A. A. CLARKE.

SURFACE TREATING MACHINE.

APPLICATION FILED NOV. 26, 1920.

1,404,342.

Patented Jan. 24, 1922.

2 SHEETS—SHEET 1.

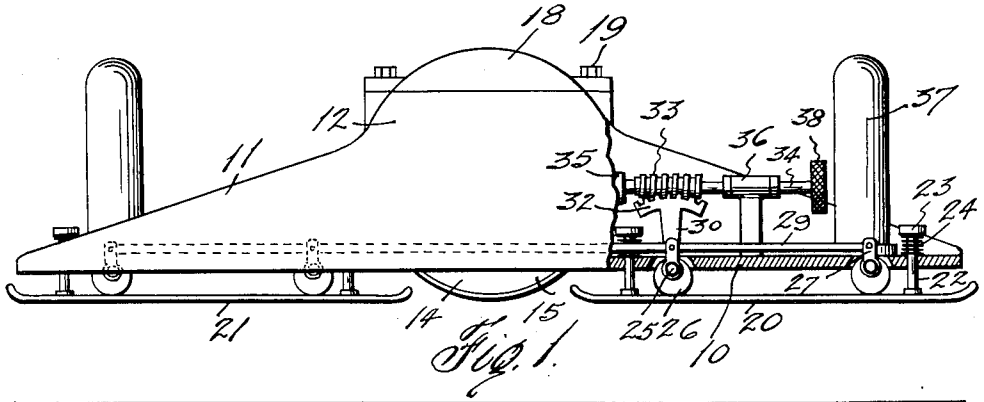


Fig. 1.

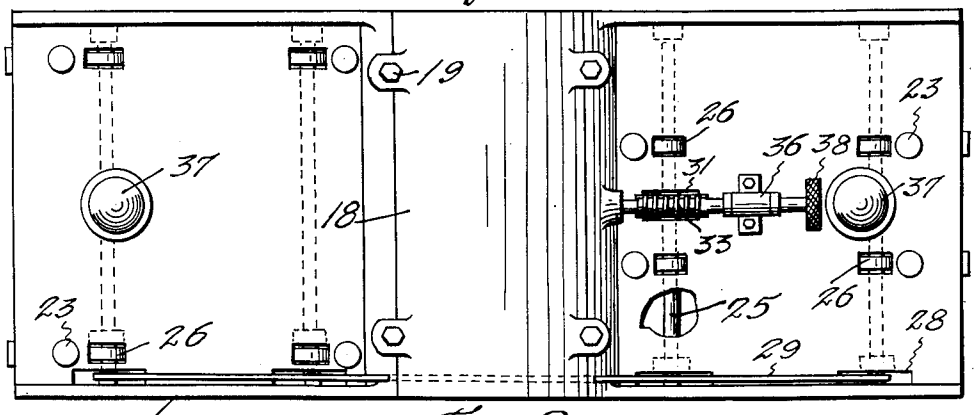


Fig. 2.

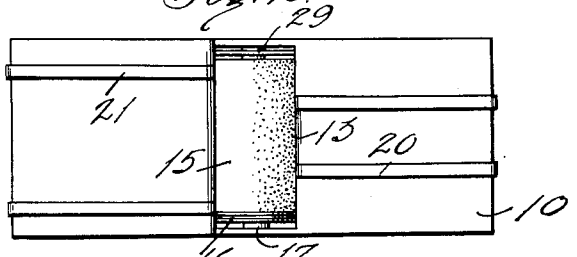


Fig. 3.

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2 SHEETS—SHEET 2.

