Aug. 8, 1950 A. F. BRUDER 2,518,279

DRIVE CONNECTION FOR A SHOE POLISHER

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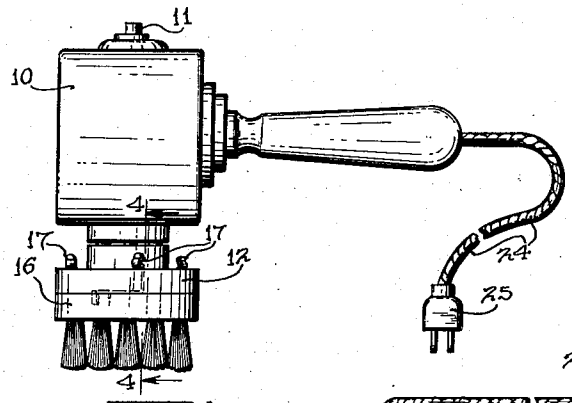


FIG. 1.

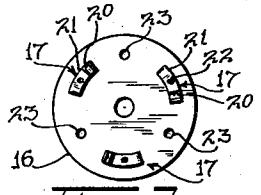


FIG. 2.

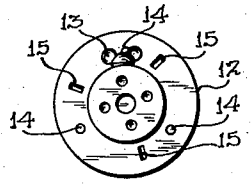


FIG. 3.

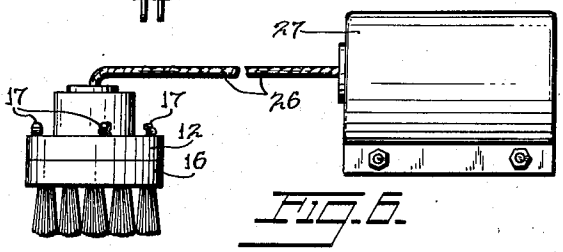


FIG. 6.

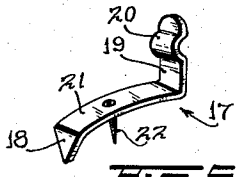


FIG. 5.

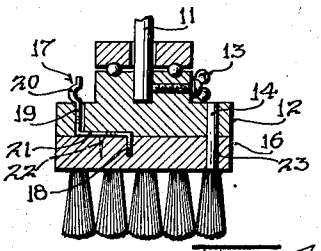


FIG. 4.

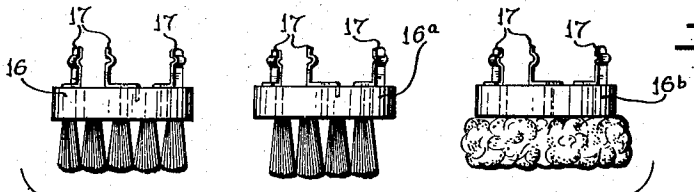


FIG. 7.

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DRIVE CONNECTION FOR A SHOE POLISHER

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4 Claims. (Cl. 287—20)

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This invention relates to an improved shoe polishing unit, and more particularly to a motor driven brush and means for detaching the brush head from the driving shaft of the electric motor.

One of the objects of the invention is to provide an electric motor with a driving shaft equipped with a disc and one or more brushes which can be coupled separately to the disc for rotation by the electric motor, so that the brush head best suited for a particular shoe polishing operation may be coupled in place with little effort and in a short period of time.

A further object of the invention is to provide a brush head for operation by an electric motor, with a plurality of spring gripping fingers and a motor shaft with a disc having slots to receive the spring gripping fingers, so that the brush head may be coupled to the motor shaft by a pushing operation, and uncoupled by a pulling operation, and when coupled will rotate in a direct positive line drive with the motor shaft.

For further comprehension of the invention and of the objects and advantages thereof, reference will be had to the following description and accompanying drawing, and to the appended claims in which the various novel features of the invention are more particularly set forth.

In the accompanying drawing forming a material part of this disclosure:

Fig. 1 is a side elevation of the improved motor driven shoe polishing unit.

Fig. 2 is a top plan view of the detachable brush head.

Fig. 3 is a bottom plan view of the driving disc of the motor shaft.

Fig. 4 is a detail vertical sectional view, taken on line 4—4 of Fig. 1, enlarged, showing the interlocking action of one of the spring fingers and the driving disc.

Fig. 5 is a detail perspective view of one of the spring fingers.

Fig. 6 is a detail side view showing the invention applied to the flexible shaft of an electrical motor.

Fig. 7 is a side elevation of a group of different polishing brushes, each having its own spring fingers.

Referring now to the drawings, 10 designates an electric motor of the hand carried or portable type, which is provided with the usual power shaft 11. On this power shaft, the driving disc 12 is preferably secured by a pin or set screw 13.

The driving disc 12 is provided with a plurality of dowel pins 14, spaced apart equal distances from each other and from the center of the shaft.

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The disc 12 is also formed with a series of slots 15, which are spaced equally from each other and from the center of the shaft.

On the driving disc 12, a brush head 16 is detachably coupled, by means of spring fingers 17. The brush head is provided with one spring finger for each slot 15 of the driving disc. Each spring finger 17 includes a base portion 21 formed at one end with a V-shaped lug portion 18, which is interlocked with the brush head 16, and at the other end with a spring arm portion 19, which extends from the brush head 16, and is formed with a lateral spring loop 20. The base portion 21 of each spring finger 17 is pierced by a fastener or screw 22, by which the spring finger is secured to the brush head.

