M. UNO.

POLISHING AND CLEANING DEVICE.

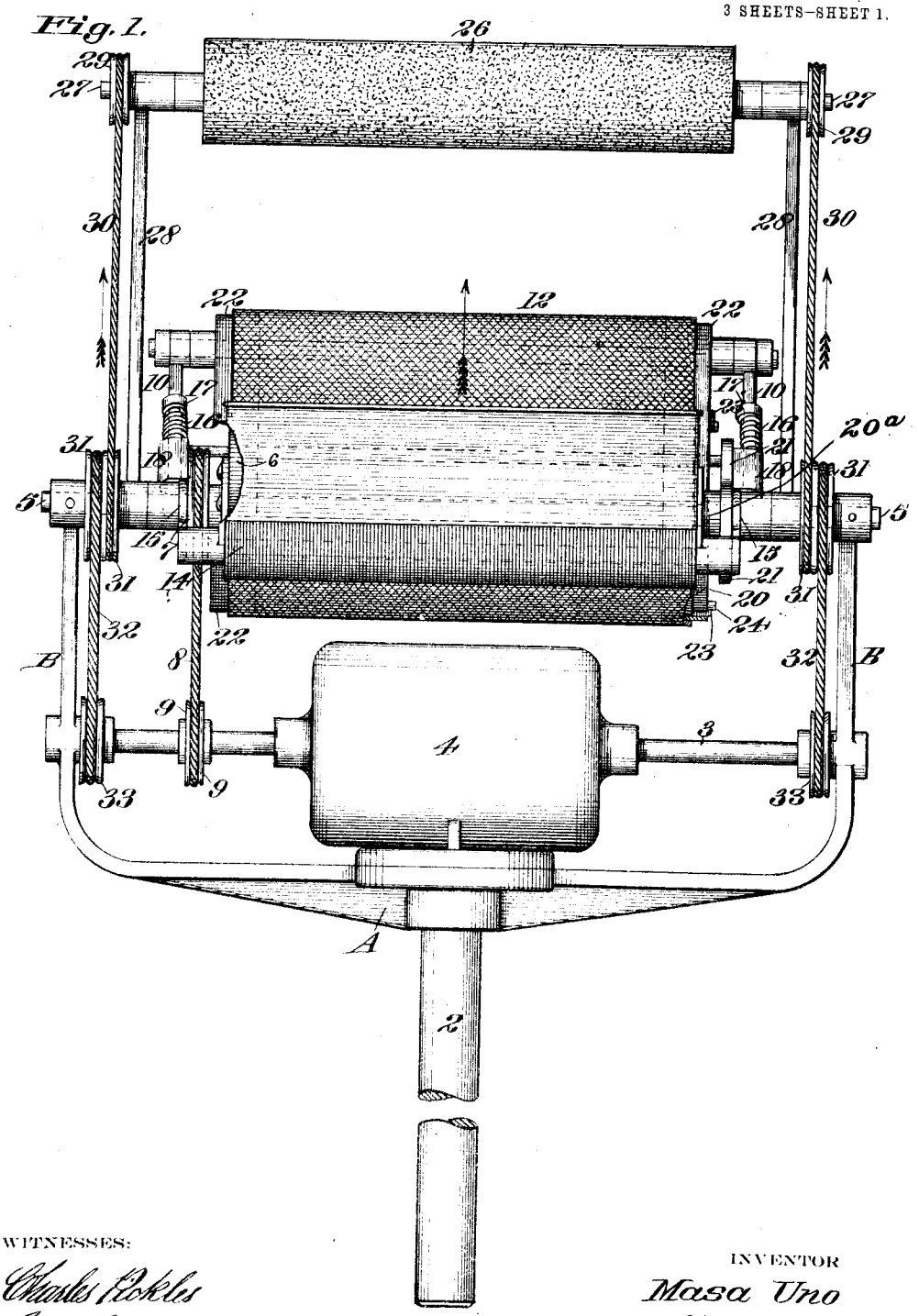
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1,118,080.

Patented Nov. 24, 1914.

3 SHEETS—SHEET 1.

Fig. 1.



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3 SHEETS—SHEET 2.

Fig. 2.

