Feb. 8, 1927. 1,616,895

R. GRABOWSKI

FLOOR SCRAPING MACHINE

Filed June 27, 1925 2 Sheets-Sheet 1

Fig. 1.

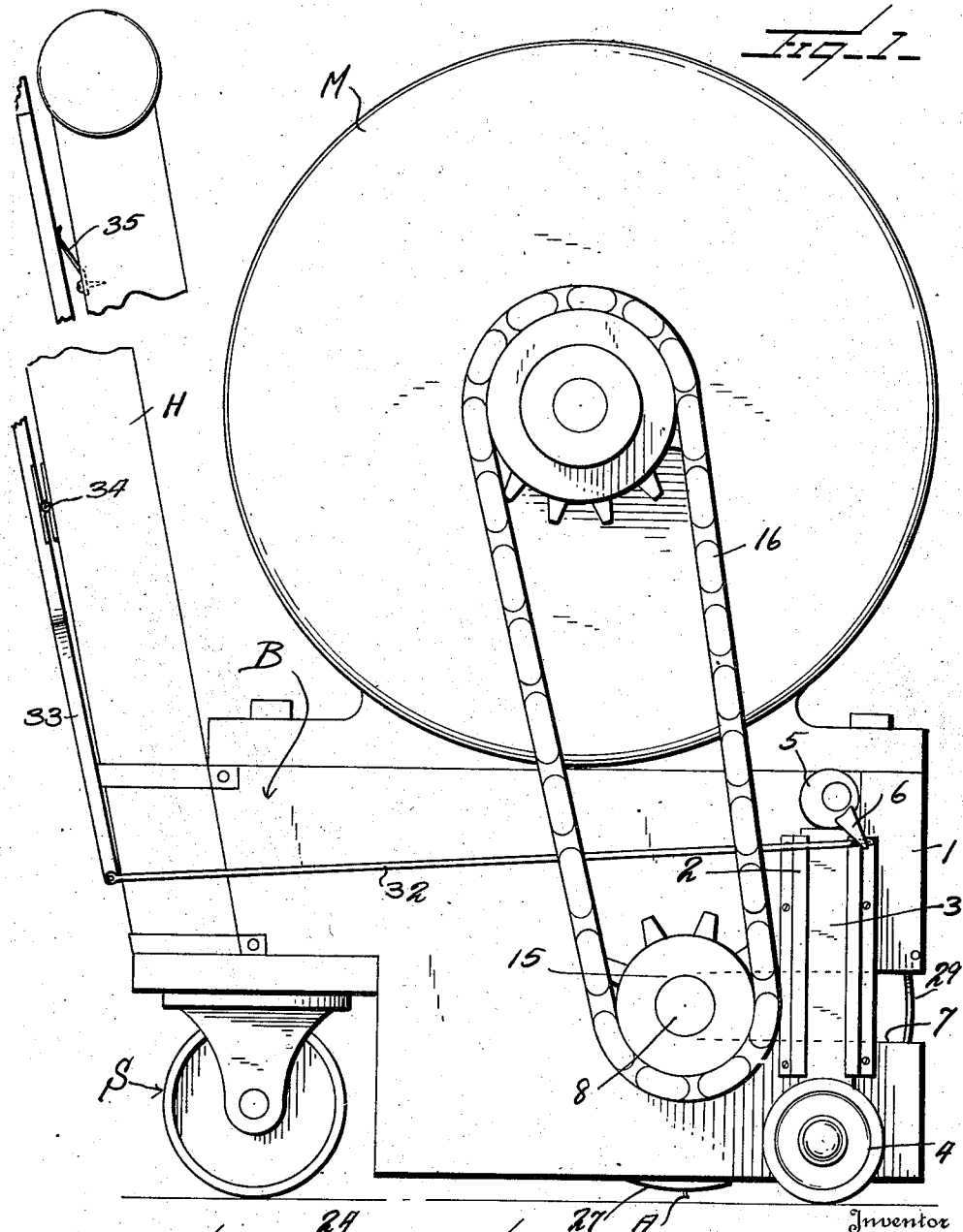


Fig. 6.

