July 8, 1947. J. B. TAVANO 2,423,737

BELT ABRADING MACHINE

Filed May 3, 1945

Fig. 1.

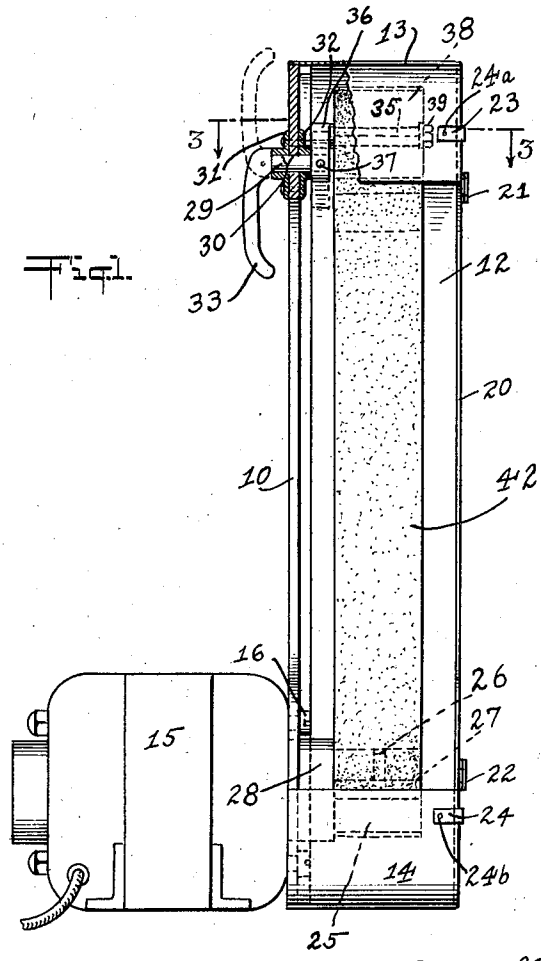


Fig. 2.

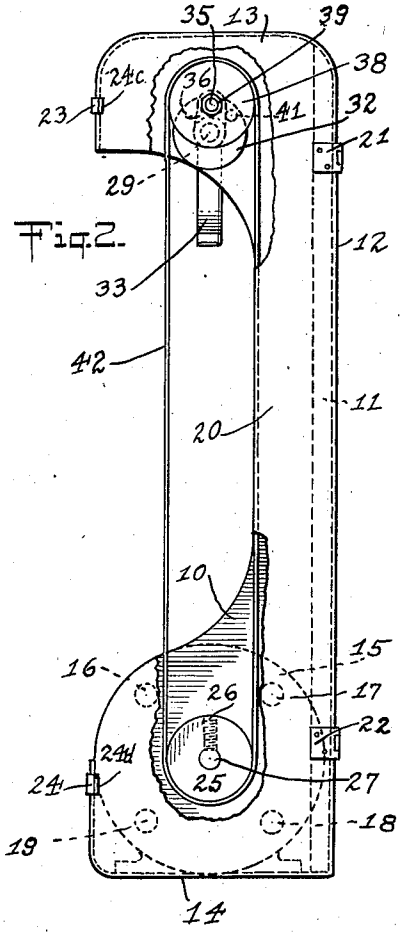
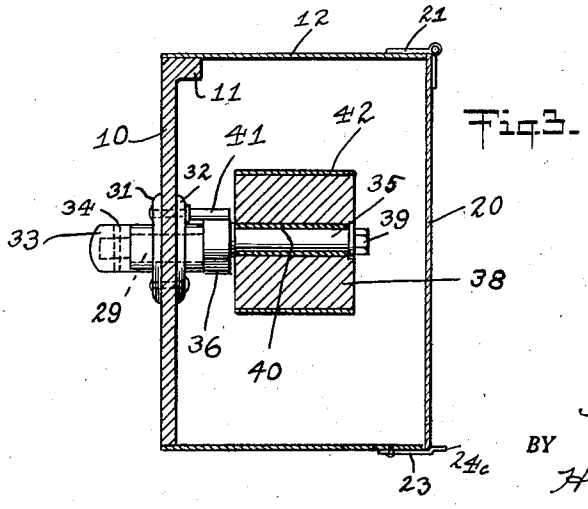


Fig. 3.



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BELT ABRADING MACHINE

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4 Claims. (Cl. 51—135)

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This invention relates to abrading machines, and more particularly to a machine employing an endless belt of abrasive tape passing over a pair of motor-driven pulleys carried by an upright U-shaped casing.

One object of the present invention is to provide a portable abrading machine of the above nature in which the upper pulley is mounted on a quick-releasing shaft having a toggle-locking action, so that it will remain in operating position until it is desired to change the belt.

A further object is to provide a device of the above nature which will be simple in construction, inexpensive to manufacture, light in weight, ornamental in appearance, compact, easy to install and manipulate, and very efficient and durable in use.