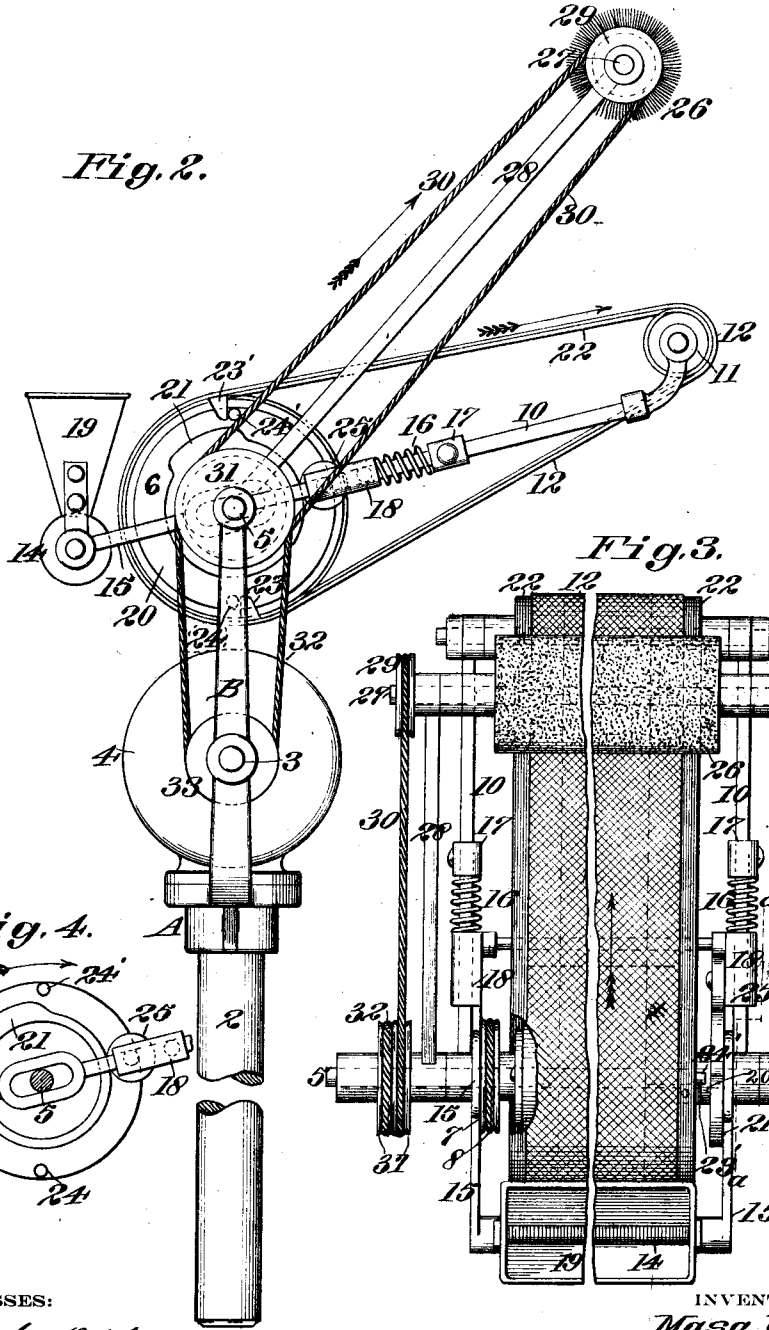


Fig. 3.

Fig. 4.

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3 SHEETS—SHEET 3.

Fig. 5.

