

No. 613,669.

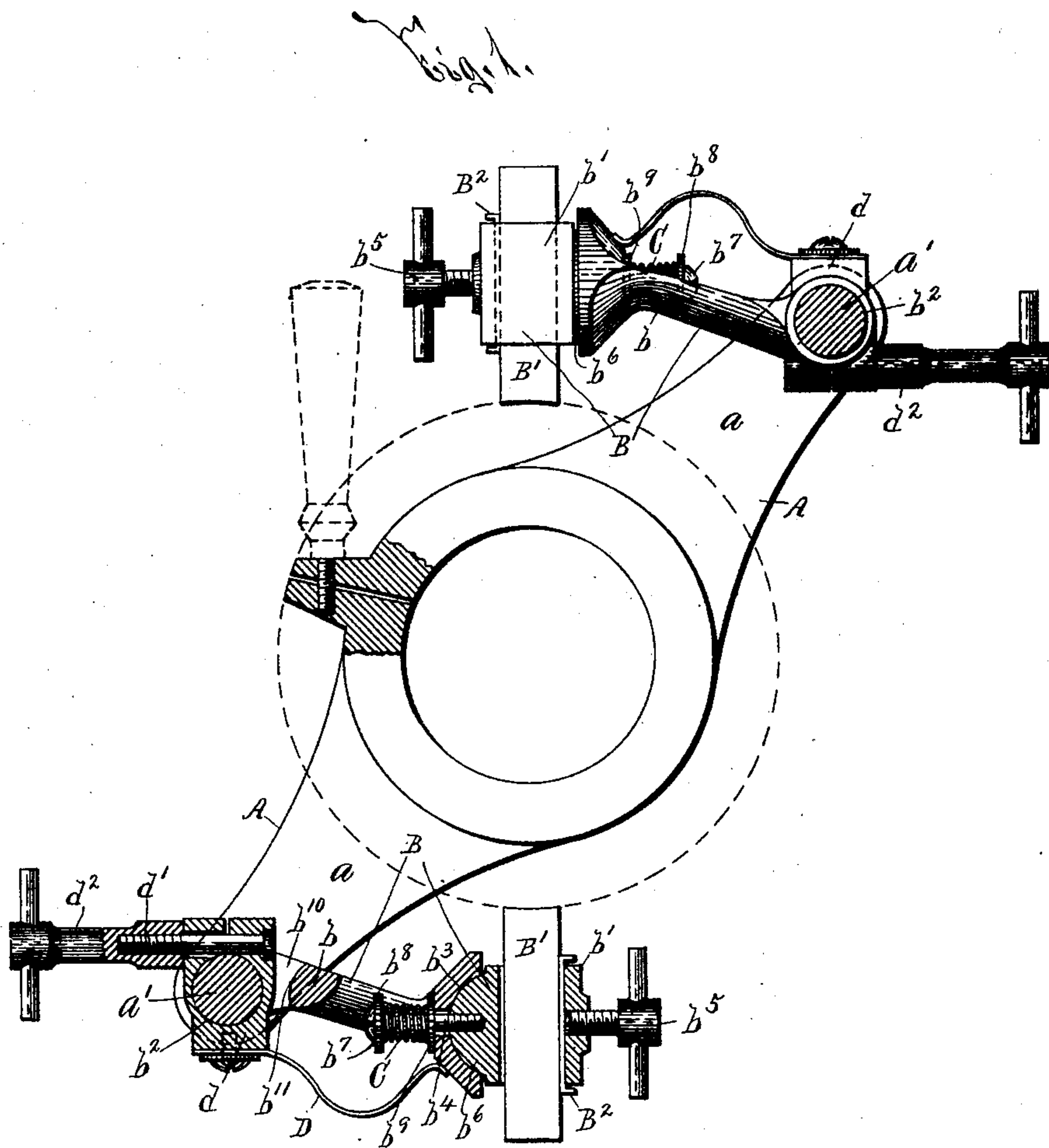
Patented Nov. 8, 1898.

