H. W. SELLNER.

SANDER OR POLISHING MACHINE.

APPLICATION FILED MAY 14, 1909.

975,166. Patented Nov. 8, 1910.

Fig. 1.

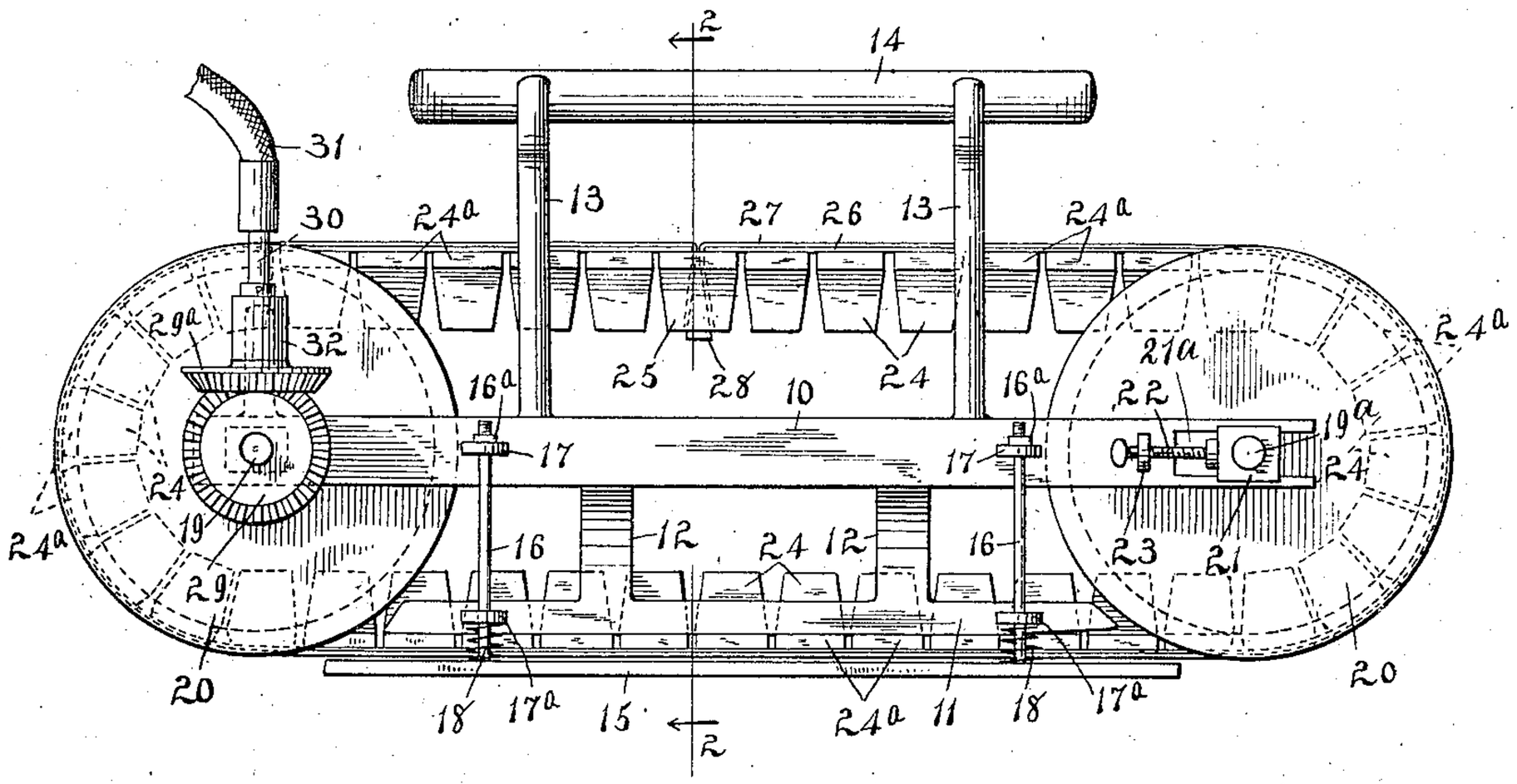


Fig. 2.