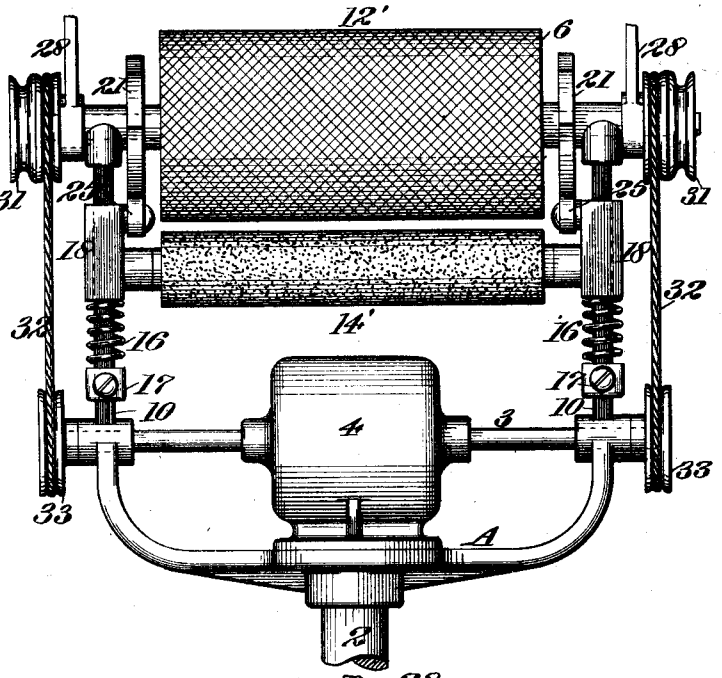
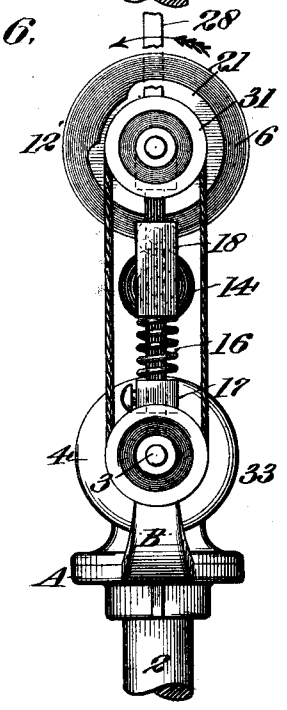


Fig. 6.



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UNITED STATES PATENT OFFICE.

MASA UNO, OF OAKLAND, CALIFORNIA.

POLISHING AND CLEANING DEVICE.

1,118,080. Specification of Letters Patent. Patented Nov. 24, 1914.

Application filed September 30, 1913. Serial No. 792,596.

To all whom it may concern:

Be it known that MASA UNO, a subject of the Emperor of Japan, residing at Oakland, in the county of Alameda and State of California, have invented new and useful Improvements in Polishing and Cleaning Devices, of which the following is a specification.

This invention relates to a cleaning and polishing device.

It is the object of this invention to provide means in a cleaning and polishing device for moistening a continuous polishing member at a predetermined point on its polishing surface, which means is simple in construction and efficient in operation.

Further objects will appear hereinafter.

The invention primarily resides in a rotary polishing member, means for revolving said member continually, and means for automatically moistening said polishing member at a certain point on its periphery at each revolution thereof so as to provide alternate wet and dry surfaces thereon.

The invention further consists of the parts and the construction and combination of parts as hereinafter more fully described and claimed, having reference to the accompanying drawings, in which,—

Figure 1 is a front elevation of the invention, with parts broken away. Fig. 2 is a side elevation of same. Fig. 3 is a detail plan view, with parts removed. Fig. 4 is a detail section and elevation on the line *a—a* of Fig. 3. Fig. 5 is a view in elevation of a modified form of the invention, with parts removed. Fig. 6 is an end view of same.

In the drawings A represents a frame of any suitable construction, provided with a hand-hold 2. Mounted on the frame A in suitable bearings is a drive shaft 3 which may be rotated from any suitable source of power, but is preferably driven by means of an electric motor 4, carried by the frame A. Rigidly mounted on outwardly projecting arms B on the frame A is a shaft 5 which extends parallel to the shaft 3 and is spaced a suitable distance therefrom. Revolubly mounted on the shaft 5 is a drum 6, having a grooved wheel 7 rigidly secured thereto. A belt 8 is rove around the wheel 7 and passes around a corresponding wheel 9 on the drive shaft 3, by means of which rotary motion may be transmitted to the drum 6 from the drive shaft 3. Rigidly mounted on the stationary shaft 5, adjacent each end thereof, are outwardly extending arms 10, on the outer ends of which a roller 11 is revolubly mounted. A polishing belt 12 is rove around the drum 6 and roller 11, and is formed of any suitable material. Means are provided for moistening the belt 12 at a certain point on each revolution thereof. This means is here shown as consisting of a moistening roller 14, carried on a slidable frame 15, supported on the arms 10, which frame is normally positioned by means of springs 16 bearing between adjustable collars 17 on the arms 10, and slidable sleeves 18 to which the frame 15 is attached; the springs 16 acting to normally retain the moistening roller 14 out of contact with the belt 12. A hopper 19, containing the moistening polish, is carried on the frame 15, and extending the length of the roller 14 has a discharge opening on its underside with which the roller 14 is in constant contact. The surface of the roller 14 may be formed of any suitable absorptive material. Loosely mounted on the stationary shaft 5 is a disk 20 and secured to a sleeve 20^a formed integrally with disk 20 is a cam disk 21, and attached to the edge of the belt 12 is a band 22 carrying a pair of fingers or projections 23 and 23′, adapted to engage pins 24 and 24′ on the disk 20, to intermittently rotate the latter when the belt 12 is in motion.

