No. 878,269. PATENTED FEB. 4, 1908.

N. D. S. K. BECK.

FLOOR FINISHING APPARATUS.

APPLICATION FILED OCT. 10, 1907.

Fig. 1.

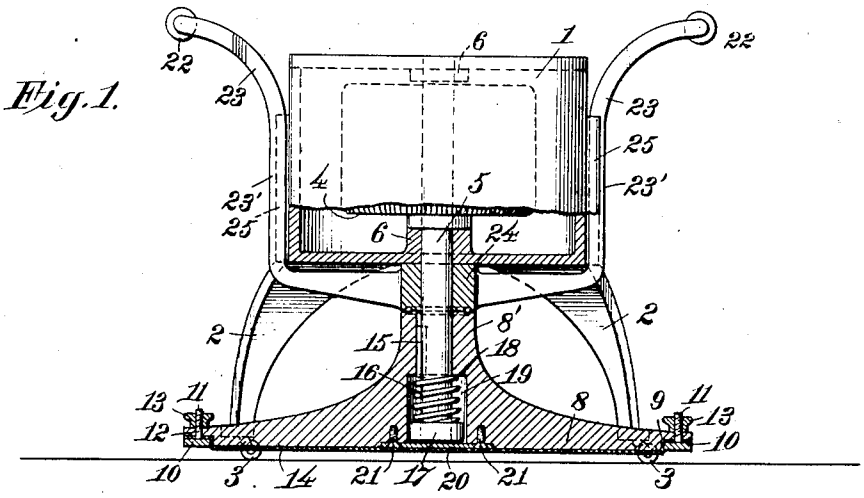
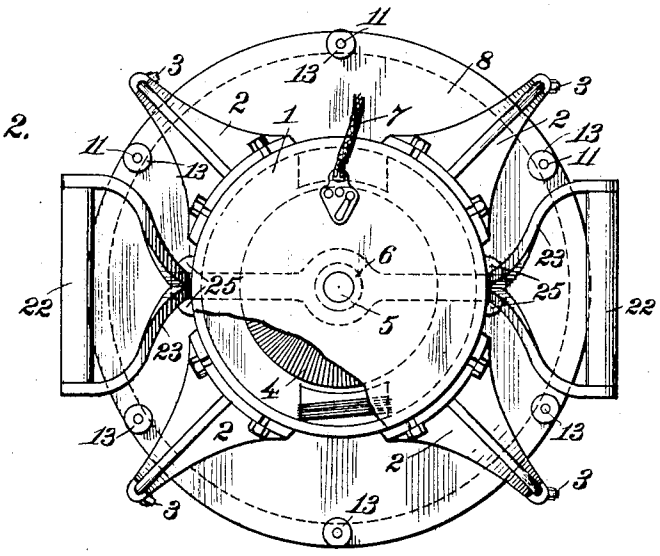



Fig. 2.




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# UNITED STATES PATENT OFFICE.

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## FLOOR-FINISHING APPARATUS.

No. 878,269. Specification of Letters Patent. Patented Feb. 4, 1908.

Application filed October 10, 1907. Serial No. 396,715.

*To all whom it may concern:*

Be it known that I, NIELS DANIEL SOFUS KRISTIANSEN BECK, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Floor-Finishing Apparatus, of which the following is a specification.

My invention relates to floor finishing apparatus, and has particular reference to the apparatus of the class mentioned, which are readily moved about by hand, to sandpaper, grind, polish or otherwise finish the floor, the operative portion of the machine being driven by a suitable motor.

The object of my invention is to provide a device of the class mentioned which shall be light, strong and durable and shall be of low cost to manufacture.

A further object of my invention is to provide a device as mentioned, wherein the grinding or finishing portion shall be driven by motor power but which at the same time shall be responsive to manual pressure by the operator to vary the frictional contact with the floor.

Further objects will appear and be described hereinafter.

With these objects in view my invention consists generally in a suitable frame mounted upon casters or rollers a motor mounted in said frame, a shaft driven by said motor, and a grinding or polishing disk mounted upon said shaft and rotatably fixed but longitudinally slidable thereon.

My invention further consists in a suitable frame mounted upon casters or rollers, a motor mounted in said frame, a shaft driven by said motor, a grinding or polishing disk rotatably fixed to said shaft and vertically slidable thereon, means for normally holding said disk in retracted position and means for manually depressing said disk.

My invention further consists in various details of construction and arrangements of parts all as will be hereinafter fully described and particularly pointed out in the claims.

My invention will be more readily understood by reference to the accompanying drawings forming a part of this specification and in which,

Figure 1 is a side elevation of a floor finishing machine embodying my invention in its preferred form, portions of the machine being shown in section, and Fig. 2 is a plan view thereof, a portion of the motor box being broken away.

Referring to the drawings, 1 indicates the frame of the device. This may be of any preferred form and is supported upon a plurality of legs, 2, provided with the casters or rollers, 3. The frame, 1 preferably constitutes a housing for a motor, 4, which drives a vertically disposed shaft, 5, having bearings, 6, in the frame. If preferred, the motor may be mounted directly upon the shaft, as shown. The motor may be of any preferred type but I prefer to employ an electric motor to which the current may be supplied from an external source as by wires, 7 or from a storage battery carried by the device. The shaft, 5 is free to rotate in the bearings, 6 but is fixed against longitudinal movement.