A. E. DOMAN.
BRUSH HOLDER.

(Application filed Feb. 4, 1898.)

(No Model.)

2 Sheets—Sheet 1.



WITNESSES:

M. D. Lewis,

Robb Chase,

INVENTOR

Albert E. Doman,

BY

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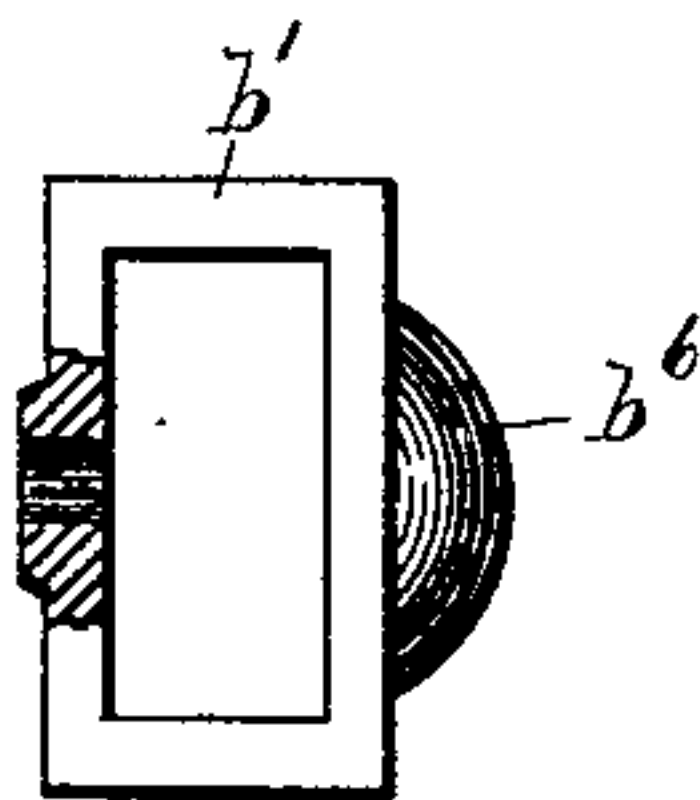
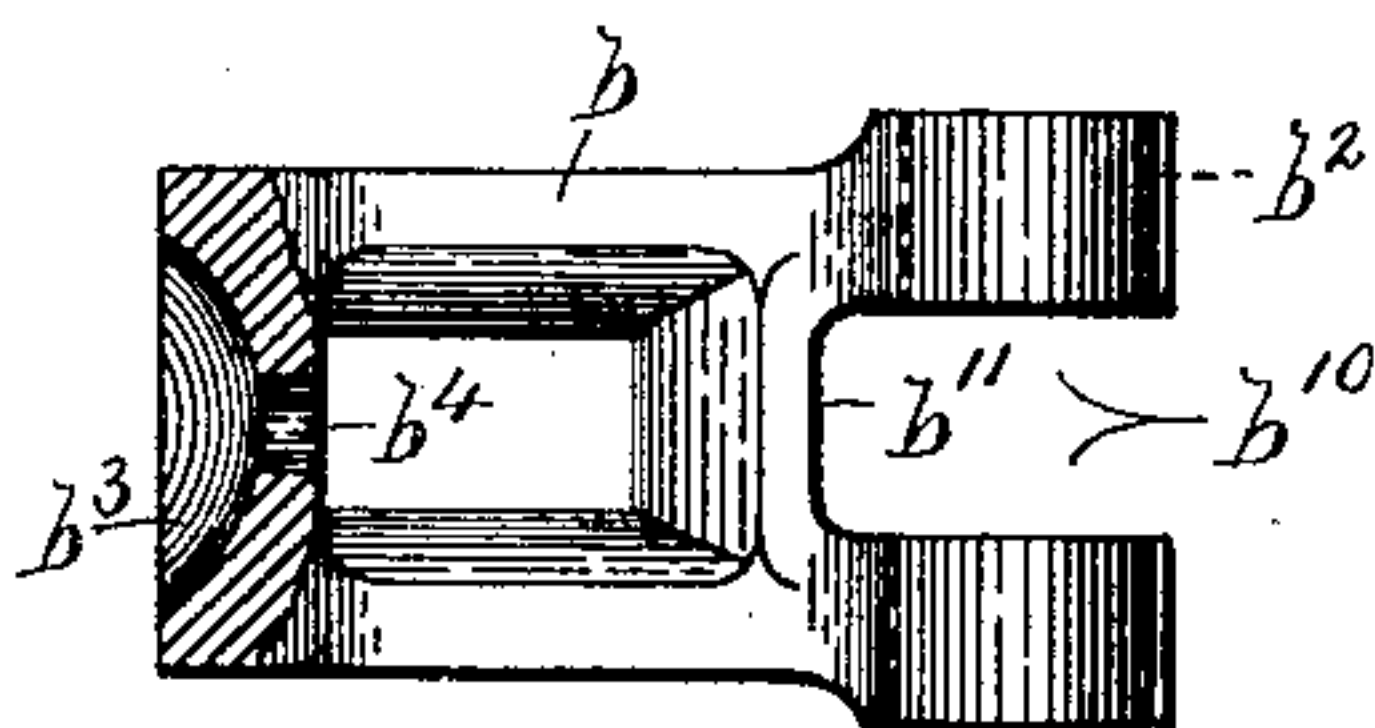
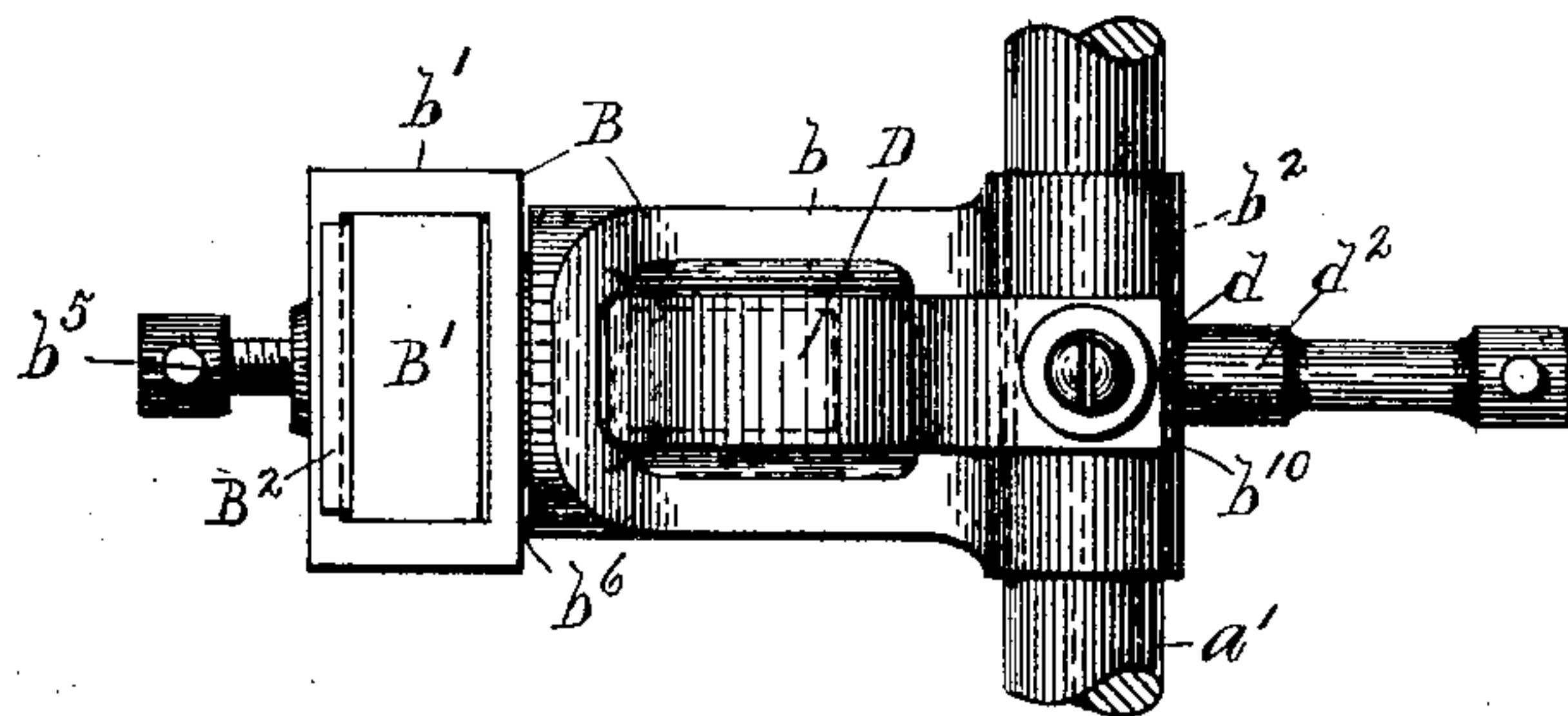
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WITNESSES:

