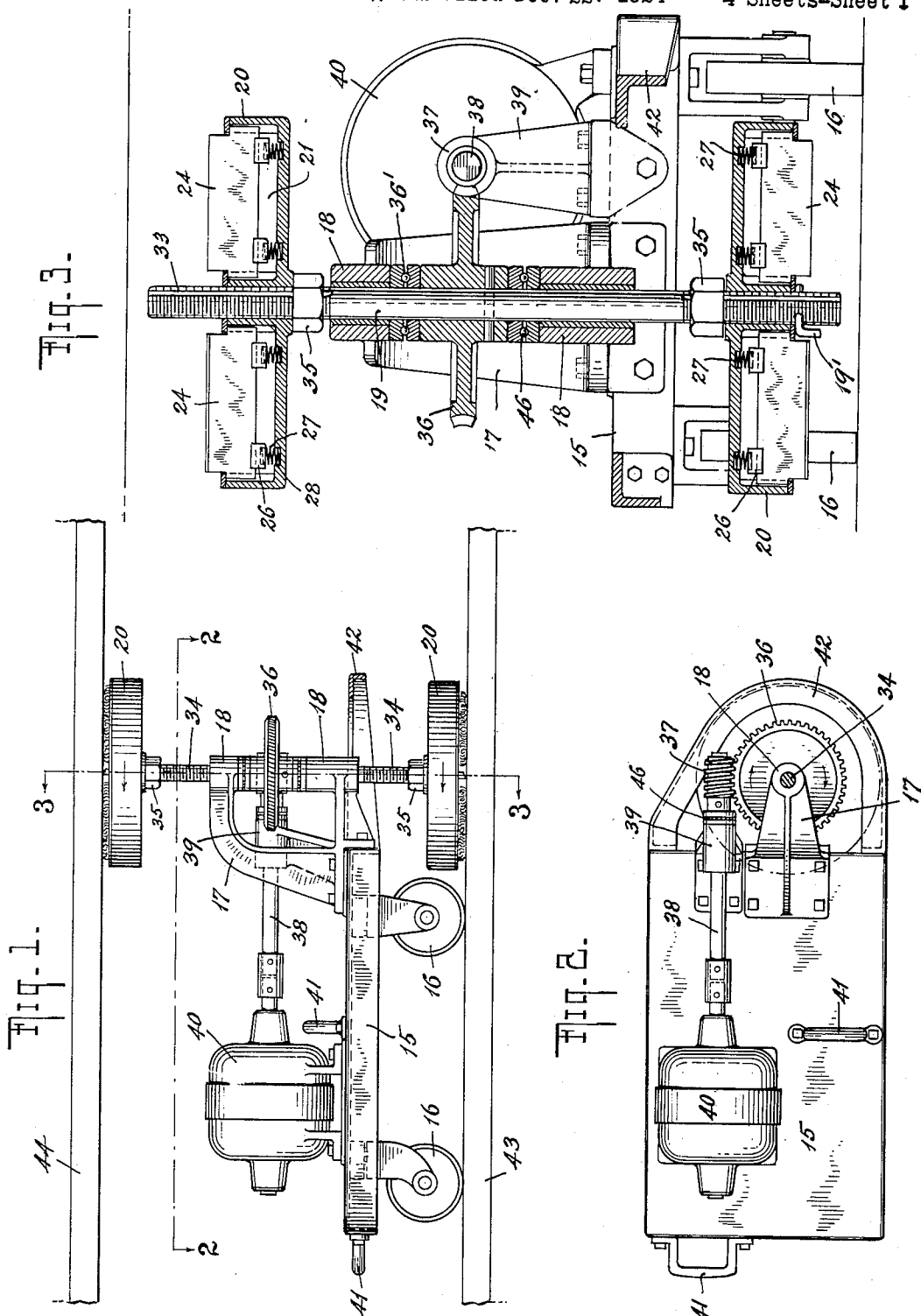
1,645,317

J. CARROLL

CLEANING MACHINE

Original Filed Dec. 22, 1924

4 Sheets-Sheet 1



WITNESS

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Fig. 7.

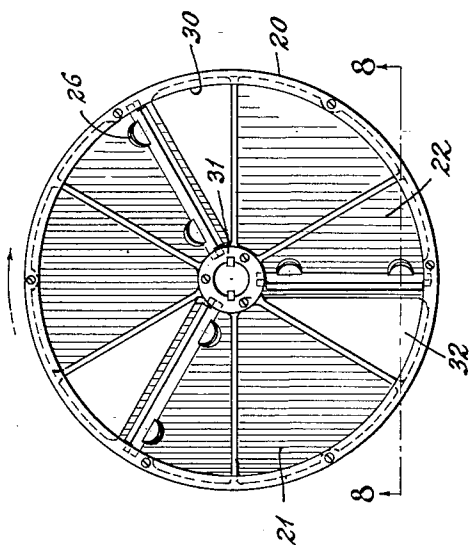


Fig. 4.

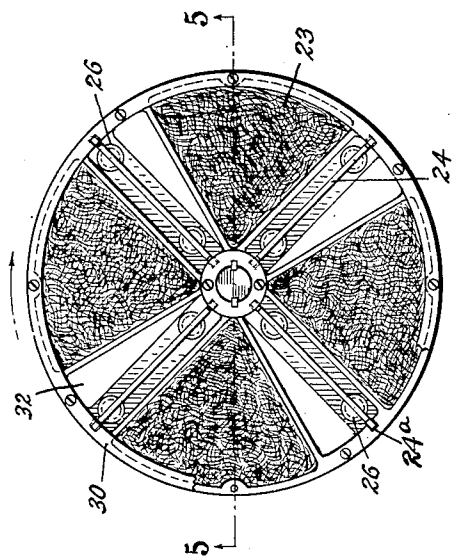


Fig. 8.

