

Dec. 15, 1931.

A. N. EMMONS

1,836,367

ABRADING ROLLER CONSTRUCTION

Filed June 13, 1928

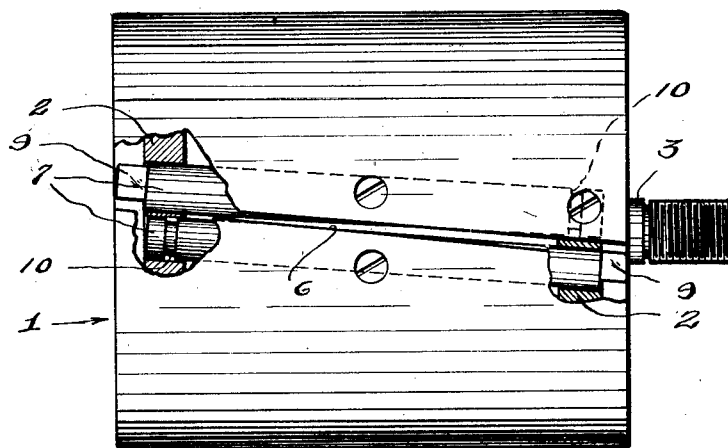


Fig. 1.

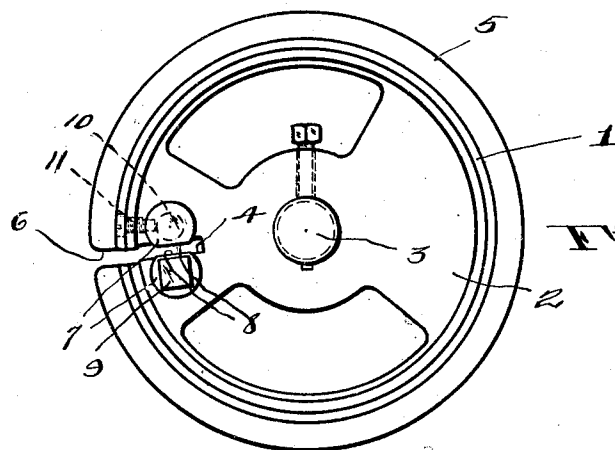


Fig. 2.

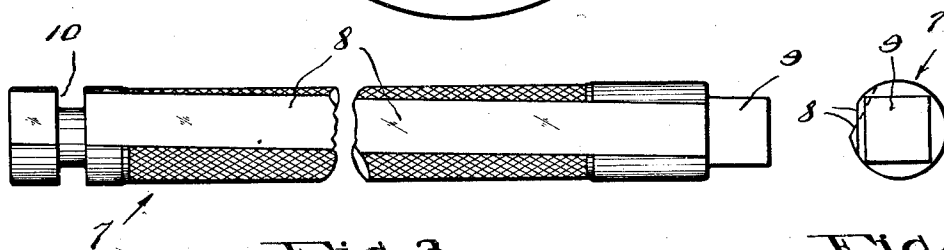


Fig. 3.

Fig. 4.

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UNITED STATES PATENT OFFICE

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ABRADING ROLLER CONSTRUCTION

Application filed June 13, 1928. Serial No. 284,984.

This invention relates to abrading machines having a drum or roller around which is wrapped a sheet of abrading material as sand paper and the like, and has for its object
5 a particularly simple and efficient means for drawing the sheet of abrading material around the drum and tightening it equally around the drum throughout the length of the drum or the width of the sheet of abrading material.

This invention consists in the novel features and in the combinations and constructions hereinafter set forth and claimed.

In describing this invention, reference is
15 had to the accompanying drawings in which like characters designate corresponding parts in all the views.

Figure 1 is an elevation, partly broken away, of a drum provided with my invention.
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Figure 2 is an end elevation thereof.

Figure 3 is an elevation of one of the tightening rolls.

Figure 4 is an end elevation thereof.

