

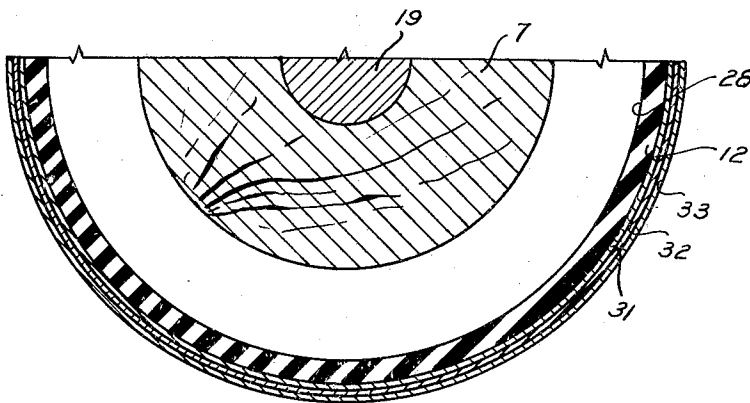
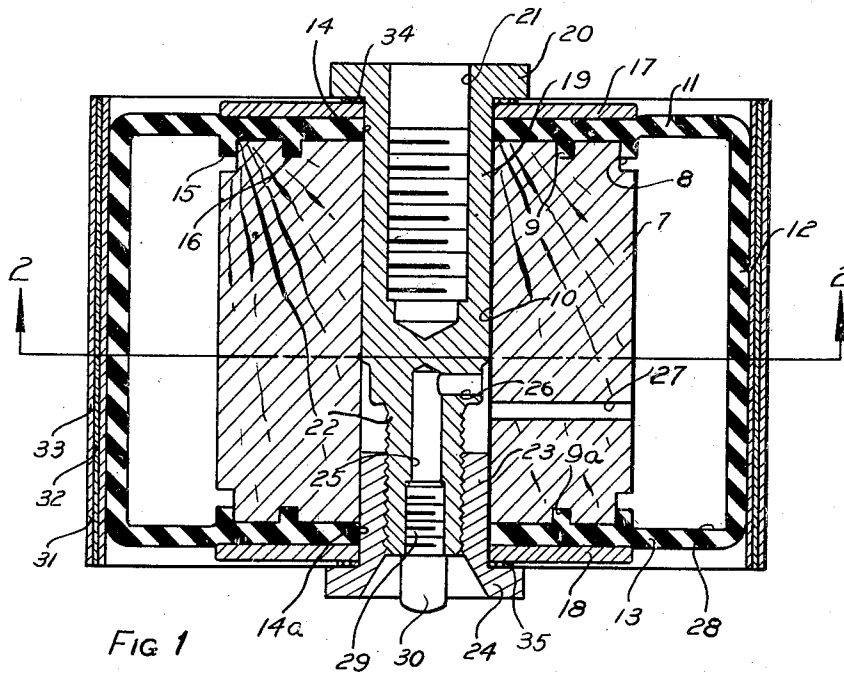
Dec. 6, 1949

A. R. RASKE

2,490,472

BUFFING AND POLISHING DEVICE

Filed March 25, 1948



INVENTOR.
ARTHUR R. RASKE
BY *Charles J. Donnelly*
ATTORNEY

UNITED STATES PATENT OFFICE

2,490,472

BUFFING AND POLISHING DEVICE

Arthur R. Raske, Detroit, Mich.

Application March 25, 1948, Serial No. 16,922

5 Claims. (Cl. 51—192)

1

My invention relates to a new and useful improvement in a buffing and polishing device in which the contacting material which performs the buffing and polishing operation is supported by a flexible supporting member which is inflated with air to provide a pneumatic supporting member of a yieldable nature.

It is an object of the present invention to provide in a device of this class a flexible, inflated, supporting member embraced by a plurality of endless bands of contacting material, such as emery cloth or buffing material and in such a manner that the inflated supporting member will retain the encircling band in position during their operation and in such a manner that when one of the bands is worn out its removal will expose the underlying band for operation.

Another object of the invention is the provision in a device of this class of a supporting core so arranged and constructed that the inflatable member mounter thereon may be rigidly held in position and prevented, when under pressure, from becoming disarranged.

Another object of the invention is the provision of a device of this class so arranged and constructed that the various parts may be easily and quickly assembled.

Another object of the invention is the provision of a device of this class which will be simple in structure and economical to manufacture, durable and highly efficient in use.

