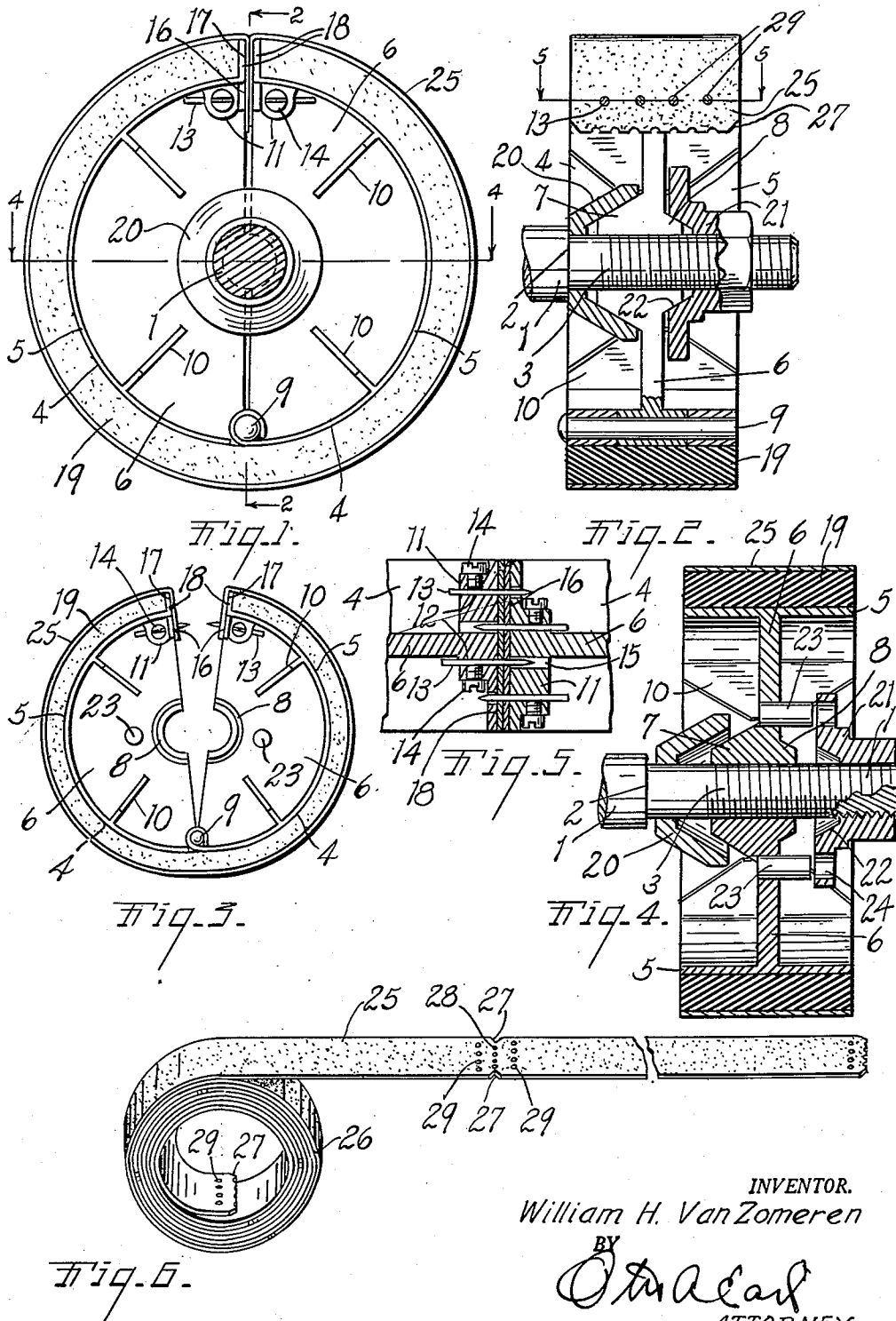


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W. H. VAN ZOMEREN
DRUM TYPE ABRADING DEVICE

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INVENTOR.
William H. Van Zomeren

BY
Orin A. Carl
ATTORNEY

UNITED STATES PATENT OFFICE

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DRUM TYPE ABRADING DEVICE

William H. Van Zomeren, Kalamazoo, Mich.

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2 Claims. (Cl. 51-194)

1

This invention relates to improvements in drum type abrading device.

The main objects of this invention are:

First, to provide an improved sanding or abrading drum which permits very rapid manipulation for removing or applying the abrading band to the drum.

Second, to provide a sanding or abrading drum of the segmental section type which may be very quickly and effectively secured to the shaft or spindle or released therefrom.

Third, to provide an abrasive strip and securing means therefor to the drum which greatly facilitates the effective application of the abrading strip to the drum.

Objects relating to details and economies of the invention will appear from the description to follow. The invention is defined and pointed out in the claims.

A preferred embodiment of the invention is illustrated in the accompanying drawing, in which:

Fig. 1 is a side elevational view of a sanding or abrading drum embodying my invention.

Fig. 2 is a fragmentary view mainly in section on a line corresponding to line 2-2 of Fig. 1.

Fig. 3 is a side view of the drum removed from the shaft and partially opened illustrating one of the steps in securing the band thereto.

Fig. 4 is a fragmentary view mainly in section on a line corresponding to line 4-4 of Fig. 1 with the clutch elements in released position.

Fig. 5 is a fragmentary view mainly in section on a line corresponding to line 5-5 of Fig. 2.

