April 29, 1947. J. W. WEBER ET AL 2,419,748

HAND CARDING TOOL

Filed June 8, 1944

Fig. 1.

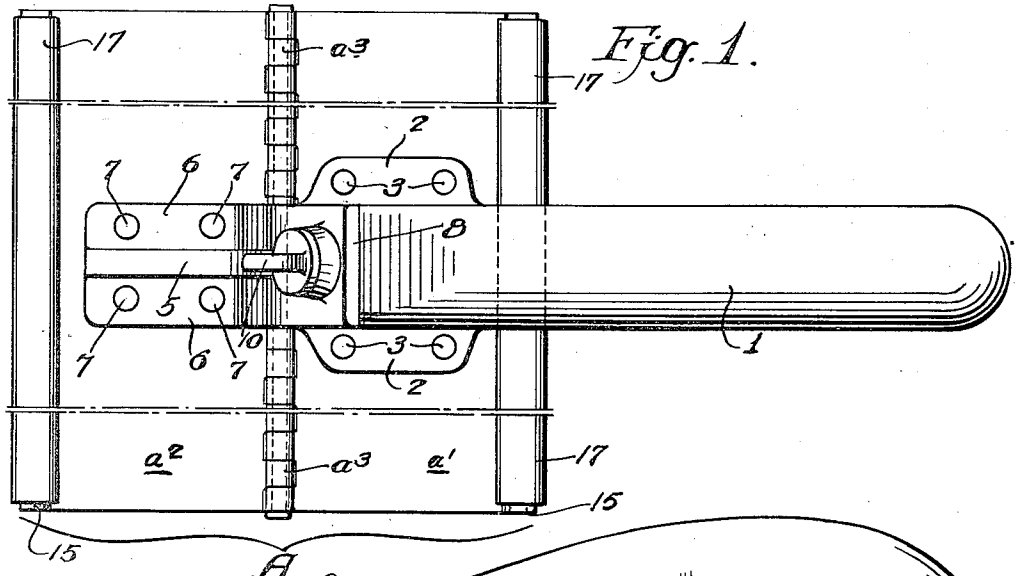


Fig. 2.

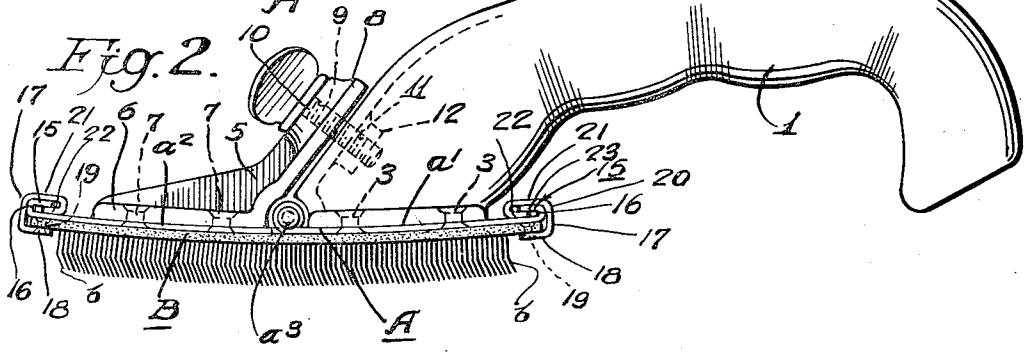
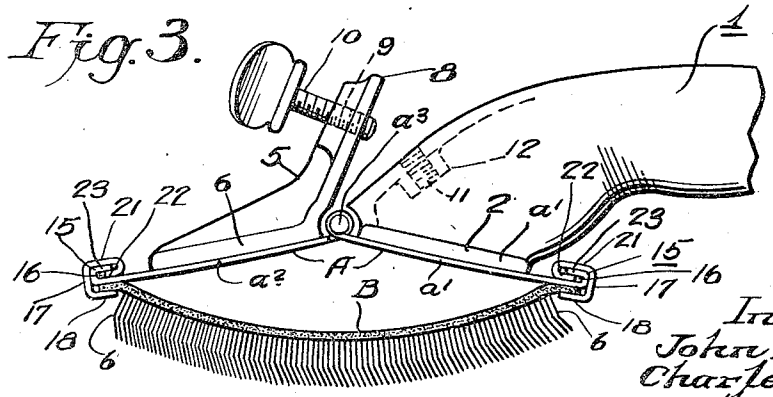


Fig. 3.



Inventors:—
John W. Weber
Charles R. Davies
by their Attorneys
Howson & Howson

Patented Apr. 29, 1947 2,419,748

UNITED STATES PATENT OFFICE

2,419,748

HAND CARDING TOOL

John W. Weber and Charles R. Davies, Philadelphia, Pa., assignors to Proctor & Schwartz, Inc., Philadelphia, Pa., a corporation of Pennsylvania

Application June 8, 1944, Serial No. 539,257

2 Claims. (Cl. 15—186)

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This invention relates to a device for cleaning fibres from between and around the bases of the wires of card clothing, and from the spaces between and the gullets of the teeth of Garnett wire, on the cylinders, doffers, workers, strippers and other rolls of carding and Garnett machines, etc. The device of the present invention may also be used as a hand carding tool, if desired.

One object of the present invention is to provide a hand tool with a readily removable and replaceable sheet of card clothing; and to provide a rigid holder for said card clothing which may be collapsed to reduce its dimension in one direction, for effecting removal of the sheet of card clothing therefrom, and for replacement of the card clothing thereon, and in which relatively movable component elements of the rigid holder may be moved into relatively extended positions to increase the aforesaid dimension of the holding device, whereby the sheet of card clothing will be placed and held under tension in one direction, to present and maintain the wires of the card clothing on the holder in a stiff upright position for use.

