(No Model.)

J. S. WHITE.

BRISTLE WASHING MACHINE.

No. 282,940. Patented Aug. 7, 1883.

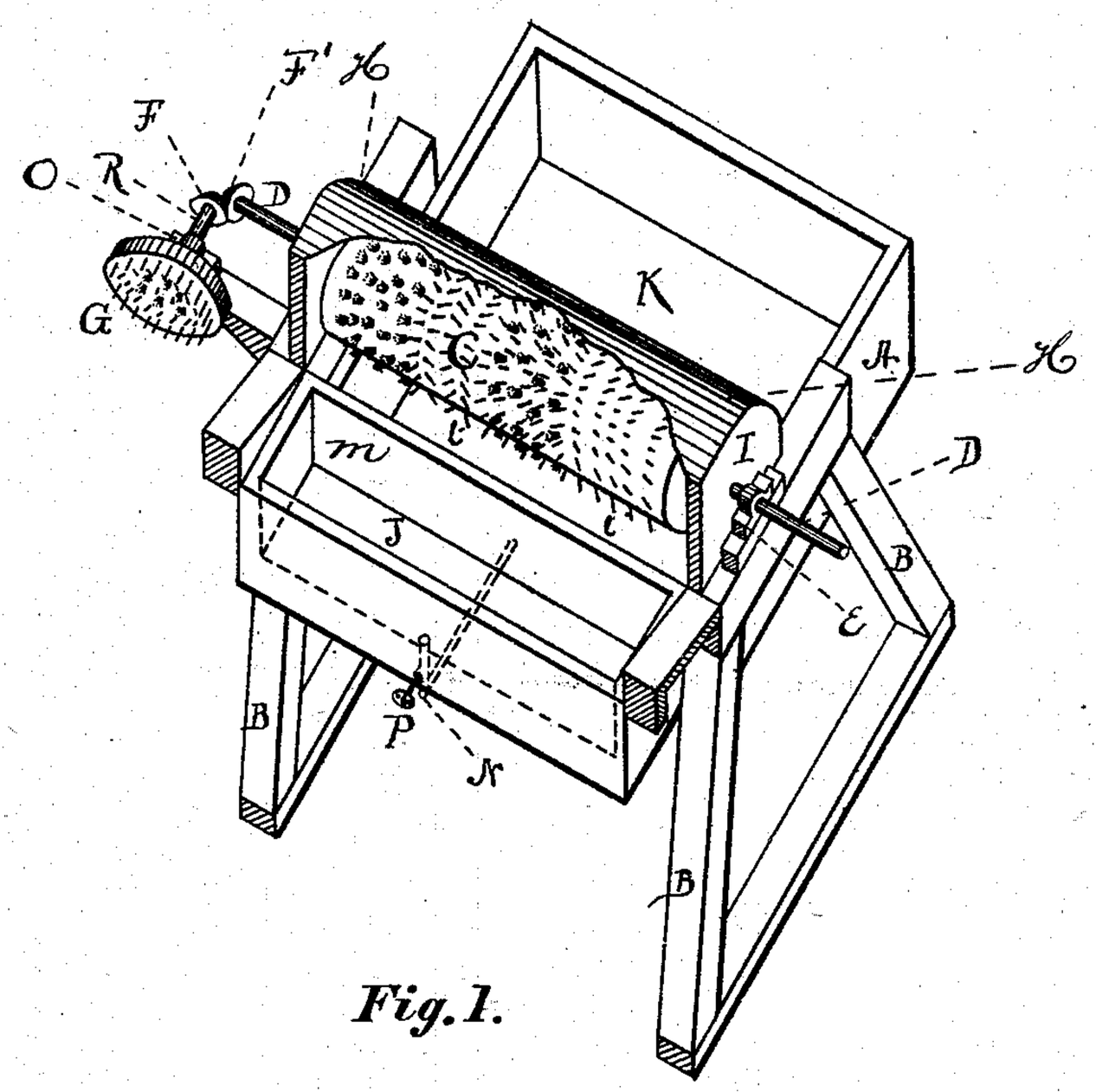
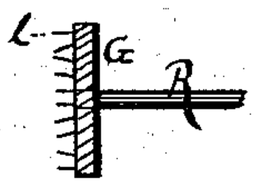


Fig. 1.