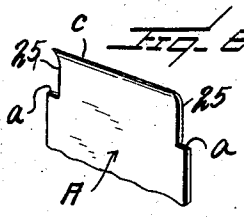
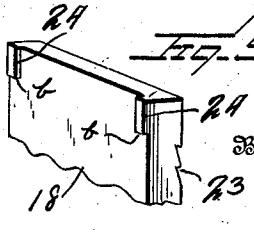


Fig. 5.



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Fig. 2.

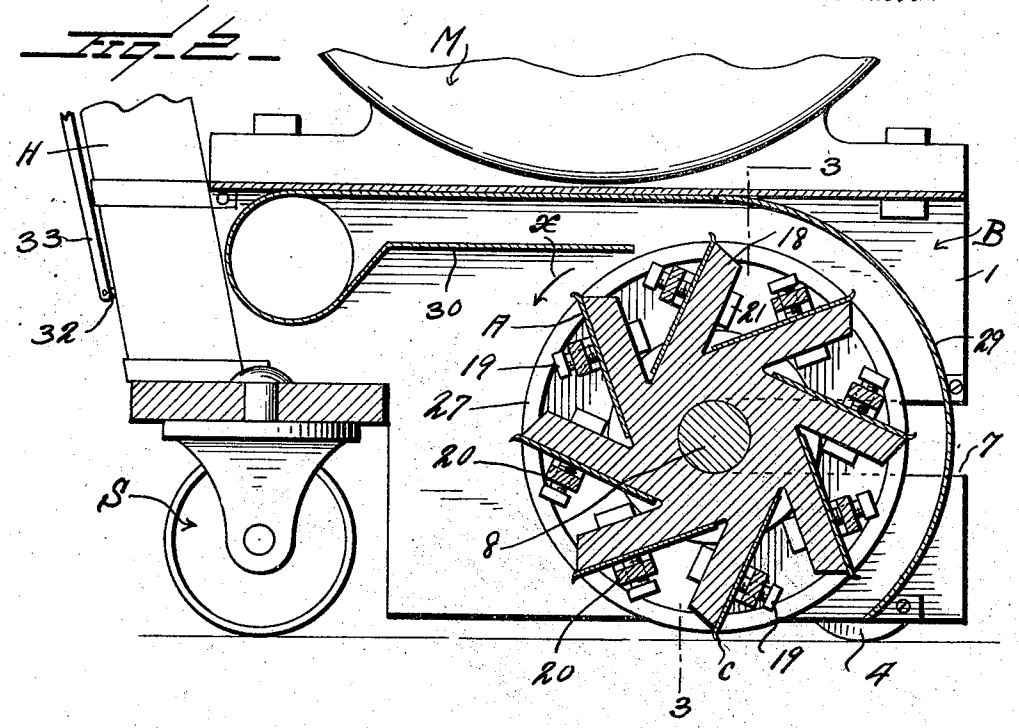


Fig. 3.

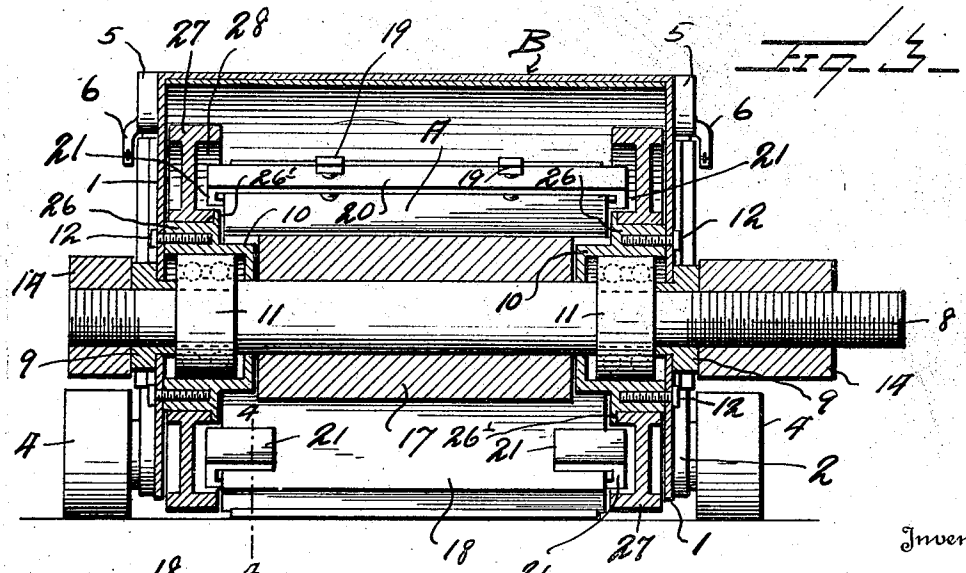
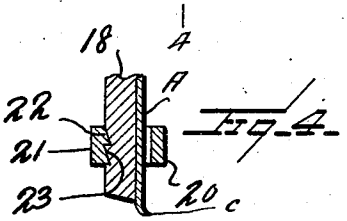