Other objects will appear hereinafter.

It is recognized that various modifications and changes may be made in the detail of structure illustrated without departing from the invention and it is intended that such shall be embraced within the scope of the claims which form a part hereof.

Forming a part of this specification are drawings in which:

Fig. 1 is a central sectional view of the invention,

Fig. 2 is a fragmentary sectional view taken on line 2—2 of Fig. 1.

In the drawings, as shown, the invention comprises a supporting core 7 which can be made of wood, plastic or any other suitable material and which is cut away as at 8 to provide the reduced portion. On opposite sides this core 7 is provided with a circular groove 9 and 9a and extending centrally through the core 7 is a bore 10.

A flexible bag 11, formed from rubber or other suitable material, is provided and comprises the oppositely disposed end walls 11 and 13 and the

2

periphery 12. There is formed centrally through these walls 11 and 13 the registering openings 14 and 14a through which the core may be inserted, the walls stretching sufficiently for this purpose. Extending inwardly from each of the walls 11 and 13 is a circular rib 15 which is adapted to lie in the cut away portion 8. Extending inwardly from each of the walls 11 and 13 is a circular rib 16 which engages in the groove 9. Engaging the outer faces of the walls 11 and 13 are the rigid plates or disks 17 and 18 respectively.

Engaging in the bore is a pressure exerting mechanism adapted for clamping the plates 17 and 18 against the walls 11 and 13 for clamping them against the opposite faces of the supporting core 7, this pressure exerting mechanism comprising member 19 which is provided on its outer end with the clamping flange 20 and provided with an internally threaded bore 21 which may be threaded on a rotating arbor or other suitable device. The inner end of the member 19 is reduced at 22 and externally threaded and threaded on to this reduced portion 22 is the internally threaded member 23 having a flange 24 on its outer end. Formed in the reduced portion 22 is a passage 25 communicating through lateral passages 26 and 27 formed in the core of supporting member 7, so that passage 25 is in communication with the space 28. Mounted in the member 22 is a suitable air valve 29 having a cap 30 on the valve 29 being so constructed that when the air is delivered under pressure to the member 29 it will pass through the passage into the space 28 and thus in turn inflate the supporting member.

Embracing the periphery 12 is a plurality of endless bands 31, 32, and 33 formed from suitable buffing or polishing material and positioned concentrically of each other so that when the flexible supporting member is inflated, members 31, 32, and 33 will be held firmly in position. A gasket 34 underlies the flange 20 and a gasket 35 underlies the flange 24.

The construction is such that when the parts are assembled as shown in Fig. 1 and the member 23 is threaded onto the portion or member 22 and walls 11 and 13 will be tightly clamped against the side faces of the core or rigid support 7, the construction being such that leakage of air is avoided. The use of the ribs 15 and 16 serves to provide a structure whereby the movement away from the center of the supporting core 7 is avoided when flexible supporting member is inflated under heavy pressure. These ribs also serve to prevent leakage of air and particularly prevent

a radial outward movement of the flexible member when being rotated at high speeds.

It is believed obvious that the device may be easily and quickly assembled and dis-assembled so that the removal and replacement of the overlying embracing material may be effected. When the outer layer of buffing or polishing material is used up and removed the underlying layer will of course be exposed for functioning, thus eliminating the necessity of dis-assembling the device and replacing the bands of operative material as soon as they become worn out.

What I claim as new is:

1. A buffing and polishing wheel of the class described, comprising: a rigid core having a bore formed centrally therethrough and provided at its opposite ends, at the periphery, with a cut away portion and having, inwardly from the periphery on opposite ends, a circular groove; a supporting bag of air-impervious, flexible material mounted on said core and having, on opposite end walls, a central opening registering with the bore in said core; a circular inwardly projecting rib on each of the end walls of said bag engaging the cut away portion of said core; a circular, inwardly projecting rib on each of said end walls engaging in the groove formed in end faces of said core; inter-engaging members projected into said bore from opposite sides thereof and adapted upon inter-engaging for clamping the end walls of said bag against the end faces of said core, the core having a passage formed therein communicating with an air inlet passage formed in one of said engaging members for delivering air into the interior of said bag for inflating said bag.

