Sept. 15, 1931. J. M. NASH 1,823,625

FINISHING AND POLISHING MACHINE

Filed Jan. 18, 1929

Fig 2

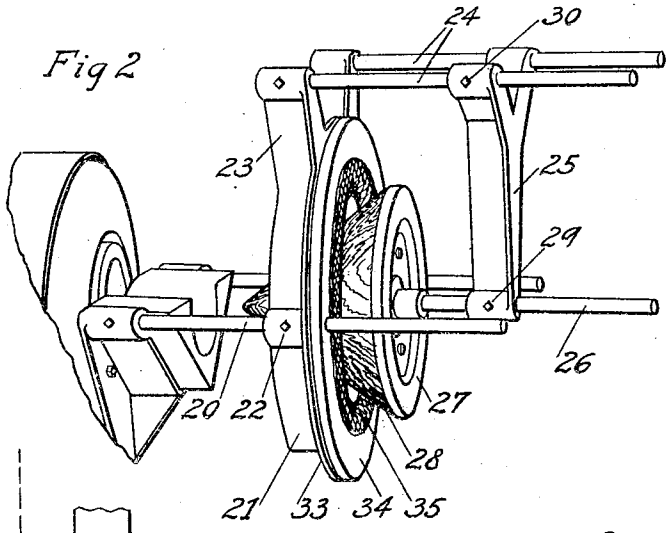
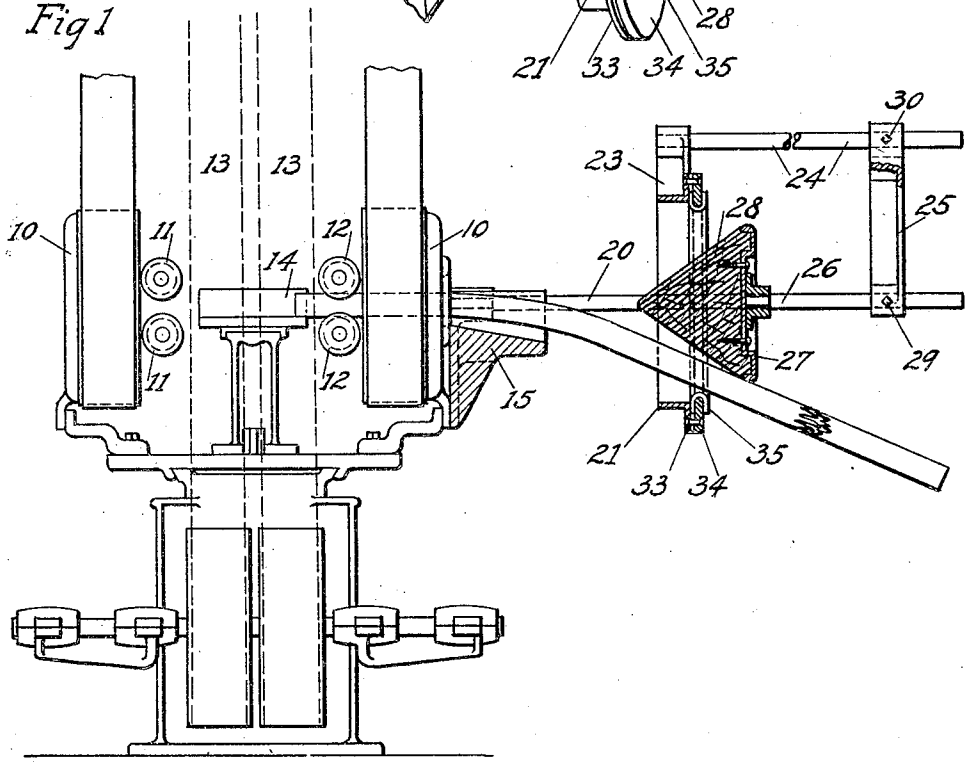


Fig 1



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UNITED STATES PATENT OFFICE

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FINISHING AND POLISHING MACHINE

Application filed January 18, 1929. Serial No. 333,268.

My invention relates to improvements in finishing and polishing machines of the general type disclosed in my former Patent #430,398 and dated June 17, 1890.

The object of this invention is to provide an attachment which will effectually control or guide the work while it is being delivered from such a machine, whereby curved pieces of work may be safely rotated in contact with sanding or polishing belts without danger of injury to workmen or of damage to the work.

In sanding or polishing machines of the above mentioned type it is customary to revolve the work (tool handles, rods, bars, and other pieces of material) in contact with traveling, abrading or polishing surfaces such as sanding belts while progressively feeding the work through the machine by means of suitable sets of feed rollers co-operative with the work rotating mechanism. Where the work has a curved portion, the end which projects from the machine is caused to swing in a circle while the curved portion is being polished and the swinging end often develops momentum and centrifugal force which tends to pull the work out of the machine, particularly after the rear end has passed the infeeding rollers.

Unless the swinging movement of the free end of the work is controlled, it tends to swing in an unnecessarily large circle and its movement also tends to become irregular and when pulled away from the machine by the force thus developed, the work is sometimes thrown violently to a distant point. My present object is to provide means, adjustable to the requirements of the work, for supporting and guiding the projecting end thereof, thereby controlling its swinging movement and preventing it from being thrown out of a fixed path or line of delivery.