Fig. 4.



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UNITED STATES PATENT OFFICE.

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FLOOR-SCRAPING MACHINE.

Application filed June 27, 1925. Serial No. 40,009.

This invention relates to certain improvements in floor scraping machines and has relation more particularly to a device of this general character of a rotary type, and it is an object of the invention to provide a device of this kind with means whereby the extent of penetration of the scraping blades is positively limited and thereby assuring a constant scraping action.

It is also an object of the invention to provide a device of this general character comprising a rotary element together with means for effectively maintaining the scraping blades in applied position thereon with the scraping edge of each of the blades in proper relation with respect to the axis of the rotary element.

Another object of the invention is to provide a device of this general character comprising a rotary scraping element together with driving means for said element and wherein idler members are provided for positively limiting the extent of penetration of the scraping element.

The invention consists in the details of construction and in the combination and arrangement of the several parts of my improved floor scraping machine whereby certain important advantages are attained and the device rendered simpler, less expensive and otherwise more convenient and advantageous for use, as will be hereinafter more fully set forth.

The novel features of my invention will hereinafter be definitely claimed.

In order that my invention may be the better understood, I will now proceed to describe the same with reference to the accompanying drawings, wherein:—

Figure 1 is a view in side elevation illustrating a floor scraping machine constructed in accordance with an embodiment of my invention;

Figure 2 is a fragmentary view partly in vertical section and partly in elevation of the device as herein disclosed;

Figure 3 is a sectional view taken substantially on the line 3—3 of Figure 2;

Figure 4 is a detailed sectional view taken substantially on the line 4—4 of Figure 3;

Figure 5 is a fragmentary view in perspective of one of the blade mounting flanges;

Figure 6 is a view in perspective of the working end portion of a scraping blade.

As disclosed in the accompanying drawings, B denotes a body member substantially in the form of an inverted U and of desired dimensions and which has operatively engaged with its rear portion a steering wheel S and a push handle H. As the particular attachment of the wheel S and the push handle H with the body B forms no particular part of my invention it is not believed that a detailed description and illustration thereof is necessary.

The side members 1 of the body B each have secured to the outer face thereof the vertically disposed guide members 2 between which is operatively engaged a slide 3 the lower end portion of which carrying a ground engaging wheel 4. The upward movement of each of the slides 3, as herein disclosed, is limited by an eccentric 5 carried by the adjacent side member 1 of the body B, said eccentric 5 being adapted to be operated by the operating handle or lever 6 carried thereby. Upon lowering the high point of each of the eccentrics 5 the slides 3 may be forced downwardly a desired extent to cause the wheels 4 to have proper engagement with the floor or other surface to maintain the body B in desired raised position and particularly to maintain the scraping blades A out of contact with such surface which is particularly desirable when transporting the machine or when the machine is not in actual operation. By disposing the low point of each of the eccentrics 5 downwardly the slide 3 will be permitted to move upwardly so that such blades will have requisite contact with the work.

