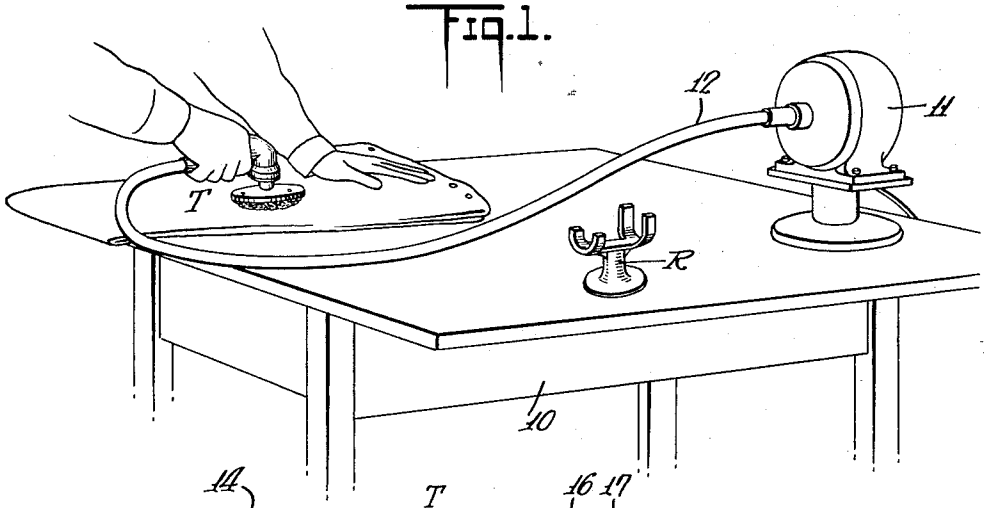
July 16, 1935. A. REINEMAN 2,008,260

RE-NAPPING APPARATUS

Filed Feb. 24, 1933

Fig. 1.



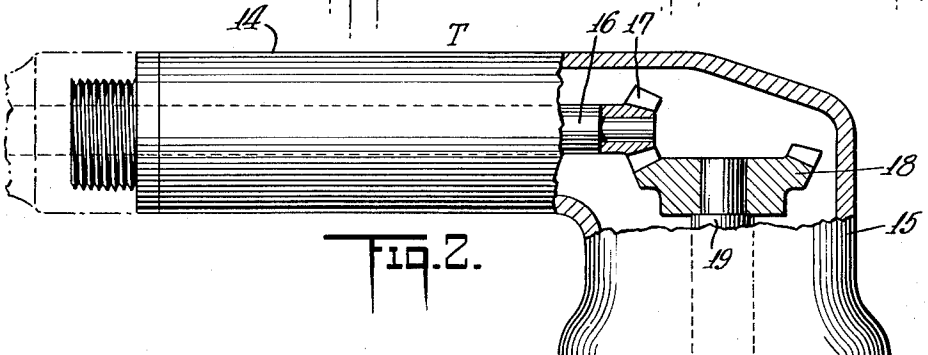
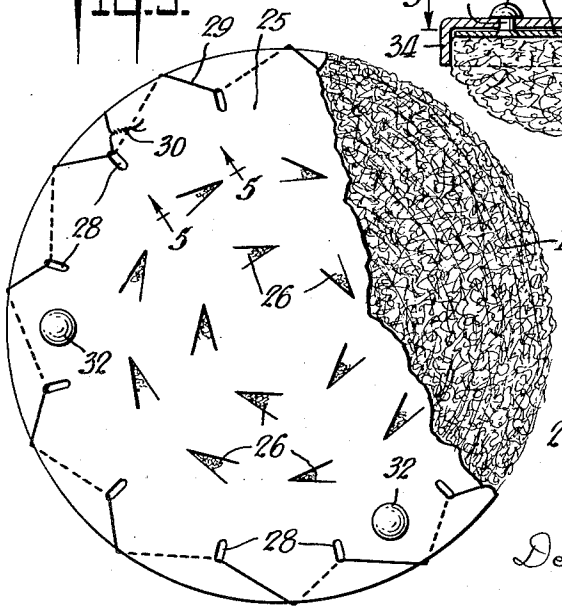


Fig. 2.