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H. C. Chase,

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UNITED STATES PATENT OFFICE.

ALBERT E. DOMAN, OF ELBRIDGE, NEW YORK, ASSIGNOR TO THE ELBRIDGE ELECTRICAL MANUFACTURING COMPANY, OF SAME PLACE.

BRUSH-HOLDER.

SPECIFICATION forming part of Letters Patent No. 613,669, dated November 8, 1898.

Application filed February 4, 1898. Serial No. 669,116. (No model.)

To all whom it may concern:

Be it known that I, ALBERT E. DOMAN, of Elbridge, in the county of Onondaga and State of New York, have invented new and useful Improvements in Brush-Holders, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

My invention relates to improvements in brush-holders for use on dynamo-electric machines, and has for its object the production of a device which is simple in construction, economical in manufacture, and causes the brush to make a positive and effective contact with the commutator, even though the periphery of said commutator is more or less irregular or uneven; and to this end it consists, essentially, in the combination, construction, and arrangement of the component parts of a brush-holder, as hereinafter fully described, and pointed out in the claims.

In describing this invention reference is had to the accompanying drawings, forming a part of this specification, in which like letters indicate corresponding parts in all the views.

Figure 1 is an elevation, partly in section, of a pair of my improved brush-holders, shown as operatively mounted upon a rocker-arm. Fig. 2 is a plan view of one of said brush-holders and a portion of its supporting spindle or pivot. Figs. 3 and 4 are plan views, partly in section, of the movable frame or support and the main portion of the brush-clamp of one of my improved brush-holders.

A is a rocker-arm, and B B are a pair of my improved brush-holders mounted thereon. The rocker-arm A is of any desirable form, size, and construction, and is usually formed with oppositely-arranged arms a , provided with laterally-projecting spindles or pivots a' . The brush-holders B generally consist of movable frames or supports b and brush-clamps b' . Corresponding ends of the movable frames or supports b are mounted on the spindles or pivots a' , being preferably formed with journal-openings b^2 for receiving said spindles or pivots. The opposite ends of the frames or supports b are formed with sockets b^3 , extending inwardly from their end faces and having substantially concave faces, and are usually provided with apertures b^4 , opening out-

wardly from the sockets b^3 through exterior faces of said frames or supports.

