Dec. 12, 1950 H. POKRAS 2,533,619

SANDING DEVICE

Filed June 1, 1948

Fig. 1.

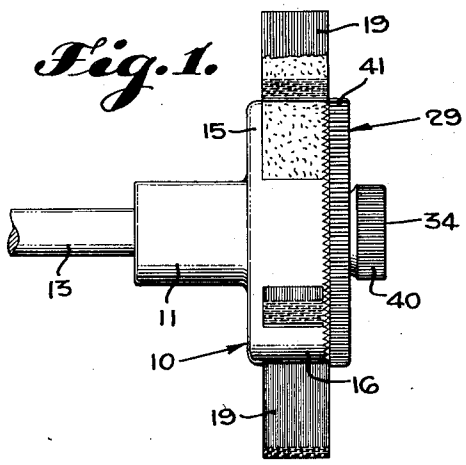


Fig. 2.

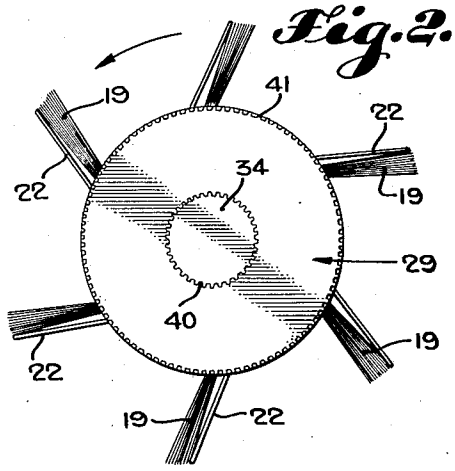


Fig. 3.

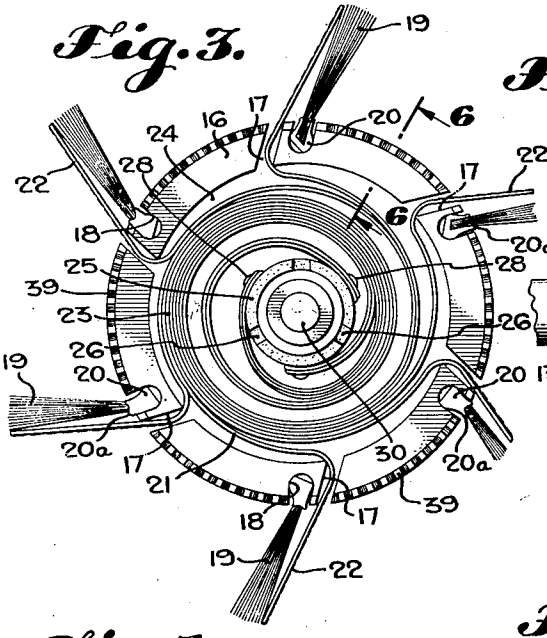


Fig. 4.

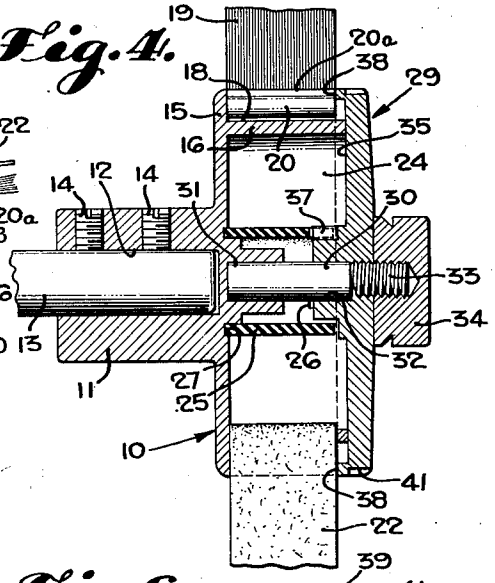


Fig. 5.

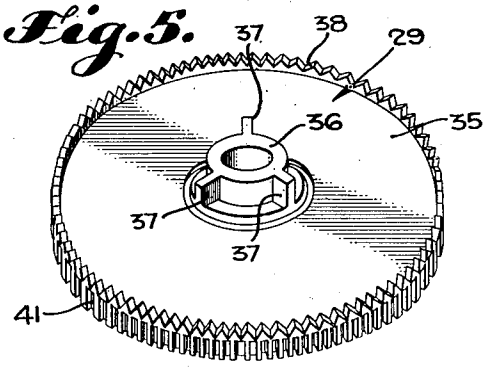
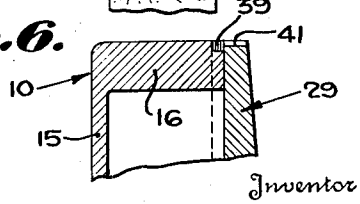


Fig. 6.



Inventor

Harry Pokras

By Lyon & Lyon

ATTORNEYS

Patented Dec. 12, 1950 2,533,619

UNITED STATES PATENT OFFICE

2,533,619

SANDING DEVICE

Harry Pokras, Los Angeles, Calif., assignor to Merit Products, Inc., Los Angeles, Calif., a corporation of California

Application June 1, 1948, Serial No. 30,321

4 Claims. (Cl. 51—194)

1

This invention relates to a sanding device and is particularly directed to a rotary sanding drum employing a plurality of strips of abrasive material.

