

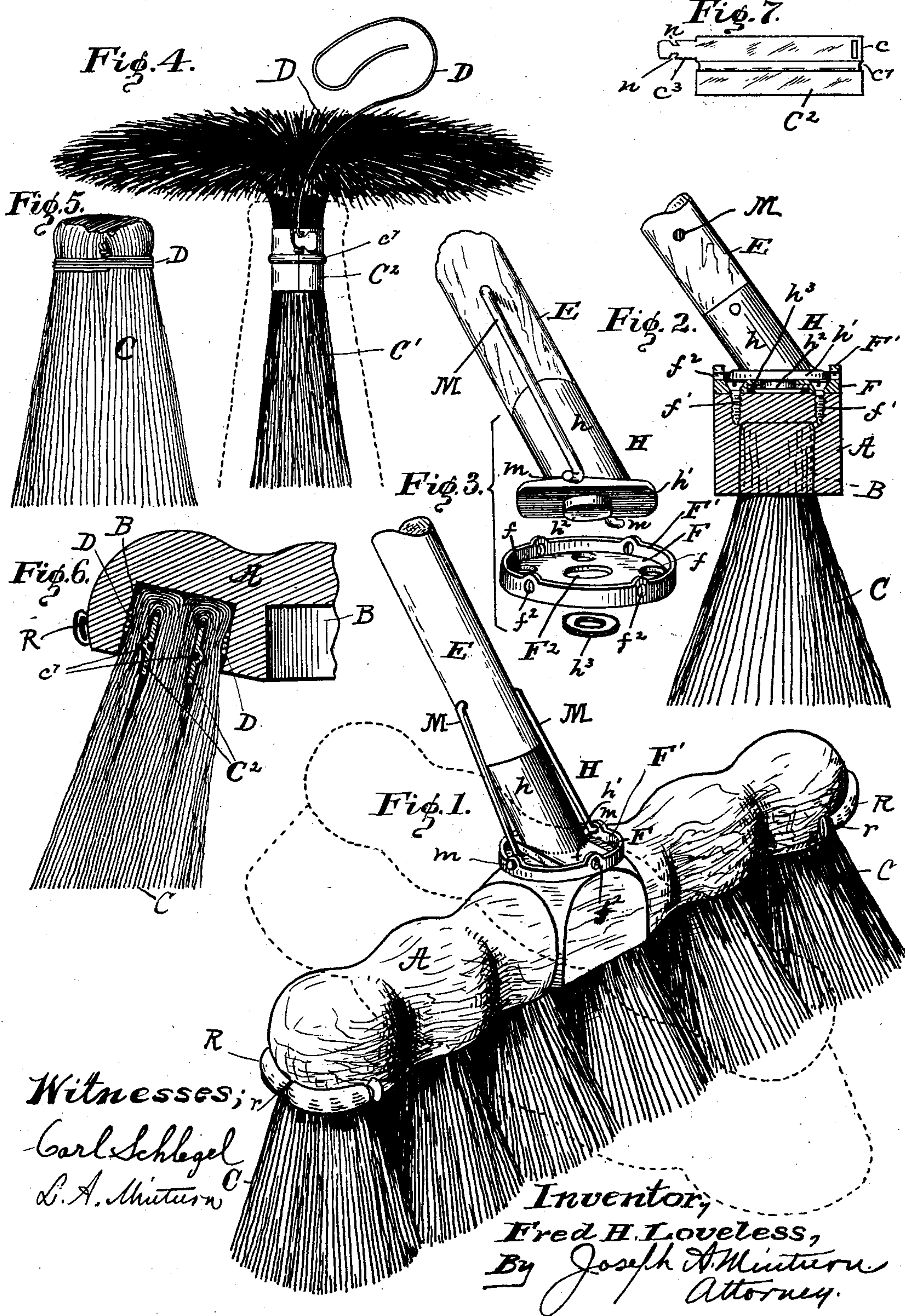
No. 637,270.