In the operation of the belt-moistening device, the finger 23 on the constantly moving band 22 on engaging the pin 24 on the disk 20, rotates the latter half a revolution, and in so doing causes the cam face 21 thereon to engage a roller 25 on the frame 15 and thereby reciprocate the latter in opposition to the springs 16 and move the moistening roller 14 into contact with the belt 12; the moistening roller 14 remaining in contact with the belt 12 a length of time regulated by the length of the acting face of the cam 21. When the cam 21 passes beyond the roller 25, the springs 16 operate to move the moistening roller 14 out of contact with the belt 12. Continued rotation of the belt 12 causes the finger 23′ to engage the pin 24′, and thereby cause the disk 20 to rotate another half revolution, and thereby dispose the pin 24 in position to be reengaged by the finger 23. In this manner the belt 12 is caused to have alternate moistened and dry portions.

In the operation of the device the surface to be polished is acted on by the portion of

the belt passing around the roller 11. Means are provided for removing dust from the surface to be polished prior to the application of the belt 12. This means consists of a rotary brush 26, mounted on a revoluble shaft 27, carried on the outer ends of adjustable arms 28, turnable on the stationary shaft 5. The brush 26 is designed to be continuously rotated from the drive shaft 3, for which purpose groove pulleys 29 are mounted on the ends of the shaft 27, around which belts 30 are rove. The belts 30 pass around double groove pulleys 31, loose on the fixed shaft 5, which are adapted to be rotated from the shaft 3 by means of belts 32 which pass around the pulleys 31 and corresponding pulleys 33 on the shaft 3. The arms 28 are sufficiently tight on the fixed shaft 5 to frictionally engage the latter to retain the arms in any desired angular position, the double pulleys 31 permitting rotation of the shaft 27 and brush 26 irrespective of the position of the arms 28.

In the modified form of the invention shown in Figs. 5 and 6, the drum 6 is covered with a suitable polishing material 12', which serves in lieu of the belt 12. The roller 11 is thus dispensed with in this form of the invention. The polishing surface 12' is moistened at intervals by means of the moistening roller 14 in the manner before described.

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

1. A cleaning and polishing device including a portable yoke, rotary polishing and brush members, means for relatively adjusting and revolving said members, means to intermittently moisten the polishing member consisting of arms slidable radially through the axis of the polishing member, a drum and moistening means carried by said arms, cams by which the arms and roller are intermittently advanced, and returning springs surrounding the arms.

2. In a cleaning and polishing device, the combination with a drive shaft, a revoluble drum, means for rotating said drive shaft, a polishing member carried by said drum, a moistening roller paralleling the drum normally out of contact with the polishing member, and means controlled by the rotation of the polishing member for intermittently moving the moistening roller into contact therewith.

3. In a polishing and cleaning device, the combination of a drum, means for rotating the drum continuously, a polishing member carried by the drum, a moistening roller, spring means for normally maintaining the roller out of contact with the polishing member, a cam for intermittently moving the moistening roller into contact with the polishing member, and means controlled by the polishing member for actuating the cam at intervals.

4. In a polishing and cleaning device, the combination of a revoluble drum, a polishing member carried by said drum, means for rotating the drum and polishing member continuously, a slidable frame, a moistening roller on said frame, yieldable means acting on said frame to normally maintain the moistening roller out of contact with the polishing member, and means controlled by the rotation of the polishing member for intermittently moving the moistening roller into and out of contact with the polishing member.

5. A portable cleaning and polishing device including a yoke, a motor mounted therein, a fixed shaft, a drum on said shaft, connections by which motion is communicated from the motor to said drum, arms movable about the fixed shaft, a rotary cleaning member journaled in the outer ends of the arms, and means to transmit power from the motor to the cleaning member.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

MASA UNO.

Witnesses:
JOHN H. HERRING,
W. W. HEALEY.