June 9, 1936. H. J. LAY 2,043,758

STREET PUSH BROOM

Filed Sept. 13, 1935

Fig. 1.

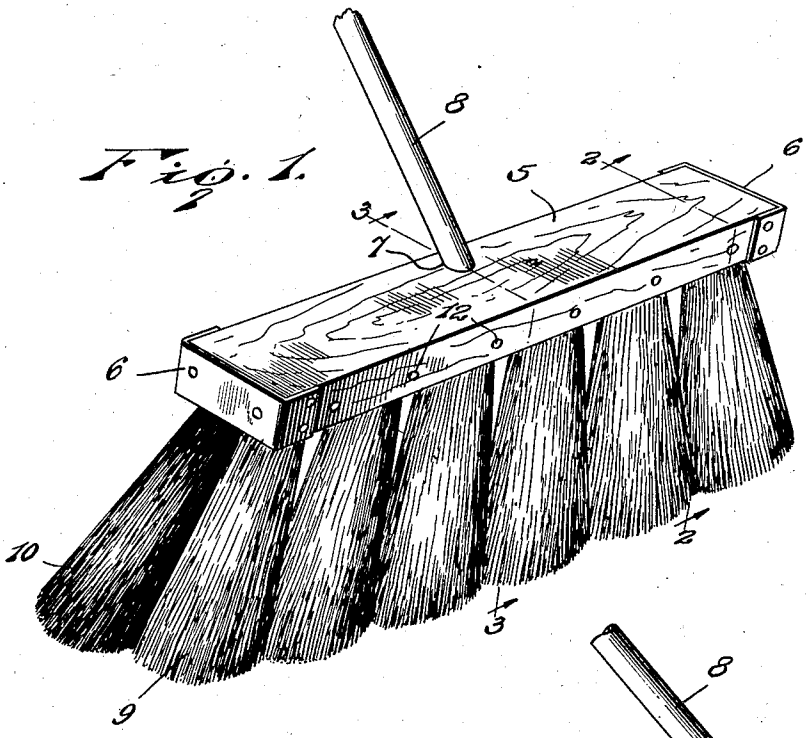


Fig. 2.

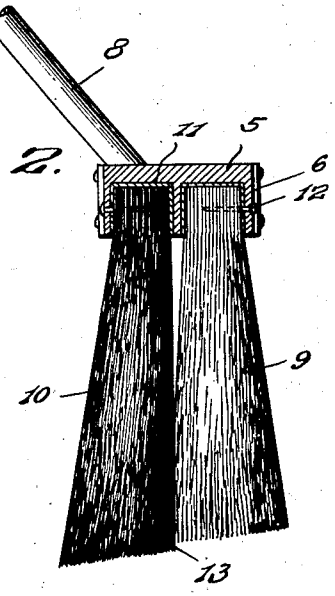
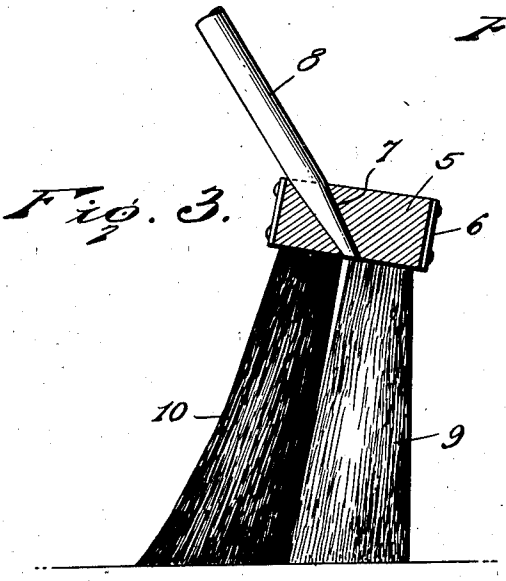


Fig. 3.



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STREET PUSH BROOM

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3 Claims. (Cl. 15—159)

This invention relates to brooms and more particularly to street gutter brooms of the push type.

With street brooms of the push type as now constructed and in general use, considerable difficulty is experienced in sweeping fine as well as coarse particles of dirt at one operation owing to the fact that the bristles or fibers of the broom head are generally relatively stiff and of uniform size and density throughout the entire effective brushing area of the broom head with the result that while the stiff bristles or fibers will move the heavy dirt particles or refuse in the act of sweeping, the fine material or dirt particles will not be affected thereby. This necessitates the use of two brooms if a thoroughly clean surface is desired, one for moving heavy particles and the other for moving fine particles which dual operation not only increases the cost of equipment of a street cleaning department but likewise prolongs and increases the labor of the street sweeper.

The object of the present invention, therefore, is to overcome these objectionable features and to provide a push broom, certain of the bristles or fibers of which are relatively stiff and coarse and others relatively fine so that as the broom is pushed over a gutter or other surface to be cleaned, the forward row of coarse bristles will loosen and move the heavy particles of dirt while the rear row of finer bristles will loosen and move the finer material with the result that both fine and coarse material may be removed from the gutter at one sweeping operation and thereby eliminate the use of an extra broom and consequently reduce the cost of equipment and labor.