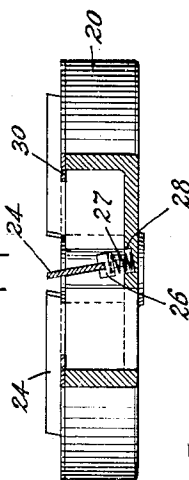


Fig. 5.

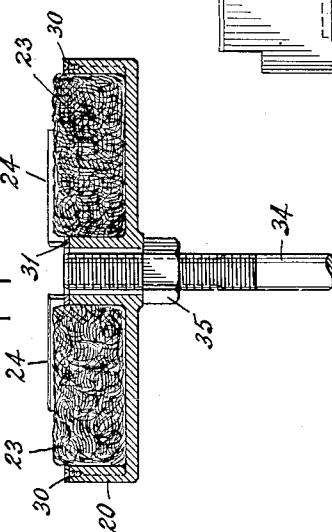
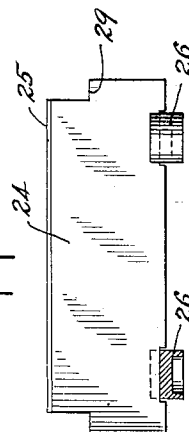


Fig. 6.



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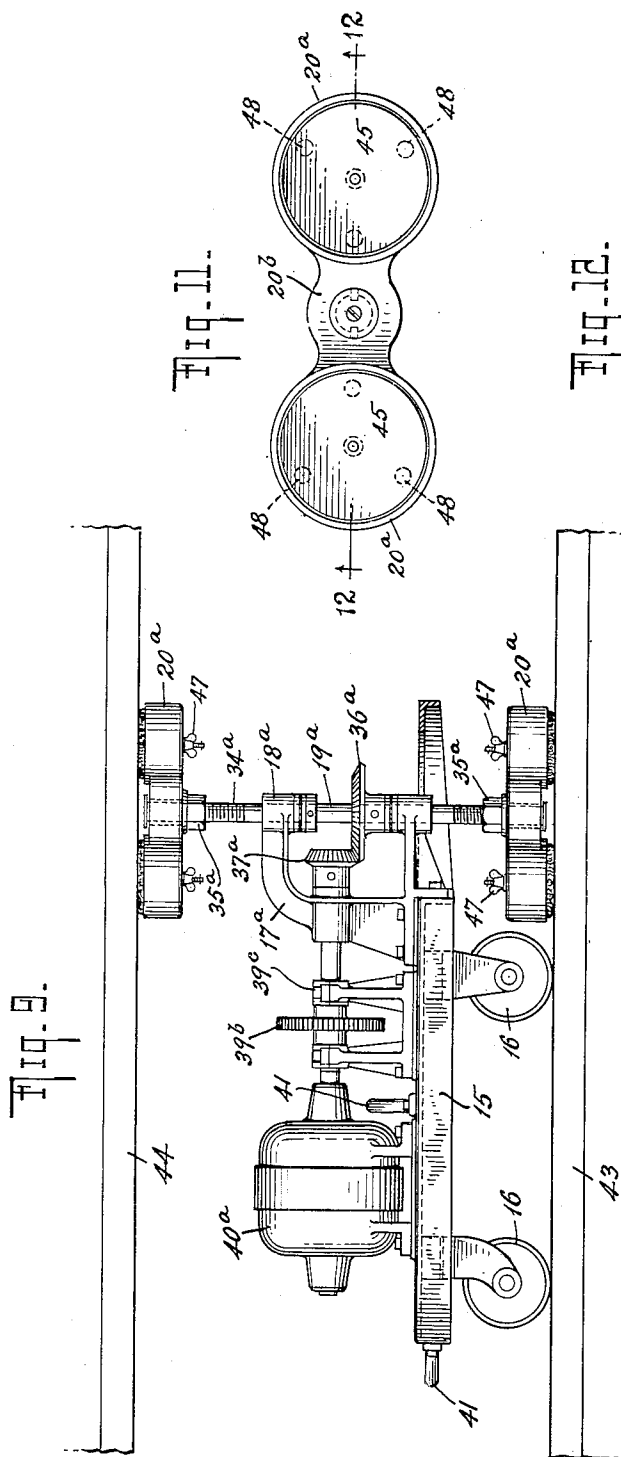
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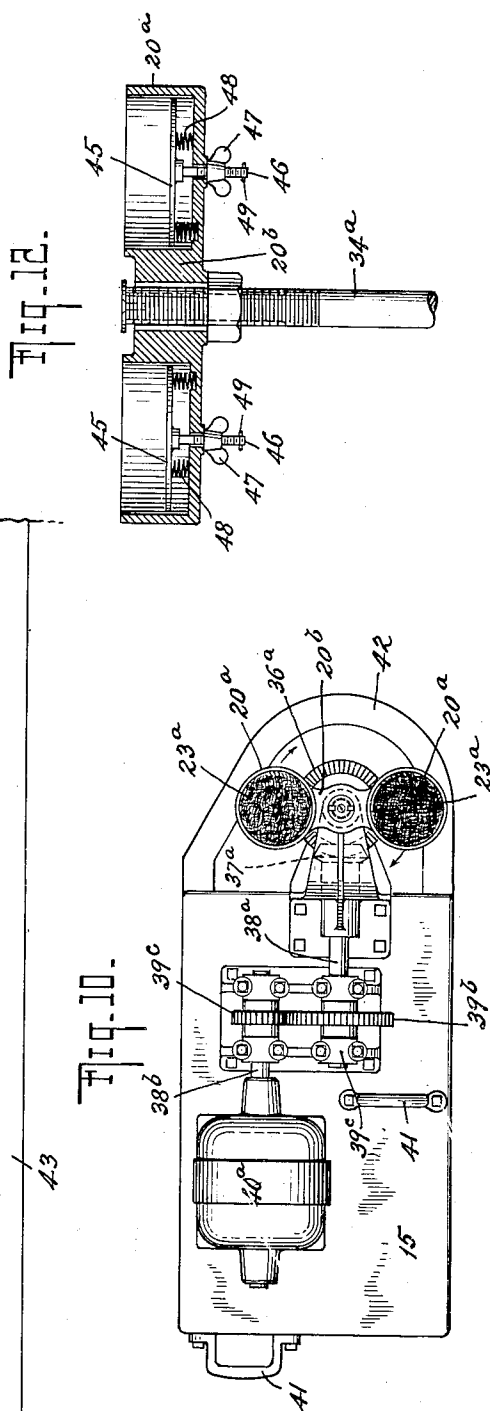