The forward portions of the side members 1 of the body B, as herein disclosed, are provided with the open slots 7 in which is adapted to be applied the opposite end portions of the shaft 8 or more particularly the flanged collars 9 freely mounted on said end portions of the shaft. Before the shaft 8 is applied, the boxings 10 together with the anti-friction mediums 11 are properly applied upon the shaft 8 and after the boxings 10 have been brought into proper position with respect to the side members 1 of the body B the same are anchored in such position by the bolts 12 or the like disposed through said side members 1 and in threaded engagement with the walls of the boxings 10 as is particularly illustrated in Figure 1. By this means a fixed mounting is provided for the shaft 8.

Threaded upon the shaft 8 outwardly of the collars 9 are the holding members 14

which serve to maintain the collars 9 in desired applied position together with the anti-friction means 11. One end portion of the shaft 8 has secured thereto a sprocket wheel 15 in driven connection through the medium of the chain 16 with the motor M, said motor being preferably of an electrical type and mounted directly upon the body B as illustrated in Figures 1 and 2 of the accompanying drawings. This motor M is adapted to be connected with a suitable source of electrical energy in any desired manner and it is also to be noted that the motor M may be operatively connected with the shaft 8 in any preferred manner other than by the use of the chain 16.

Fixed to the shaft 8 and substantially bridging the space between the boxings 10 is a drum 17 of preferred diameter and which is provided circumferentially thereabout with the outstanding flanges 18, each of said flanges having its blade contacting surface or face tangential to the peripheral line of the drum 17 with each of the flanges 18 disposed on the same angle with respect to the blade contacting surfaces of the adjacent flanges.

The blades A are of a scraping type and each of said blades is maintained in applied position by the holding screws 19 threaded through an elongated strip 20 disposed longitudinally of a flange 18 and overlying an applied blade A. The extremities of the members or strips 20 are returned, as at 21, to provide hook like ends straddling the opposite face of a flange 18 and having close contact therewith when the screws 19 are adjusted to hold a blade A in applied position. Each of the returned portions of each of the hook like ends 21 of the members 20 has its inner face provided with the teeth 22 which are received in similarly formed pockets or recesses 23 provided in the rear face of the flange 18 so that the member 20 is effectively held against movement outwardly of a flange 18 when a blade A is clamped thereto. When it is desired to remove the applied blade A it is only necessary to adjust the screws 19 outwardly a sufficient distance.

The outer or free corner of each of the flanges 18 has extending outwardly from its blade contacting surface the lugs 24 which are adapted to be received in the cut out portions 25 provided in the working extremity of a blade A with the inner shoulders *a* afforded by each of the cut out portions 25 in contact with the inner end *b* of a lug 24. By this means, the projection of the working or scraping edge *c* of a scraping blade A is limited. The working or scraping edge *c* of the blade may be caused to project further by lengthening the cut out portions 25 although in practice it is deemed more expedient to provide a plurality of separate blades A having cut out portions 25 of varying lengths.

The coaction of the shoulders *a* of a blade A with the inner ends *b* of the lugs 24 of a flange 18 also provides positive means to assure the working or scraping edge *c* of the blade to be properly set or to be arranged in parallelism with the axis of the shaft 8 as said inner ends *b* of the lugs 24 of each flange 18 are aligned on a plane parallel to the axis of the shaft 8 or of the drum 17.

The boxings 10 are so constructed as to have the portions thereof immediately adjacent to the side members 1 constituting mountings 26 for the idler wheels 27. These idler wheels 27 are of similar diameter and during a scraping operation have direct contact with the floor or other surface to be worked and thereby provide positive means for limiting the extent of penetration of the scraping edges *c* of the blades A, it being understood that such extent of penetration will be determined by the distance each of said scraping edges *c* projects beyond the peripheries of the idler wheels 27.

The inner faces of the wheels 27 are provided with the annular recesses 28 in which are freely received the end portions of each of the members 20 so that when the screws 19 have been loosened to remove a blade A it will be assured that said member 20 will not be displaced with respect to the associated flange 18.