A further object of the invention is to provide a push broom having relatively coarse and fine bristles mounted in the head thereof with the coarse bristles arranged in advance of the fine bristles and of a length shorter than the fine bristles so that when the broom is supported at the proper angle for sweeping purposes and a slight downward pressure is exerted on the head of the broom in the act of sweeping, the lower ends of the fine bristles will be flexed rearwardly thus causing the active ends of both sets of bristles to aline horizontally on the surface to be cleaned and all fine particles of dirt not acted upon by the coarse bristles will be loosened and moved by the relatively fine rear bristles and a thorough cleaning of the gutter or other surface operated upon effected.

Further objects and advantages will appear in the accompanying specification, in which similar numerals of reference indicate corresponding parts in all the figures of the drawing:

Figure 1 is a perspective view of a street gutter broom of the push type constructed in accordance with the present invention.

Figure 2 is a transverse sectional view showing the normal position of the relatively coarse and fine brushing tufts.

Figure 3 is a similar view showing the position of the tufts in the act of sweeping.

The improved broom forming the subject-matter of the present invention is of the push type and comprises a head 5 preferably oblong in shape and formed of wood or other suitable material, the ends of the head being preferably reinforced and strengthened by metallic bands 6. Formed in the central portion of the head 5 is a diagonally disposed tapered opening 7 which constitutes a socket for the reception of the correspondingly tapered end of an operating handle 8 by means of which the broom may be pushed over a gutter or other surface to be cleaned. Depending from the head 5 and secured thereto in any suitable manner are front and rear rows of brushing tufts 9 and 10. The forward brushing tufts 9 are made from relatively coarse stiff bristles or fibers and said tufts are designed to remove heavy dirt particles or refuse while the rear tufts 10 are made from relatively fine bristles or fibers and are adapted to remove fine particles of dirt and other material not acted upon by the forward coarse brushing tufts. The upper ends of the tufts 9 and 10 are compressed and fitted in sockets or seats 11 formed in the lower face of the head 5 and may be secured therein in any suitable manner as by cementing and driving nails or similar fastening devices 12 within the sockets and in engagement with the compressed ends of the tufts. It will be understood, however, that these tufts may be secured within the head in any suitable manner and it is not desired to limit the invention in this respect. The lower ends of the fibers constituting the forward tufts 9 terminate short of the lower ends of the fibers constituting the tufts 10 so that when the broom is not in use the lower ends of the tufts will be offset with respect to each other to form a step 13. In other words, the lower ends of the tufts 10 normally project below the lower ends of the tufts 9 so that when the broom is placed at the proper angle for sweeping purposes and a slight downward pressure exerted on the handle 8, the lower projecting ends of the fine tufts 10 will be flexed or deflected rearwardly and cause the ends of both sets of tufts to lie in the same horizontal

plane and thus present a substantially smooth surface to the ground.

In using the broom, the head thereof is supported at the angle shown in Figure 3 of the drawing and the brush head pushed over the surface to be cleaned in the usual manner by means of the handle 8. On the initial forward movement of the brush head, heavy particles of material and refuse will be loosened and moved by the row of coarse tufts 9 and all fine particles too small to be acted upon by the coarse tufts 9 will be acted upon by the fine fibers of the tufts 10 so that a gutter or other surface may be thoroughly cleaned at one operation of the broom. Inasmuch as the tufts 10 of fine material project below the ends of the tufts 9 of coarse material, when the broom is in use the flexing of the lower ends of the fine fibers of the tufts 10 will exert a slight tension on the surface being cleaned so that all of the finer particles of dirt and refuse are thoroughly removed and the gutter left in a clean sanitary condition. The tufts of brooms now in general use are of uniform stiffness and density with the result that only the coarse material and refuse is removed in the act of sweeping and if it is desired to thoroughly clean a gutter it is necessary to go over the partially cleaned surface with another broom having fine bristles. The present invention provides a broom by means of which both the coarse and fine particles of material are removed at one operation, thereby not only effecting a saving in the cost of brooms for a street cleaning department, but also decreasing the time and labor of the street sweeper.

Any style or type of bristles or fibers for the tufts may be employed and any desired number of rows of tufts used, it being essential, however, that the tufts of fine bristles be arranged at the rear of the tufts of coarse bristles so that said fine bristles will remove any particles of dirt not acted upon by the coarse bristles. It will, of course, be understood that the brooms may be made in different sizes and shapes and constructed of any suitable material without departing from the spirit of the invention.

Having thus described the invention, what is claimed as new is:

1. A broom of the push type comprising a head, an unobstructed row of brushing tufts of relatively coarse material depending from the head along the forward portion thereof and adapted to initially and directly engage and move material forwardly when the broom is pushed in a forward direction, and a row of tufts of relatively fine material depending from the head back of the coarse tufts for subsequently engaging and moving forwardly material not acted upon and carried forwardly by said coarse tufts.

2. A broom of the push type comprising a head, front and rear rows of brushing tufts depending from the head, the front row of tufts being of relatively coarse material and adapted to initially and directly engage and move material when the broom is pushed in a forward direction and the tufts of the rear row being formed of relatively fine material and longer than the tufts of the front row to form a pronounced step at approximately the center of the working surface of the broom.

3. A broom of the push type comprising a head, front and rear rows of brushing tufts depending from the head, the front row of tufts being formed of relatively coarse material and the rear row of tufts being formed of finer material with the lower end portions of the rear row of tufts extended below the lower ends of the front row of tufts to form a step whereby when the broom is in use the stepped ends of the rear row of tufts will be deflected rearwardly and upwardly and exert a tension on the surface to be cleaned thereby to move all fine particles of material not acted upon by the coarse brushing tufts.

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