2. A buffing and polishing wheel of the class described, comprising: a rigid core having a bore formed centrally therethrough and provided at its opposite ends, at the periphery, with a cut away portion and having, inwardly from the periphery, on opposite ends, a circular groove; a supporting bag of air-impervious, flexible material mounted on said core and having on opposite end walls a central opening registering with the bore in said core; a circular inwardly projecting rib on each of the end walls of said bag engaging the cut away portion of said core; a circular, inwardly projecting rib on each of said end walls engaging in the groove formed in the end faces of said core; inter-engaging members projecting into said bore from opposite sides thereof and adapted upon inter-engagement for clamping the end walls of said bag against the end faces of said core, said core having a passage formed therein communicating with an air inlet passage formed in one of said engaging members for delivering air into the interior of said bag for inflating said bag; and an endless band of polishing material embracing the periphery of said bag and adapted upon the inflating of said bag for being held rigidly on said bag.

3. A buffing and polishing wheel of the class described, comprising: a rigid core having a bore formed centrally therethrough and provided at its opposite ends, at the periphery, with a cut away portion and having, inwardly from the periphery, on opposite ends a circular groove; a supporting bag of air-impervious, flexible material mounted on said core and having on opposite end walls a central opening registering with the bore in said core; a circular, inwardly projecting rib on each of the end walls of said bag engaging the cut away portion of said core; a circular, inwardly projecting rib on each of said end walls

engaging in the groove formed in end faces of said core; inter-engaging members projected into said bore from opposite sides thereof and adapted upon interengagement for clamping the end walls of said bag against the end faces of said core, said core having a passage formed therein communicating with an air inlet passage formed in one of said engaging members for delivery of air into the interior of said bag for inflating said bag; and a plurality of concentrically arranged endless bands of abrasive material in embracing relation to the periphery of said bag and adapted, upon the inflation of said bag, for being held rigidly on said bag.

4. In a polishing and buffing device in the class described, a core having a central bore formed therethrough provided with a radial passage communicating with said bore and provided on opposite end faces with a circular groove positioned inwardly from the periphery thereof and provided, at the periphery at opposite ends with a cut away portion; a circular, flexible, air-impervious bag having registering circular openings in its opposite end walls and adapted for mounting on said core; an inwardly projecting circular rib on each of said end walls engaging the cut away portion of said core; an inwardly projecting circular rib on each of said end walls engaging in said groove in said core; a rigid plate engaging each of the end walls of said bag; a flange bearing member internally threaded and projecting into said bore from one end, said flange being adapted for pressing a plate against an end wall of said bag for clamping an end against the face of said core; an externally threaded member projected into said bore from the opposite end and threaded into said first mentioned member; a flange on the outer end of said externally threaded member for clamping a plate against the other end wall of said bag for clamping the same against the other end face of said core, said externally threaded member having a passage communicating with the passage in said core for delivering air into the interior of said bag for inflating the same.

5. In a polishing and buffing device in the class described, a core having a central bore formed therethrough and provided with a radial passage communicating with said bore and provided on opposite end faces with a circular groove positioned inwardly from the periphery thereof and provided at the periphery at opposite end faces with a cut away portion; a circular, flexible, air-impervious bag having registering circular openings in opposite end walls and adapted for mounting on said core; an inwardly projecting circular rib on each of said end walls engaging the cut away portion of said core; an inwardly projecting circular rib on each of said end walls engaging in said groove of said core; a rigid plate engaging each of the end walls of said bag; a flange-bearing member internally threaded and projected into said bore from one end, said flange being adapted for pressing a plate against one end wall of said bag for clamping the same against an end face of said core; an externally threaded member projecting into said bore from the opposite end and threaded into said first mentioned member; a flange on the outer end of said externally threaded member for clamping the plate against the other end wall of said bag for clamping the same against an end face of said core, said externally threaded member having a passage communicating with the passage in said core for delivering air into the interior of said

2,490,472

5

bag for inflating the same; and a plurality of concentrically superimposed endless bands of abrasive and polishing material embracing the periphery of said bag and adapted, upon the inflation of said bag for being mounted on the periphery of said bag.

ARTHUR R. RASKE.

REFERENCES CITED

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

Number
493,002
1,444,314
1,951,998
2,017,163
2,072,129

6

UNITED STATES PATENTS

Name	Date
Webster -----	Mar. 7, 1893
Herder -----	Feb. 6, 1923
Simonson -----	Mar. 20, 1934
Reed -----	Oct. 15, 1935
Ricks et al. -----	Mar. 2, 1937

FOREIGN PATENTS

Number
21,038

Country	Date
Australia -----	Feb. 6, 1936