(No Model.)

G. M. BENNETT.

COMBINED SCRUBBING AND SWEEPING MACHINE.

No. 479,616. Patented July 26, 1892.

Fig. I.

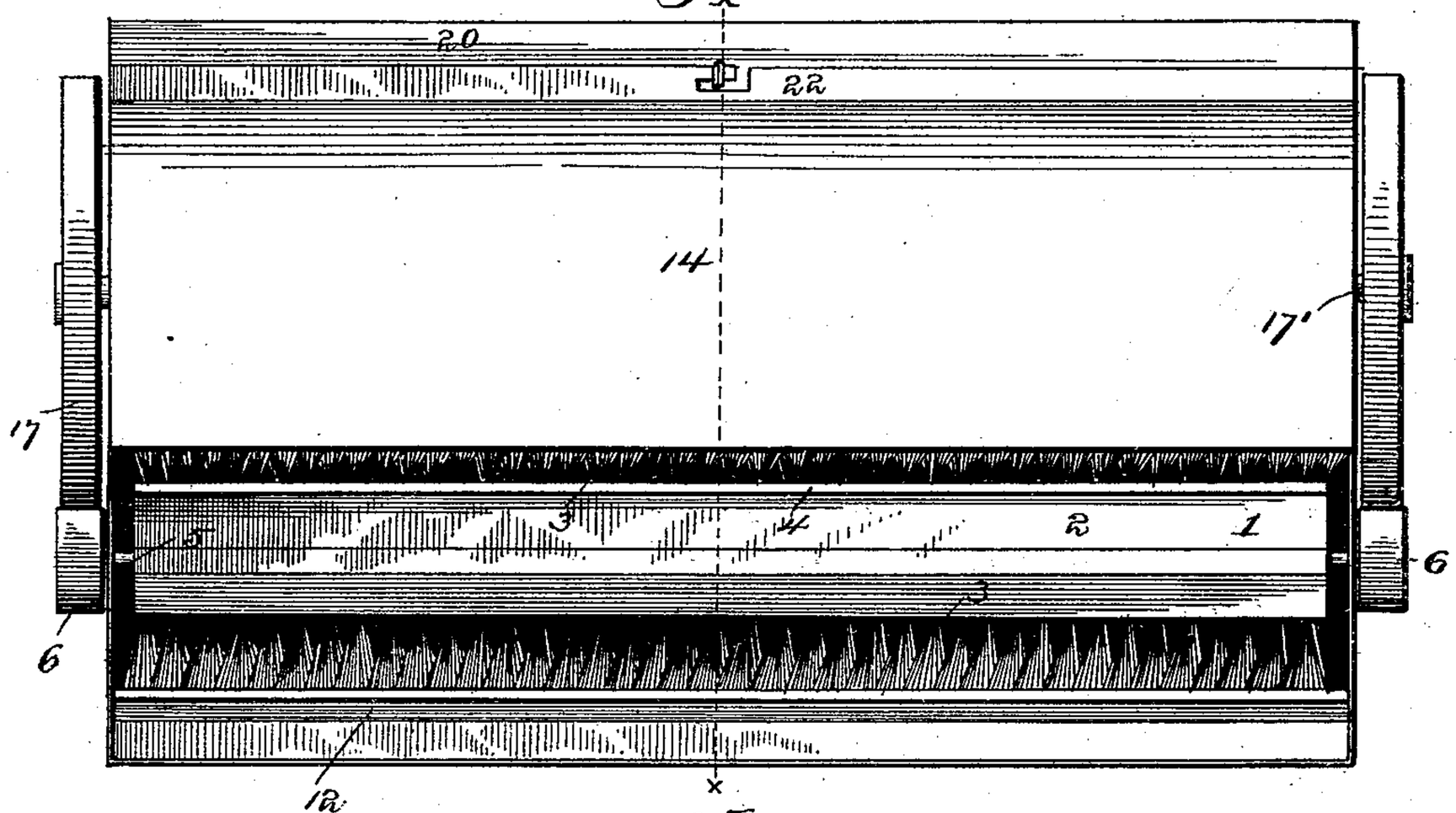


Fig. II.