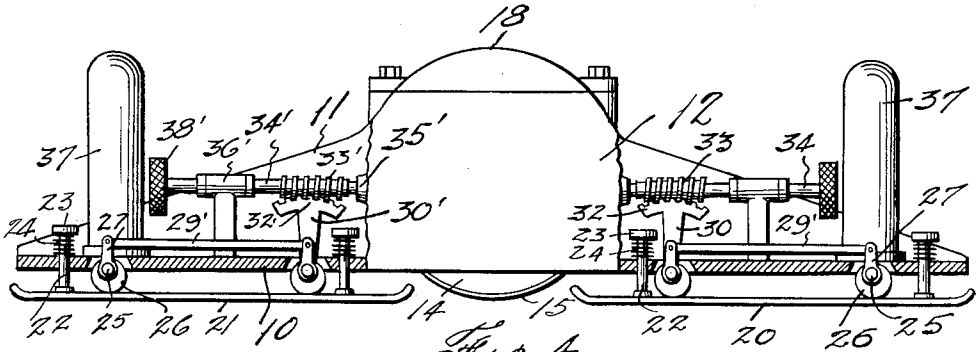


Fig. 4

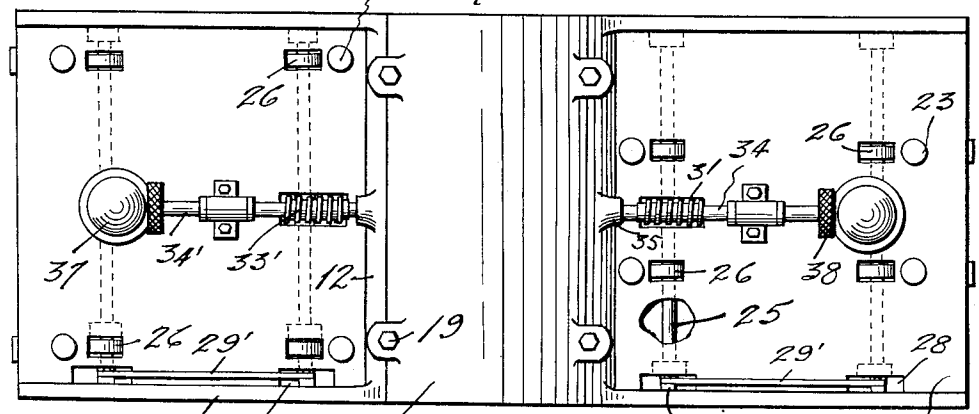


Fig. 5

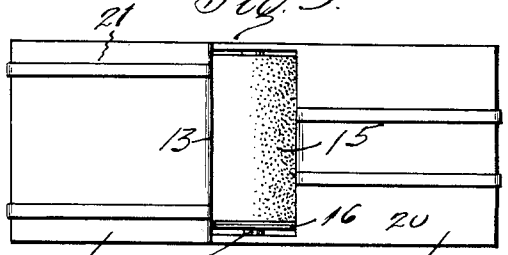


Fig. 6

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UNITED STATES PATENT OFFICE.

ALEX A. CLARKE, OF DALLAS, TEXAS.

SURFACE-TREATING MACHINE.

1,404,342. Specification of Letters Patent. Patented Jan. 24, 1922.

Application filed November 26, 1920. Serial No. 426,391.

To all whom it may concern:

Be it known that I, ALEX A. CLARKE, a citizen of the United States, residing at Dallas, in the county of Dallas and State of Texas, have invented certain new and useful Improvements in Surface-Treating Machines, of which the following is a specification.

This invention relates to new and useful improvements in surface treating machines.

The invention has particularly to do with that type of machines involving a revolving surface treating member, propelled by a motor and mounted in a frame; and the frame being adjustably supported on runners.

The object of the invention is to provide a machine of practical construction involving supporting runners with adjusting elements disposed between the runners and the frame, whereby the frame is raised and lowered to advance the surface treating member toward the work or to retract it therefrom.

An apparatus designed to carry out the invention will be hereinafter described together with other features of the invention.

The invention will be more readily understood from a reading of the following specification and by reference to the accompanying drawings, in which an example of the invention is shown, and wherein:

Fig. 1 is a side view of a machine constructed in accordance with my invention, part being shown in elevation and part in section,

Fig. 2 is a plan view of the same,

Fig. 3 is an underside view,

Fig. 4 is a longitudinal vertical sectional view of a modified form, a portion being illustrated in elevation,

Fig. 5 is a plan view, and

Fig. 6 is an underside view.

In the drawings the numeral 10 designates a supporting frame or body having upright flanges 11 along each side which are inclined upwardly from the ends of the frame and united with a transverse housing 12 at the center of said frame. The frame is elongated and the sides are removed; the base or bottom of the frame being broad and flat.

The frame has a central transverse slot 13 at its center which extends nearly to the side edges thereof. Within the housing 12, a horizontal drum 14 is mounted transversely so as to depend through the slot 13. This drum has a sleeve or covering 15 formed of suitable surface treating material, such as sand paper, felt or any abrading substance. The drum 14 is mounted on an armature 16 and contains suitable motor elements, whereby said drum is caused to revolve when the device is properly connected with a source of electrical current. The details of this feature are not illustrated as they have no particular bearing on the invention and may be carried out in ways well known in this art, as for instance as is illustrated in my Patent No. 1,352,583, issued September 14, 1920. The manner of propelling the drum is unessential as it can be done in any approved manner and by any kind of a motor.

The armature 16 has a trunnion 17 at each end which is suitably supported in the ends of the housing 12 and which it is not considered necessary to illustrate in detail. An arcuate cover 18 is mounted on the housing 12 and is fastened by machine screws 19. This cover protects the parts from dirt and dust and may be removed to inspect the enclosed parts and to gain access to the drum.

The essential feature of this invention is the adjustment whereby the surface treating drum is advanced toward the work or retracted therefrom. In carrying out this feature the frame 10 is supported on runners 20 and 21. The runners 20 are disposed on one side of the drum, while the runners 21 are disposed on the other side of said drum. The runners 21 are arranged along each side of the frame; while the runners 20 are set inwardly from the edges of the frame so as to travel within the area between the runners 21. This is done so that the sleeve 15 will project on each side of the runners 20 thus causing the latter to always rest on a portion of the surface which has been treated and thus give an even bearing, it being obvious that if one runner rested on an uncut surface and the other on a cut surface, the machine would be tilted. The ends of the runners are turned upwardly so as to prevent them from digging into the surface.