Other features of the invention and the construction and operation thereof will be fully disclosed hereinafter, reference being had to the accompanying drawing of which:

Figs. 1 and 2 are respectively a plan view and end elevation showing the device ready for use; and

Fig. 3 is a view similar to Fig. 2 showing the device in collapsed form for replacement of the card clothing thereon.

The device comprises an arcuate base plate A, of general concavo-convex cross-sectional form, and which is composed of two similar half parts or sections *a1*, and *a2* pivotally connected together along inner longitudinal adjoining edges thereof, as by a hinge joint *a3*, in the form of a "piano" hinge.

Secured to the section *a1*, for example, of the arcuate base plate A is a handle 1 having lateral flanges 2, 2 through which, and the base plate section *a1*, pass rivets 3, 3. Obviously the handle 1 may be secured to the plate section *a1* by means of spot welding, etc., instead of the rivets 3 without departing from the spirit of the invention.

Secured to the base plate section *a2* is a bracket 5, which is provided with lateral flanges 6, 6 through which, and the plate *a2* pass rivets 7, 7. These rivets, like the rivets 3, may be replaced by spot welding or any other suitable means capable of producing a rigid connection between these elements.

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The bracket 5 is provided with an arm 8 which is drilled at 9 to receive and rotatably support a clamp screw 10. The screw 10 is adapted to enter a correspondingly threaded bore 11, formed in the handle 1.

Preferably the handle 1 is of hollow cast construction and may be composed of any suitable material, such as aluminium, plastic, etc. Inside the hollow handle structure a boss 12 is provided, in which the screw threaded bore 11 is formed.

In order to stiffen the base plate A from end to end, the sections *a1*, *a2* thereof, along their outer longitudinal marginal edges remotely situated with respect to the hinge joint *a3*, are provided with upwardly and inwardly turned flanges 15, 15. Open spaces or undercut grooves 16, 16 are provided between the inturned parts of the flanges 15, which are spaced from and run parallel to the underlying portion of the plates *a1* and *a2*, as the case may be.

Stretched over the under convex surface of the base plate A is a strip of leather, canvas or other suitable flexible backing material, in which are, in the usual manner, anchored the bases of the carding wire teeth *b*, *b*.

Along each of the opposite longitudinal edges of the backing sheet B is a substantially U-shaped clip 17, having one leg 18 secured, as by rivets 19, to the backing sheet B. Each clip 17 also includes a center cross portion 20, adapted to engage the outer flanged edge of the plate section *a1* or *a2*, as the case may be. Each clip 17 also includes a second leg 21, substantially parallel to the leg 18. The leg 21, in each instance, is provided with an inturned lip 22. These lips 22 are arranged to slide under the inturned lips 23 of the flanges 15 of the base plate A and into the spaces 16 formed by the inturned lips 23 on the backing plate A, and to interlock with said inturned flange lips, to provide an anchorage for each edge of the backing sheet B along the corresponding edge of the base plate A of the device.

In operation, the clamp screw 10 is backed out of the threaded boss 12 permitting the base plate A to break along its longitudinal center, about the pintle of the hinge joint *a3*, as clearly shown in Fig. 3. The clips 17, 17 may be removed from the flanged edges 15 of the sections *a1* and *a2*, of the base plate A, by moving said clips longitudinally, until the inturned lips 22 of the clips 17 are entirely removed from the locking grooves 16 in the flanged edges of the plates *a1* and *a2*.

The breaking of the base plate A at its center

produces slack in the backing sheet B of the carding cloth, making the release of the clips 17 from the flanged edges 15 of the plate sections *a*1 and *a*2 possible.

A new sheet of carding cloth may be readily applied by reversing the order, i. e. by slipping the lips 22 of the clips 17 into the locking grooves 16 and sliding the clips longitudinally of the plate A. After the clips 17 are in place the plate A is again straightened out from its collapsed condition shown in Fig. 3 to its normal extended condition shown in Fig. 2, which increases the distance between the opposite flanged edges 15, 15 of the plate A, which places the backing sheet B of the carding cloth under lateral tension and keeps the backing sheet B in firm, smooth, tight contact with the base plate A. The locking screw 10 is threaded into the boss 12 and tightened to retain and increase the tension placed on the backing sheet B by the lateral expansion of the base plate A.

We claim:

1. A hand tool comprising a base plate of concavo-convex cross-sectional form composed of two component sections hinged together intermediate opposite edges of said plate to afford lateral expansion and contraction thereof, a sheet of card clothing adapted to bear against the convex face of said plate under tension, means comprising inturned flanges on said plate edges and clips having inturned flanges secured to predetermined edges of said sheet and interlocking with the inturned flanges on said plate for securing said edges of said plate to said edges of said card clothing, and means for maintaining said plate in a laterally extended condition to maintain said card clothing under said tension.

2. A hand tool comprising a base plate composed of two sections hinged together intermediate opposite edges thereof, a sheet of card clothing adapted to bear against said plate under tension, means for securing said edges of said plate to corresponding edges of said card clothing, a handle element of predetermined length and having one end secured to one of said sections, a bracket element secured to the other of said sections and including a relatively short arm overlying a portion of said handle adjacent said base plate while exposing the remaining portion of the length of the handle for gripping the handle alone in using said tool, and a bolt rotatably mounted in one and threaded into the other of said elements adjacent said base plate for maintaining said plate in a laterally extended condition to maintain said card clothing under said tension.

JOHN W. WEBER.
CHARLES R. DAVIES.

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