An important object of this invention is to provide a new and improved form of strip feeding apparatus for simultaneously feeding additional lengths of abrasive strips through ports on the periphery of the housing, the strips extending from a common coil positioned within the housing.

Another object is to provide a sanding drum having a plurality of ports around its periphery through which abrasive strips may extend from the interior thereof, the housing having a closure which may be secured to the housing at any one of a plurality of angular positions, together with means controlled by the closure for turning a coil of abrasive strips within the housing to advance the individual strips through the housing ports.

Other objects and advantages will appear hereinafter.

In the drawings:

Figure 1 is a side elevation of a preferred embodiment of my invention.

Figure 2 is an end elevation thereof.

Figure 3 is a side elevation on an enlarged scale, the closure or cover being removed to expose the interior of the housing.

Figure 4 is a sectional elevation, the abrasive strips being omitted for clarity of illustration.

Figure 5 is a perspective view of the cover or closure member.

Figure 6 is a fragmentary sectional view taken substantially on the lines 6—6 as shown in Figure 3.

Referring to the drawings, the housing 10 may include a hub portion 11 bored as shown at 12 to receive a drive shaft 13. Set screws 14 may be employed for securing the hub 11 to the shaft 13. The housing 10 includes a radially extending flange 15, together with an axially extending shell 16. Slotted apertures or ports 17 are provided at circumferentially spaced intervals on the shell 16 and are preferably oriented at an angle with respect to a radial plane containing the axis of the drive shaft 13. A plurality of sockets 18 are also provided on the periphery of the shell 16, and each of these sockets is positioned adjacent one of the ports 17. Outwardly extending brush assemblies 19 are provided, and the base 20 of each of these brush assemblies is adapted to be received in one of the sockets 18. The shape of each brush base 20 and its receiving

2

socket 18 is such as to direct the individual brush bristles away from the circumference of the shell in a nonradial direction and at an angle to a radial plane extending through the brush base. In this way the brush assemblies 19 are mounted in approximate parallelism with the angle of the port 17 adjacent each respective brush assembly.

The outwardly directed lips 20a on each of the brush bases 20 extend outwardly beyond the periphery of the shell 16 in order that the brush bristles may be held away from the corner edges of each of the receiving sockets 18, and in this way the service life of the brush bristles may be materially extended. The brush assemblies may be mounted in position by inserting the brush bases 20 axially into the open end of each of the sockets 18. An abrasive strip 21 extends outwardly through each of the ports 17 and the exposed portion 22 of each strip lies adjacent one of the brush assemblies 19. The strips 21 are assembled on a common coil 23 adapted to be received within the central chamber 24 provided within the housing 10. The coil 23 includes a central sleeve 25 provided with radially extending slots 26 at one end. The other end of the sleeve is supported on an annular shoulder 27 provided on the housing 10. Each of the abrasive strips 21 in the coil 23 is secured at its inner end to the sleeve 25 by means of fastening elements 28.

A closure member 29 cooperates with the housing 10 to complete the central enclosure 24. This member 29 is circular in shape and is attached to the housing 10 by means of the stud 30. The stud 30 may be fixed at its inner end 31 by any convenient means such as, for example, a press fit, and extends axially of the shaft 13 through central opening 32 provided in the closure member 29. Threads 33 on the projecting end of the stud 30 are adapted to be engaged by the securing nut 34. The nut 34 holds the inner face 35 of the closure member 29 against the outer edge of the shell 16. As shown clearly in Figure 5, the closure 29 is provided with an inwardly directed boss 36 and a plurality of radially extending fins 37. The fins 37 are adapted to be received within the slots 26 provided on the sleeve 25, so that rotation of the closure member 29 relative to the stud 30 serves to turn the sleeve 25 within the enclosure 24. The fins 37 and slots 26 constitute drive means whereby the closure 29 may turn the sleeve 25. Means are provided for adjustably securing the closure 29 in any selected angular position with respect to the housing 10. As shown in the drawings this means includes a series of

inwardly directed notched projections 38 adapted to be received within a cooperating series of notched recesses 39 formed on the outer periphery of the shell 16. The depth of cooperative engagement of the projections 38 and notches 39 measured in an axial direction is considerably less than that of the fins 37 and slots 26.

Tightening of the nut 34 serves to engage the projections 38 with the notches 39 and thereby prevent relative rotation between the closure 29 and housing 10. The external surface 40 of the nut 34 may be knurled as shown in Figure 1, and the outer periphery 41 of the closure 29 may likewise be knurled if desired in order to facilitate manual adjustment of the closure 29 with respect to the housing 10. In operation the housing 10 is secured to the drive shaft 13 by means of the set screws 14. The coil 23 and sleeve 25 are installed as a unit axially into the chamber 24, and each of the abrasive strips 21 is directed through one of the ports 17. The brush assemblies 19 are installed in the sockets 18. The closure member 29 is then installed over the end of the projecting stud 30 to bring the fins 37 into registry with the notches 26 in the sleeve 25. The length of the slots 26 and fins 27 is such that the engagement between these parts is effected before engagement occurs between the projections 38 and notches 39. Accordingly, the closure member 29 may be turned with respect to the housing 10 to adjust the position of the sleeve 25 and thereby regulate the length of exposed portion 22 of each of the abrasive strips 21. When the desired length of strip is exposed the nut 34 is tightened to bring the projections 38 into engagement with the notches 39 and thereby prevent further relative rotary movement between the closure member 29 and the housing 10.