Patented Nov. 21, 1899.

F. H. LOVELESS.
BRUSH.

(Application filed Sept. 6, 1898.)

(No Model.)



Witnesses;

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UNITED STATES PATENT OFFICE.

FRED H. LOVELESS, OF LAFAYETTE, INDIANA, ASSIGNOR, BY MESNE ASSIGNMENTS, OF TWO-THIRDS TO EBEN E. BAILEY, OF SAME PLACE.

BRUSH.

SPECIFICATION forming part of Letters Patent No. 637,270, dated November 21, 1899.

Application filed September 6, 1898. Serial No. 690,280. (No model.)

To all whom it may concern:

Be it known that I, FRED H. LOVELESS, a citizen of the United States, residing at Lafayette, in the county of Tippecanoe and State of Indiana, have invented certain new and useful Improvements in Brushes, of which the following is a specification.

This invention relates to brushes and floor-sweepers, and has for its object to provide an improved brush of neat, durable, and inexpensive construction in which the tufts are filled with fiber at the middle and are of uniform density throughout their whole thickness and in which the fiber is held in the tufts and the tufts in the head or back of the brush without liability of pulling out.

The object also is to provide an adjustable connection with the handle whereby the brush can be turned to wear both sides alike or can be used in either of the two usual positions—that is, approximately transverse or approximately longitudinally of the handle.

The invention consists in the novel features of construction in a brush, as hereinafter described and claimed.

In the annexed drawings, Figure 1 is a perspective view of the brush and enough of the handle to show my improvements. The brush in full lines is transverse to the handle, and the dotted lines show the position longitudinally of the handle. Fig. 2 is a transverse vertical section of the brush-head at the point of attachment of the handle. Fig. 3 represents detached details of the handle-fastening. Fig. 4 is a view illustrating the manner of forming the tufts. Fig. 5 is a side elevation of a completed tuft. Fig. 6 is a longitudinal vertical section through the end of the head and the end tuft, and Fig. 7 is a detail of the band for clamping the inside fibers of the tufts.

Similar letters of reference indicate like parts throughout the several views of the drawings.

Referring to the drawings, A represents the brush head or back, preferably composed of wood, and B the openings or recesses provided in the brush-head to receive the tufts C, each of which comprises a bundle of fibers C', held by a band C², and then folded outward or over onto themselves and wired by a wire D, con-

nected with the band which holds the core fibers.

E represents the handle, to which the brush-head A is adjustably secured in a manner which will be hereinafter fully described.

In constructing a brush according to this invention I take a bundle of fibers twice the length of the desired tuft and bind them together by means of the band C², which is placed approximately midway of the length of the bundle. This band C² is shown in Fig. 7 in the flat. It has the transverse slot *c* at one end and the tongue *c*³ at the opposite end, adapted to be projected through the slot and bent back to form a fastening to hold the band in place on the bundle of fibers. The tongue has the opposite inwardly-sloping notches *n n* to engage the wire D, with which the finished tuft is bound. When the band has been bent into place around the fibers, it is tightened by being drawn up in a vise. After the band has been applied the ends of the fibers extending above it are spread evenly in all directions and are bent or folded outward and backward or over onto themselves. The inner or lower ends of the fibers form a central core, against which the upper or outermost portions of the fibers are brought. The folded-over fibers should be pounded or compressed to make a secure and compact body at the point of wrapping. This wrapping is effected by the wire D, which is looped near one end and secured to the band C² by catching the loop over the notched tongue of the band, as shown in Fig. 4. The free end portions of the wire are projected upwardly from among the fibers, and after the latter are folded and pounded down they are held by wrapping the long end of the wire around the outside of the bundle near the fold, and then the outer end of the long wire is secured to the short end by twisting the two together, as shown in Fig. 5. A waterproof glue is applied to the fibers under the band C² before the latter is fastened, and a groove *c*⁷ is made in the band to retain the glue. This groove also serves as a stop to support the tuft in the vise when the fibers are pounded after folding. The end of the tuft is embedded in the waterproof glue in the openings B in the head.