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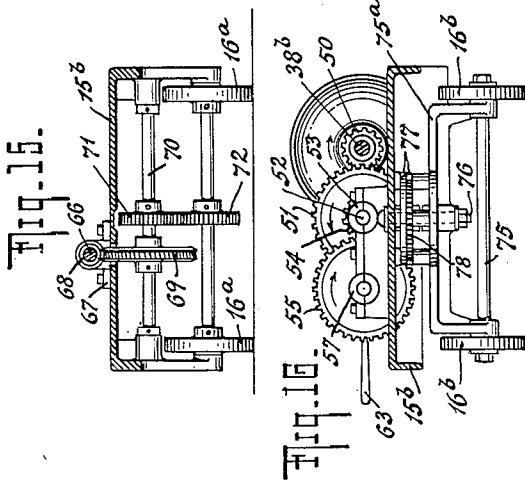
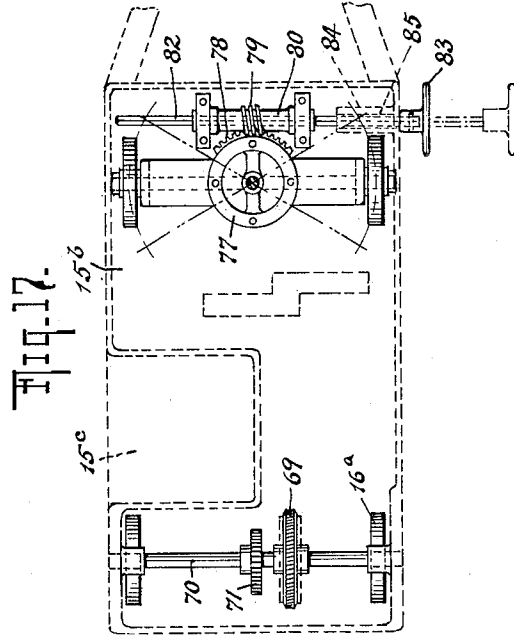
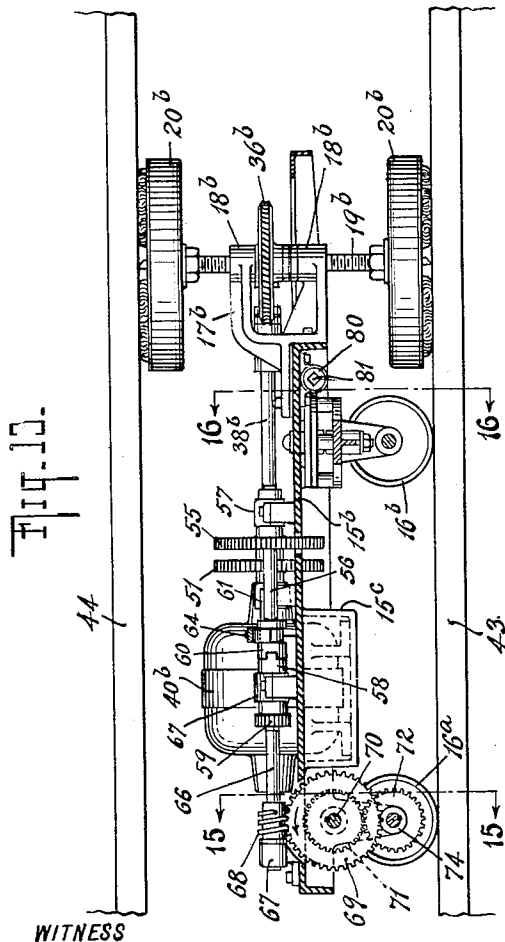
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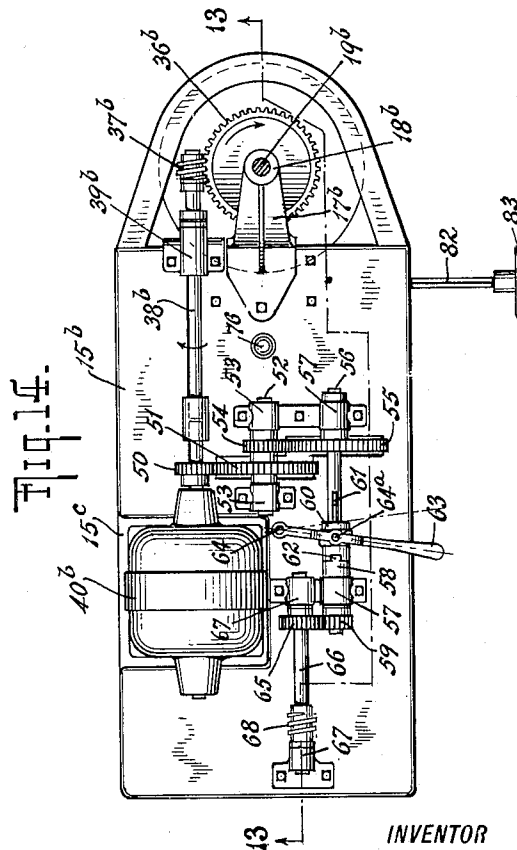
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4 Sheets-Sheet 4