Fig. 3.



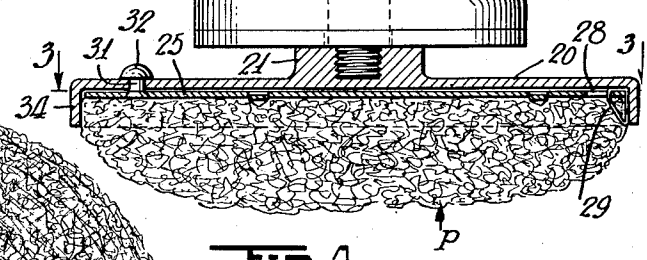


Fig. 4.

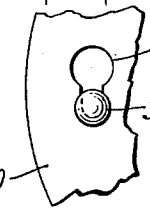
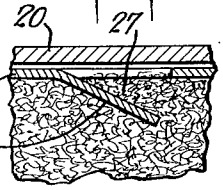


Fig. 5.



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RE-NAPPING APPARATUS

Alfred Reineman, New York, N. Y.

Application February 24, 1933, Serial No. 658,380

11 Claims. (Cl. 26—28)

My present invention relates to re-napping apparatus, that is, to means for restoring a nap to woven, knitted or netted fabrics that have developed a worn or shiny appearance.

Among the objects of the invention are to provide a device for the above purpose, by which the fresh appearance of the fabric with its nap may be restored, without appreciably shortening its residual life, as compared with a continued use of the shiny worn fabric.

Another object is to provide a device of the above type, which is of simple construction, which may be easily manipulated for use by non-expert operators, and without danger of destroying or wearing through the fabric in the process of use and in which the active agency for re-napping may be readily replaced after it is worn out or soiled.

A feature of the invention is the use of metal wool, preferably steel wool as the mechanical agency for loosening the surface fiber of the goods, and thus creating the nap, said steel wool preferably in the form of a pad to be rotarily driven in contact with the fabric.

Another feature is the provision of means for retaining the face of the pad in engagement with the mounting disk and auxiliary means firmly attaching the periphery of the pad with respect to the mounting disk.

Another feature is the mounting of the parts without likelihood of abrasion on the part of the instrumentalities by which the steel wool pad is attached to its mounting disk.

A specific feature of the invention is the use of prongs on the mounting disk, all facing in the same direction rotarily and inclined slightly with respect to the disk for retaining the wool pad, and an over-cast wire mounting stitch through the pad and the disk for securing the periphery of the pad against the disk.

Another feature is the mode of mounting of such wool pad incorporated in a unit with its mounting disk, by releasable connection of the latter to a driving chuck.

Another feature is a releasable key hole slot connection between the mounting disk for the wool pad and the driving chuck, the latter having a flange enclosing the mounting disk and the base portion of the pad.

In the accompanying drawing, in which is shown one of various possible embodiments of the several features of the invention.

Fig. 1 is a perspective diagrammatic view showing the general assembly and mode of use of the device.

Fig. 2 is a view on a much larger scale partly in section and with parts broken away, showing the operating head of the unit,

Fig. 3 is a plan of the head viewed from the underside, with parts of the pad broken away, to disclose the details of the construction,

Fig. 4 is a detail view of the bayonet slot connection, and,

Fig. 5 is a sectional detail view on a larger scale, taken on the line 5—5 of Fig. 3.

Referring now to the drawing, there is shown in Fig. 1 a conventional table 10 on which is mounted a conventional fractional horsepower electric driving motor 11 connected by a conventional flexible driving shaft 12 to the operating head T of the re-napping tool, shown illustratively applied for re-napping a pair of trousers. The head is shown with a horizontal handle 14 having a right-angle extension 15 formed somewhat in the shape of a telephone receiver. Through the handle extends a drive shaft 16 affixed to the driving flexible shaft 12 by conventional means (not shown) and connected by a miter gear reduction 17, 18 to a vertical shaft 19 in the head 15 upon which said shaft is affixed, the steel wool driving head now to be described.

