(No Model.) 2 Sheets—Sheet 1.

A. J. SANDS.

CHUCK FOR BROOM WINDING MACHINES.

No. 341,278. Patented May 4, 1886.

Fig. 1.

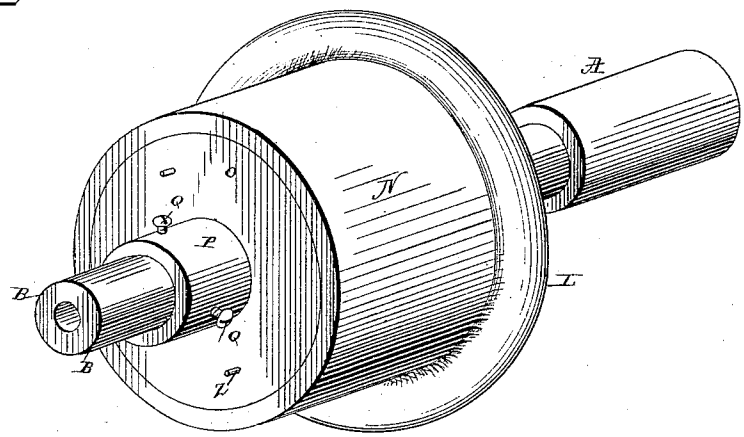


Fig. 2.

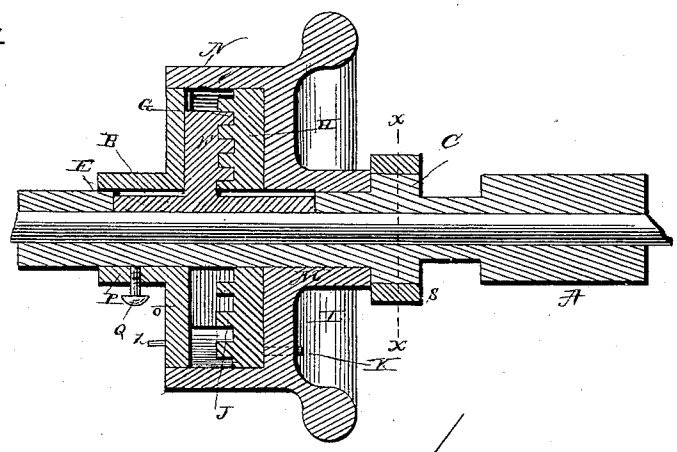


Fig. 3.

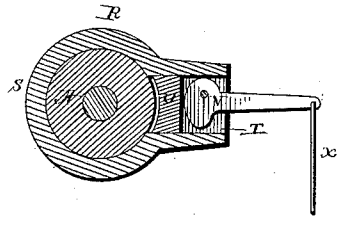
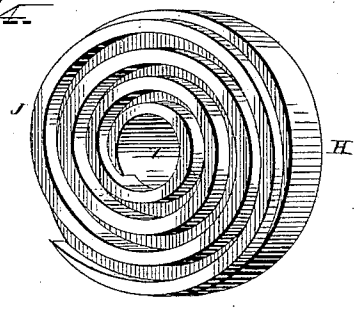


Fig. 4.



WITNESSES

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(No Model.) 2 Sheets—Sheet 2.

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Fig. 5.

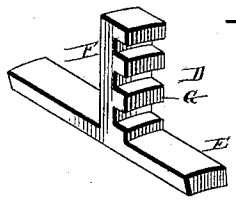


Fig. 7.

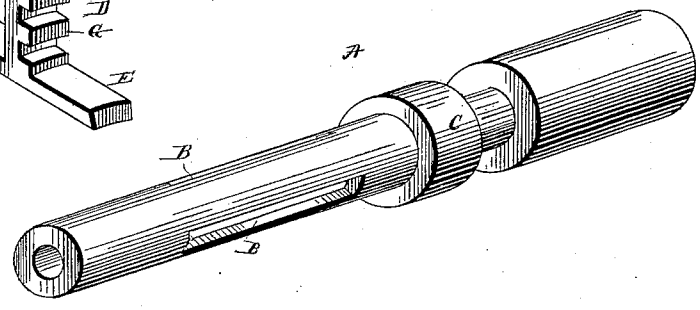


Fig. 6.