With these and other objects in view, there has been illustrated on the accompanying drawing, one form in which the invention may conveniently be embodied in practice.

The present machine is adapted for use especially for removing burrs from cast metal parts, such as wrenches, and other articles, and in which the casing is cut away to expose the outer stretch of the belt so that it will be permitted to penetrate slotted parts which could not be abraded with a grinding wheel.

The present invention may also be used on articles of plastic, glass, and other materials, and will perform its work rapidly and do operations impossible with cylindrical grinding wheels.

In the drawing,

Fig. 1 represents a side view, partly in section, of an abrading machine embodying the invention.

Fig. 2 is a front view of the same, with parts broken away for clearness.

Fig. 3 is a transverse sectional view of the same, taken along the line 3—3 of Fig. 1, looking in the direction of the arrows.

Referring now to the drawing, in which like reference numerals denote corresponding parts throughout the several views, the numeral 10 indicates a relatively thick flat heavy rear vertical supporting plate of U-shaped construction having a narrow intermediate section and provided with a vertical edge flange 11, to which is secured a thin casing 12 having a short curved top hood 13 extending downwardly along the edge of said plate 10, and a short curved bottom hood 14 extending upwardly from the the bottom edge of said plate 10, said casing being of thin material and having flat upper and bottom surfaces.

At the bottom of the rear plate 10, provision

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is made of a motor 15 secured thereto by a plurality of bolts 16, 17, 18, 19.

The casing 12 is provided with a swingable thin cover 20 secured thereto as by a pair of hinges 21, 22, said cover 20 being held detachably in closed position by means of a pair of snap-locking catches 23, 24 fitting over the edges of the hoods 13, 14, as clearly shown in the drawing. The catches 23, 24 are preferably secured to the hoods 13, 14 by rivets 24a, 24b, and have offset end lugs 24c, 24d.

In order to drive the abrasive belt 42, provision is made of a bottom pulley 25 mounted upon a horizontal shaft 27 by means of a set screw 26—the shaft 27 being secured to a motor drum 28 in any suitable manner.

At the upper part of the casing 12, provision is made of a horizontal shaft 29 passing through an aperture 30 in the plate 10 and secured in operating position by means of a pair of bearing plates 31, 32, riveted or otherwise secured on opposite sides of the plate 10, as clearly shown in Fig. 1.

The shaft 29 is provided with a releasing handle 33, mounted behind the plate 10 and secured to the rear end of the shaft 29 by an attaching pin 34. The shaft 29 has rigidly secured thereto, as by a pin 37, a rocking arm 36 having on its extremity an eccentric offset shaft 35 upon which is mounted an upper releasable pulley 38.

The upper pulley 38 is adapted to be held on the shaft 35 by a forward nut 39, and is provided with a bearing bushing 40 within the interior of said pulley.

In order to limit the motion of the releasable pulley 38 when the handle 33 is moved from the full line to the dotted line position shown in Fig. 1, to a point just beyond the dead center, provision is made of a stop pin 41 secured to the rear plate 10, as by screw threads, whereby the releasable pulley 38 will be prevented from being released until the handle 33 is operated in the reverse direction.

Operation

In operation, when it is desired to release the abrasive belt 42 for permitting it to be changed or replaced with a fresh belt, it will only be necessary to swing the handle 33 from the full line position to the dotted line position shown in Fig. 1.

While there has been disclosed in this specification one form in which the invention may be embodied, it is to be understood that this form is shown for the purpose of illustration only, and that the invention is not to be limited to the

specific disclosure, but may be modified and embodied in various other forms without departing from its spirit. In short, the invention includes all the modifications and embodiments coming within the scope of the following claims.

Having thus fully described the invention, what is claimed as new and for which it is desired to secure Letters Patent is:

1. In an abrading machine, a U-shaped casing open at one side and having a base, a motor attached to the rear of said casing and having a horizontal shaft, a pulley mounted on said motor shaft, a vertical rockable arm pivotally mounted at the top of said casing and having a handle for operating the same, a horizontal upper shaft secured to said rocking arm on an offset axis eccentric from the pivotal axis of said arm and located within said casing, a releasable pulley rigidly secured to said upper shaft, an abrasive belt passing around said pulleys, and a stop pin secured to said casing in the path of said arm at a point just behind the line passing through the axes of said motor shaft pulley and rockable arm, said upper pulley being releasable by forcing it forwardly past said line in a direction away from said stop pin.

2. The invention as defined in claim 1, in which

said rocking arm is secured to said casing by a pair of bearing plates located on opposite sides of one wall thereof to support said rocking arm shaft.

3. The invention as defined in claim 1, in which a releasable door cover is provided on one side of the casing.

4. The invention as defined in claim 1, in which the intermediate sides of the casing are cut away to expose the free edge of the belt.

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