WHEEL RAISING AND LOWERING MECHANISM FOR FLOOR POLISHING MACHINES AND THE LIKE
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FIG. 1.

FIG. 2.

FIG. 3.

FIG. 4.

FIG. 5.

FIG. 6.

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WHEEL RAISING AND LOWERING MECHANISM FOR FLOOR POLISHING MACHINES AND THE LIKE

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3 Claims. (Cl. 280—44)

1. My invention relates to an improvement in a wheel raising and lowering mechanism and more particularly to a type for use in a floor polishing machine or the like.

Floor machines are moved about the floor in operation and require a mechanism for lowering the wheels whereby the machine may be moved with the floor treater member raised from the floor to facilitate moving the same. To this end it is an object of my invention to provide a mechanism which raises and lowers the wheels of a floor polishing machine quickly and positively by a simple direct movement of the operator's foot.

It is an additional object to provide a wheel raising and lowering mechanism which is virtually concealed within a portion of the floor machine housing and which is readily held in a positive locked position when the wheels are in a lowered position. It is a further object to provide a pivoted cam arm and lever member which engages the shaft mounting the pair of running wheels of the floor machine and holds the wheel shaft in a positive lowered or raised position. It is also an object to provide a cam surface formed on the end and side of the pivoted cam arm member which is in direct contact with the shaft mounting the running wheels whereby an efficient, simple and positive actuating mechanism is formed for raising and lowering the wheels of a floor machine or the like by acting upon the axle mounting the wheels of the machine.

The invention will appear more clearly from the following detailed description when taken in connection with the accompanying drawings, showing by way of example a preferred embodiment of the inventive idea.

In the drawings forming part of the application:

Figure 1 is a side view of the main body portion of a floor polishing machine with my wheel raising and lowering mechanism holding the wheels in a lowered position.

Figure 2 is a bottom plan view of the machine and mechanism shown in Figure 1.

Figure 3 is a section on the line 3—3 of Figure 2.

Figure 4 is a section similar to that of Figure 3 but with the wheels in raised position.

Figure 5 is a section on the line 5—5 of Figure 2.

Figure 6 is a perspective view of the cam locking levers removed from the mechanism unit.

My wheel raising and lowering mechanism A is composed of the shaft 10 on which are mounted the wheels 11. The shaft 10 in turn is mounted on the lower ends 12 of the arms 13 and 13' which are pivotally secured to the stub shafts 14 mounted on the gear housing 15 of the machine B. The housing 16 which mounts the motor cover member 17 also conceals the wheel mechanism A and has formed inwardly thereof the inner depending wall members 18. Formed in each of the wall members 18 is a cutout recess 19 having the semi-circular corner portion 20 formed therein which aids in positioning the wheel axle 10 as hereinafter described.

I further provide the shaft 21 which is rotatably mounted in the enlarged portions 22 formed in the inner walls 18. Secured to the ends of the shaft 21 are the pivoting cam locking members 23 and 24 which have formed on the lower depending ends thereof the semi-circular cutout portions 26 which engage the shaft 10 and place it in locked position when the wheels 11 are in the lowered position shown particularly in Figures 1, 3 and 5. So that the cam locking members 23 and 24 may be pivoted to raise and lower the wheels 11 by acting on the shaft 10, I provide the lever 27 which is formed on the member 22 and extends rearwardly thereof for engagement by the operator's foot. Each of the cam locking members 23 and 24 has the edge 28 thereof formed at a flat angle and the apex 29 of the angular surface edge 28 is the stopping point of the shaft 10 when the wheels 11 are in raised position.

The lever 27 is adapted to extend outwardly of the housing 10 for foot engagement my means of the slot 30 formed in the housing 15 through which the lever 27 extends. To maintain the shaft 10 and the wheels 11 in a raised position I provide a spring 31 which is secured at 32 to the under side of the housing 16 and at 33 to the pivoted arm 13. To limit the extent of the downward movement of the wheels 11 through the movement of the arms 13 and 13' I provide the stop member 34 which is secured to the under side of the gear housing 16 and acts in combination with the semi-circular portion 26 to place the lowered wheels 11 in a positive secured position. With my new compact construction the wheels are easily enclosed within the rear portion of the housing 16.