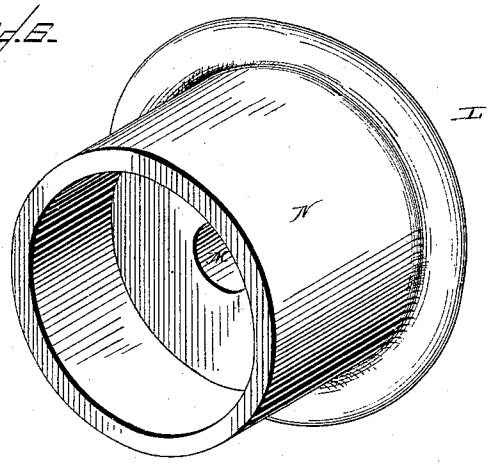
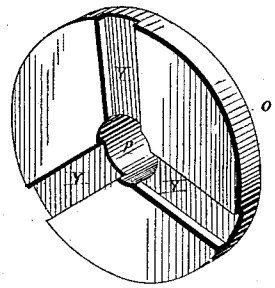


Fig. 8.



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UNITED STATES PATENT OFFICE.

ARTHUR J. SANDS, OF SCHENECTADY, NEW YORK, ASSIGNOR TO ADDISON M. YOUNG, OF SAME PLACE.

CHUCK FOR BROOM-WINDING MACHINES.

SPECIFICATION forming part of Letters Patent No. 341,278, dated May 4, 1886.

Application filed February 17, 1886. Serial No. 192,307. (No model.)

To all whom it may concern:

Be it known that I, ARTHUR J. SANDS, a citizen of the United States, and a resident of Schenectady, in the county of Schenectady and State of New York, have invented certain new and useful Improvements in Chucks for Broom-Winding Machines; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a perspective view of as much of a machine for winding the wires upon brooms as will illustrate my improved chuck. Fig. 2 is a longitudinal vertical sectional view of the same. Fig. 3 is a vertical cross-section on line *x x*, Fig. 2. Fig. 4 is a perspective view of the disk having the scroll or spiral flange. Fig. 5 is a similar view of one of the dogs. Fig. 6 is a similar view of the cap having the hand-wheel; and Figs. 7 and 8 are perspective views, respectively, of the barrel and of the cap closing the forward end of the chuck.

Similar letters of reference indicate corresponding parts in all the figures.

My invention has relation to chucks for holding the handles of brooms while they are wound with wire and finished; and it consists in the improved construction and combination of parts of such a chuck, as hereinafter more fully described and claimed.

In the accompanying drawings, the letter A indicates the barrel, which may have any suitable means for revolving it, and which may be journaled in any suitable manner, and this barrel is provided with a number of equidistant longitudinal slots, B, opening near the outer end of the barrel, and extending to within a short distance of a collar, C, upon the barrel, the said slots opening radially through the sides of the tubular barrel. Dogs D fit with their inner long bodies, E, in the slots and slide radially within them, and these dogs are provided at their outer sides with outwardly-projecting arms F, having a series of equidistant lugs, G, upon their rear faces, the said lugs being of the same height and thickness and forming portions of a square-cut spiral or scroll. The bodies of the dogs are of the same thickness as the sides of the barrel and correspond in shape to them, and a disk, H, fits and revolves with its central aperture, I, upon the barrel and upon the rear ends of the dogs, having a spiral flange or scroll, J, upon its forward face, which corresponds to the scroll, of which the lugs upon the dogs form portions, and having the said lugs fitting in the spiral space between the windings of the spiral flange. The rear face of this disk is provided with a number of projecting pins, K, which fit into the forward side of a hand-wheel, L, revolving with its sleeve M upon the barrel, and having a cylindrical flange, N, projecting from its forward side, which flange may project over the scroll-disk and over the dogs.

It will be seen that the scroll-disk will be revolved with the hand-wheel, and the dogs will be moved in the slots in the barrel when the scroll is revolved, the spiral flange or scroll drawing the lugs upon the dogs and the dogs in or out in the slots when it is revolved.

A front plate or cap, O, has its central sleeve, P, secured to the outer end of the barrel by means of set-screws Q, and this cap or disk fits within the outer end of the cylindrical box formed by the flange of the hand-wheel, closing the said box or casing, and confining the dogs to their radial play.