Fig. 2.



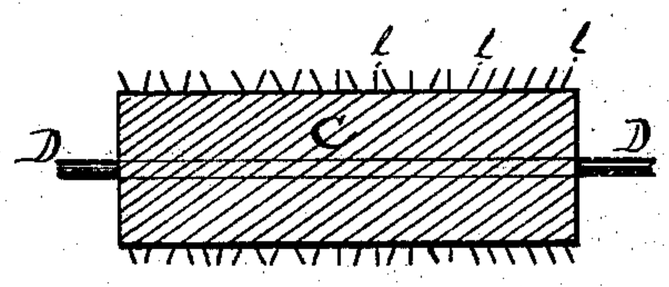


Fig. 3.

Witnesses:
John F. Barrett
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UNITED STATES PATENT OFFICE.

JOHN S. WHITE, OF PORTLAND, MAINE.

BRISTLE-WASHING MACHINE.

SPECIFICATION forming part of Letters Patent No. 282,940, dated August 7, 1883.

Application filed January 27, 1883. (No model.)

To all whom it may concern:

Be it known that I, JOHN S. WHITE, residing in Portland, in the county of Cumberland and State of Maine, have invented certain new and useful Improvements in Bristle-Washing Machines; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to a bristle washing and cleaning device, and is illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view. Fig. 2 is a detail of a disk, and Fig. 3 is a sectional detail of the washing-cylinder.

Similar letters of reference indicate corresponding parts.

The subject of this invention is a new and ingenious mechanical contrivance organized for the purpose of cleaning and washing that class of bristles used in manufacturing brushes—for example, paint-brushes; and the novelty consists in the construction and combination of the several parts of my device, all as will now be more fully set out and explained.

In the drawings accompanying this specification, A is the water-tank or casing of my bristle-washing machine.

B B are the standards or legs which support the water-tank A.

C is the washing-cylinder.

D is a supporting shaft or spindle, running through the cylinder C.

E E are bearings in which the cylinder-shaft turns.

F F′ are cog-wheels.

G is a washing and cleaning disk.

H is a shield or guard over the washing-cylinder.

I I are pieces to support the shield.

J and K are divisions of the water-tank. Other parts will be introduced in the more extended and specific description of the construction and application of the above-enumerated parts.

The water-tank A is made of any convenient size and shape. At the ends it is attached to standards B B, which are of sufficient length to raise the water-tank high enough from the floor to permit free action of the operator. The tank A is made water-tight to prevent leakage of its contained liquid substances. The bearings E E, which rest upon the top rails of the supporting frame-work, serve as convenient bearing-points for the cylinder-spindle D.

The cylinder and its attached devices constitute the chief feature of my invention. The circumference of the cylinder is filled with stiff projecting points or fingers. When the cylinder is in revolution, the office of the projecting points is to work in and through a mass of bristles held against them, and thoroughly remove the foreign substances adhering to the bristles. The projections used on the periphery of the cylinder C may be of various kinds. I have found, however, by a series of practical experiments, that a cylinder provided with projections as follows will produce the most desirable results.

l l represents rows or series of metallic fingers projecting from the circumference of the washing-cylinder. These fingers are set on an angle with the cylinder.

In the use of my device the washing-cylinder C is revolved by power applied to the supporting-spindle D. The tank or sink A has a partition, M, which divides the same into two tanks, J K. The tank J is raised a little above the tank K. The tank J is intended to hold hot water for soaking the bristles previous to washing them. When necessary, the tank K can be used for the same purpose, and a supply of water can be fed from the tank J to the tank K by means of the tube N, the flow being regulated by the stop-cock P. Ordinarily the small tank, J, will be large enough to hold in bath sufficient bristles to supply the machine.