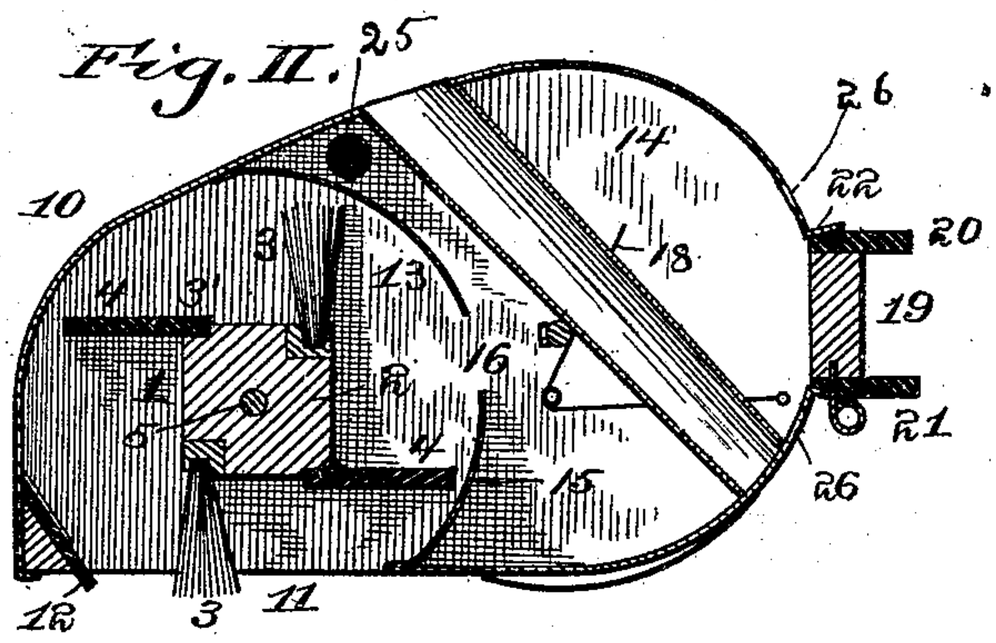
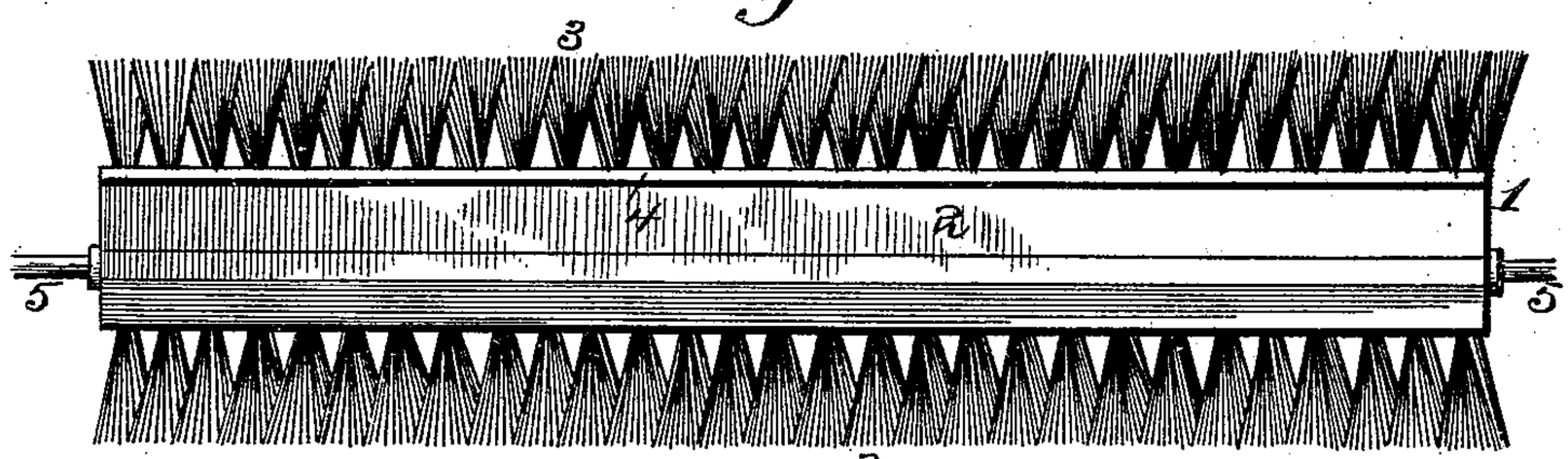


