

J. B. SHARP.  
Broom-Brace.

No. 164,490.

Patented June 15, 1875.

FIG. 1.

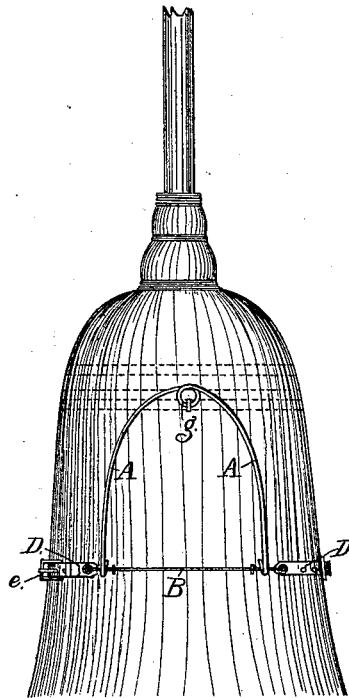


FIG. 4.

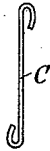


FIG. 3.

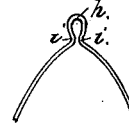
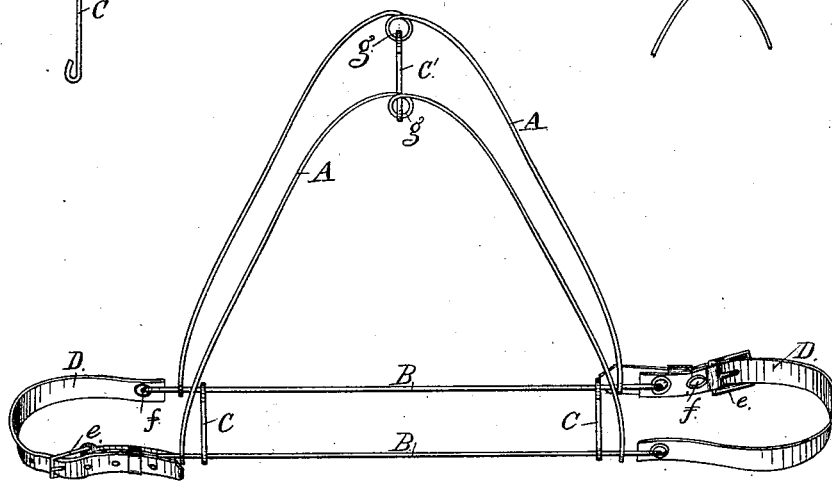


FIG. 2.



Witnesses  
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# UNITED STATES PATENT OFFICE.

JOSEPH B. SHARP, OF VINELAND, NEW JERSEY.

## IMPROVEMENT IN BROOM-BRACES.

Specification forming part of Letters Patent No. **164,490**, dated June 15, 1875; application filed May 26, 1875.

*To all whom it may concern:*

Be it known that I, JOSEPH BENSON SHARP, of Vineland, in the county of Cumberland and State of New Jersey, have invented certain Improvements in Broom-Braces; and I do hereby declare that the following, taken in connection with the drawings which accompany and form part of this specification, is a description of my invention sufficient to enable those skilled in the art to practice it.

My invention has for its objects the saving of brooms from too rapid wear and damage when in use; the construction of a brace so that the parts on which the principal strain comes shall not be liable to be broken or fractured, either in making or in use, while at the same time it allows all the proper bending and swaying of the broom while in use without liability to displace the parts of the brace, and at the same time preventing the broom from breaking down or wearing out of shape; facility of application to, and adjustment for, any size of broom, and also to the changing condition of the broom as it becomes worn away; and great lightness, as well as simplicity.

In the drawing, Figure 1 represents a broom with my invention applied thereto. Fig. 2 is a perspective view of the brace; and Fig. 3 represents a form of bend or eye which I have found defective, and which I have illustrated by way of contrast with the spiral eye shown in the other figures. Fig. 4 shows one of the hooks detached.

