No. 838,019. PATENTED DEC. 11, 1906.

R. GARDNER.

ABRASIVE WHEEL.

APPLICATION FILED OCT. 20, 1904.

Fig. 2.

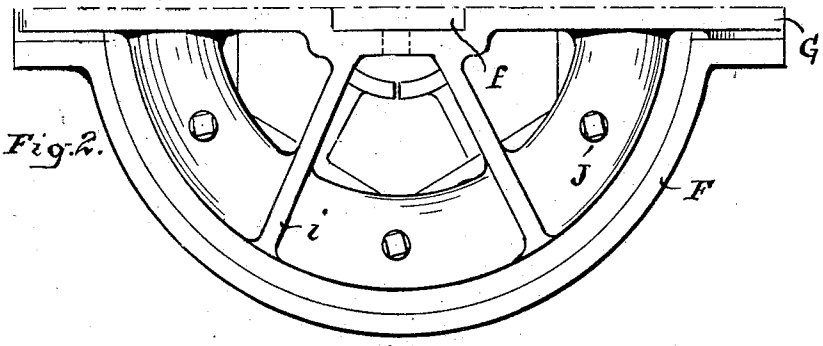


Fig. 1.

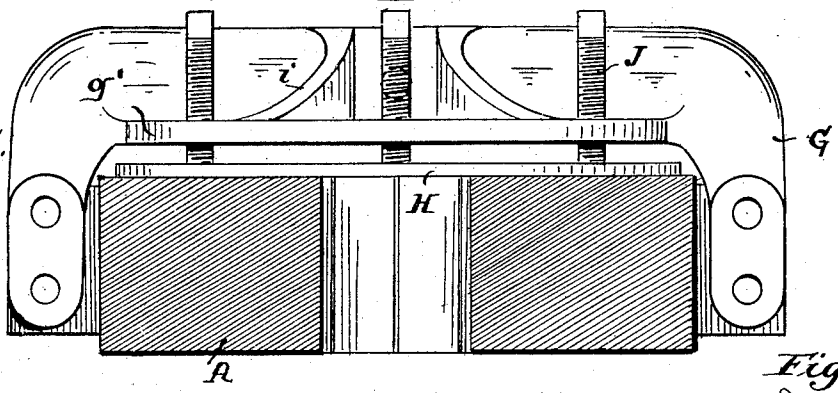


Fig. 4.



Fig. 3.

WITNESSES

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ABRASIVE WHEEL.

No. 838,019. Specification of Letters Patent. Patented Dec. 11, 1906.

Application filed October 20, 1904. Serial No. 229,229.

To all whom it may concern:

Be it known that I, ROLAND GARDNER, a subject of the King of England, and a resident of Cleveland, county of Cuyahoga, and State of Ohio, have invented certain new and useful Improvements in Abrasive Wheels, of which the following is a specification.

The object of my invention is to build up such wheels of a plurality of skeleton sections or units ready to be assembled in wheel form and in which form they are to furnish a most efficient cutting-surface as well as a durable and safe structure under protection of a suitable inclosure and mounting therefor. I attain this object in a wheel as shown in the accompanying drawings, in which—

Figure 1 represents a part-sectional and part side view of said wheel and the means for holding the units thereof in assembled condition. Fig. 2 is a half plan view of the same, and Fig. 3 is an under side view of same. Fig. 4 illustrates a modification of said units in reduced scale.

Like letters of reference denote like parts in the drawings and specification.

As shown in Fig. 3, this wheel is made up of six sections A. There may, however, be more or less of such sections without departing from the nature of my invention.

Each section or unit A comprises a radial or center strip *a*, outer flanges *b*, inner flanges *c*, and intermediate flanges *d*.

Jointed, the outer and inner flanges form the rim B and hub C of the wheel, while the intermediate flanges may either form a reinforcing polygonal or circular band D or E. As shown in Fig. 3, the sectors or units A are provided with circular flanges *d*, which form the circular band E. However, angular flanges *d'* may be provided (see Fig. 4) to form when united a polygonal band.

Preferably the cutting-faces of the strips and flanges increase from hub to rim in radial proportion. However, they may be of even thickness.

Grooves *e* are provided for in the flanges to enable "slushing" of the waste material from the hub to periphery of the wheel, water being supplied through the hub of the wheel.

The sections when assembled become well braced, and therefore present a strong structure even though the walls thereof are thin. Abrasive material molded in the form as shown and described may be highly compressed without liability of becoming "gummed" when put to use, while its hardness (high compression) greatly enhances the cutting quality of wheels thus built up.

As a means of arranging and holding the sections in assembled operative condition I employ the semicircular bands F, a bail G, and washer H. Both the bands are flanged, as at *g*, to afford opportunity of clamping the bands by means of the bolts I I, the bail G being placed intermediate said flanges and engaged by said bolts, as seen in Figs. 1 and 3.

At *f* the bail is adapted for connection with the driving-spindle for the wheel, (said spindle not being shown.)

At or near the base a flange *g'* is provided for, which is reinforced by the ribs *i*. A number of set-screws J J have screw-threaded connections with said flange and serve for the purpose of opposing the pressure under which the sections are brought to bear against the surfaces to be dressed.

The washer H is placed intermediate the abrasive material and set-screws in order to distribute the thrust of said screws uniformly over the entire surface of the wheel and to maintain them at all times under equal resistance and level position.

The bolts and set-screws form a convenient and ready means of adjustment for the bands and bail whenever these parts must be reset on account of wear of the abrasive material.

What I claim, and desire to secure by Letters Patent, is—

1. For abrasive wheels a plurality of sector-like units each having a center strip wherefrom flanges project which united form the outer rim, an internal band and hub of said wheel as shown and for the purpose set forth.

2. The combination with a sectionally-built-up wheel of semicircular flanged bands, a bail and a washer all constructed and equipped substantially in the manner as and for the purpose set forth.

ROLAND GARDNER.

Witnesses:
BERNH. F. EIBLER,
L. C. THOMPSON.