The brush head 16 is also formed with a socket or hole 23, one for each dowel pin 14 of the driving disc 12. These holes are located between the spring fingers. The brush head 16 is coupled to the driving disc 12 by pushing the spring fingers through the slots 15 of the driving disc, and when this is done the dowel pins 14 will enter the sockets or holes 23 of the brush head.

As the offset spring latching loops 20 pass through the driving disc they will establish a latching action against the inner side of the driving disc, and thereby couple the brush head to the driving disc against the pressures which develop to separate the two when the motor is energized, by means of the usual service cord 24 and plug-in connector 25.

The centrifugal thrust imposed upon the brush head will be taken up by the dowel pins, so that the brush head will not tend to twist the spring fingers or disturb the coupling established with the driving disc.

In the operation of cleaning and polishing a shoe, it is necessary to use first one type of brush, and then another type of brush, and finally to apply a high polishing effect with the aid of another polishing head.

Fig. 7 shows a set of three brush heads 16, 16a and 16b. Each brush head is equipped with three spring fingers 17, and formed with three dowel holes, so that it can be coupled directly to the driving disc 12. Each brush head is provided with a different type of bristles or they are saturated with a different polishing preparation. By using one brush head, the initial polishing step may be quickly completed, by using the next brush head the intermediate polishing step may be completed, and by using the third brush head the last polishing step may be completed.

Instead of coupling the brush head directly to

the driving shaft, the driving disc 12 may be attached to a flexible shaft 26, and this driven by means of the electrical motor 27 from any suitable distance for the scene of work.

In either case the brush head may be detached from the driving disc by a simple pulling operation, which requires neither skill or any important period of time to complete, being affected in a few seconds.

It is to be understood that the pin or set screw 13 may be eliminated when the disc 12 is made integral with the power shaft 11, also that a suitable on and off switch may be provided for controlling the motor 10.

While I have illustrated and described the preferred embodiments of the invention, it is to be understood that I do not limit myself to the precise constructions herein disclosed and the right is reserved to all changes and modifications coming within the scope of the invention as defined in the appended claims.

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

1. A drive connection for a shoe polisher, comprising a driven disc formed with spaced holes, dowel pins mounted on one face of said driven disc alternately with said spaced holes, a member having a back portion positioned against the face of said driven disc, said back portion being formed with spaced holes into which said dowels extend for causing said member to rotate with said driven disc, and spring fingers projecting from said back portion into said spaced holes of said driven disc releasably connecting said member with said driven disc.

2. A drive connection for a shoe polisher, comprising a driven disc formed with spaced holes, dowel pins mounted on one face of said driven disc alternately with said spaced holes, a member having a back portion positioned against the face of said driven disc, said back portion being formed with spaced holes into which said dowels extend for causing said member to rotate with said driven disc, and spring fingers projecting from said back portion into said spaced holes of said driven disc releasably connecting said member with said driven disc, each spring finger comprising a base portion extended along the face of said back portion, means intermediate said base portion securing said base portion to said back portion, a lug portion formed at one end of said base portion and pressed into said back portion retaining said spring finger from turning about the said intermediate securing means, and a spring arm portion formed at the other end of said base portion for extension through one of said holes of said driven disc.

3. A drive connection for a shoe polisher, comprising a driven disc formed with spaced holes, dowel pins mounted on one face of said driven disc alternately with said spaced holes, a member having a back portion positioned against the face of said driven disc, said back portion being formed with spaced holes into which said dowels extend for causing said member to rotate with said driven disc, and spring fingers projecting from said back portion into said spaced holes of said driven disc releasably connecting said member with said driven disc, each spring finger comprising a base portion extended along the face of said back portion, means intermediate said base portion securing said base portion to said back portion, a lug portion formed at one end of said base portion and pressed into said back portion retaining said spring finger from turning about the said intermediate securing means, and a spring arm portion formed at the other end of said base portion for extension through one of said holes of said driven disc, said securing means comprising a screw passing through said base portion intermediate of its ends and into said back portion.

4. A drive connection for a shoe polisher, comprising a driven disc formed with spaced holes, dowel pins mounted on one face of said driven disc alternately with said spaced holes, a member having a back portion positioned against the face of said driven disc, said back portion being formed with spaced holes into which said dowels extend for causing said member to rotate with said driven disc, and spring fingers projecting from said back portion into said spaced holes of said driven disc releasably connecting said member with said driven disc, each spring finger comprising a base portion extended along the face of said back portion, means intermediate said base portion securing said base portion to said back portion, a lug portion formed at one end of said base portion and pressed into said back portion retaining said spring finger from turning about the said intermediate securing means, and a spring arm portion formed at the other end of said base portion for extension through one of said holes of said driven disc, and a spring loop formed near the free end of each of said arm portions for engaging the face of said driven disc opposite the face against which said member is positioned after said arm portions have been completely extended through the respective holes of said driven disc.

ALBERT F. BRUDER.

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