A A are two arched braces, more particularly hereinafter described; B B, two cross-bars, on which A A are hooked; C C C', hooks, for connecting the two arches and the two cross-bars or wires together when the device is applied to a broom, and D D are flexible straps, which may be made of leather, rubber, webbing, or other appropriate, but light and strong material.

To adapt the device for brooms of varying sizes, or varying degrees of wear, or for hard or light sweeping, I make the straps with a buckle, *e*, or other equivalent adjusting device, the strap being provided with a series of holes, which are preferably re-enforced with a metallic eyelet, as shown at *f*, whenever the thinness or character of the strap renders it desirable. I place the buckle or fastening device

far enough distance from the point where the cross-wires B B are hooked or linked or otherwise fastened to the strap to permit sufficient flexibility of the strap between such point and the buckle, to prevent the cutting or chaffing of the straws of the broom when in use by the hooked ends of the wires B B or arches A A. These hooked ends should be so bent as to present their smooth surfaces only to the straw.

In the practical use of these braces the formation of the eye of the arched or bent wires A is very important, as it needs to be strong enough to meet as a central point the strain and pull of the broom while sweeping, requires to be secure against possibility of getting loose from its detaining-hook C', and must not in the act of bending the wire to form the eye become split or barbed, whereby it may cut or fray the straws, as well as become the weakest at the point where it needs to be the strongest.

To secure the ends desired, and to avoid such defects, I form it into a coil, as shown at *g*, this coil being on the inside of or beneath the crest of the arch, and the double of the coil being at its upper part, the size of the coil being ample to allow all the play required upon the hook C' in either direction, as the pressure on the broom in sweeping may be on its one side or the other. This spiral or coiled eye prevents its getting dislodged from its hook, as would be the case if the eye were formed open, as shown in Fig. 3, and also allows the eye to ride evenly in a rotary path upon its hook either to the right or left, which cannot be if the eye be made as in Fig. 3. In coiling, also, the bend is gradual and uniform, and all in one direction, while, if bent as in Fig. 3, the bend is not uniform, somewhat abrupt, and requires first the bend at its bight *h* to be in one direction, while its other two bends, *i i*, being made in the opposite direction, destroy the character of the fiber of the light wire, and too frequently fracture, and must always weaken and injure, so that after a little use it will break apart. The coil, also, by giving a double of the wire upon itself, insures additional strength at this point, and as the double part is above the pin or hook C', and as the latter may be deemed a fulcrum for

the arched wire, this double part, acting as the short arm of a lever, bears upward or away from the broom, and consequently tends to press the longer arms of the wire and its cross-wires C toward and against the broom, instead of away from it, as would otherwise be the case. This causes the wires C C and the straps to cling more closely to the broom.

As the broom wears away the straps may be tightened as need be; and it will readily be seen that my invention may be readily applied to brooms of any size or shape; that the device is so light, being mainly made of small, and preferably copper-coated or brass wire, that it adds almost nothing to the weight of the broom; that it is simple, and requires no peculiar skill to apply it, and is not likely to be in any way a source of annoyance to the housekeeper, as it may remain on a broom until the latter is worn out, and then applied successively to dozens of other brooms.

For packing purposes, or shipping in large quantities for the trade, its construction is such that it may lie almost flat, so that large numbers may be compactly stowed, and occupy but little room.

The manner in which the brace holds the straws of the broom permits of sweeping corners with great thoroughness and ease, and saving carpets from moth and mold in such places.

I claim—

1. In a broom-brace, the arched or yoke pieces A, constructed with the inward bent spiral eyes  $g'$ , combined with the hooks C C' and cross-rods B B, the hook C' holding the eye at its lower or single part, as and for the purpose set forth.

2. In combination with a broom-brace, and with the rods B B and hooks C C', the adjusting-straps D D, substantially as and for the purpose set forth.

3. The broom-brace described, consisting essentially of the parts A A, B B, C C C', and the adjusting-straps, constructed and connected substantially as set forth.

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