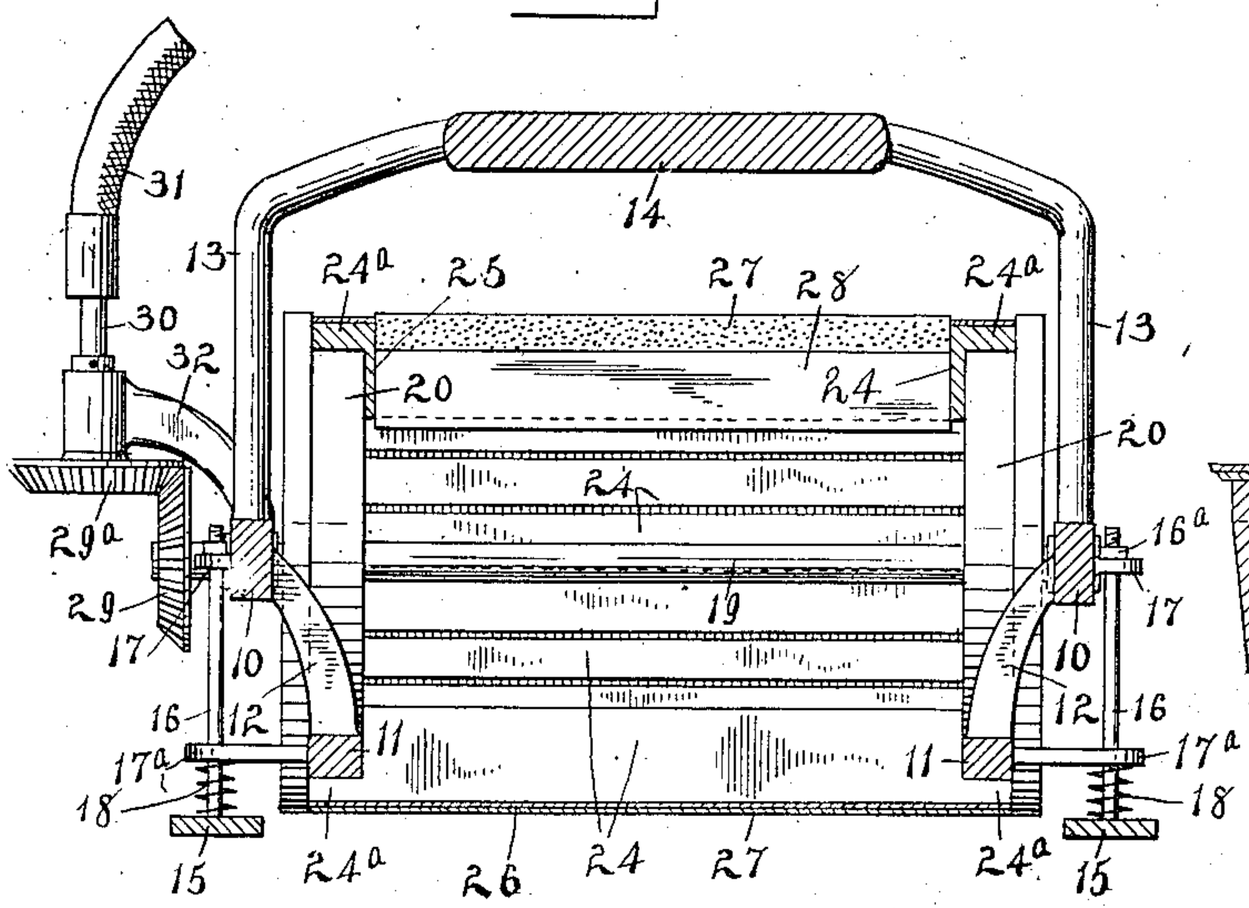
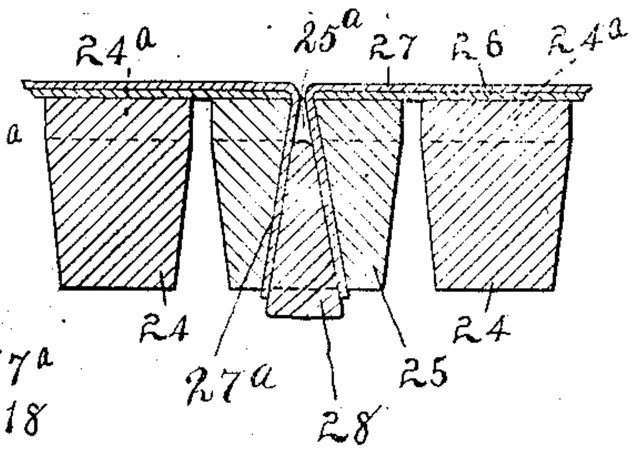