25 This abrading roller comprises, generally, a drum or body having a lengthwise slot extending inwardly and opening through its periphery, a pair of tightening rolls mounted in the body on opposite sides of the slot, each
30 of these rolls having a lengthwise slightly spiral flattened portion and the flattened portions of the two rolls being arranged to come opposite each other in line with the slot, the rolls being so mounted that the full portions
35 project into the slot upon rotation of the rolls to tighten the sheet of abrasive material wrapped around the drum, this sheet having its end portions extending into the slot between the rolls and means for rotating the
40 rolls to tighten the abrading strip around the drum.

1 designates the drum which may be of any suitable form, size and construction, it being here shown as formed hollow with the heads
45 2 at each end in which is mounted a suitable axle 3. The drum may be mounted in any suitable manner in the machine.

4 is the slot extending inwardly in a radial direction in the drum and opening through
50 the periphery of the drum.

5 is a sheet of yielding material as felt usually wrapped around the body or drum with its ends spaced apart to form a slot 6 in line with the slot 4.

7 designates the pair of tightening rolls
55 mounted in the heads of the drum on opposite sides of the slot 4, the slot 4 extending spirally relatively to the drum. Each of the rolls 7 are formed with a slightly spiral flattened portion extending from end to end
60 thereof, the rolls being movable so that their flattened portions can be brought opposite each other in line with the slot 4. The portion of each roll on opposite sides of the flattened portion 8 is usually knurled with the
65 exception of these portions mounted in bearings in the heads of the drum.

The rolls are provided with means for turning them as wrench heads 9, the wrench heads 9 being formed on one end of one roll and on
70 the other end of the other roll.

Each roller is held from endwise movement by an interlocking engagement with one of its bearings, and as here shown each roll is formed with an annular groove 10 located in
75 one of its bearings, and a key 11 in the contiguous head of the drum extends into the groove.

In operation, the sheet of abrading material as sand paper is cut off approximately
80 the right length. It is then wrapped around the drum and the end portions extended down into the slot 4 between the flattened portions of the rolls 7, these rolls having been turned so that the flattened portions are opposite each other. The rolls 7 are then turned
85 in opposite directions or toward each other by means of wrenches engaging opposite ends of the rolls and by reason of the spiral flattened portions, the full portions of the rolls
90 take hold of the abrading material instantly throughout the width of the sheet of material and draw or evenly tension the same throughout the width of the sheet so that the sheet of material is evenly drawn taut on the drum.
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What I claim is:

1. An abrading roller comprising a drum having a lengthwise slot extending inwardly and opening through its periphery, a pair of
100 rolls mounted in the drum on opposite sides

of the slot, each roll having a spiral flattened portion, these flattened portions being arranged to come opposite each other in line with the slot, the full portions of the pair of rolls projecting into the slot upon rotation of the rolls to move the flattened portions out of opposition to each other, a sheet of abrading material around the drum and having its ends extending into the slot between the rolls and means for rotating the rolls.

2. An abrading roller comprising a drum having a lengthwise slot extending inwardly and opening through the periphery of the drum, the slot being arranged slightly spiral, a pair of rolls mounted in the body on opposite sides of the slot and parallel thereto, each roll having a lengthwise slightly spiral flattened portion, the flattened portions being arranged to come opposite each other in line with the slot and the full portions of the rolls projecting into the slot upon rotation of the rolls so that their flattened portions are out of opposition to each other, and a strip of abrading material extending around the drum with the ends thereof extending into the slot between the rolls, and means for rotating the rolls.

3. An abrading roller comprising a drum having a lengthwise slot extending inwardly and opening through the periphery of the drum, a pair of rolls mounted in the drum on opposite sides of the slot, the rolls having respectively lengthwise slightly spiral flattened portions arranged to come opposite each other in line with the slot, the full portions of the pairs of rolls projecting into the slot upon rotation of the rolls to move the flattened portions out of opposition to each other, a sheet of abrading material wrapped around the drum and having its ends extending into the slot between the rolls, and means at one end of one roll and at the opposite end of the other roll for rotating the rolls.

In testimony whereof, I have hereunto signed my name, at Syracuse, in the county of Onondaga, and in the State of New York, this 6th day of June, 1928.

ARTHUR N. EMMONS.

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