Fig. III.



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UNITED STATES PATENT OFFICE.

GEORGE M. BENNETT, OF BURLINGTON, IOWA.

COMBINED SCRUBBING AND SWEEPING MACHINE.

SPECIFICATION forming part of Letters Patent No. 479,616, dated July 26, 1892.

Application filed March 21, 1891. Serial No. 385,846. (No model.)

To all whom it may concern:

Be it known that I, GEORGE M. BENNETT, a citizen of the United States, residing at Burlington, in the county of Des Moines and State of Iowa, have invented certain new and useful Improvements in a Combined Scrubbing and Sweeping Machine; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in a combined scrubbing and sweeping machine; and the object of the invention is to provide a simple, inexpensive, and durable machine which is equally adapted for taking up unclean water and washings from a floor after it has been scrubbed or mopped and for sweeping carpets without change in the construction of the operating parts to adapt the machine to its different uses.

With these ends in view the invention consists in a rotary brush-roll having its working surface formed by alternate strips and bristles, which are arranged in the tangents of a circle with the axis of the brush-roll as a center.

The invention further consists in the peculiar construction and combination of parts, as will be hereinafter fully explained.

To enable others to more readily understand my improvements, I have illustrated the same in the accompanying drawings, in which—

Figure I is a bottom plan view of the machine. Fig. II is a vertical transverse section thereof on the plane indicated by the dotted line *x x* of Fig. I. Fig. III is a detail view of the brush-roll removed from the machine.

Like numerals of reference denote corresponding parts in all the figures of the drawings.

To enable the machine to be used equally as well for taking up unclean water and washings from a floor after it has been scrubbed as for sweeping carpeted floors, I resort to a novel form of brush, which is peculiarly constructed to adapt it to thoroughly and efficiently perform the service required of it. The brush comprises a longitudinal core or brush-roll 2, the brushes 3, and the flexible or pliable strips 4, arranged between two adjacent series of bristles 3. The core or roll 2 is polygonal in cross-section, preferably square, or it may be hexagonal or octagonal, according to the number of strips or bristles it is desired or convenient to employ, and said strips and bristles are arranged in planes corresponding to the tangent of a circle with the axis of the core or roll as the center of such circle. Each strip and each series of bristles extend longitudinally of the polygonal core or roll, and they are received or fixed to the core at or near the angles formed by the flat faces of such core. The flexible strips, which are preferably of rubber, are rigidly and firmly secured at one edge to the core by staples or in any preferred manner, and the strips are fastened in rigid battens 3′, which are fixed in recesses in the core flush with the surface thereof, and fastened in place by suitable means. The strips and bristles extend equally from the brush core or roll, so as to uniformly bear or press against the floor.

I have found by experiments with a machine having a brush constructed as herein described that the unclean water, washings, dust, dirt, &c., are thoroughly lifted or elevated by the bristles and strips into a suitable receptacle, and that the tangential arrangement of such bristles and strips effects the cleaning or sweeping of the floor to much better advantage and with more thoroughness and certainty than a brush having radial bristles. The brush has a shaft 5, or trunnions may be provided at the ends of the core, and the ends of said shaft or the trunnions are extended beyond the core a sufficient distance to fit in the bearings in a casing and to receive the driving-rolls 6, one of which is provided at each end of the brush. The brush is arranged longitudinally in a case 10, which is provided with a longitudinal slot or opening 11 in the lower side thereof, through which slot the bristles and strips project as the brush is rotated to contact with the floor or carpet. On one side of this opening or slot 11 in the bottom of the case 10 a flexible strip 12 is provided, which depends below the case and is dragged over the floor to prevent the washings or sweepings from escaping from the casing. The casing is divided longitudinally into two compartments 13 14 by a longitudinal fixed partition 15, arranged on one side of the slot 11 opposite to the strip 12, and this partition is curved somewhat to conform to