The driving head comprises a chuck preferably a flanged aluminum disk 20 having a threaded nipple 21 mounted on the end of shaft 19 in which chuck is releasably mounted the steel wool re-napping pad unit.

The pad unit comprises a pad P circular in contour,—made as a unit with a sheet metal mounting disk 25 therefor. The mounting disk has prongs 26 preferably formed integral therewith, which in a preferred specific embodiment comprise triangular tongues stamped out of the disk and inclined downward therefrom at an acute angle, the prongs preferably arranged along the peripheries of two or more circles concentric with the disk and all prongs pointing in the same direction rotarily, as shown, preferably the direction of rotation of the disk. It will be immediately apparent that the pad may be readily applied to the disk by juxtaposing the two and giving them a short relative turn, in which operation, strands of the metal wool will become lodged under the respective prongs, as best shown at 27 in Fig. 5, and the pad will be effectively held in position against the mounting disk 25 at distributed parts of the contacting area of said pad.

The invention furthermore affords positive means affixing the periphery of the pad with respect to the mounting disk. For this purpose, a

plurality of apertures **28** is provided near the periphery of the disk **25** and metal wire **29**, ordinarily copper wire, is applied in an overcast stitch through said apertures, and about the periphery of the pad, preferably substantially midway through the thickness of the pad. The ends of the wire are twisted together as at **30** at the upper face of the disk **25**. Thus, the steel wool pad and its mounting disk constitute a separate replaceable article of manufacture or unit saleable as such. The prongs **26** retain the steel wool pad in secure face-to-face contact with disk **25** and the wire stitch **29** secures the peripheries of the disk and pad securely together, and at the same time precludes disengagement of the pad from the prongs, since relative rotary displacement of said elements is thereby precluded. Yet the pad-retaining instrumentalities are all disposed at a considerable distance from the fabric engaging or wearing face of the wool pad, so that, in use, only the surface of the steel wool pad will engage the fabric.

Preferably the mounting disk has conformations at the upper face thereof by which a releasable connection, preferably a stud and slot connection, may be made with respect to the driving chuck therefor. In the specific embodiment shown, three equidistant mounting studs **31**, each headed as at **32**, protrude upward from the disk and thus co-act with corresponding key hole slots **33** in the face of the chuck. The flange or skirt **34** of the chuck surrounds and encloses the mounting disk **25** as well as a considerable portion of the thickness of the pad and the stitch **29**.

In use of the device, it is preferred first to wet the goods with an emollient solution (not of my invention), by which the goods is softened to preclude abrasion or wear of the fabric, and the fiber thereof is yet given sufficient body for the steel wool effectively to act thereon. The steel wool pad driven from the motor and speed reducing transmission, preferably at about 450 R. P. M. is held in engagement with the fabric while the operator continuously moves it over the fabric area.

Preferably an appropriate rest, shown at R on the table, is used for holding the tool while out of use.

Obviously when the pad has become worn or soiled, it can readily be replaced by a new pad unit, such as shown in Fig. 3.

While the invention is especially useful for re-napping wool worsted outer clothing, most subject to developing a shine after wear, the invention has a broader field of application in the treatment also of other wool, cotton or silk fabrics.

The invention in its broadest aspects is not limited to the treatment of textiles, but when made of sufficiently large proportions is applicable to the polishing of hard wood floors and for numerous other possible uses. The claims though designating the apparatus as a re-napping head, are not intended to be so limited, but to protect the combination therein recited, regardless of the use to which such combination is put.

It will thus be seen that there is herein described apparatus in which the several features of this invention are embodied, and which apparatus in its action attains the various objects of the invention and is well suited to meet the requirements of practical use.

