

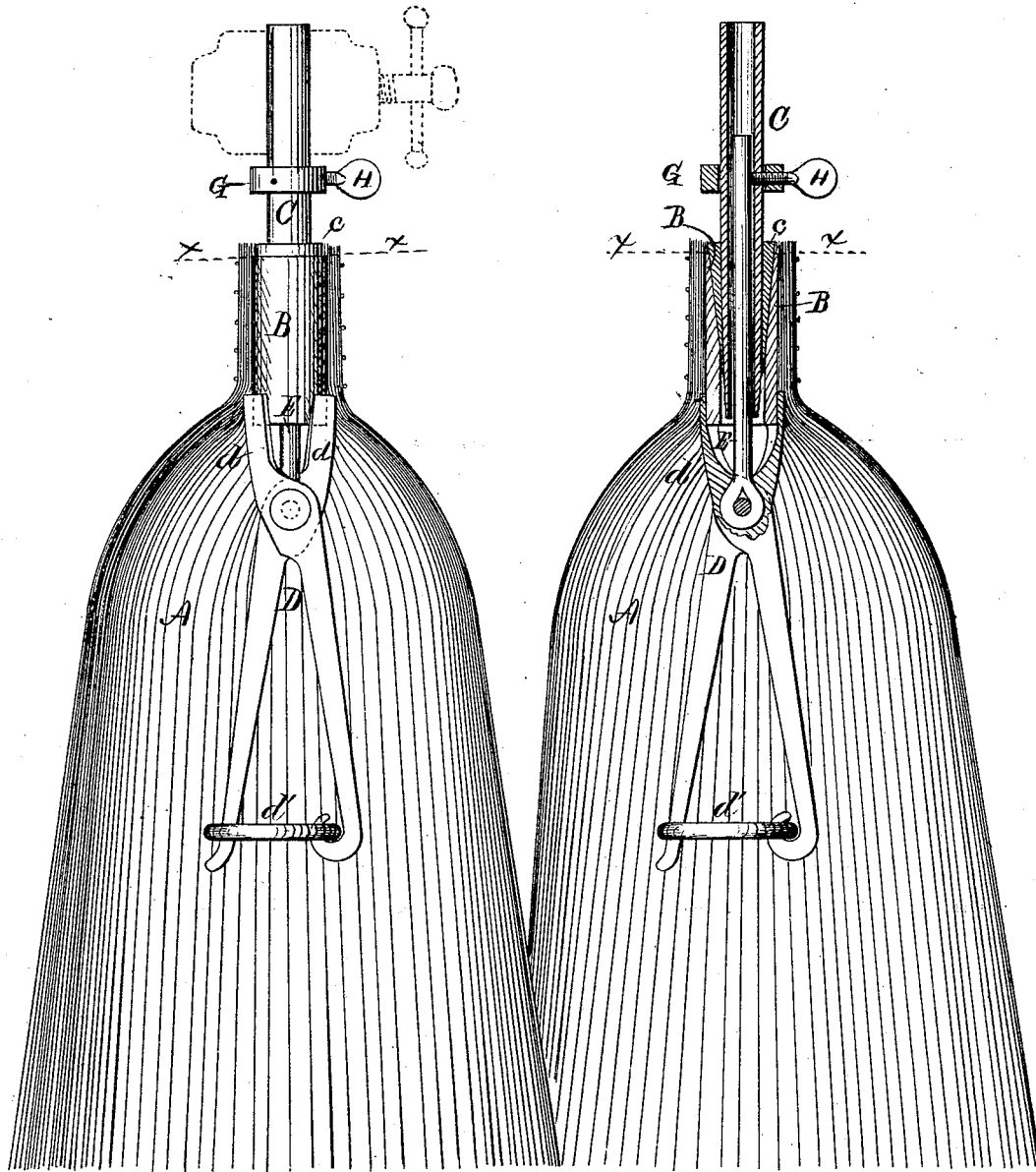
W. R. ALLEN.  
Broom-Making Machine.

