(No Model.)

J. FROSSARD.

ROTARY BRUSH.

No. 597,521. Patented Jan. 18, 1898.

Fig. 2.

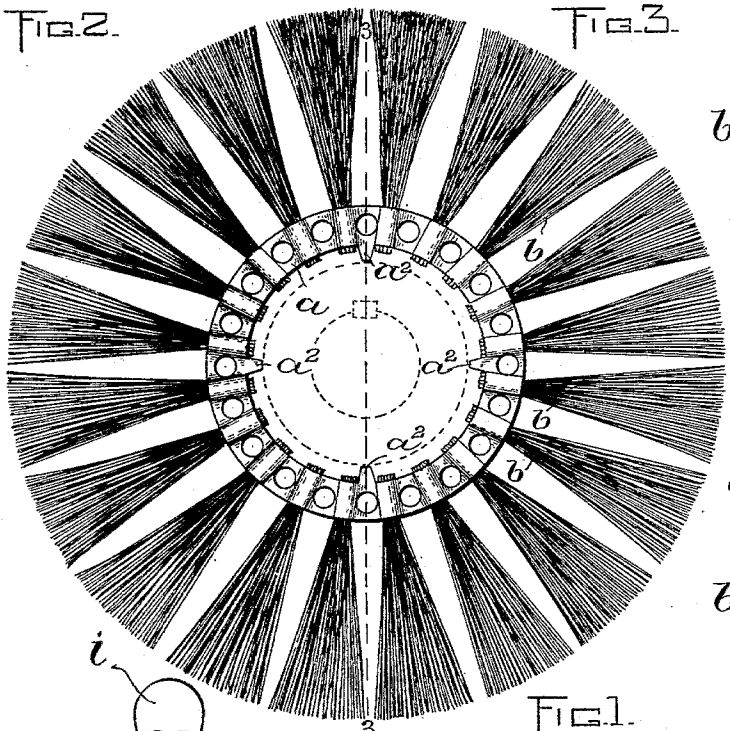


Fig. 3.

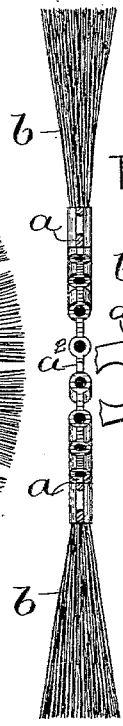


Fig. 4.



Fig. 5.

Fig. 6.

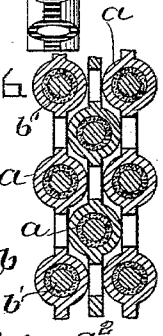


Fig. 1.

Witnesses:
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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JOHN FROSSARD, OF PEPPERELL, MASSACHUSETTS, ASSIGNOR OF ONE-HALF TO WALDO SPAULDING, OF TOWNSEND, MASSACHUSETTS.

ROTARY BRUSH.

SPECIFICATION forming part of Letters Patent No. 597,521, dated January 18, 1898.

Application filed July 20, 1897. Serial No. 645,207. (No model.)

To all whom it may concern:

Be it known that I, JOHN FROSSARD, of East Pepperell, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Rotary Brushes, of which the following is a specification.

This invention relates to rotary brushes such as are used for applying liquid coating matter to a web of paper and for other purposes where the brush becomes saturated with the material which it applies, the nature of the material being such that unless the brush is frequently cleaned the bristles are rotted and weakened and the usefulness of the brush seriously impaired.

The invention has for its object to provide a brush of this character adapted to be readily separated into sections of such size that the tufts of bristles are freely accessible on all sides and may be readily cleaned.

The invention also has for its object to provide a brush the length of which can be readily varied and which will always run true.

The invention also has for its object to enable a brush of this character to be adjusted longitudinally to adapt it to the position of the web of paper or other material upon which it acts.

The invention consists in the several improvements which I will now proceed to describe and claim.

Of the accompanying drawings, forming a part of this specification, Figure 1 represents a longitudinal section of a brush embodying my invention, the hub on which the brush is mounted being shown in side elevation and broken away at one end. Fig. 2 represents a side elevation of one of the sections of the brush. Fig. 3 represents a section on line 3 3 of Fig. 2. Fig. 4 represents an enlarged edge view of one of the bristle-holding collars. Fig. 5 represents a side elevation of a portion of one of the collars, the bristle-holding socket on said portion being shown in section. Fig. 6 represents a section on line 6 6 of Fig. 1.