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UNITED STATES PATENT OFFICE.

JOSEPH CARROLL, OF BROOKLYN, NEW YORK.

CLEANING MACHINE.

Application filed December 22, 1924, Serial No. 757,300. Renewed August 24, 1927.

My invention relates to cleaning machines and has for its object to provide a machine constructed in a novel manner to simultaneously clean the active surfaces of opposed pressure or other platens. The invention contemplates a cleaning machine of novel construction adapted specially for cleaning accumulated matter from the surfaces of the pressure members in belt presses, in a minimum of time and with maximum efficiency. Other more specific objects of the invention will appear from the description hereinafter and the features of novelty will be pointed out in the claims.

In the accompanying drawings, which illustrate an example of the invention without defining its limits, Fig. 1 is a side elevation of one form of the cleaning machine showing the same in use; Fig. 2 is a sectional view thereof on the line 2—2 of Fig. 1; Fig. 3 is a section on an enlarged scale on the line 3—3 of Fig. 1; Fig. 4 is a detail plan view of one form of cleaning member forming part of the invention; Fig. 5 is a sectional view thereof on the line 5—5 of Fig. 4; Fig. 6 is a detail face view of a scraper or scraping device comprising part of the invention; Fig. 7 is a view similar to Fig. 4 with certain materials omitted; Fig. 8 is a section on the line 8—8 of Fig. 7; Fig. 9 is a side elevation, partly in section, of another form of the cleaning machine showing the same in use; Fig. 10 is a plan view thereof; Fig. 11 is an enlarged detail view of the cleaning member of this form of the invention; Fig. 12 is a sectional view on the line 12—12 of Fig. 11; Fig. 13 is a sectional elevation, on the line 13—13 of Fig. 14, showing still another form of the invention; Fig. 14 is a plan view thereof partly in section; Figs. 15 and 16 are sectional views taken respectively on the lines 15—15 and 16—16 of Fig. 13, and Fig. 17 is a plan view of the running gear with the carriage shown in dotted lines.

The machine comprises a travelling carriage 15 of suitable construction and mounted so as to be capable of being easily shifted about, as, for instance, by being supported upon wheels or rollers 16. At one end, the travelling carriage 15 is provided with a supporting bracket 17 fixed upon the carriage in any suitable manner and provided with bearings 18 in which a vertical shaft 19 is mounted so as to be rotatable therein. The shaft 19 projects in opposite direc-

tions from the carriage and from the supporting bracket 17 thereof and at its opposite ends is provided with recessed carriers 20 as shown in Fig. 1. In the form shown, the carriers 20 include a plurality of recesses 21 and 22 diverging in outward radial directions as shown in Figs. 4 and 7. The recesses 21 are each adapted to contain an abradant 23 which may comprise steel wool or other suitable material, while the chambers 22 contain scraping devices 24, it being understood that the abradants 23 and the scraping devices 24 project outwardly beyond carriers 20 so as to cooperate to perform cleaning functions in the manner to be more fully set forth hereinafter. The scraping devices are preferably in the nature of blades having cutting edges 25 and preferably are resiliently mounted in cups 26, which, in turn, are supported by springs 27, as shown in Fig. 8; in order to prevent unintentional shifting of the springs 27, they are set into depressions 28 formed at the proper points in the bottoms of the recesses 22. In order to increase the cutting or scraping efficiency of the scraping devices 24, they are preferably inclined in the direction of operation of the cleaning members, as indicated in Fig. 8, and are maintained in such positions by means of inclined slots 24^a formed upon the interior of the upright walls of the carriers 20 for slidably receiving the opposite end edges of said scraping devices 24 as shown in Figs. 4 and 8. The scraping devices 24, in addition, are formed at their opposite ends with shoulders 29, which, by cooperation with annular plates 30 and 31, maintain the scraping devices against expulsion from the chambers 22 under the influence of the springs 27, it being understood that the annular members 30 and 31 are so proportioned and arranged as to inwardly overhang the chambers 22, so as to provide abutments for the shoulders 29. To prevent accumulation of the material which is removed by the action of the cleaning members, the chambers 22 are preferably provided in their bottoms with discharge openings 32, through which said material may automatically drop or be otherwise removed.