As many changes could be made in the above construction, and many apparently widely different embodiments of this invention could be made without departing from the scope thereof, it is intended that all matter contained in the above description or shown in the accompanying drawing shall be interpreted as illustrative and not in a limiting sense.

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

1. A re-napping head comprising a support disk, a pad of metal wool engaging said disk, an overcast wire stitch support extending through the periphery of the pad under the operating face thereof and through corresponding apertures in the support disk, and means integral with the support disk and distributed throughout the area thereof, and clasping strands at the engaging face of the metal wool pad.

2. A renewable metal wool re-napping head, comprising a metal wool support disk, a disk-shaped pad of steel wool in engagement therewith, means integral with said support disk and distributed through the area thereof, clasping strands of the pad in engagement therewith and a metal wire overcast stitch extending peripherally of the pad free from the operating face thereof and through corresponding apertures in the support disk, said disk having means for releasable attachment thereof to a driving chuck.

3. A re-napping head including a metal support disk having struck-out tongues extending at a small angle obliquely therefrom, a circular steel wool pad engaging one face only of said disc and substantially coextensive therewith having strands thereof extending under said oblique tongues and means free from the operating face of the steel wool pad, firmly securing the peripheral region thereof against the support disk.

4. A re-napping head including a metal support disk having short struck-out tongues extending at a small angle relative to the plane of the disk and all pointing peripherally in the same direction, a steel wool pad engaging said support disk and having strands thereof clasped by said struck-out tongues, and means extending through strands of said wool at the periphery thereof and firmly securing the pad to the support disk.

5. A re-napping head including a metal support disk having short struck-out tongues extending at a small angle relative to the plane of the disk and all pointing peripherally in the same direction, a steel wool pad engaging said support disk and having strands thereof clasped by said struck-out tongues, and metal wire stitching overcast about the periphery of the pad and through corresponding apertures in the support disk.

6. As an article of manufacture, a renewable re-napping head element comprising a support disk, having means affixed thereto for releasable attachment with respect to a chuck, said head element having means at the underface thereof for straddling strands of a steel wool pad and having further means near the periphery therefor for securing the periphery of said pad thereto.

7. As an article of manufacture, a renewable re-napping head comprising a metal support disk, having headed studs for releasable attachment thereof to a carrying chuck with corresponding key hole slots, said disk having conformations at the opposite face thereof for engagement of the contiguous face of a steel wool pad, said disk also having apertures near the periphery thereof adapted for stitching connection of the periphery of said pad thereto.

8. As an article of manufacture, a support plate

for a steel wool re-napping pad comprising a metal plate having prongs peripherally directed in one and the same rotary sense, upstanding headed studs adapted to extend into corresponding key hole slots for mounting said plate, said plate having apertures near the periphery thereof.

9. A re-napping head including a chuck having key hole slots in the face thereof, a renewable re-napping head comprising a steel wool pad, a mounting disk therefor, having upstanding headed studs for cooperation with said slots and having unitary oblique tongues distributed throughout the area thereof for holding said pad, and an over-stitched wire connection through corresponding apertures near the periphery of said disk retaining the periphery of said pad in engagement therewith, said chuck presenting a a peripheral flange encircling the mounting disk and the contiguous part of said pad.

10. A re-napping head comprising a pad of metal wool, a disc-shaped support having one face in contact with said pad and exposed at its opposite face, means securely connecting the peripheries of the pad and the disc against relative displacement in any direction, and means unitary with said disc straddling strands of said pad to prevent separation of the central area of said pad relative to said disc.

11. A re-napping head including a support disc, a pad of steel wool in contact with one face thereof, and free from engagement with the opposite face thereof, means integral with said disc straddling strands of said pad and holding the said pad against direct separation from said disc, and means at the periphery of said disc extending peripherally of said pad for securing said elements together against relative displacement of their peripheries in any direction.

ALFRED REINEMAN.