July 28, 1931. H. HERTZBERG 1,816,529

DRY MOP

Filed Feb. 27, 1929

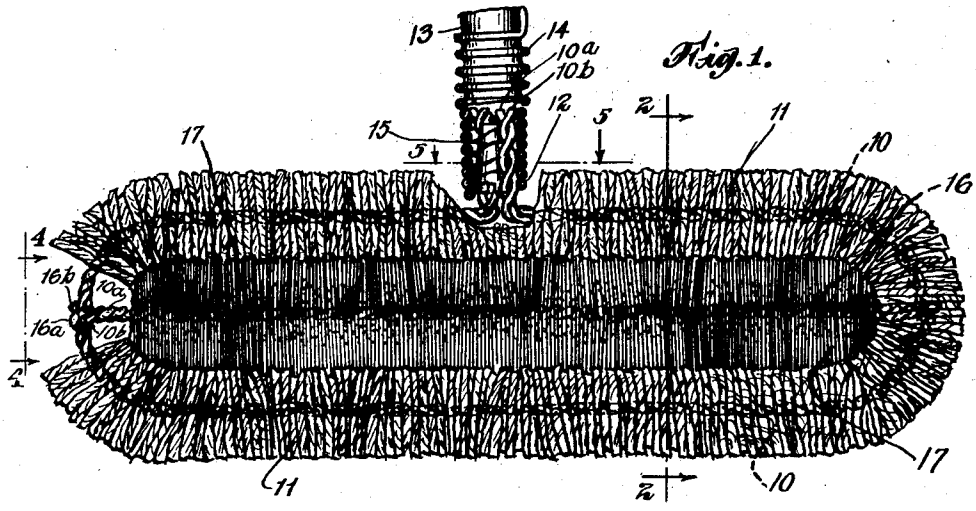


Fig. 1.

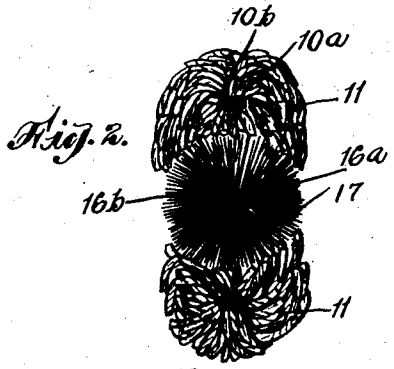


Fig. 2.



Fig. 4.

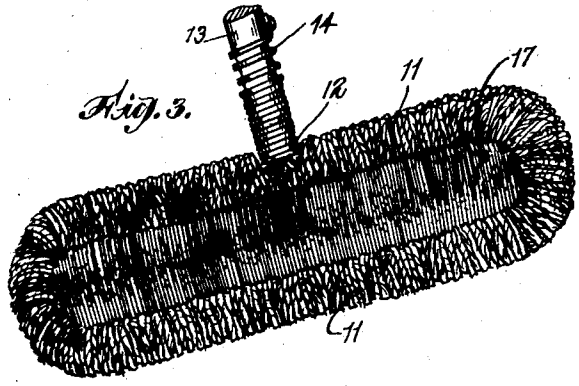


Fig. 3.

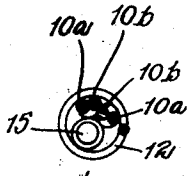


Fig. 5.

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Patented July 28, 1931 1,816,529

UNITED STATES PATENT OFFICE

HARRY HERTZBERG, OF BROOKLYN, NEW YORK

DRY MOP

Application filed February 27, 1929. Serial No. 343,073.

This invention relates to dry mops and dusters and particularly to that type of such implements which are intended for cleaning floors and walls in dry condition to remove dust particles adhering thereto.

It is the particular object of the present invention to provide an implement of this kind which performs the above stated operation in an improved manner and which prevents the dust removed thereby from being scattered about and from being deposited at other places.

With this and other objects in view the invention consists in a novel combination of cleaning materials of different character in the same mop, in a novel arrangement of details of construction as hereinafter more fully described and finally pointed out in the appended claims and as illustrated in the drawings which form a material part of this disclosure and in which:

Fig. 1 is a front elevation of my dry mop from which parts of the cleaning material are removed to show the frame construction.

Fig. 2 is a sectional elevation on line 2—2 of Fig. 1.

Fig. 3 is a perspective view of my dry mop.

Fig. 4 is a detail side elevation of the frame joint at 4—4 of Fig. 1.