Each runner near its ends carries a pair of upright posts 22 extending through the base of the frame and projecting above the same. Each post has a cap nut 23 on its upper end and a coiled spring 24 is confined

between the cap nut and the base of the frame, whereby the runners are forced upward and placed under spring tension. Transverse rock shafts 25 are mounted under the base and each shaft carries a pair of eccentrics 26 which bear upon the upper surfaces of the runners. By this arrangement each runner is engaged by a pair of eccentrics, each eccentric being adjacent a post. Each shaft 25 has an upstanding crank arm 27 fixed on its end and these arms extend up through slots 28 in the base of the frame adjacent one of the flanges 11. The arms are all pivoted to a common link 29 so as to swing in unison. The link passes through the housing. When the link is moved to swing the arms the shafts 25 will be rocked, thereby swinging the eccentrics 26. When swung in one direction the eccentrics will move downward thus displacing the runners downwardly from the frame 10 against the tension of the springs 24 and thus raising the drum 14 and retracting it from the surface being worked upon. By swinging the parts in the opposite direction whereby the eccentrics are moved upward, the springs 24 will elevate the runners whereby the drum is lowered and caused to cut deeper into the surface or exert their pressure thereon.

For swinging the link and adjusting the runners I secure a lever 30 to one of the rock shafts adjacent the housing. This arm projects up through a slot 31 in the frame 10 and has a worm sector 32 on its upper end. A worm screw 33 is mounted on a shaft 34 and engages with the sector. The shaft has one end supported in a derrick 35 on the housing and passes through the bearing box of a standard 36. For traversing the machine a pair of upright handles 37 are mounted at each end of the frame. A thumb wheel 38 on the outer end of the shaft 34 is adjacent one of these handles so that the operator may easily turn said wheel while his hand is grasping the handle.

In Figs. 4, 5 and 6 I have shown a modified construction in which the link 29 is omitted and instead a pair of links 29′ are employed, each link connecting the rock shaft on each side of the housing. The adjusting means is duplicated in a lever 30′ arranged on the opposite side of the housing from the lever 30. The lever 30′ is connected to the rock shaft 25 on its side and projects up through a slot 31′ in the base of the frame and has a sector 32′ on its upper end. The sector 32′ engages a worm screw 33′ mounted on a shaft 34′ supported in a box 35′ and standard 36′. Shaft 34′ has a thumb wheel 38′ on its end adjacent the handle 37 at that end of the frame. By this arrangement the machine may be adjusted vertically by rotating both thumb wheels to the same degree, whereby the frame will be raised evenly at each end, or by adjusting the parts at one end to a greater degree than those at the other end, the frame may be tilted or inclined longitudinally as will be apparent. This mechanism provides independent adjustment on each side of the surface treating member.

In using the machine the operator grasps the handles 37 and starts the motor so as to revolve the drum 14. By turning the wheel 38 the worm screw 33 is caused to revolve, thus swinging the lever 30 through the agency of the sector 32, whereby the rock shaft to which the lever is attached, is swung. It will be seen that when the rock shaft is swung, it will swing all of the other rock shafts through the agency of the arms 27 and the link 29. By swinging the lever 30 in one direction the eccentrics will be raised and by swinging it in the opposite direction said eccentrics will be lowered, and this is accomplished by rotating the wheel 38 in one direction or in the other direction. By this means the drum and its surface treating sleeve 15 will be moved toward or from the surface being worked upon by the raising or the lowering of the frame with relation to the runners 20 and 21 as will be obvious. A very fine adjustment may be had and may be effected while the machine is in operation.

Various constructions may be used for adjusting the drum and the invention is presented as including all such modifications as properly come within the scope of the appended claims.

What I claim, is:

1. In a surface treating machine, a frame, a motor propelled surface treating member mounted upon the frame, runners arranged beneath the frame, posts secured to the runners and having slidable engagement with the frame, springs surrounding the posts and engaging the frame, and elements carried by the frame and engaging said runners at points spaced from said posts and adapted to effect a relative vertical movement between the runners and the frame.

2. In a surface treating machine, a frame, a motor propelled surface treating member mounted in the frame, supports under the frame, eccentrics interposed between the supports and the frame, and means for swinging the eccentrics to adjust the frame vertically.

3. In a surface treating machine, a frame, a motor propelled surface treating member mounted in the frame, supports under the frame, eccentrics interposed between the supports and the frame, means for swinging the eccentrics to adjust the frame vertically, and handles mounted on the frame

for traversing the same, said adjusting means being operable from one of the handles.

4. In a surface treating machine, an elongated frame, a motor propelled surface treating drum carried by the frame, spring pressed runners mounted under the frame, eccentrics mounted on the frame and spacing the runners from the frame against the spring tension, and means for swinging the eccentrics to vertically adjust the frame.

In testimony whereof, I affix my signature.

ALEX A. CLARKE.