No. 167,051.

Patented Aug. 24, 1875.

FIG. I.

FIG. II.



WITNESSES:

A. M. Wallum  
D. G. Stuart

INVENTOR:

Willard R. Allen,  
By W. B. Richards,  
Atty.

# UNITED STATES PATENT OFFICE.

WILLARD R. ALLEN, OF GALESBURG, ILLINOIS.

## IMPROVEMENT IN BROOM-MAKING MACHINES.

Specification forming part of Letters Patent No. 167,051, dated August 24, 1875; application filed January 4, 1875.

*To all whom it may concern:*

Be it known that I, WILLARD R. ALLEN, of Galesburg, county of Knox and State of Illinois, have invented certain Improvements in Broom-Making Machinery, of which the following is a specification:

My invention relates to improvements in machines for making that class of brooms which are formed upon a socket, for the reception of the handle; and the invention consists in the employment of a hollow mandrel, upon which the socket is held by a peculiarly-constructed pair of tongs while the broom is being formed thereon; and, further, in forming that part of said mandrel where the broom is held, of lead, or some similar metal, to prevent damage to the knife-edge in trimming the broom, all as hereinafter fully described.

In the accompanying drawings, Figure 1 is a top plan view of my improvement secured horizontally in a vise, as in operation, and a broom shown in section, as constructed thereon. Fig. 2 is a horizontal sectional view of the device, shown at Fig. 1.

Referring to the parts by letters, a represents the broom, and B the socket upon which it is formed. The socket B is cylindrical in form, and perforated lengthwise with a conical-shaped opening, as plainly shown in the drawings, and for the reception of the handle. C is the mandrel, a plain cylindrical piece of gas-pipe, with an enlarged conical-shaped part, *c*, which is coated with lead, or other soft metal, or suitable compound. The enlargement *c* is made to correspond with the interior of the socket B. D is a pair of tongs, the jaws *d d* of which are shaped so as to fit the cylindrical exterior of the socket B when closed thereon. One of the handles of the tongs carries a ring, *d'*, which may be turned over the other handle to secure the gripe of the jaws on the socket B. E is a tongue, pivoted at one end to the axial bolt of the tongs, and projects beyond the jaws some distance. The tongue E is of less diameter than the bore of the mandrel C. G is a collar, loosely fitted on the up-

per portion of the mandrel C, and H is a thumb-screw, the threaded portion of which is passed through one side of the collar G, and also through a hole formed in the mandrel.

The operation of my invention is as follows: The mandrel C is held between the jaws of an ordinary vise, shown by dotted lines at Fig. 1, or may be held in any other desired manner. The socket B is then passed onto the mandrel to the position shown in the drawings, or until it is seated snugly on the enlargement *c*. The tongue E of the tongs is then inserted within the hollow mandrel until its end passes the set-screw H, and its jaws reach the end of the socket B, upon which they are closed and secured by the clamping-link *d'*. The broom may now be formed, and wired upon the socket C in the ordinary manner, and as shown in the drawings. By releasing the ring *d'* and set-screw H, the broom may be removed, being first, however, trimmed at the end, and on the line *x x*, the knife coming in contact in the operation with the soft metal will be preserved from the injury inseparable from trimming against hard metal. The broom may be finished in the ordinary manner.

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

1. The mandrel C, having the conical or tapering portion *c*, covered with soft metal, or other suitable compound, substantially as and for the purpose specified.

2. The mandrel C, having the tapering end *c*, in combination with the tongs D, having the tongue E, collar G, and thumb-screw H, substantially as and for the purpose specified.

In testimony that I claim the foregoing invention I hereto subscribe my name this 18th day of December, 1874, in presence of two witnesses.

WILLARD R. ALLEN.

Witnesses:

J. J. TUNNICLIFF,  
W. B. RICHARDS.