July 15, 1930. A. O. ENGBERG ET AL 1,770,749

ANIMAL CLEANING DEVICE

Filed June 25, 1928

FIG. 1.

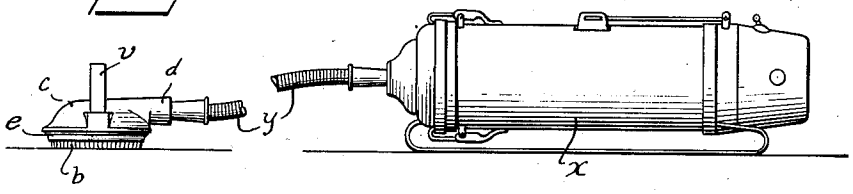


FIG. 2.

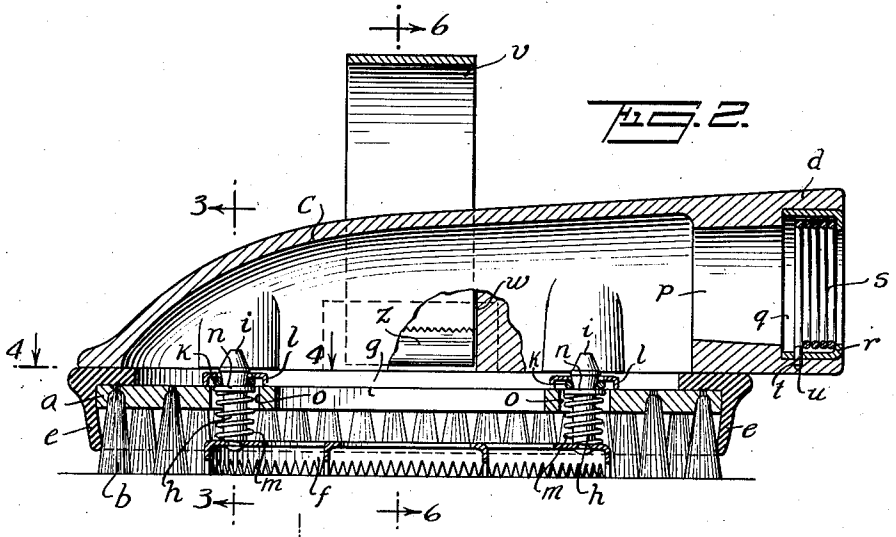


FIG. 4.

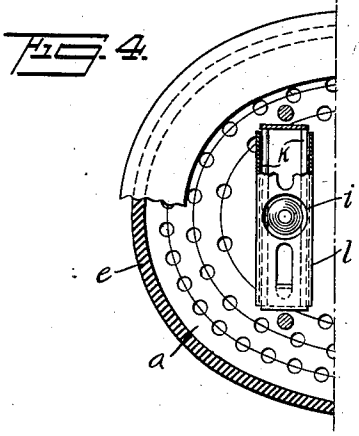


FIG. 3.

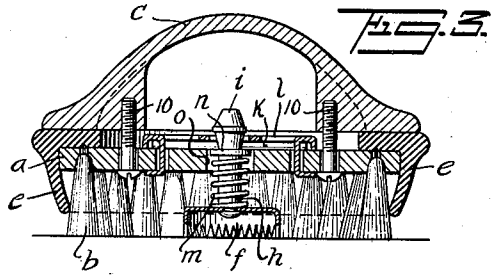


FIG. 6.

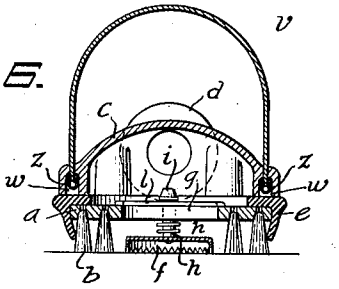
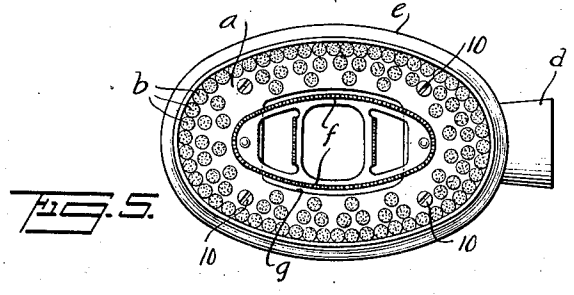


FIG. 5.



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UNITED STATES PATENT OFFICE

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ANIMAL-CLEANING DEVICE

Application filed June 25, 1928, Serial No. 288,188, and in Germany June 27, 1927.

The present invention relates to devices for cleaning animals and more particularly to such devices operating with the aid of air suction, as by being connected to dust suction apparatus.

One object of the invention is to provide a device for cleaning animals combining a brush with a resiliently mounted currycomb member. Another object of the invention is to provide an animal cleaning device having exchangeability of a currycomb member so that different kinds of currycomb members can be used with the same cleaning device. A still further object is to provide a cleaning device which includes brush bristles and a comb member wherein the comb member is tiltable relative to the body of the cleaning device. Still another object of the invention is to provide a combined currycomb, brush and air suction device in which the comb member is mounted so as to yieldingly engage the main portion of the device and to be yieldably severable therefrom and held resiliently spaced from the main portion of the cleaning device to permit movement of the comb member relative to such main portion.

The invention will be described with reference to the accompanying drawings, constituting part of this specification. Further objects and the nature and advantages of the invention will appear as the description proceeds.

