[17.] Patented Sep. 26, 1871.

G. Willett's Machine for Manufact'g Brushes.

A.

No. 119,439.

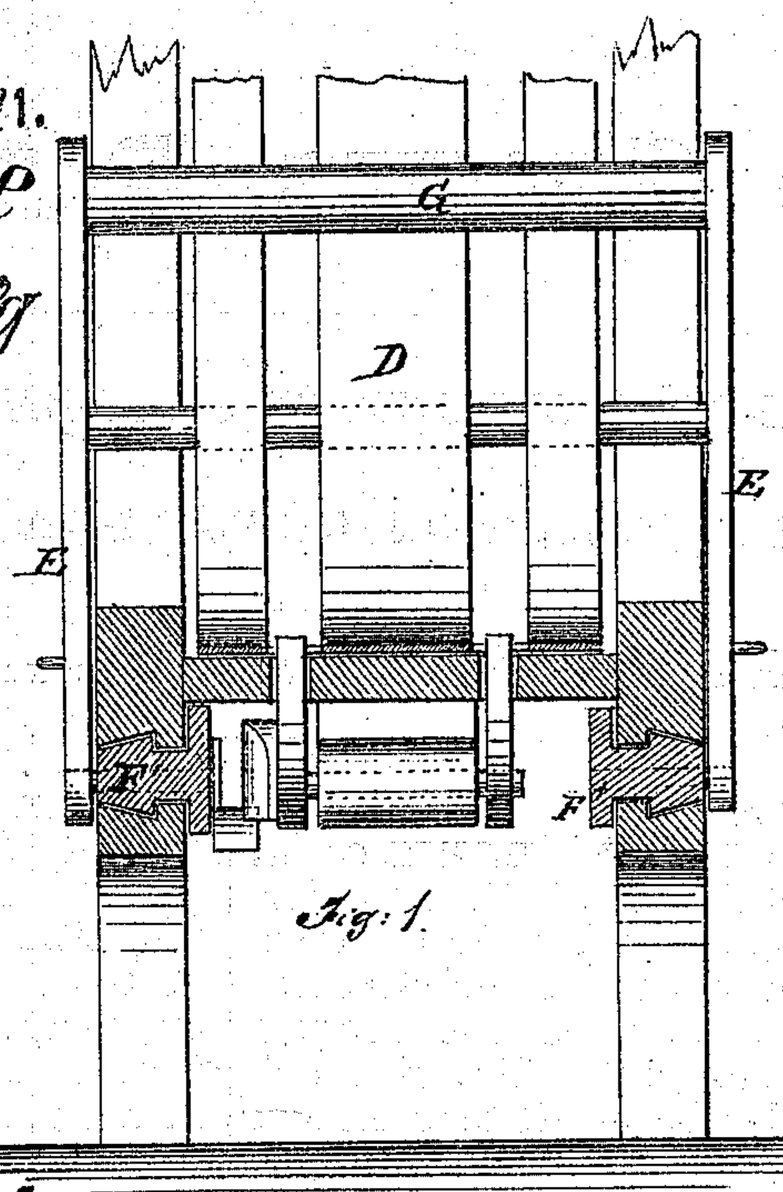

Fig: 1.

Fig: 2.