In the drawings:

Figure 1 is a conventional view, in elevation, showing a sanding machine of the type disclosed in my former patent with my improved attachment applied thereto, the latter being illustrated partially in vertical section.

Figure 2 is an isometric view of the attachment, showing a fragment of the associated portion of the sanding machine.

Like parts are identified by the same reference characters in both views.

In the sanding machine illustrated in the drawings, the drums 10, infeeding rollers 11 and outfeeding rollers 12, sanding belts 13, and associated parts, may be assumed to conform generally to the parts J, M, G and associated parts shown in the aforesaid former patent. A steady rest or guide 14 is shown in Figure 1 and in place of the fork Q shown in my former patent, I employ a conically recessed guide bracket 15 as also shown in Figure 1.

These parts and all other features of the sanding machine per se may be assumed to be of ordinary construction and further illustration and description of these parts is therefore deemed unnecessary.

The attachment claimed herein is carried by two supporting bars or rods 20 which project from the frame of the sanding machine or from the bracket 15. Adjustably mounted on these rods is a ring 21. The rods extend through suitable apertures in the sides of the ring whereby the latter may be supported in any desired position of adjustment along the rods by set screws 22.

A pair of over arms 24 are supported by forked members 23 from points above the ring 21 and in positions parallel with the axis of the supporting rods 20. The over arms project outwardly from the ring on the side opposite that occupied by the sanding machine and a hanger 25 is suspended from these over arms and used to support a cone-holding rod 26 which carries a cone-holder 27 to which a wooden cone 28 is secured. The lower end of the hanger 25 is apertured to receive the rod 26 and the rod is secured in the desired position of adjustment in the hanger bearing or aperture by means of a set screw 29. The hanger is also adjustable along the over arms 24 and is similarly secured thereto by set screws 30.

The cone 28 is normally supported within the ring 21. The latter is provided with an annular flange 33 to which a collar 34 may be

secured. About the inner margin of this collar a covering 35 of canvas or similar material is wrapped and held in a position to form a cushion bearing for the work when passing through the ring, the diameter of the collar 34 being less than that of the ring, although it is greater than that of any portion of the cone 28 intended to be inserted through the collar.

When work is being fed through the sanding machine, any portion of which is curved, the ring 21 will be adjusted on the rods 20 in a position to receive the end of the work between the cone and the ring, while the curved portion of the work is being polished. The cone 28 will also be adjusted in the ring 21 to provide an annular opening for the work of a suitable width, the requirements in this regard being determined by the thickness of the work, the degree of its curvature, and the distance of the ring and cone from the sanding machine. The latter depends largely upon the length of the work.

When properly adjusted, the cone guides the end of the work into the space between it and the ring cushion 35 as the work develops its swinging tendency and the engaged portion of the work is guided in the circular path provided by this annular space until the work is completely delivered from the sanding machine. It then drops quietly to the floor. The cushion or covering 35 and the wooden or non-metallic surfaces of the cone prevent abrasion of the work, the latter contacting with the metal backing 27 but lightly and for a very brief period if at all.

While my attachment may be used at both the infeeding and outfeeding sides of the polishing machine, it will usually be sufficient to use it only at the outfeeding side, it being customary to feed the more straight end of the work through the machine in advance of the curved end.

I claim:

1. A work guiding attachment for work, rotating and feeding machines, comprising the combination of an annulus, a cone disposed with its apex projecting through the annulus and adopted to receive a portion of the work between it and said annulus, during polishing operations, on another portion of the work.

2. A work guiding attachment for finishing and polishing machines of a work receiving annulus adjustably spaced from the machine, and a cone supported with its axis intersecting the plane of the annulus at the center thereof and adjustable axially with reference to the annulus.

3. A work guiding attachment for finishing and polishing machines of a work receiving annulus adjustably spaced from the machine, and a cone supported with its axis intersecting the plane of the annulus at the center thereof and adjustable axially with reference to the annulus, said annulus and cone having non-abrasive bearing surfaces for the work.

4. A work guiding attachment for work rotating and feeding machines, comprising the combination with such a machine of an annulus disposed at one side of the machine in the path of the work, and a cone supported with its apex projecting toward said machine in a line extending through the center of the annulus.

5. The combination with a finishing and polishing machine provided with an outfeeding way, of a set of rods projecting from the machine at opposite sides of said way, an annulus adjustably supported by said rods, a set of over arms supported by the annulus and a work guide adjustably supported from the over arms at the center of the annulus.

6. In a work guiding device for rotating work having curved portions the combination of a ring supported in the path of the work, a collar secured to the ring and cushioned along its inner margin, a cone holder supported on the outfeeding side of the ring, and a non-abrading cone carried thereby with its axis extending through the center of the ring and collar, said cone being spaced from the collar and ring to allow the work to swing in a circular path between them.

7. An attachment for a finishing and polishing machine, having means for rotating the work, said attachment comprising a guide for engaging the discharging end portion of a crooked piece of work, said guide having work engaging members and adjusting means for adapting it to hold the engaged portion of the work to its natural annular path about the normal axial line of discharge until the work is wholly released from said machine.

JOHN M. NASH.