Dec. 6, 1932. A. COTTI 1,890,147

HAND APPARATUS FOR ROUGHING CLOTH

Filed Oct. 10, 1931

Fig. 1.

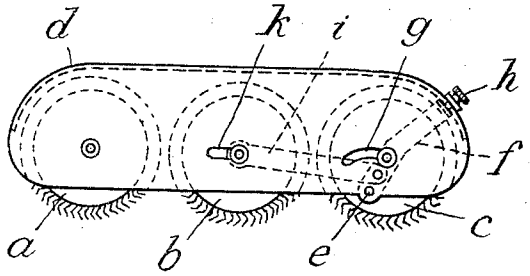


Fig. 2.

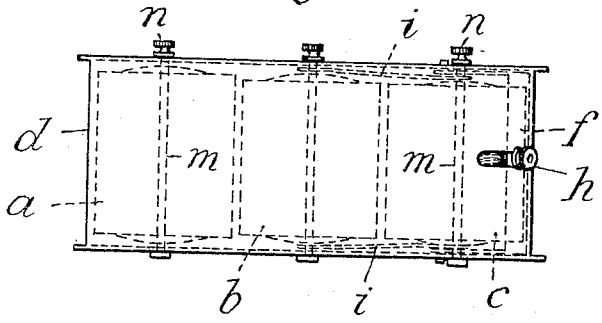


Fig. 3.

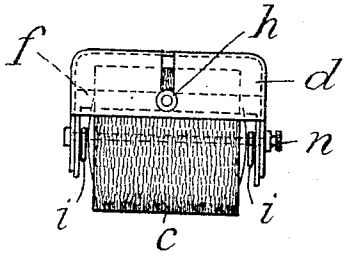
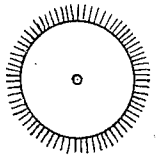


Fig. 4.



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UNITED STATES PATENT OFFICE

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HAND APPARATUS FOR ROUGHING CLOTH

Application filed October 10, 1931, Serial No. 568,194, and in Germany November 18, 1930.

This invention relates to a hand apparatus for raising cloth, especially the worn places of articles of clothing, in order to improve their appearance.

The hand apparatus consists of a casing open at the bottom, in which several raising cylinders are mounted transversely between the longitudinal sides of the casing.

The apparatus is preferably constructed so that the raising cylinders are mutually adjustable and in this manner their card clothing can be brought more or less into mesh. Thus, the mechanical resistance of the raising cylinders can be increased or reduced according to the raising effect to be obtained.

An embodiment of the invention is illustrated by way of example in the accompanying drawing in which:

Fig. 1 shows the raising apparatus in side elevation.

Fig. 2 is a top plan view of Fig. 1.

Fig. 3 is an end elevation of Fig. 1.

Fig. 4 shows a modified form of construction of the raising cylinders.

In the form of construction illustrated three raising cylinders *a*, *b* and *c* are provided, which are arranged transversely between the longitudinal sides of a casing *d*, open at the bottom and made of sheet metal or other material. The wires of the card clothing of the middle cylinder *b* are directed in the opposite direction to the wires of the two outer cylinders *a* and *c*.

For adjusting the roughening effect of the card clothing of the cylinders, the two cylinders *b* and *c* are shiftable relative the one to the other and to the cylinder *a*, so that the card clothing of the cylinders can be brought into engagement the one with the other more or less deeply. The further they intermesh the greater will be the resistance offered to the rotation of the cylinders. Consequently the roughing effect is also increased.

A bracket *f* oscillatable around the pivot points *e* carries the axle of the cylinder *c* and serves for shifting the cylinders *b* and *c*. Arcuate slots *g* are provided in the side walls of the casing *a* through which the ends of the axle of the cylinder *c* extend. For fixing the bracket *f* a screw provided with a knurled nut *h* is employed. Levers *i* are linked one on each side to the bracket *f* and carry the cylinder *b* in their other end. Slots *k* provided one in each side wall of the casing *d* allow the shifting of the cylinder *b*. It will be easily seen that by shifting the cylinder *c* by turning the bracket *f*, the cylinder *b* will be displaced by means of the levers *i*, the arrangement being such that the cylinder *b* is only shifted half as far as the cylinder *c* in order to bring the card clothing of all three cylinders the same distance into mesh.

In order to enable the raising cylinders to be easily removed, they are loosely mounted on their axles *m*, which can be drawn out, after unscrewing, the knurled nuts *n* provided on one end of each axle.

In raising apparatuses with only two cylinders only one cylinder need be made shiftable.

In order to remove the gloss from worsted cloth, it is advisable to employ straight wires, as illustrated in Fig. 4, instead of bent card wires.

I claim:

1. A hand apparatus for raising cloth, comprising in combination with a casing open at the bottom and several cylinders mounted transversely between the longitudinal sides of said casing, raising elements on the periphery of said cylinders, and means for varying the intermeshing depth of said raising elements.

2. A hand apparatus as specified in claim 1, comprising in combination with the raising cylinders and the casing, an oscillatable bracket mounted in said casing carrying one of said cylinders adapted to shift said cylinder relative to the other cylinders, and means

for fixing said cylinder in the shifted position.

3. A hand apparatus as specified in claim 1, comprising in combination with the raising cylinders and the casing, a bracket carrying one of said cylinders oscillatable in said casing adapted to adjust its cylinder relative to the other cylinders, a lever connecting said bracket to the neighbouring cylinder adapted during the adjustment of its cylinder to at the same time adjust said neighbouring cylinder.

In testimony whereof I affix my signature.

ALDO COTTI.