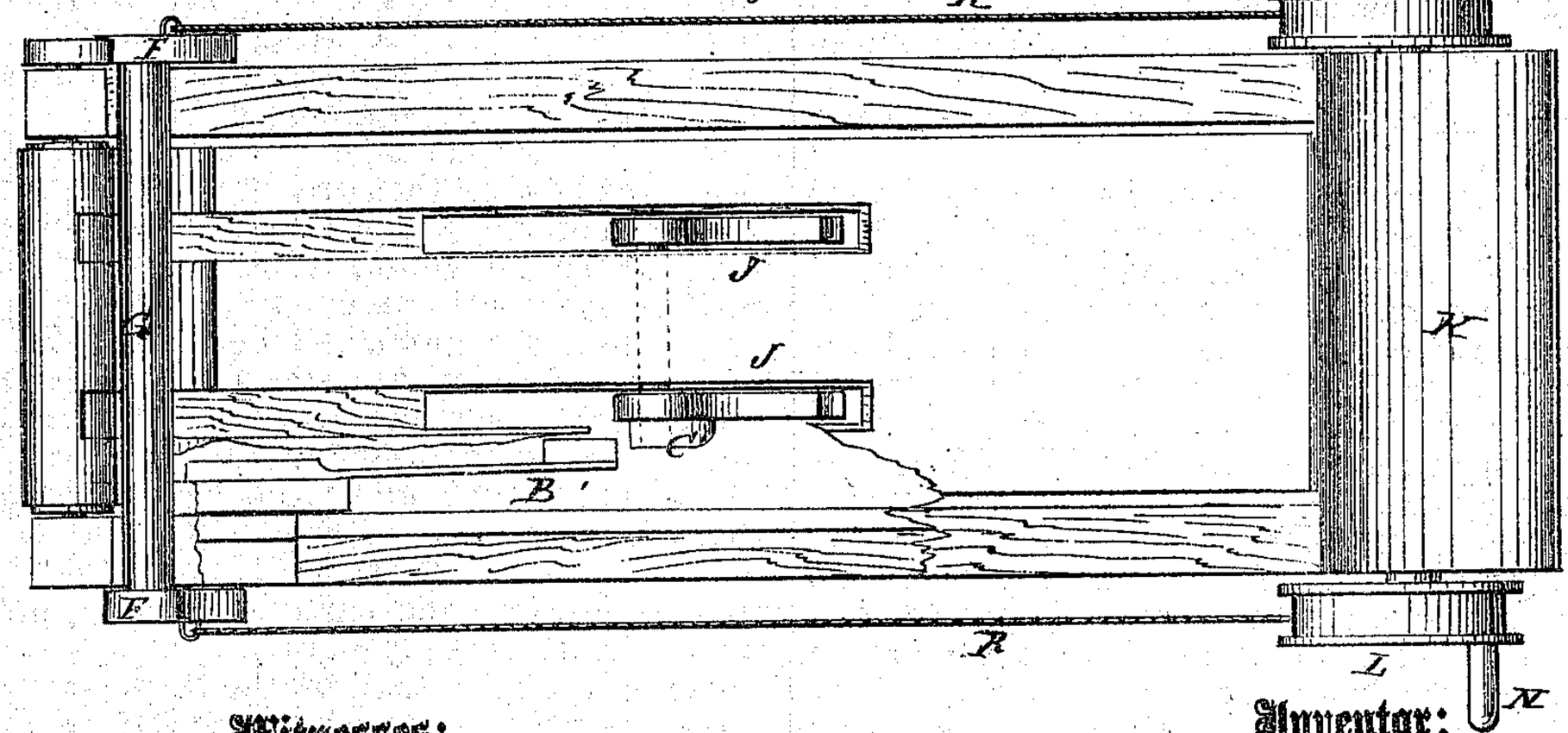

Fig. 3

Witnesses:

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UNITED STATES PATENT OFFICE.

GEORGE WILLETT, OF ST. ALBANS, VERMONT.

IMPROVEMENT IN MACHINERY FOR MANUFACTURING BRUSHES.

Specification forming part of Letters Patent No. 119,439, dated September 26, 1871; antedated September 14, 1871.

To all whom it may concern:

Be it known that I, GEORGE WILLETT, of St. Albans, in the county of Franklin and State of Vermont, have invented a new and useful Improvement in Machinery for Manufacturing Brushes; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing forming part of this specification.

This invention relates to a new and useful improvement in machinery for manufacturing brushes for painting and other purposes; and consists in an apparatus for "turning-in" and "casing" the brush; or, in other words, for rolling gray and white bristles together so that the gray will form the center of the brush and the white bristles will form the outside or casing; or so that any bristles may be rolled together to form a brush of any required size, with a string or cord rolled around it at the same time by the continued movement of an apron, as will be hereinafter more fully described.

In the accompanying drawing, Figure 1 represents a vertical section of the machine, the section being taken on the line *x x* of Fig. 2. Fig. 2 is a side view of the machine, partly in section. Fig. 3 is a top or plan view, partly in section.

Similar letters of reference indicate corresponding parts.

A is the frame or table, the rear portion of which, B, extends up and supports the ends of a roller, C, around which the apron D is rolled. E is a carriage, consisting of two uprights, F F, which are connected together by the handle G and the roller H. These uprights F are pivoted to blocks, F′, which slide in dovetail grooves in the sides of the frame A, (see Fig. 1,) so that the carriage is allowed to move from one end of the machine to the other in rolling the bristles. The apron D is attached at one end to the bed of the machine at the point I. It passes back over the roller H and is rolled around the roller C. The apron is given sufficient slack to allow it to hold any desired quantity of bristles on its horizontal portion back of the cam J, but when sufficient slack is given the roller C is fastened by a pin so that it cannot revolve while the carriage is moving forward. The gray bristles are placed on this portion of the apron in sufficient quantity for the center of a brush of the required size. The white bristles are placed on the apron forward of the cam J, arranged thereon so as to be rolled around and form a casing for the gray bristles or center of the brush. The carriage is connected by the cords R R with the drums L L on the shaft M. This shaft is revolved by means of the crank-handle N for moving the carriage forward in the act of turning in the bristles.

In moving the carriage forward from the position seen in Fig. 2, the upright E connected to slide blocks of the frame directly under the bed, the grooves in the sides being entirely through sides of frame B′, a horizontal spring attached to uprights E—the carriage being moved forward brings the end of spring B′ against lever C, attached to shaft of cam J, and moves cam J in position represented by dotted lines, thus turning in each end of gray bristles alike. The further forward motion of carriage after the turning-in process is done brings cam J back into position indicated by continuous lines. The spring B′ is made as in figure H, L being the portion coming in contact with C. When projection I passes beyond the end of C it affords no obstruction to the return of J to the position indicated by continuous line. A string is placed on the apron so as to be rolled around the bristles or casing as the carriage is moved forward.

In moving the carriage forward with the bristles in the bend of the apron it will be seen that the brown bristles will be rolled into a cylindrical form, and that the white bristles, being distributed in a thin layer on the apron, will, by the continued movement of the apron, be rolled around the cylinder, thus forming a casing of white bristles.

The brush thus cased is delivered with the string around it ready for fastening into the concave K, the carriage being given the inclined position seen in dotted lines in Fig. 2 by means of the handle G. When the string or cord around the brush is fastened the metallic ferrule is put on and the brush is ready for driving in the handle.

The back motion to throw the carriage into an upright position is given by the spiral springs S, attached to the dovetail slides F′.

By this machine the tedious and difficult operation of arranging the bristles of a brush so as to have the dark or inferior bristles form the cen-

ter or body of the brush while the white or superior bristles form the outside or casing is easily and rapidly performed.

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

1. Rolling and casing a brush by the continuous movement of an apron, substantially as shown and described.

2. The arrangement and combination of the carriage E, cam J, apron D, and frame or table A with the parts connected therewith, substantially as and for the purposes herein shown and described.

GEORGE WILLETT.

Witnesses:
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