The brush-clamps b' are formed with openings therein for receiving the brushes B' and suitable engaging plates B^2 , and corresponding sides thereof are provided with movable clamping members b^5 and their opposite sides with projections b^6 , movably mounted in the sockets b^3 . The projections b^6 are preferably formed with substantially convex faces for engaging the concave faces of the sockets b^3 and are provided with stems or arms b^7 , which project from said convex faces through the apertures b^4 , are movable in said apertures to a limited extent, and support suitable springs C, usually interposed between shoulders or heads b^8 , formed upon the outer ends of said stems or arms, and washers b^9 , engaged with the adjacent faces of the frames or supports b . The springs C move the brush-clamps independently of the frames or supports b and hold said brush-clamps in their normal positions.

The brush-holders B are forced to their operative position by suitable springs D, engaged with the frames or supports b , and mounted upon suitable supports d , which are preferably clamped to the spindles or pivots a' by any desirable means, as screws d' and nuts d^2 . The supports d for the springs D are usually arranged in cut-outs b^{10} in the adjacent ends of the frames or supports b and are engaged by stop-faces b^{11} upon the frames or supports b as said frames or supports reach the limit of their movement. The supports d thus act as stops to limit the movement of the frames or supports b .

My improved brush-holder is very simple in construction, is cheaply manufactured, and permits a limited universal movement of the brush, thereby effecting a positive and thorough contact of the brush with the commutator. The construction and operation of my improved brush-holder will now be readily understood upon reference to the foregoing description and the accompanying drawings, and it will be particularly noted that I do not herein limit myself to the exact construction and arrangement of the component parts of said brush-holder.

While I have shown my ball-and-socket

joint with the socket on the supporting-arm and the ball member of the joint attached to the brush-clamp, it is obvious that said members may have the opposite arrangement, the ball being part of the supporting-arm and the socket attached to the brush-clamp, without departing from the nature and spirit of my invention.

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

1. A brush-holder having a frame or support, combined with a brush-clamp secured thereto by a ball-and-socket joint.
2. In a brush-holder, the combination of a movable frame or support provided with a socket having a substantially concave face, and a brush-clamp provided with a projection having a substantially convex face for engaging said substantially concave face, substantially as and for the purpose specified.
3. In a brush-holder, the combination of a frame or support provided with a concave socket and a brush-clamp provided with a convex projection having a substantially universal movement in said socket, substantially as set forth.
4. In a brush-holder, the combination of a frame or support provided with a concave socket and a brush-clamp formed with an opening therein for receiving the brush, and having one side provided with a clamping member and its opposite side provided with a projection movably mounted in said socket, substantially as set forth.
5. A brush-holder having a ball-and-socket joint connecting the frame to the brush-clamp, one member of the said joint having an aperture, a rod or arm smaller than said aperture secured to the other member of said joint, and projecting through said aperture, and means on said rod for keeping said members in contact, substantially as set forth.

6. A brush-holder having a ball-and-socket joint connecting the frame to the brush-clamp, one member of said joint having an aperture, a rod or arm smaller than said aperture secured to the other member of said joint and projecting through said aperture, and a spring secured to said rod or arm for holding said members together, substantially as set forth.

7. In a brush-holder, the combination of a movable frame or support provided with a socket having a substantially concave face, and with an aperture extending outwardly from the socket, a brush-clamp formed with an opening therein for receiving the brush, and having one side provided with a movable clamping member and its opposite side provided with a projection having a substantially convex face for engaging said substantially concave face and with a stem or arm extending through the aperture, and a spring mounted on the stem or arm for holding the brush-clamp in its normal position, substantially as and for the purpose described.

8. In a brush-holder, the combination of a frame or support provided with a concave socket having an aperture, and a brush-clamp provided with a convex projection having a substantially universal movement in said socket, a rod or arm secured to said convex projection and fitting loosely in said aperture, a head on the free end of said rod or arm, and a spring interposed between said head and said concave socket for retarding the movement of said joint, substantially as set forth.

In testimony whereof I have hereunto signed my name, in the presence of two attesting witnesses, at Elbridge, in the county of Onondaga, in the State of New York, this 8th day of December, 1897.

ALBERT E. DOMAN.

Witnesses:

F. J. HASELTINE,
AURILLA WOOD.