Fig. 3.



WITNESSES:

Mathew J. Marty

Chas. F. Bassett

INVENTOR

Herbert W. Sellner

BY Frederick Benjamin

ATT'Y

UNITED STATES PATENT OFFICE.

HERBERT W. SELLNER, OF FARIBAULT, MINNESOTA.

SANDER OR POLISHING-MACHINE.

975,166. Specification of Letters Patent. Patented Nov. 8, 1910.

Application filed May 14, 1909. Serial No. 495,847.

To all whom it may concern:

Be it known that I, HERBERT W. SELLNER, citizen of the United States, residing at Faribault, in the county of Rice and State of Minnesota, have invented certain new and useful Improvements in Sanders or Polishing-Machines, of which the following is a specification.

My invention relates to abrading or polishing machines of the class employing an endless belt carrying the abrading agent and adapted to be applied to the surface to be treated, the particular type of device under consideration referring to portable apparatus arranged to be manually guided upon the work.

The chief objects of the improvements which form the subject matter of this application are to furnish simple and effective mechanism for accomplishing the purpose sought; to provide an abrading or polishing machine of the variety specified in which the tension of the belt may be readily adjusted and to supply a light construction that may be readily handled, so that the required results may be rapidly accomplished.

Further objects stated in detail are:—to provide yielding supports or fenders that will permit the machine to be placed upon the floor or bench without danger of bringing the abrading member in contact with the supporting surface; to furnish a rigid but flexible supporting means for the abrading element and to so arrange the attachment for the abrading element or member that it can be readily removed when worn out, or damaged, and another one substituted, thus presenting the advantage of allowing the interchange of a coarse medium for one of finer texture, thus permitting the machine to be used either as a sander or a polisher, as occasion may require.

I accomplish the desired results by means of the apparatus illustrated in the accompanying drawing, which forms a part of this application, the details of importance being disclosed in the following views:—

Figure 1 is a side elevation of the complete machine; Fig. 2 is a sectional view on the line 2—2 of Fig. 1, and Fig. 3 is an enlarged fragmentary view of a portion of the endless bed showing the manner of attaching the abrading element thereto.

Referring to the details of the drawing the numeral 10 indicates parallel side frame members, from which are suspended presser rails 11, one upon each side of the machine, curved hanger arms or brackets 12 rigidly connecting them with the frame. From each side member 10 rise two rods 13, having their upper portions bent inward and secured to a plate 14, which constitutes a handle, by means of which the device can be guided upon the work or moved from place to place as desired. Upon each side of the machine extending parallel with the frame is a protective fender or shoe 15 forming a support for the machine when not being operated. The shoes or fenders are suspended by vertical bolt-rods 16 which pass through ears 17 and arms 17^a, projecting from the frame member 10, and the presser rail 11, respectively. The upper ends of the bolts 16 are furnished with nuts 16^a, which rest upon the ears 17, and the lower ends are embraced by coiled springs 18, interposed between the shoes and the arms 17^a and tending to hold said shoes at their lowest positions.