Fig. 6 is a perspective view of a roll of the abrasive band of my invention.

In the embodiment of my invention illustrated, the spindle or shaft 1 is provided with an abutment 2 and has a threaded portion 3 adjacent the abutment. The complementary drum members, designated generally by the numeral 4-4, comprises rim elements 5 having integral web elements 6 and hub elements 7 and 8. These drum members are pivotally connected at 9 to be swung to and from each other as is indicated in Fig. 3. The rim elements are provided with bracing webs 10.

The drum members have pin supports 11 at their swinging ends, these supports having bores 12 adapted to receive the pins 13 which are adjustably and removably secured in the bores by means of the set screws 14. The supports have bores 15 aligned with the bores 12 to receive the projecting ends of the pins, as is shown in Fig. 5. The faces 16 of these pin supports are flush with

2

the faces 17 of the outturned radial rim flanges 18.

The resilient tire 19 is arranged around the rim elements with its ends in abutting relation to the flanges 18. To secure the drum upon the shaft in its closed position, I provide the internally conical clutch member 20 disposed on the shaft or spindle 1 to coact with the abutment 2 and to clampingly embrace the conical hub elements 7. A second clutch member 21 is provided having an internal conical recess 22 adapted to clutchingly embrace the conical hub elements 8. The drum members 4 are provided with studs or pins 23 adapted to engage the holes 24 in the clutch member 21 so that when the drum is rotated the member 21 is rotated. The clutch member 21, being threaded upon the shaft, is moved longitudinally thereof by rotation of the drum so that the threaded clutch member may be quickly engaged and disengaged by the rotation of the drum. When the clutch members are in engagement, the drum is effectively secured to the shaft for rotation therewith.

The tire serves as a support for the abrasive band 25 which is of a width corresponding to the width of the tire and of such length that it may be arranged around the tire as shown in Fig. 3, and its ends engaged with the pins 12 when the members 4 are in partially open position, as shown in Fig. 3. When the drum members are closed and clamped upon the shaft, the band is suitably tensioned and secured by means of the pins and by being clamped between the flanges 17 and the pin support members. The faces of the support members and the flanges are flush.

To facilitate the forming of the bands of proper length and their application, the abrasive strip designated generally by the numeral 26, has opposed notches 27 in the edges thereof and severing perforations 28 aligned with the notches. These notches 27 and perforations 28 are uniformly spaced longitudinally of the strip so that it may be conveniently severed into sections of the desired length. The band is further provided with transverse rows of perforations 29 suitably spaced to receive the pins 12. This greatly facilitates the application of the bands to the drum and saves time and material, as it avoids the necessity of workmen measuring off the desired amount or cutting and trying as is the general practice. If a section cut from the roll is too short, it is wasted.

I have illustrated and described my invention in a highly practical embodiment thereof. I have not attempted to illustrate or describe various

3

modifications or adaptations as it is believed that this disclosure will enable those skilled in the art to embody or adapt my invention as may be desired.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. In an abrading device, the combination with a shaft provided with an abutment and with a threaded portion adjacent the abutment, of identical complementary drum members each comprising rim, hub and web elements, said drum members being pivotally connected at one side thereof and adapted, when brought together, to constitute a circular drum, said hub elements being axially slidable on said shaft and being outwardly tapered at both ends, an internally frusto-conical clutch member axially movable on said shaft for supported engagement with said abutment and to coast with one end of both of said hub elements, and a second internally frusto-conical clutch member coacting with the other end of both of said hub elements and having threaded engagement with the threaded portion of said shaft, each of said web elements being provided with an axially projecting stud, said second clutch member having holes therein adapted to receive said studs so that rotation of the drum in one direction on the shaft with the studs in engagement with the said second clutch member acts to move the clutch members together and clamp them upon the hub elements and secure the drum to the shaft.

2. In an abrading device, the combination with a shaft provided with an abutment, of complementary drum members pivotally connected at one side thereof and adapted, when brought together, to constitute a circular drum and including hub elements axially slidable on said shaft and tapered at both ends, a clutch member

4

axially movable on said shaft for supported engagement with said abutment and adapted to clampingly engage one end of hub elements of both drum members, and a second clutch member coacting with the other ends of the drum member hub elements and having threaded engagement with the shaft, each of said drum members being provided with an axially projecting stud, said second clutch member having holes therein adapted to receive said studs so that rotation of the drum in one direction on the shaft with the studs in engagement with the said second clutch member acts to move the clutch members together and clamp them upon the hub elements and secure the drum to the shaft.

WILLIAM H. VAN ZOMEREN.

REFERENCES CITED

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

UNITED STATES PATENTS

Number	Name	Date
Re. 8,555	Dunham	Jan. 28, 1879
136,727	Howe	Mar. 11, 1873
178,994	Buzzell	June 20, 1876
217,300	Starr	July 8, 1879
610,761	Keary	Sept. 13, 1898
613,079	Ross	Oct. 25, 1898
733,577	Catt	July 14, 1903
999,436	Dobyne	Aug. 1, 1911
1,104,684	Levine	July 21, 1912
2,107,411	Dunford	Feb. 8, 1938
2,403,434	Gulden	July 9, 1946

FOREIGN PATENTS

Number	Country	Date
394,137	Germany	Apr. 12, 1924
400,754	Great Britain	Nov. 2, 1933