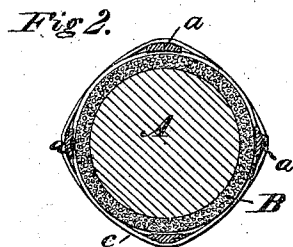
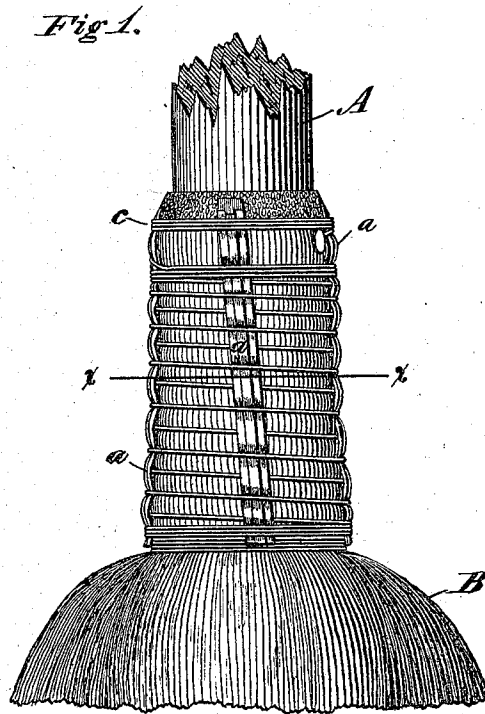


E. M. CRANDAL.

Improvement in Brooms.

No. 131,854.

Patented Oct. 1, 1872.



Witnesses.

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Inventor.

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UNITED STATES PATENT OFFICE.

EDWARD M. CRANDAL, OF CHICAGO, ILLINOIS.

IMPROVEMENT IN BROOMS.

Specification forming part of Letters Patent No. 131,854, dated October 1, 1872.

To all whom it may concern:

Be it known that I, EDWARD M. CRANDAL, of Chicago, in the county of Cook and State of Illinois, have invented certain Improvements in Brooms, of which the following is a specification:

My invention consists in the use of rubber or other elastic material in connection with the wire or cord that secures the brush of a broom to the handle, for the purpose of compensating for the shrinkage of the handle and brush, and thus to keep the latter always tight upon the handle.

Figure 1 is a side elevation of a portion of the broom, showing my invention applied thereto; and Fig. 2 is a transverse sectional view of the same on the line *xx* of Fig. 1.

As is well known, one of the greatest difficulties with brooms is the liability or tendency of the brush to become loose upon the handle, arising from the shrinkage of the handle or the brush, or of both combined. When this occurs, the wire or cord used for fastening the brush to the handle is apt to work or slip off, or become unwrapped, thereby permitting the brush to become detached, thus destroying the broom. To remedy this difficulty is the object of my present invention; and to accomplish this object I provide strips of rubber or other elastic material, and insert them, with the brush, under the wire or cord when the latter is wound in making the broom.

There are various ways of applying the rubber, but that shown in the drawing I find to be both simple and efficient.

In the drawing, A represents the handle and B the brush of an ordinary house-broom. In winding the wire or cord *c* I provide and in-

sert rubber strips *a*, as shown in Figs. 1 and 2. These strips *a* may be simply flat strips of soft rubber, or they may be formed, as represented in the drawing, with a small projecting rib along one or both sides. In applying these strips they may be placed between the brush and the wire, or they may be woven alternately over and under the wire, as represented in Fig. 1; and they may be arranged either straight or spiral, as preferred.

It is obvious that the rubber may be placed next to the handle, and that the strips may be varied in width, as desired; but I prefer to place them next to the wire, as they thereby assist to prevent the wire from slipping or becoming displaced, and thus render it more secure.

Any elastic material may be used, provided it has sufficient elasticity to compensate for the shrinkage of the parts, and keep the wire tight, and thereby prevent the brush from becoming loose on the handle; but I consider rubber as being best adapted to accomplish the object.

By this means I am enabled to so construct brooms that the brush will remain tight on the handle, and thus enable them to be used until worn out.

Having thus described my invention, what I claim is—

The rubber strips *a* or their equivalents, applied to brooms, substantially as and for the purpose described.

EDWARD M. CRANDAL.

Witnesses:

JAS. KAUFMANN,
PHILIP STEIN.