Fig. 5 is a detail sectional plan on lines 5—5 of Fig. 1.

Referring to the drawings, 10 is a mop frame having the shape of an elongated loop consisting of two wire strands 10*a* and 10*b* twisted about each other and holding mop material 11 of an absorbent nature, as cords of wool or cotton, between the twisted wire strands. The free ends of the loop-forming wires 10 are held within the tubular portion at one end of a helical coil of wire 12 while the opposite end 14 of said coil is adapted to hold a mop stick 13. The wire ends 10 are preferably held in coil 12 by means of a screw 15 which presses them against the turns of said coil as shown in Figs. 1 and 5. The wires 10 and 10*a* are separated from each other at the center of the curved opposite ends of the loop to form ring-like apertures in the frame as shown in Fig. 4. These apertures accommodate the ends of a second pair of twisted wire strands 16 which hold clamped between their turns brush material 17 of a harder and non-absorbent kind adapted for a sharp cleaning action as stiff bristles, or vegetable fiber as piassava or the like. These fibers radiate from the stem formed by wires 16 and form a cylindrical brush around them which occupies the otherwise open interior space of loop 10. The ends of the horizontal wire stem 16 being journalled in the apertures formed by loop strands 10*a* and 10*b* can be rotated therein but preferably the stem 16 is locked to the loop by bending ends 16*a* and 16*b* around wires 10*a* and 10*b*.

The cleaning action of this dry mop differs considerably from that of similar devices and is particularly efficient for cleaning painted walls. On surfaces of this kind dust particles are held tightly by mass—or electrical attraction. A mop or soft or absorbent material is not sharp enough to loosen these particles from the wall and a brush of bristles or the like which is capable of loosening them distributes the dust upon neighboring wall portions by which they are quickly attracted. It is therefore quite evident that neither a brush nor a mop can furnish a thorough and efficient cleaning action. My invention remedies this defect by the combined action of the brush 17 of sharp and stiff material which loosens the dust efficiently from the wall and of the absorbent soft material 11 which completely surrounds brush 17 to which these particles cling before they can escape to be redeposited upon other places. This action is further improved by the action of static electricity which is generated by friction of the bristles and mop material against the wall. By this friction the wall receives a negative electric charge—particularly when covered with resinous paint. The bristles of the brush remain approximately neutral electrically and the soft woolly mop material receives a positive electric charge in accordance with their electrostatic qualities. It is therefore quite clear that dust particles which are loosened from the wall surface by the mechanical action of the bristles are strongly attracted by the positively charged mop material while they are repelled from the wall and in lesser degree

from the bristles of the brush. No such improved action could take place if the brush and surrounding material had the same mechanical or electrical qualities. The resiliency of the coiled spring holder 12 allows the plane of loop 10 to adjust itself parallel to a wall or other surface under a light pressure, while the handle 13 forms different angles therewith so that no opening for the escape of dust is available. It is another advantage of the manner of mounting brush 17 that when its exposed faces are used up or dirty, it may be rotated 90 degrees in frame 11 after loosening ends 16*a* and 16*b*, whereby a new cleaning portion is exposed and it may be locked again by rebending the ends 16*a* and 16*b* around 10*a* and 10 *b*.

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

1. A mop head comprising a handle engaging part, a mop handle, a looped frame held by the handle engaging part, soft, absorbent mop material on said frame, a shaft traversing said loop having its ends fastened thereto perpendicularly to said mop handle and bristles adapted for sharp cleaning action on said shaft within the hollow portion of said loop.

2. A mop head comprising a handle engaging part, a mop supporting member attached thereto, limp and absorbent mop material carried by said supporting member and a brush consisting of stiff cleaning material held on said supporting member within the central part of said loop and surrounded by said absorbent material.

3. A mop comprising a mop holder, a mop head held thereby, said head comprising a looped frame supporting mop material, bearings formed by said frame at opposite sides of said looped frame, a shaft mounted in said bearings, bristles on said shaft forming a brush within said frame and means to lock the ends of said shaft to said frame.

4. In a mop head the combination of a shaft having stiff cleaning material radiating therefrom forming a cylindrical brush, a loop of wire strands holding soft dusting material intertwisted therebetween, opposite ends of said shaft being held by said wire strands at diametrically opposite places of said loop, said soft material encompassing the stiff cleaning material on said shaft and clinging closely thereto.

Signed at Brooklyn, in the county of Kings and State of New York this 23d day of February A. D. 1929.

HARRY HERTZBERG.