For the purpose of permitting the cleaning members to be adjusted to and from operative positions and to be set in the most efficient positions with respect to the surfaces being acted upon, said members 20 are slid-

ably mounted upon the shaft 19 and are fixed thereon against relative rotation, for instance, by means of keyways 33 and cooperating keys, as shown in Fig. 3. To fix the cleaning members in their aforesaid positions, any suitable means may be provided; for instance, as shown in the illustrated examples, the shaft 19 may be screwthreaded at its opposite ends, as indicated at 34, for the accommodation of nuts 35, whereby the adjustment and positioning of the cleaning members may be effected. The cleaning members are operated in the intended manner, by means of suitable driving mechanism, which, in the drawings, comprises a worm gear 36 fixed upon the shaft 19 and meshing with a worm pinion 37 carried by a counter shaft 38; the latter is rotatably mounted in a bearing 39 fixed upon the carriage 15 and operatively connected with a source of power, which, in the illustrated example, is in the form of an electric motor 40 located upon the carriage 15. For the purpose of facilitating the manipulation of the cleaning machine, suitable handles 41, located at appropriate points upon the carriage may be provided. In the operation of the machine, the possibility exists that it may be brought into more or less violent contact with surrounding parts of the apparatus being cleaned; to prevent such impacts from injuring the cleaning members and the shaft 19, a guard 42 may be provided and secured to the carriage 15, as shown, for instance, in Figs. 1 and 2.

Assuming that the cleaning machine is to be used for cleaning a belt press for which purpose, it is particularly adapted, the carriage 15 is moved upon the bed or one pressure platen 43 of the press and beneath the other platen 44 thereof; the machine is thus located between opposed pressure platens, as shown, for instance, in Fig. 7. The upper cleaning member 20 is adjusted upwardly on the shaft 19 to a position in which the abrasants 23 and the scraping devices 24 are in engagement with the lower surface of the platen 44 and is fixed in this position by means of the upper nut 35. The lower cleaning member 20 is similarly moved downwardly on the shaft 19 until its abrasants 23 and scraping devices 24 are in engagement with the upper surface of the lower platen 43. As the motor 40 is started, power will be applied to the shaft 38 and to the worm pinion 37 and this will bring about a rotation of the worm gear 36 and a corresponding operation of the shaft 19 and the cleaning members 20. In this way, the abrasants 23 and the scraping devices 24 will be caused to act upon the surfaces of the platens 43 and 44 to remove accumulated matter therefrom and to restore said surfaces to their initial clean condition. By providing the worm gearing as the medium for

operating the cleaning members, a very powerful and thorough abrasive and scraping action is produced upon the surfaces of the platen by means of the scraping devices and abrasants whereby the most stubborn matter is efficiently and quickly removed. By manually manipulating the carriage 15 through the medium of the handles 41, the machine is operated so as to bring the cleaning devices 20 into contact with every part of the surfaces of the platens 34, 44. When the cleaning operation has been completed, the cleaning members 20 are respectively lowered and raised to the inoperative positions shown in Fig. 3, and the machine is removed from the belt press which is now again in a condition of maximum efficiency. To maintain the lower cleaning member 20 in its raised position, the shaft 19 may be perforated for the accommodation of a pin 19', whereby said lower member is supported, as shown in Fig. 3; ball bearings 36' may be located at suitable places for reducing friction in the well known way.

In the form shown in Figs. 9 to 12 inclusive, the cleaning members comprise recessed carriers 20^a connected in pairs by cross bars 20^b and mounted upon a shaft 19^a at opposite ends thereof in the same way as in the form of the invention first described. The cleaning members 20^a are in the nature of receptacles, each of which contains an abrasant 23^a which, as in the first form may be steel wool or other suitable material. The abrasants 23^a rest upon false bottoms 45 provided in the recessed carriers and mounted upon screwthreaded stems 46 which extend downwardly through the bottoms of the carriers and accommodate wing nuts 47. Springs 48 are located between the bottoms of the carriers and their false bottoms 45 and exert a tension tending to force the latter in upward directions. The arrangement is such that the abrasant in each cleaning member is automatically placed under a tension when the cleaning machine is in use, so as to perform its cleaning function in the most efficient manner and furthermore so that the abrasant in each carrier will be automatically forced outwardly to compensate for wear resulting from such use. The tension of the springs 48 may be varied by adjusting the positions of the wing nuts upon the respective stems 46; to prevent the complete disconnection of the wing nuts from said stems, the latter may be provided with stops, for instance, in the form of pins 49, as shown in Fig. 12. The cleaning members may be adjustably mounted and fixed in adjusted positions upon the shaft 19^a in the same way as in the forms illustrated in Figs. 1 to 8 inclusive and the shaft 19^a accordingly may be screwthreaded as indicated at 34^a for the accommodation of nuts 35^a. The shaft 19^a extends vertically in op-

posite directions from a bearing bracket 17^a in the bearing 18^a in which it is journaled; the bracket 17^a is mounted upon a travelling carriage 15, which may correspond to the carriage 15 of Fig. 1 and be similarly mounted upon wheels or equivalent devices 16, so as to be easily moved about. For facilitating the manipulation of the carriage, handles 41 may be provided as in the first form.

The cleaning members of the form now being described are preferably operatively driven at a rapid rate and for this purpose a bevel gear 36^a may be fixed upon a bevel pinion 37^a carried by a counter shaft 38^a.