I will now describe the fastening by which the brush is secured to the handle.

F represents a disk or plate having holes f for the screws f' , by which the plate is fastened to the top of the brush-head. The plate has an upwardly-projected marginal flange F' with four equidistant holes f^2 , and the plate also has a central opening F^2 , and around this opening on the under side of the plate the metal is reduced in thickness, as shown in Fig. 2, to admit of the insertion of a washer between the brush-head and the plate and also to allow for riveting the handle-iron to the plate.

H represents the handle-iron, consisting of a socket or sleeve h , a plate h' at the lower end of the socket, and a pin or lug h^2 on the under side of the plate midway of the ends of the latter. The pin h^2 is circular in cross-section and fits into the circular opening in the plate F , where it is held by placing a washer h^3 around it and then battering the end of the pin onto the washer to prevent the removal of the pin. This makes a joint between the handle E , which is seated in the socket h , and the brush-head, which permits of the rotary adjustment of the head around the pin h^2 . The socket h is oblique to the plate h' to give the convenient angle between the head and the handle required for a floor or wall brush.

M is a U-shaped wire spring which is projected through the brush-handle. The ends of the wire are turned outwardly to form hooks $m m$, adapted in size and position to be inserted into the holes f^2 in the flange of the plate F . The ends $m m$ are projected from the inside out, and the spring action which spreads the arms will retain the ends in the disk-holes until the arms are brought together with sufficient force to overcome the resistance of the spring. Because of the two pairs of holes at right angles to each other it will be seen that the brush can be turned and fastened at right angles to the handle or longitudinally of it.

The ends of the brush-head will preferably be provided with the rubber pieces R to avoid scarring the furniture by contact with the brush ends. By using rubber tubes and fastening them by staples r , which cross the tube and impinge it closely to the head, the air in the tube will be held from escaping and a pneumatic cushion will thus be secured, which is more yielding than solid rubber.

What I claim as my invention is—

1. A tuft for brushes consisting of a single bundle of fibers bound together into a solid core by a band approximately midway of the length of the fibers, a metal band to bind the fibers together having a slot and a tongue to project through the slot and secured by bending into a hook, the fibers at one end of said band being folded over uniformly around and secured to the core end of the bundle, and a wire secured to the core-band and wrapped around the folded-over portions of the fibers, substantially as described.

2. The combination with a bundle of fibers one end of which bundle is bound together to form a core and the other ends of the fibers are folded over uniformly around the core and secured thereto, of a metal band to bind the core and a wire secured to the band and wrapped around the folded-over portions of the fibers to retain same, said band having a notched tongue and a slot at the end opposite the tongue and also having a longitudinal groove, substantially as described.

3. The combination with a brush-head and a brush-handle of a disk secured to the head having a central opening and a marginal flange with one or more pairs of diametrically opposite openings through the flange, a plate with a socket to receive the handle on one side and having a pin or lug on the opposite side from the socket to project through the opening in the disk where it will be secured by riveting to form non-separable joint having rotary adjustment, and a spring-wire secured to the handle and having the ends caught into the openings in the flange of the disk to lock the brush against accidental rotation around the handle, substantially as described.

4. In a fastening for adjustably securing brushes to handles, a pair of plates pivotally secured together, a flange from one of the plates concentric with the pivot and having pairs of diametrically opposite holes and a spring-catch to engage the openings of the flange and lock the plates against rotation, substantially as shown and described.

In witness whereof I have hereunto set my hand and seal, at Indianapolis, Indiana, this 29th day of August, A. D. 1898.

FRED H. LOVELESS. [L. S.]

Witnesses:

JOSEPH A. MINTURN,
CARL SCHLEGEL.