The frame members 10 are connected at each end of the machine by axles 19, 19^a, upon which are mounted flanged guide wheels 20, arranged inside of said frame. The forward axle 19 is journaled in the frame, while the rear axle 19^a is mounted in boxes 21, slidable in slots 21^a in the frame ends, and adjustable in said slots by means of screws 22, supported in ears 23. The said wheels 20 are connected by an endless belt carrier or feeding bed, consisting of a series of transversely arranged bars 24, connected at spaced intervals by a suitable belt or apron 26, secured to their outer faces in any desirable manner. The ends of said bars are notched to form projections or flanges 24^a which are supported on, and travel over, the faces of the wheels 20. The sides of the bars 24 are inclined so that the inner faces are narrower than the outer, to permit the carrier or movable bed to assume the proper curvature as it passes around the wheels. Upon the outer surface of the apron 26 is applied an abrading member 27 in the form of a continuous sheet. When the appliance is used as a sander, this will usually consist of a layer of sand paper either laid directly upon the apron 26 or provided with a suitable backing to render the article more durable, such construction being usual in abraders of this type, and therefore not shown in the drawing. In order to conveniently secure the sand belt or band 26 in

opposition with the carrier or bed plate, and facilitate its ready removal for any purpose, I make one of the carrier bars a little wider than the others, as indicated at 25, and furnish this key bar with a longitudinal slot 25ª, having its sides inclined so that the slot is approximately triangular or wedge-shaped in cross section. The ends 27ª of the paper are introduced into this slot and a wedge-shaped key 28 driven into the slot between the paper ends from the rear side, thus clamping the material firmly in position, so as to permit the proper tension or stretching of the sand paper.

The movable bed is driven by means of a beveled gear 29, mounted on the outer end of the shaft 19 and receiving motion from a similar gear 29ª, carried on a vertical spindle 30, connected by a flexible shaft 31 with any convenient source of power, the said spindle being journaled in bracket 32, attached to the adjacent frame member 10.

The operation of the machine will be readily understood from the foregoing description of the details and by inspection of the drawing:—When applying the sand paper or other polishing element, the feeding bed will be first loosened by turning the adjusting screws 22 in the proper direction. The ends of the sand paper are then drawn through the slot 25ª from the narrow side, and the wedge or key inserted in the manner described, after which the device is again tightened by means of the said screws.

Power having been applied to the mechanism the device is moved over the surface to be abraded or polished by means of the handle 14, the pressure being varied at will, so that the abrading surface will bear more or less heavily upon the work, this pressure being resisted to a certain degree by the springs 18. It will not be necessary to stop the motor when the machine is removed from the work as the resistance of the said springs will be sufficient to raise the entire machine clear of the support upon which the shoes 15 may be placed.

As the flanges 24ª of the bars 24 travel between the wheels 20 in their lower course, they are supported from above and kept in a true alinement by means of the presser rails 11, thus causing an even contact of the abrading element over the entire extent of the surfaces in apposition for this reason producing results more satisfactory than when the polishing material is spread upon rollers or drums which have a smaller proportional area of contact with the work.

Having thus described my invention, what I claim as new, is:—

1. In a polishing machine, the combination with a frame, of a pair of axles journaled at opposite ends of the frame, means for adjusting one of said axles upon the frame, a pair of flanged wheels mounted upon each axle, an endless feeding bed comprising a series of connected bars supported at their ends upon the faces of said wheels, one of said bars having a longitudinal slot, an abrading member consisting of a layer of suitable material embracing the endless bed, and having its ends inserted in said slot, a wedge engaging the ends of the abrading member in the slot, and driving mechanism adapted to be attached to a source of power.

2. In a polishing machine, the combination with a frame, of a pair of axles journaled at opposite ends of the frame, means for adjusting one of said axles on the frame, a pair of flanged wheels mounted upon each axle, an endless feeding bed comprising a series of connected bars supported at their ends upon the faces of said wheels, one of said bars having a longitudinal slot, an abrading sheet embracing the endless bed and having its ends inserted in said slot, a wedge engaging the ends of the sheet in the slot, rigid presser rails engaging the lower course of the endless bed upon opposite sides, fenders yieldingly attached to the frame, and driving mechanism adapted to be attached to a source of power.

In testimony whereof I affix my signature in the presence of two witnesses.

HERBERT W. SELLNER.

Witnesses:
P. F. RUGE,
T. FLECKENSTEIN.