A casting, R, is secured to the supporting-frame of the chuck, and has a bearing, S, which fits upon the collar upon the barrel, and one side of this casting is formed with a recess, T, opening into the side of the bearing, and having a block, U, sliding within it, the inner end of which block is cylindrically concaved, so as to bear against and fit upon the collar of the barrel. A cam-lever, V, is pivoted within the recess, and bears with its cam-head against the outer side of the block, and has a cord or rod, X, secured to its outer arm, for the purpose of drawing the said arm down so as to bring the head to bear against the block, and thus force the block against the collar, holding the same rigidly, and preventing the spindle from revolving.

The inner face of the front plate or cap is formed with radiating grooves Y, within which the forward sides of the outwardly-projecting arms of the dogs may slide and be guided, and

the outer face of the plate is provided with outwardly-projecting pins Z, upon which the bands or straps can be hung when they are used in making the broom.

It will thus be seen that the handle of a broom may be inserted into the tubular barrel and be held firmly within it by the dogs, which may be forced simultaneously against the handle by the scroll and hand-wheel, and the barrel will be prevented from revolving when the hand-wheel and scroll are revolved, tightening the dogs by depressing the outer handle of the cam-lever, which will force the brake-block against the collar of the barrel, preventing it from moving.

This chuck is principally intended for the purpose of holding the handles of brooms while they are being wrapped with wire and finished, but it follows that the chuck may be used for holding any other objects, and the spiral scroll will exert considerable force upon the dogs, holding the object firmly.

The chuck is so constructed that it may be taken apart in pieces, which all may be replaced by corresponding parts, if any parts should become damaged, and the scroll-disk and dogs, which are especially subjected to wear, may be removed from the barrel and from the hand-wheel, retaining all other parts, which are not so exposed to wear, the scroll-disk being only connected to the hand-wheel by the rearwardly-projecting pins upon its rear face, which pins fit into perforations or recesses in the forward face of the hand-wheel.

Having thus described my invention, I claim and desire to secure by Letters Patent of the United States—

1. In a chuck, the combination of a barrel having radiating slots, dogs sliding radially in the said slots and having their rear faces provided with lugs forming parts of a spiral scroll, and a hand-wheel turning upon the barrel and having a spiral scroll or flange upon its forward face engaging the lugs upon the rear faces of the dogs, as and for the purpose shown and set forth.

2. In a chuck, the combination of a barrel having radiating slots, dogs sliding radially in the said slots and having their rear faces provided with lugs forming parts of a spiral scroll, a disk having a spiral scroll or flange upon its forward face engaging the lugs of the dogs and having pins upon its rear face, and a hand-wheel turning upon the barrel to the rear of the scroll-disk and having perforations or recesses in its forward face for the reception of the pins of the scroll-disk, as and for the purpose shown and set forth.

3. In a chuck, the combination of a barrel having radiating slots in its forward end and having a shoulder or collar, dogs sliding radially in the said slots and having radiating arms upon their outer sides provided with lugs upon their rear faces forming parts of a spiral scroll, a disk turning upon the barrel and having a spiral scroll or flange upon its forward face and having rearwardly-projecting pins upon its rear face, a hand-wheel turning upon the barrel and having perforations in its forward face for the pins of the scroll-disk and having a forwardly-projecting annular flange projecting beyond the forward sides of the arms of the dogs, and a cap or disk fitting with its edge within the outer end of the casing formed by the flange, and having radiating grooves in its rear face for the arms of the dogs being secured to the barrel, as and for the purpose shown and set forth.

4. In a chuck, the combination of a barrel having a collar, a rigid casting formed with a bearing for the collar and with a recess, a block sliding in the inner portion of the said recess and having its inner end concaved to fit against the collar, and a cam-lever pivoted in the outer end of the recess of the casting and having its inner cam-shaped end bearing against the outer end of the block, and having its outer arm provided with means for tilting it, as and for the purpose shown and set forth.

5. The combination of a chuck-barrel having radially-sliding dogs and means for operating the said dogs, a bearing for a shoulder or collar of the said barrel having a recess opening into one side of the same, a block fitting against the collar and sliding in the recess, and a cam-lever bearing with its eccentric head against the block, as and for the purpose shown and set forth.

In testimony that I claim the foregoing as my own I have hereunto affixed my signature in presence of two witnesses.

ARTHUR J. SANDS.

Witnesses:

JACOB W. CLUTE,

ADDISON M. YOUNG.