The same letters of reference indicate the same parts in all the figures.

In carrying out my invention I construct a brush in a number of separable sections, each of which is composed of a ring or holder a, which is of any suitable rigid material, preferably metal, and is provided with a series of radial sockets a', extending through the ring or from its inner to its outer edge, said sockets being adapted to receive the tufts of bristles b, which when inserted in the sockets are caused to radiate therefrom, as shown in Fig. 2. The sockets a are separated by thin connecting webs or necks, so that the sides of each ring present alternating projections and recesses, the projections of one ring fitting the recesses of the next, as shown in Fig. 6, so that when the sections are assembled upon the hub c the rings a will be interlocked with each other and the tufts of bristles b will be closely assembled and form a practically continuous mass of brush material extending throughout the length of the brush.

The rings a are preferably provided with feet a^2, projecting inwardly from their inner edges, said feet being arranged to bear upon the hub c and thus keep the rings a concentric with said hub. The object of the feet a^2 is partly to decrease the weight of the rings a, permitting them to be made narrower and also to allow space between the inner edges of the rings and the hub c for the inward projection of the tufts of bristles b or of the pegs b', which are driven into the sockets from the inner edge of the ring to hold the tufts in place in the sockets, the inwardly-projecting feet a^2 preventing the necessity of carefully trimming away the inner ends of the tufts of bristles and of the pins b'.

The collars a are assembled upon the hub c to make up a brush of the desired length, the collars being secured between clamping-flanges c', which are adjustably secured to the hub by screws c^2 or any other suitable means. (I have shown but one of the flanges c' in the drawings, the other being constructed and attached in the same way.)

The hub c is preferably tubular and mounted to move endwise on a driving-shaft e, which is journaled in bearings on a supporting-frame and is provided with a key or feather e', which engages a groove in the hub, so that the hub is rotatively engaged with the shaft while free to move endwise thereon. Means are provided for moving the hub

lengthwise on the shaft to adjust the brush to the position of the web of paper or other material on which it acts, said means being here shown as a lever *i*, pivoted at *i'* to a fixed support *j* and having a forked end engaged with a groove i^2 in the hub *c*. The support *j* has a stud *j'*, which projects through a segmental slot i^3 in the lever *i*. A clamping-nut j^2, engaged with the stud *j'*, bears on the lever *i* and holds the latter in any position to which it may be adjusted.

It will be seen that the sections of the brush can be readily separated and that each section when separated from the others can be readily cleaned to remove accumulations of glue and other matter from the tufts of bristles. The length of the brush can be varied at will by increasing or diminishing the number of sections employed. When the brush material is rendered useless by wear, the stubs of the tufts can be removed from the sockets and new ones inserted. Hence it is feasible to renew the brush material at a comparatively slight expense, nothing being discarded but the stub ends of the bristles. The interlocking of the rings with each other not only brings the bristle-tufts close together, but keeps the tufts always in a predetermined relation to each other and causes the brush to run true. The adjustable end clamps or flanges adapt themselves to the length of the brush and bind the rings or sections firmly together.

I do not limit myself to the details of construction and the exact shape and construction of parts here shown, and may variously modify the same without departing from the spirit of my invention.

I claim—

1. A rotary brush comprising a series of separable sections mounted on a hub or shaft, each section being composed of a ring bearing on the hub and having radially-arranged sockets which alternate with thin connecting webs or necks to form alternating projections and recesses, the projections of each ring entering the recesses of the next, and brush material inserted in said sockets and radiating from the ring.

2. A rotary brush comprising a series of separable sections mounted on a hub or shaft, each section being composed of a ring having radially-arranged sockets open at both edges of the ring and feet projecting inwardly from the inner edge of the ring and arranged to bear on the hub.

3. A rotary brush comprising a tubular hub and brush material thereon, combined with a driving-shaft within said hub and rotatively engaged therewith, the hub being longitudinally movable on the shaft, and an adjusting-lever engaged with the hub and provided with means whereby it may be secured in different positions.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 17th day of July, A. D. 1897.

JOHN FROSSARD.

Witnesses:
GEORGE G. TARBELL,
ARTHUR P. WRIGHT.