On the drawings:—

Fig. 1 shows an animal cleaning device connected to a dust suction apparatus;

Fig. 2 is a vertical longitudinal section through the cleaning device;

Fig. 3 is a section taken on the line 3—3 of Fig. 2;

Fig. 4 is a partly sectional plan view taken on the line 4—4 of Fig. 2;

Fig. 5 is a view from underneath of the cleaning device; and

Fig. 6 is a transverse cross-section through the cleaning device taken on the line 6—6 of Fig. 2.

The cleaning device according to the invention comprises a brush plate *a* (Fig. 2) fitted around the edge with bristles *b* and to which a hollow casing or cover *c* is attached by means of screws 10. Cover *c* is formed with a tubular extension *d*. The end of an air hose *y* (Fig. 1) fits into extension *d* and connects the cleaning device with the suction apparatus *x*. Cover *c* may be moulded and is preferably made of insulating material. It may be made of other materials such as aluminum or aluminum alloys. Between the brush plate *a* and the edge of the casing *c* a ring-shaped rubber strip or rim member *e* is stretched over plate *a* and extends downwardly around the bristles for some distance. A currycomb member *f* having serrated edges is arranged beneath a centrally disposed opening *g* in the brush plate and is surrounded by bristles *b*.

One of the most important features of the invention lies in the manner of mounting the comb. The mounting is such that the comb is replaceable and also slightly resilient in order that the comb can readily conform to the body of the animal so that the skin will not be injured. In order to accomplish this, the comb is provided with a plurality of holding pins *h*. Each holding pin comprises a head *i*, of the shape of oppositely disposed cones, which is adapted to pass through a hairpin-like or snap spring *k* which is located above the brush plate *a* and held against the upper surface of the brush plate by a cap *l*. Around the shaft of the pin *h* is arranged a spring *m* which, when the parts are assembled, pushes a washer *n* upwardly against the hairpin spring *k*. As spring *k* is held in place by the cap *l*, it forms an upper abutment for the spring *m* and the resiliency of the comb *f* is thus determined by the elasticity of the spring *m*. Furthermore, a slight tilting movement is rendered possible by this construction in that the holes *o* through which the pins *h* pass are so much larger than the pins or the outside diameter of the springs that a certain amount of lateral play of the comb is possible.

The tubular extension *d* is provided with a cone-shaped bore *p* and a recess *q*. In this recess is fitted a flanged sleeve *r* which holds a spring *s* adapted to grip the conical connecting member of the suction tube *y*. The spring *s* and sleeve *r* are retained within the

recess *q* and one end of the spring is anchored therein by bending the end *t* radially outward and inserting it in a hole *u* in the wall of the tubular extension *d*.

The cover *c* has attached thereto a hand strap *v*. The cover *c* is formed with slots *w* at the places where the strap is to be connected. Slots *w* are of such size that the strap ends can pass through them and are of greater width at the bottom than the top. After the strap ends are pushed through the slots *w*, sharp edged tags or clips *z* which are wider than the width of the upper parts of slots *w* are attached thereto so that the two ends cannot be pulled upwardly out of the slots. The advantage of the arrangement is that the means of securing the strap is invisible and protected from injury. Furthermore, it is simple in construction and durable in use.

In order to facilitate the gripping of the tags *z* on the strap, they are provided with teeth.

It will be seen that the parts for holding the comb member *f* to the hollow member are yielding engageable and yieldably severable on drawing the comb member away from the hollow member and hold the comb member resiliently spaced from the hollow member to permit movement of the comb member relative to the hollow member.

While we have described one preferred form of the invention, it will be understood that the invention is not limited to the construction set forth, but is to be limited only by the scope of the appended claims taken in conjunction with the state of the prior art.

Having now particularly described and ascertained the nature of our said invention and in what manner the same is to be performed, we declare that what we claim is:

1. A combined currycomb, brush and air suction member comprising a hollow member adapted for flow of air therethrough, brush bristles secured in said member, a comb member and means for supporting said comb member on said hollow member comprising cooperating members yieldingly engageable and yieldably severable on drawing the comb member away from the hollow member and holding said comb member resiliently spaced from said hollow member to permit movement of the comb member relative to the hollow member.

2. A combined currycomb, brush and air suction member comprising a hollow casing having a tubular extension for connection to a source of reduced air pressure and having an open side, a plate connected to said casing on said open side having a centrally disposed opening, a comb member having serrated edges, means for supporting said comb member on said plate in front of said opening comprising cooperating members yieldingly engageable and yieldably severable on drawing the comb member away from the plate and holding said comb member resiliently spaced from said plate to permit movement of the comb member relative to the plate and bristles secured in said plate around said comb member.

3. A combined currycomb, brush and air suction member comprising a hollow casing having a tubular extension for connection to a source of reduced air pressure and having an open side, a plate connected to said casing on said open side having a centrally disposed opening, a comb member having serrated edges, means whereby said plate supports said comb member in front of said opening comprising pins secured to said comb members, said pins having heads, spring members carried by said plate adapted to receive said pins and to engage the pins under the heads and springs acting between said comb member and said plate and bristles secured in said plate around said comb member.

4. A combined currycomb, brush and air suction member comprising a hollow member adapted for flow of air therethrough, brush bristles secured in said member, a comb member and means for supporting said comb member on said hollow member comprising cooperating parts relatively movable in operation and holding said comb member resiliently spaced from said hollow member to permit movement of the comb member relative to the hollow member.

5. In an animal cleaning device, a hollow member adapted for flow of air therethrough, contact members extending outwardly from said hollow member to rest against the animal to be cleaned, a centrally disposed comb, said contact members being disposed around said comb and detachable means for connecting said comb to said hollow member, said detachable means including a part supported by said hollow member and a part supported by said comb, one of said parts consisting of a pin having a head and the other part including a spring member.

In testimony whereof we hereunto affix our signatures.

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