The latter is journaled in the bracket 17^a and in bearings 39^a and carries a gear 39^b, which meshes with a pinion 39^c fixed upon the shaft 38^b of an electric motor 40^a. As in the first form, the motor 40^a is mounted upon the carriage 15, which may also be provided with a protecting guard 42, for preventing injury to the cleaning members, as previously set forth herein.

The machine is shown in Fig. 9 in operative co-relation with the pressing platens 43 and 44 of a belt press, it being understood that the adjustment of the cleaning members 20^a with respect to the surfaces of said platens is accomplished in approximately the same way as in the form shown in Figs. 1 to 8 inclusive. After the adjustment has been effected and assuming the motor 40^a to be in operation, the shaft 19^a will be rotatably driven through the means of the gearing 39^c, 39^b, shaft 38^a, and gearing 37^a, 36^a, and accordingly will rotate the cleaning members 20^a and cause the abrading 23^a thereof to operate in abrasive contact with the surfaces of platens 43, 44, respectively. As in the first form, the machine is manipulated to cause the cleaning members to clean all parts of the surfaces of the platens 43 and 44, it being understood that after this operation has been completed, the cleaning members 20^a are returned to inoperative positions, as in the first form, to permit the cleaning machine to be removed from the press.

In some cases, the distance between the platens 43 and 44 may be too small to permit a workman to manually manipulate the cleaning machines as previously described herein or for some other reason, it may be desirable to have a power manipulated machine; in such cases, the self-propelled cleaning machine illustrated by way of example in Figs. 13 to 17 inclusive may be utilized. In this machine the carriers 20^b may be either in the form shown in Fig. 1 or Fig. 9, and similarly may be mounted upon a shaft 19^b at the opposite ends thereof; the shaft 19^b extends vertically in opposite directions from a bracket 17^b in the bearings 18^b of which it is journaled, said bracket being fixed upon the travelling car-

riage 15^b as in the forms previously described. The shaft 19^b and the carriers 20^b with their associated elements may be driven by suitable driving mechanism, for instance as in Fig. 1 or in Fig. 9, the illustrated example showing a driving arrangement similar to that of Fig. 1. That is the shaft 19^b carries a worm gear 36^b in mesh with a worm pinion 37^b fixed upon a counter-shaft 38^b rotatably mounted in a bearing 39^b projecting upwardly from the carriage 15^b; the counter-shaft 38^b is operatively connected with an electric motor 40^b located upon the carriage 15^b as shown in Figs. 13 and 14; in the preferred arrangement and in order to keep the machine as low as possible, the carriage 15^b is provided with a recess 15^c in which the motor is mounted. As so far described, the machine of Figs. 13 to 17 inclusive may include all of the features of either or both of the forms previously described, it being understood that the operation, as a cleaning machine, and the advantages are the same as set forth with respect to the machines of Figs. 1 and 9.

As shown in the drawings, the counter-shaft 38^b carries a pinion 50 which meshes with a gear 51 secured upon a stub shaft 52; the latter is journaled in bearings 53 fixed upon the carriage 15^b and further carries a pinion 54 arranged in mesh with a gear 55. This gear is mounted upon a shaft 56 to rotate therewith, said shaft being journaled in bearings 57 also located upon the carriage 15^b and extending loosely through a sleeve 58 rotatably mounted in the one bearing 57 and forming part of or connected to rotate with a pinion 59; for the purpose of operatively connecting the pinion 59 at will with the shaft 56 and consequently with the motor 40^b, a second sleeve 60 is slidably mounted upon the shaft 56 and is connected therewith by means of a key or the like 61, it being understood that the sleeves 58 and 60 at their opposed ends are provided respectively with lugs and recesses 62 or any equivalent devices for detachably coupling said sleeves together. In order to facilitate the connection and disconnection of the sleeves 58 and 60, a handled lever 63 is pivoted at 64 upon the carriage 15^b and is connected at 64^a with the sleeve 60 in any conventional manner to slidably manipulate the same without interfering with its rotation. The pinion 59 meshes with a companion pinion 65 fixed upon a shaft 66 journaled in bearings 67 upon the carriage 15^b and carrying also a worm pinion 68 arranged in mesh with a worm gear 69 as shown in Fig. 13. The worm gear 69 in turn is secured upon a shaft 70 located beneath the carriage 15^b and having a gear 71 fixed thereon and meshing with a gear 72 fastened upon a shaft 73 journaled in bearings 74 depending from said carriage 15^b; rear wheels 16^a

similar to those of Figs. 1 and 9 are fixed upon the shaft 73 and support the one end of the carriage 15^b as shown in Fig. 13. As illustrated in Figs. 13 and 14 and by dotted lines in Fig. 17, the carriage 15^b is provided at the proper points with suitable openings for the accommodation of the gears 51 and 55 and the worm gear 69. At the front, the carriage is mounted upon front wheels 16^b which are carried by an axle 75 mounted to rotate in a frame 75^a; the latter is pivotally connected with the carriage 15^b by means of a king-bolt 76 and a fifth-wheel 77. Upon the periphery of its movable section, the fifth-wheel 77 is provided with a toothed segment 78 meshing with a worm pinion 79 which forms part of or is fixed upon a controlling member 80 journaled in bearings 81 depending from the carriage 15^b; as shown in Fig. 13, the member 80 is provided with an axial bore 81 of rectangular or other non-circular cross-section for removably accommodating the correspondingly shaped operating or key member 82 which may be provided with a hand wheel 83 or its equivalent for manipulating said member 82. To facilitate the connection of the key member 82 with the controlling member 80, a tubular guide member 84 may be fixed upon the carriage 15^b in line with the member 80, the guide member being provided with an axial bore 85 in axial registry with the bore 81; the arrangement is such that the outer end of the bore 85 is located at or near an edge of the carriage 15^b so as to be readily accessible for the insertion of the key member 80.