It is to be particularly noted that in practice, the shaft 8 and the drum 17 mounted thereon rotate in an anti-clockwise direction as indicated in Figure 1 by the arrow *x* whereby it is assured that the blades A will have effective scraping action on the surface being treated and in a manner whereby splitting or the like is effectively avoided.

It is also to be understood that the shaft 8 is to be rotated at an extremely high speed and preferably at a rate of over three thousand revolutions per minute so that the action of the scraping blades A upon the work will be substantially continuous.

Supported within the body in any desired manner and extending downwardly over the forward portion of the applied drum 17 and suitably spaced from the margins of the flanges 18 is a plate 29 serving as a deflector leading to the conduit 30 carried by the upper portion of the body B, said conduit 30 discharging to one side of the machine and providing means whereby the scrapings will be readily carried off and if desired delivered within a suitable collecting bag. This, however, forms no particular part of the present invention. It is also to be understood that the curved plate 29 is adapted to be removed when it is desired to take out the shaft 8 and the parts carried thereby or to replace the same.

Operatively engaged with the handle or lever 6 is a rearwardly directed rod 32 which is also operatively engaged with the lower end portion of a vertically disposed lever 33 hingedly connected, as at 35, with the push handle H. Interposed between the upper portion of the push handle H and the lever 33 is a spring 35 of a tension to normally maintain the wheels 4 in contact with a floor or other surface to hold the forward portion of the body B raised. When it is desired to bring the blades A into working action, the upper portion of the lever 33 is forced inwardly by the operator and which action rotates the eccentric 5 to bring the low point thereof downward. It will be understood that as soon as pressure upon the upper portion of the lever 33 is released, the spring 35 will operate to bring the high point of the eccentric 5 down and thereby raising the forward portion of the body B to bring the blades A into idle position.

It is also to be noted that the inner end of each of the mountings 26 is provided with an outstanding flange 26′ to provide means to prevent the adjacent wheel 27 having undue movement toward the adjacent end of the drum 17.

From the foregoing description it is thought to be obvious that a floor scraping machine constructed in accordance with my invention is particularly well adapted for use by reason of the convenience and facility with which it may be assembled and operated, and it will also be obvious that my invention is susceptible of some change and modification without departing from the principles and spirit thereof and for this reason I do not wish to be understood as limiting myself to the precise arrangement and formation of the several parts herein shown in carrying out my invention in practice except as hereinafter claimed.

I claim:—

1. A floor scraping machine comprising, in combination, a portable body, a drum rotatably supported thereby, means for rotating the drum, outstanding flanges carried by the drum and spaced circumferentially therearound, a scraping blade overlying a face of each of the flanges and having its scraping edge projecting therebeyond, an elongated member overlying the applied blade and having reverted end portions overlapping the opposite face of the flange, and a screw threaded through the member and having direct clamping contact with the blade.

2. A floor scraping machine comprising, in combination, a portable body, a drum rotatably supported thereby, means for rotating the drum, outstanding flanges carried by the drum and spaced circumferentially therearound, a scraping blade overlying a face of each of the flanges and having its scraping edge projecting therebeyond, an elongated member overlying the applied blade and having reverted end portions overlapping the opposite face of the flange, and a screw threaded through the member and having direct clamping contact with the blade, the reverted extremities of the member and the opposed face of the flange interlocking to hold said member against slippage with respect to the flange when the blade is in clamped position.

3. A wood scraping machine comprising a portable body, a rotatable scraping element carried thereby, means for rotating said element, slides carried by the side walls of the body for movement in a vertical direction, a ground engaging wheel carried by the lower end portion of each of the slides, and means carried by the body and engageable with the upper portion of each of the slides to raise the adjacent portion of the body to render the scraping element inoperative.

4. A wood scraping machine comprising a portable body, a rotatable scraping element carried thereby, means for rotating said element, slides carried by the side walls of the body for movement in a vertical direction, a ground engaging wheel carried by the lower end portion of each of the slides, and an eccentric carried by each side of the body and constantly in contact with the upper end of each of the slides.

In testimony whereof I hereunto affix my signature.

ROMUALD GRABOWSKI.