When the exposed portions 22 of the abrasive strips 21 become worn through a period of use, additional lengths of strip may be drawn from the coil 23. This operation is effected by backing off the nut 34, sliding the closure member 29 axially away from the housing 10 for a sufficient distance to disengage the projections 38 without disengaging the fins 37, and then rotating the closure member 29 through a predetermined angular movement. Each of the extending portions 22 of the abrasive strips 21 may be lengthened by pulling the additional length thus made available through the respective ports 17, and the worn portions of the strips may then be cut off or otherwise removed.

When the quantity of abrasive strips available in the coil 23 has been exhausted a new coil and central sleeve 25 may be installed as a unit. The brush assemblies 19 likewise may be replaced if desired by withdrawing the worn brushes axially of the sockets 18 after first removing the closure member 29.

Having fully described my invention, it is to be understood that I do not wish to be limited to the details herein set forth, but my invention is of the full scope of the appended claims.

I claim:

1. In a rotary abrading device, a shell having a peripheral wall provided with circumferentially spaced ports; a plurality of abrasive strips coiled within the shell and having portions extended outwardly through said ports; a closure member for a side face of the shell and encompassing the peripheral wall; a sleeve element within the coil and attached to said abrasive strips; cooperating drive elements on the sleeve and closure member extending axially for a relatively great length permitting relative axial movement but preventing relative rotary movement between the sleeve and closure member, whereby turning of the closure member relative to the shell acts to turn the sleeve; cooperating means on the shell and closure member extending axially for a relatively short length, said means including a series of projections on one and a series of notches on the other; the projections and notches being disengageable upon the closure member being moved axially a distance insufficient to disengage the cooperating drive elements; and means for clamping the shell and closure member together and for maintaining the projections and notches in engagement.

2. In a rotary abrading device, a shell adapted to receive a coil of abrasive strips and having a peripheral wall provided with circumferentially spaced ports through which the strips may extend; a closure member for a side face of the shell and encompassing the peripheral wall; relatively long axially extending drive means on the closure member adapted to engage an element of the coil of abrasive strips, whereby turning of the closure member relative to the shell acts to turn the coil; relatively short cooperating means on the shell and closure member including a series of projections on one and a series of notches on the other; the projections and notches being disengageable upon the closure member being moved axially a distance insufficient to disengage the axially extending drive means from the element of the coil; and means for clamping the shell and closure member together and for maintaining the projections and notches in engagement.

3. In a rotary abrading device, a housing having a shaft-receiving boss; releasable means on the boss for securing a shaft thereto, the housing having a radially extending side wall and an axially extending shell, the shell having a peripheral wall provided with circumferentially spaced ports; a plurality of abrasive strips coiled within the shell and having portions extended outwardly through said ports; a closure member cooperating with the shell and side wall to define an enclosure for said coil; a sleeve element within the coil and attached to said abrasive strips; relatively long axially extending cooperating drive elements on the sleeve and closure member permitting relative axial movement but preventing relative rotary movement therebetween, whereby turning of the closure relative to the shell acts to turn the sleeve; relatively short axially extending cooperating means on the shell and closure member including a series of projections on one and a series of notches on the other; the projections and notches being disengageable upon the closure member being moved axially a distance insufficient to disengage the cooperating drive elements; and means for clamping the shell and closure member together and for maintaining the projections and notches in engagement.

4. In a rotary abrading device, a shell having a peripheral wall provided with circumferentially spaced ports, the wall having a socket adjacent each of the ports; an outwardly extending brush mounted in each of the sockets; a closure member for a side face of the shell confining the brushes against lateral displacement from the sockets; a sleeve element within the shell adapted to carry abrasive strips for extension through said ports; relatively long axially extending cooperating drive elements on the sleeve and closure member permitting relative axial movement but preventing relative rotary movement between the sleeve and closure member, whereby

turning of the closure member relative to the shell acts to turn the sleeve; a cooperating series of projections and notches on the shell and closure member for securing the shell and closure member in angularly adjusted position; said projections and notches being disengageable upon the closure member being moved axially a distance insufficient to disengage the cooperating drive elements; and means for clamping the shell and closure member in an axial direction for maintaining the projections and notches in engagement.

HARRY POKRAS.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
2,194,577	Vonnegut	Mar. 26, 1940
2,418,966	Bonkowski	Apr. 15, 1947
2,430,099	Bradley	Nov. 4, 1947
2,439,962	Bonkowski	Apr. 20, 1948