I also provide the resilient tubular members 35 and 36 which are secured on the shaft 10 in such a position so that contact is made with the semi-circular corner portion 23 when the shaft 10 is raised thereby cushioning the upward movement of the shaft 10.

In outlining the operation of my device we will
assume the wheels 11 are in the raised position shown in Figure 4 where the shaft 10 is positioned against the apex 28 of the angle of the edge 29, the spring 31 holding the arm 13 in raised position and the resilient tubular members in contact with the portion 26. In this position the upper edge of the lever 27 also engages the upper end of the slot 33. To lower the wheels 11 the operator merely presses his foot on the lever 27 and pushes the same downwardly, and as this is done the shaft 10 travels from point 29 down the edge 28 of the cam members 23 and 24 whereby the shaft 10 is forced into the semi-circular notch formations 26 of the members 23 and 24 for locking the same. In this position the stop member 34 engages the underside of the pivoted arm 13 which is of course lowered with the lowering of the shaft 10 along with the arm 13'. The wheels are maintained in the lowered position due to the fact that the shaft 10 is positioned in the semi-circular notch 26 and the fact that the shaft 10 in its lowered position is slightly forward in the housing with regard to the position of the shaft 21 above it.

In the type of machine illustrated in Figure 1 the wheels are raised to allow the brush 37 to contact and operate on a floor to be treated. My invention provides a mechanism acting directly upon the shaft mounting the wheels of the machine which places the wheels in a positive lowered or raised position by a simple movement of the foot. With the wheels in a positive lowered position the machine may be easily moved about with little or none of the surface of the brush contacting the floor. In raising the wheels 11 the lever 27 is raised and the shaft 10 is released from the notch 26, the shaft 10 traveling along the edge 28 to the point 29 where it is held as heretofore set forth. The invention is not to be understood as restricted to the details set forth since these may be modified within the scope of the appended claims without departing from the spirit and scope of the invention.

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

1. A wheel raising and lowering mechanism for a floor polishing machine including a wheel shaft, a pair of arms secured to said shaft, means for pivoting said arms to the floor polishing machine, a pair of cam locking elongated arm members each having a semi-circular notch formed in the lower end thereof adapted to engage said wheel shaft and release therefrom, said cam arms being pivotally mounted at a point on said machine rearwardly of the pivot point of said wheel shaft arms, a lever secured to one of said cam arms to move said cam arms downwardly and forwardly against said wheel shaft, a flat angle edge formed on the forward edge of each of said cam arms adapted to slideably engage said wheel shaft as the same is raised or lowered, the apex of said flat angle engageable with said wheel shaft when the wheels are raised, spring means secured to said pivotal arms and adapted to be secured to the floor polishing machine whereby said pivotal arms are urged in an upward raised position.

2. A wheel raising and lowering mechanism for mobile units including a wheel shaft, a pair of arms secured to said wheel shaft, a pair of spaced apart cam arms each having notch means formed on the lower free end thereof adapted to releasably engage said shaft, a lever secured to one of said cam arms, a second shaft secured to the upper ends of said cam arms and mounted at a point rearwardly of said wheel shaft for pivoting said cam arms, said second shaft being positioned slightly to the rear of the vertical center of said wheel shaft when the wheel shaft is in lowered position, means for mounting said shafts in the housing of the mobile unit, and spring means secured to one of said pair of shaft arms adapted to be secured to the housing of the mobile unit to maintain said shaft arms and said cam arms in a raised position.

3. In a wheel raising and lowering mechanism for floor treating machines and the like, a shaft for mounting a pair of wheels, arm means for pivoting said shaft to the floor treating machine, a pair of spaced apart elongated cam arm means having a notch formed in the lower end thereof for engagement with said wheel shaft, a shaft secured to said cam arm means, means for pivotally mounting said cam arm shaft to the floor treating machine at a point slightly rearwardly of the vertical center of said wheel shaft, said cam arm means having a leading wide angle cam edge adapted to contact said wheel shaft, lever means for forcing said cam edge against said wheel shaft to position said wheel shaft in said notch or remove the same thereafter, and spring means for maintaining said cam arm means in a raised position.

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