To keep the water from spattering and flying about when the cylinder is in operation, a guard or shield, H, is placed over the cylinder, being supported by the side pieces, I I.

The operations of my bristle washing-machine are as follows: The operator takes the bristles, which have been previously soaked in hot water in the tank or sink J, as many as he can conveniently grasp, holding them by the butt-ends. The flag ends of the bristles are then pressed up to the cylinder, so that the projecting fingers or points *l* can play between

them and beat or whip off all foreign substances. After undergoing this operation the bristles are pure and clean and ready to be manufactured into brushes. Experiments have demonstrated that with the fingers *l* set straight—that is to say, at right angles to the periphery of the cylinder—very good results can be obtained. Still with the fingers set on an angle far better results are achieved. The reason of this is that when the fingers are straight they pass too readily through the bristle ends; but when they are on an angle they strike across the bristle ends, whipping and beating them, and in a very short period of time thoroughly remove all dirt and filth.

In the use of stiff points or fingers for the purposes specified, I do not confine myself to any particular style or material. The points can be made of tufts of stiff hair or bristles, or they can be made of wood, or rubber, or metal. All that is necessary is that the points should be stiff and stout, so that they can efficiently perform the work of whipping the dirt from the ends of the bristles. For general use I prefer the use of metallic points, as they are rigid, less likely to be broken, and easily replaced if they are accidentally displaced.

Under certain circumstances it may be more desirable to wash the bristles by rotating the fingers through the bristle ends. To provide for this contingency I have made and attached to the machine a disk, G, which has points, the same as those used on the cylinder C, set upon its face. This disk revolves at the end of a spindle, R, which finds a journal-bearing at O. Motion is communicated to the disk by means of a cog-wheel, F, on the end of the spindle R, which meshes with a cog-wheel, F′, on the end of the spindle D. The field of application for a machine organized as my invention is very wide.

Heretofore it has been the practice in brush factories to wash and clean brush-bristles by a process identical with washing clothes, a tub and wash-board being the implements used. This process has always proved very slow and laborious, requiring in large factories the services of many operators.

With my improvement in the process of cleaning bristles one man and machine will prepare and clean in one day more bristles than many men could in the same time by the old process.

I am aware that machines have been publicly described, but not to my knowledge ever practically used, in which the bristles were first confined in a clamp which rotated within a cylindrical box or casing, the said casing being provided with different devices for the flag ends of the bristles to strike against. Such is not my invention. My invention is designed to be more rapid and efficient in its operations. With my machine the attendant is not obliged to stop and fill a clamp with bristles, but simply takes from the tank or sink J a handful of soaked bristles and holds them up to the rapidly-rotating cylinder C, by the action of which they are quickly freed from all foreign substances. As soon as the first handful of bristles is pure and clean the bristles are placed upon proper drying-racks, and another handful is subjected to the operations of the machine.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a machine for treating brush-bristles to render them clean and free from all impurities, the combination, with a tank or sink, A, for containing hot water or other liquid substances, said tank or sink being divided by a partition, M, into two tanks or sinks, J and K, with means for feeding the liquid substances from one sink to the other, and a shield, H, to prevent the spattering of liquid substances, as described, of a rotating cylinder, C, provided with series or rows of projecting fingers *l*, adapted to remove all dirt, impurities, or foreign substances from the bristles, which have been previously softened by bathing, substantially as set forth.

2. The herein-described machine for treating bristles to render them clean and pure, consisting, essentially, of the tank A, for containing liquid substances, supported by standards B B, bearings E E, supporting spindle D, carrying a cylinder, C, provided with fingers *l* for removing surplus impurities from brush-bristles, and shield H over the cylinder C, spindle D, and disk G, and operating devices, the whole combined and adapted to operate substantially as described.

In testimony that I claim the foregoing as my own I have affixed my signature in the presence of two witnesses.

JOHN STAPLES WHITE.

Witnesses:
NATHAN GOOLD,
ROBERT G. BRIGGS.