It will be understood, when the machine of Figs. 13 to 17 inclusive is in use, for instance, for cleaning belt presses, it is placed between the platens 43 and 44 as in the previous forms and the parts are adjusted to bring the abradants or other devices of the carriers 20^b into contact with the surfaces of the respective platens 43 and 44 as shown in Fig. 13. The motor 40^b is then started to operate the carriers 20^b as in the forms first described, the motor at the same time being utilized to furnish the motive power for propelling the machine in the following manner. The lever 63 is pivotally operated to shift the sleeve 60 toward the sleeve 58 and to interconnect the lugs and recesses 62 thereof and thereby connect the pinion 59 with the shaft 56. This causes the gearing 50, 51, 54, and 55 to transmit motion to the pinions 59 and 65 and consequently brings about an operation of the worm-gearing 68—69 and the gears 71 and 72 and thereby operates the rear wheels 16^a to propel the carriage 15^a and its associated parts. The gearing whereby power is transmitted from the motor 40^b to the rear wheels 16^a is a reduction gearing and is so arranged that the propulsion of the machine will take place

at a relatively slow speed so predetermined that the action of the abradants or other devices of the carriers 20^b will be most efficiently utilized. It will be understood that during the normal travel of the machine in a given direction the key-member 82 is disconnected from the machine. When it is desired to change the direction of travel of the machine, the said key-member 82 is inserted into and through the bore 85 of the guide member 84 and is guided thereby into the bore 81 of the controlling member 80; the member 82 may be inserted into the bore 85 to a greater or lesser extent dependent upon the position of the machine relatively to that part of the belt press at which the operator finds it most convenient to reach the same. In any case, the key-member 82 is rotated, by means of the hand wheel 83 or its equivalent to correspondingly rotate the controlling member 80 and with it the worm pinion 79; this operation of the latter is transmitted to the segment 78 whereby the movable member of the fifth-wheel 77 is rotatably actuated and thus swings the frame 75^a and the front wheels 16^b in one direction or the other to correspondingly change the direction of travel of the machine. As soon as the desired adjustment has been effected, the key-member 82 may be withdrawn from the bore 81 and disconnected from the machine until another change in the direction of travel thereof is desired. If and when the propulsion of the machine is to be arrested, the lever 63 is swung in a direction to disconnect the sleeve 60 from the sleeve 58, whereby the rear wheels 16^a are disconnected from the motor 40^b and the machine accordingly comes to a standstill. It will thus be seen that the machine shown in Figs. 13 to 17 inclusive is self-propelled and requires no manual attention other than that required to start, stop, and steer the same.

It will be understood that the platens 43 and 44 of the drawings are intended to be representative of opposed pressure and other platens of any kind, upon the operative surfaces of which foreign matter, whereby the efficiency of the platens is interfered with, collects in the operative use of the apparatus of which the platens form a part. In any case, the cleaning machine is adapted to simultaneously clean the operative surfaces of opposed platens and to remove therefrom any of the aforesaid collected matter. The machine in all of its forms is rapid and thorough in action and restores the operative surfaces of the platens to a maximum serviceable condition in a minimum of time.

This is of particular advantage where the element of time is of importance and is particularly important in connection with belt presses, the pressure platens of which have heretofore been cleaned by hand. This oper-

ation, as heretofore performed, requires the services of a considerable number of men using hand scrapers and oftentimes consumes as much as eight or ten hours of time. Because of these facts, it has been found necessary to do this work usually at night, so that loss of production due to shutting down of presses might be avoided. The cleaning operation thus becomes not only expensive, but is difficult to perform satisfactorily, due to the fact that the matter with which the platens of belt presses become covered is of a gummy nature, which becomes very hard. The use of the hand scrapers also carries with it the possibility that the surfaces of the platens may be nicked or otherwise injured. These disadvantages are entirely overcome with the present cleaning machine, which may be used, if necessary, after each pressing operation, that is, when the pressing of each roll of belting has been completed, as the work of cleaning when done with the assistance of the improved cleaning machine requires only relatively small periods of time. Because of the accurate operation of the machine, due to the accurate adjustment of the cleaning members which is possible, the danger of injury of any kind to the surfaces of the platens is also obviated.

Various changes in the specific forms shown and described may be made within the scope of the claims without departing from the spirit of my invention.

I claim:—

1. A machine for simultaneously cleaning opposed platens comprising a travelling carriage including running gear, rotatable cleaning members mounted upon said carriage and rotatable about axes transverse to the surfaces of said platens, said member being adapted to simultaneously engage said opposed platens and operating mechanism carried by said carriage and operatively connected with said cleaning members for simultaneously operating the same.

2. A machine for cleaning belt presses comprising a travelling carriage including running gear, a plurality of cleaning members rotatably mounted upon said carriage and projecting transversely to said carriage in opposite directions therefrom and driving mechanism carried by said carriage and operatively connected with said cleaning members to simultaneously rotate the same.