Upon the lower end of the shaft, I provide the grinding or polishing disk, 8, and equip the same with means for securing a disk of felt or sandpaper to its underface. To this end, the periphery of the underface of the disk is grooved or rabbeted as at 9, and a clamping ring, 10 is fitted therein. The ring, 10 is provided with a plurality of stud bolts, 11 which extend vertically upward through holes, 12 in the disk, 8, and the ring is tightened by the nuts, 13.

14 indicates the sandpaper or felt, a disk of which is first spread across the face of the disk, 8, after which the ring, 10 is placed in position with the bolts, 11 extending through the holes, 12. The nuts, 13 are then screwed upon the bolts, 11 securely clamping the felt or sandpaper in position. The disk, 8 is free to slide longitudinally on the shaft, 5, but is rotatably fixed thereon in any suitable manner, as by a key or feather, 15. The disk is normally held in retracted position by a spring, 16 interposed between a collar, 17 on the lower end of the shaft, 5, and a shoulder, 18 forming the top of a recess, 19 extending upwardly from the bottom of the disk, 8.

20 indicates a plate closing the recess, 19. This is let into the face of the disk to bring its outer surface flush with the face of the disk and may be secured in position in any suitable manner, as by the screws, 21.

22—22 indicate suitable handles for depressing the disk to bring it into contact with the floor. These are arranged for vertical reciprocation and are preferably rotatably fixed with relation to the frame of the device. To this end the handles are connected by

arms, 23 to a collar, 24 loosely mounted upon the shaft, 5, and interposed between the upper end of the hub, 8′ of the disk, 8, and the lower bearings, 6 of the shaft. The collar, 24 is vertically movable upon the shaft and by applying pressure to the handles it is depressed lowering the disk into contact with the floor. To reduce the friction between the collar, 24 and the hub 8′, I provide suitable ball bearings, 25. The arms, 23 are preferably rotatably fixed with relation to the frame, in order that the frame may be guided thereby. To this end, each arm is provided with a vertical portion, 23′ which lies close to the frame, 1 and the frame is provided with vertically disposed lugs or ribs which constitute guides for said portions.

The operation of the device is as follows: A piece of sandpaper or felt having been secured upon the disk, 8, by the ring, 10 and the motor, 4, having been started, the operator grasps the handles, 22—22 and presses the same downward against the pressure of the spring, 16 until the disk contacts the floor. It is evident that the apparatus may be readily moved about as desired by means of the handles and further, that the operator may vary the pressure of the disk upon the floor by increasing or decreasing his pressure upon the handles. In this manner the disk is responsive to the operator and finer work may be accomplished than by hand or with machines that are not so readily responsive.

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

1. In a device of the class described, a suitable frame mounted upon rollers, in combination with a motor mounted in said frame, a vertical shaft driven by said motor, a disk rotatably fixed and longitudinally slidable on said shaft, and means for manually depressing said disk, substantially as described.

2. In a device of the class described, a suitable frame mounted upon rollers, in combination with a motor mounted in said frame, a vertical shaft driven by said motor, a disk rotatably fixed but longitudinally slidable upon said shaft, a spring for normally maintaining said disk in retracted position and means for manually depressing said disk, substantially as described.

3. In a device of the class described, a suitable frame mounted upon rollers, in combination with a motor arranged in said frame, a vertical shaft driven by said motor, a disk rotatably fixed and longitudinally slidable upon one end of said shaft, a spring arranged within said disk for normally holding the same in retracted position and means for depressing said disk, substantially as described.

4. In a device of the class described, a frame mounted upon rollers, in combination with a motor arranged within said frame, a vertical shaft driven by said motor, a disk rotatably fixed and vertically slidable upon said shaft, a recess in the lower portion of said disk, a collar on the lower end of said shaft within said recess, a spring interposed between said collar and the top of said recess for normally holding said disk in retracted position and means for lowering said disk, substantially as described.

5. In a device of the class described, a suitable frame mounted upon rollers, in combination with a motor mounted in said frame, a vertical shaft driven by said motor, a disk rotatably fixed and vertically slidable on said shaft, a recess in the lower portion of said disk and about the end of said shaft, means therein for normally maintaining said disk in retracted position, a plate closing said recess and suitable means for depressing said disk, substantially as described.

6. In a device of the class described, a suitable frame mounted upon rollers, in combination with a motor arranged in said frame, a vertical shaft driven by said motor, a disk, rotatably fixed and vertically slidable on said shaft, means for normally holding said disk in retracted position, means for manually depressing said disk and guides on said frame for said means, substantially as described.

7. In a device of the class described, a suitable frame mounted upon rollers, in combination with a motor, in said frame, a vertical shaft driven by said motor, a disk rotatably fixed and vertically slidable upon the lower end of said shaft, a collar loosely mounted on said shaft, and resting upon the hub of said disk, a pair of arms extending from said collar, handles at the ends of said arms, and guides for said arms upon said frame, substantially as described.

8. In a device of the class described, a suitable frame mounted upon rollers, in combination with a motor mounted in said frame, a vertical shaft driven by said motor, a disk rotatably fixed and vertically slidable upon the end of said shaft, means for normally retracting said disk and means rotatably fixed but vertically movable on said frame for depressing said disk, substantially as described.

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

NIELS DANIEL SOFUS KRISTIANSEN BECK.

Witnesses:
FRANCES E. SHEEHY,
HELEN F. LILLIS.