the brush, and it is joined to the top of the casing, said partition having a longitudinal slot 16, which connects the two compartments 13 14, into which the casing is divided by the partition 11. In one of these compartments 13 the brush 1 is arranged, and the sweepings and washings lifted by the brush in its rotations ascend the curved partition 15 and pass through the slot 16 into the compartments 14, which form a receptacle for such sweepings or washings. The casing is supported by the carrying-rolls 17 of comparatively large diameter, which are arranged on the outside of the casing to rest upon the floor and be turned by frictional contact therewith as the machine is pushed or drawn over the floor. The carrying-wheels are mounted on the ends of a shaft 17′, which is journaled in the end walls of the casing and extends through the compartment or receptacle 14 therein, and on the inside of this compartment 14 are arranged brake-springs 18, which are fixed to the ends of the casing and are designed to bear or impinge upon the axle or shaft to retard in a measure the free rotation thereof, and thereby compel the operator to use force or pressure on the handle to insure considerable friction on the carrying-wheels, and thus press the machine firmly upon the floor, which is especially advantageous when scrubbing the floor.

The carrying-wheels 17 and the drive-rolls of the brush are faced with rubber or other suitable material to insure good frictional contact, and said wheels and rolls are arranged to bear upon each other to cause the brush to be rotated by the drive-wheels as the machine is drawn or pushed over the floor.

A flap or door 19 is provided to the compartment or receptacle 14 on one side of the case 10 to enable the sweepings or washings to be emptied, and this flap is hinged to the casing and its free edge confined in place by a suitable catch or fastening. On the outside of the hinged flap or door I provide the parallel flexible strips 20 21, which are suitably fastened in place to the edges of the flap, which is received snugly between flanges 22 of the shelter-casing.

The machine may be inverted by turning the handle 23 thereof to adapt the strips 20 21 to be used as scrubbers to wash the floor, after which the brush can be brought into play or use to take up the unclean water or washings.

The operation and advantages of my invention will be readily understood and appreciated by those skilled in the art to which the invention relates from the foregoing description, taken in connection with the drawings.

I am aware that modifications in the form and proportion of parts and details of construction of the mechanism herein shown and described as an embodiment of my invention can be made without departing from the spirit or sacrificing the advantages of my invention, and I therefore reserve the right to make such alterations as fairly fall within the scope of my invention.

In the side walls of the casing in a plane immediately above the curved longitudinal partition I provide openings or holes 25, through which water can be poured to fill the receptacle when used for scrubbing purposes, and suitable holes or openings 26 are also provided for feeding the scrubber, said openings being provided in the casing below the strip 19 for sprinkling purposes.

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

1. A portable scrubbing and sweeping machine consisting, essentially, of the perforated wheeled casing having the interior receptacle, the brush having the polygonal core and the alternative bristles and moppers, which are secured to the angles or corners of said core and lie tangentially to the axis of the same, and means for positively rotating the brush, substantially as described.

2. In a portable scrubbing and sweeping machine, the brush consisting of the polygonal core 2 and the alternate moppers and bristles 4 3, secured to said core at its angles or corners and arranged tangentially to the axis of the same, substantially as and for the purpose described.

3. In a portable scrubbing and sweeping machine, a brush comprising a polygonal core having the longitudinal recesses in its faces near the corners or angles thereof, the battens secured in said recesses and having the series of tangential bristles united thereto, and the flexible tangential mopper-strips fastened to the core between the series of bristles, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

GEORGE M. BENNETT.

Witnesses:
JOHN. S. WERTZ,
J. T. BELL.