3. A machine for cleaning belt presses comprising a horizontally travelling carriage including running gear, a vertical shaft journaled upon said carriage and projecting transversely in opposite directions therefrom, cleaning members mounted upon said shaft at opposite ends thereof and driving mechanism carried by said carriage and operatively connected with said shaft to simultaneously actuate said cleaning members.

4. A machine for cleaning belt presses

comprising a horizontally travelling carriage including running gear, a bracket fixed upon said carriage, a vertical shaft journaled in said bracket and projecting transversely in opposite directions therefrom, cleaning members mounted upon said shaft at opposite ends thereof and driving mechanism carried by said carriage and operatively connected with said shaft for simultaneously operating said cleaning devices.

5. A machine for cleaning belt presses comprising a horizontally travelling carriage including running gear, a bracket fixed upon said carriage, a vertical shaft journaled in said bracket and projecting transversely in opposite directions therefrom, a recessed carrier mounted upon each end of said shaft, an abradant in the recessed carriers projecting outwardly beyond the same and a motor carried by said carriage and operatively connected with said shaft for simultaneously rotating said carriers and the abradant therein.

6. A machine for cleaning belt presses comprising a travelling carriage, a bracket fixed upon said carriage, a vertical shaft journaled in said bracket and projecting in opposite directions therefrom, carriers mounted upon said shaft at opposite ends thereof and each provided with a plurality of recesses, an abradant in some of said recesses, scraping devices in others of said recesses and a motor mounted upon said carriage and operatively connected with said shaft for simultaneously rotating said carriers and the abradant and scraping devices carried thereby.

7. A machine for cleaning belt presses comprising a travelling carriage, a bracket fixed upon said carriage, a vertical shaft journaled in said bracket and projecting in opposite directions therefrom, single carriers mounted upon said shaft at opposite ends thereof and facing in opposite directions, a plurality of abradants carried by each of said carriers, a plurality of scraping devices mounted upon each of said carriers, said abradant and scraping devices co-operating to perform cleaning functions, a worm gear fixed upon said shaft, a worm pinion connected with said worm gear and a motor mounted upon said carriage and operatively connected with said worm pinion.

8. A machine for cleaning belt presses comprising a travelling carriage, a bracket fixed upon said carriage, a vertical shaft journaled in said bracket and projecting in opposite directions therefrom, a recessed carrier mounted upon each end of said shaft, cleaning means mounted in said recessed carriers, and resilient devices in said carriers whereby said cleaning means are automatically placed under tension when in use and yieldingly forced against the surfaces being cleaned.

9. A machine for cleaning belt presses comprising a travelling carriage, a bracket fixed upon said carriage, a vertical shaft journaled in said bracket and projecting in
5 opposite directions therefrom, cleaning members adjustably mounted upon opposite ends of said shaft and movable lengthwise thereof to and from operative positions and driving mechanism mounted upon said carriage and operatively connected with said shaft.

10. A machine for simultaneously cleaning opposed platens comprising a travelling carriage, movable cleaning members mounted upon said carriage and adapted to simultaneously engage said opposed pressure plates, operating mechanism carried by said carriage and operatively connected with said cleaning members for simultaneously operating the same, and propelling mechanism whereby said machine is propelled coincidentally with the operation of said cleaning members.

11. A machine for cleaning belt presses comprising a travelling carriage, a plurality of cleaning members rotatably mounted upon said carriage and projecting in opposite directions therefrom, driving mechanism carried by said carriage and operatively connected with said cleaning members to simultaneously rotate the same, and propelling mechanism operatively connected with said driving mechanism for propelling said machine.

12. A machine for cleaning belt presses comprising a travelling carriage, a vertical shaft journaled upon said carriage and projecting in opposite directions therefrom, cleaning members mounted upon said shaft at opposite ends thereof, driving mechanism carried by said carriage and operatively connected with said shaft to simultaneously actuate said cleaning members and propelling mechanism operatively connected with said driving mechanism for propelling said machine.

13. A machine for cleaning belt presses comprising a travelling carriage, a bracket fixed upon said carriage, a vertical shaft

journaled in said bracket and projecting in opposite directions therefrom, a recessed carrier mounted upon each end of said shaft, an abradant in the recessed carriers projecting outwardly beyond the same, a motor carried by said carriage and operatively connected with said shaft for simultaneously rotating said carriers and the abradant therein, propelling mechanism whereby said machine is propelled and means for connecting said propelling mechanism and said motor and disconnecting it therefrom at will.

14. A machine for cleaning belt presses comprising a travelling carriage, a bracket fixed upon said carriage, a vertical shaft journaled in said bracket and projecting in opposite directions therefrom, recessed carriers mounted upon said shaft at opposite ends thereof, abradants in said carriers projecting beyond the same, a motor mounted upon said carriage and operatively connected with said shaft, propelling mechanism operated by said motor for propelling said machine and means whereby the latter is manually steered to change its direction of travel at will.

15. A machine for cleaning belt presses comprising a travelling carriage, rear wheels and steerable front wheels on which said carriage is mounted, a bracket fixed upon said carriage, a vertical shaft journaled in said bracket and projecting in opposite directions therefrom, cleaning members mounted upon opposite ends of said shaft, driving mechanism mounted upon said carriage and operatively connected with said shaft, a controlling member for adjusting said front wheels to change the direction of travel of said carriage, said controlling member having an axial bore of non-circular cross-section and an operating member adapted to fit said axial bore and insertable into the same at will for operating said controlling member to change the direction of travel of the machine.

In testimony whereof I have hereunto set my hand.

JOSEPH CARROLL.