



# UNITED STATES PATENT OFFICE.

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COMB-CLEANER.

1,237,268.

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*To all whom it may concern:*

Be it known that I, ADOLPH ABRAHAM, a citizen of the United States, residing at Rockford, in the county of Winnebago and State of Illinois, have invented certain new and useful Improvements in Comb-Cleaners, of which the following is a specification.

This invention contemplates an improved comb cleaner and has as its primary object to provide a device of this character which will be simple, durable, and efficient.

The invention has as a further object to provide a device of this character wherein the body of the cleaner will be formed from a single piece of material and will be provided with relatively long fingers adapted to yieldably support the cleaning element of the device.

And the invention has as a still further object to provide a construction wherein the said cleaning element will be formed from a single length of material wound about the fingers and wherein the fingers will be provided with terminal shoulders adapted to prevent the displacement of the cleaning element.

Other and incidental objects will appear as the description proceeds and in the drawings wherein I have illustrated the preferred embodiment of the invention and wherein similar reference characters designate corresponding parts throughout the several views,

Figure 1 is a perspective view of my improved device,

Fig. 2 is a fragmentary elevation particularly showing the mounting and character of the cleaning element employed,

Fig. 3 is a horizontal sectional view showing the arrangement of the cleaning element upon the fingers of the body portion of the device.

Fig. 4 is a plan view showing the manner in which the cleaning element is wound about the said fingers,

Fig. 5 is a fragmentary view particularly showing the shoulders terminally formed on the fingers and adapted to prevent the displacement of the cleaning element.

In carrying out my invention, I employ a substantially U-shaped body portion 10 which is preferably formed from a single piece of suitable resilient sheet metal and includes spaced substantially parallel arms 11 which are joined by a connecting por-

tion 12. Preferably, opposite longitudinal margins of the connecting portion 12 are rolled to form reinforcing flanges 13 whereby the said connecting portion is strengthened. Pressed into the arms 11, at points intermediate the ends thereof, are oppositely disposed substantially cylindrical sockets 14 adapted to receive the thumb and finger of one hand of the operator so that the device may be readily manipulated.

Formed on the outer extremities of the arms 11 are a plurality of longitudinally extending yieldable fingers 15 which are, as will be observed, relatively long and tapered toward their free ends, and are thus possessed of a considerable degree of resiliency. The fingers 15 upon the confronting sides thereof and adjacent the outer extremities of the said fingers, are notched transversely as particularly shown at 16 in Fig. 5 and are thence bent laterally and outwardly to provide terminal shoulders 17.

By notching the fingers as indicated, the outer terminals thereof may be readily bent to define laterally projecting shoulders 17, while the possibility of the breaking of the fingers, in being thus bent, will be reduced to a minimum, the said notches serving to sufficiently weaken the fingers to such degree that the outer terminals thereof may be readily directed laterally.

Coöperating with the fingers 15 of the body portion 10 of the device is a cleaning element indicated as a whole in Fig. 1 of the drawings at 18. This cleaning element is preferably formed from a single length of suitable resilient wire 19 preferably made up of a plurality of strands twisted together as more particularly shown in Fig. 2 of the drawings. In thus forming the wire 19 of twisted strands, the cleaning element 18 is provided with a roughened surface adapted to effectually engage between the teeth of a comb to remove foreign matter therefrom.

In connecting the wire 19 with the fingers 15, one extremity of the wire is secured to the finger A at one corner of one of the arms 11 as shown at 20 in Fig. 3 of the drawings, preferably by wrapping the said extremity of the wire one or more times around the said finger and then wrapping the contiguous end of the wire upon the wire itself. Reference will now be had to Figs. 3 and 4 wherein the disposition of the wire 19 upon the fingers 15 is clearly indicated, and for convenience, in describing the wind-

ing of the wire about the said fingers, the several fingers will be designated by letters in Fig. 3.

After being secured to the finger A in the manner just previously indicated, the wire is carried freely around the outer extremity of the finger B, arranged opposite the finger A, whence it is then returned and passed around the finger A. The free extremity of the wire is then carried freely around the finger C and is thence passed freely around the finger D arranged opposite the finger C, whence it is returned and passed around the finger C. From the finger C, the free extremity of the wire is then passed freely around the finger E and then around the finger F arranged opposite the finger E, whence it is returned to the finger E and then passed around the finger G. This winding is continued until the wire has been passed around all of the fingers of the device when the free terminal thereof is secured to the finger H arranged opposite the finger A upon the adjacent arm 11.

From the preceding description, and upon an examination of Fig. 4, it will be seen that the wire 19 is looped freely around corresponding figures of the arms 11 of the device to be returned to the initial finger whence it is extended across and looped over the finger immediately adjacent the initial finger. After having been so looped over the finger adjacent the initial finger, it is then looped around the finger corresponding therewith upon the opposite arm 11, this operation being continued until wire is passed around all of the fingers of the device.

This winding of the wire 19 has been found most convenient and efficient since, in passing the wire freely around all of the fingers of the device, the yieldable action of all of the said fingers tending to maintain the strands of the wire between the arms 11 taut, is fully utilized. The purpose in making the fingers 15 relatively long will now appear since the said fingers will thus be adapted to exert a considerable tension upon the cleaning element 18 for maintaining the strands thereof relatively taut. Furthermore, the arms 11 of the body portion 10 of

the device will cooperate with the fingers 15 in this regard, for maintaining the cleaning element 18 stretched.

It will now be seen that the shoulders 17 of the fingers 15 are adapted to engage the cleaning element 18 at the points thereof where it is looped around the said fingers to prevent the displacement of the cleaning element from the body portion of the device, as particularly shown in Fig. 2 of the drawings. Consequently, it will be seen that I provide a very simple and efficient construction for the purpose set forth. In use, the body portion of the device is grasped between the thumb and finger of one hand of the operator in the manner previously indicated and the strands of the cleaning element are passed between the teeth of the comb in the well known manner to effect the removal of any foreign matter from the comb.

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

1. A device of the character described including a body having spaced arms joined by a flat straight connecting portion with the arms provided at their outer extremities with fingers, and a cleaning element connected to said fingers to extend between the said arms with the arms and the said connecting portion of the body unobstructed to be received within a hand of an operator with the thumb and a finger of the hand embracing the said arms and with the bight of the body presented inwardly toward the hand.

2. A device of the character described including a substantially U-shaped body having spaced arms joined by a straight bight portion and provided with sockets, fingers formed at the outer extremities of said arms, and a cleaning element connected to said fingers to extend between the arms with the said arms and the bight of the said body unobstructed to be received within a hand of an operator with the thumb and a finger of the hand embracing the said arms for engagement in said sockets and with the bight of the body presented inwardly toward the hand.

In testimony whereof I affix my signature.  
ADOLPH ABRAHAM. [L. s.]