

No. 771,020.

PATENTED SEPT. 27, 1904.

C. H. LANE.
BRUSH HOLDER FOR AIR SEPARATORS.

APPLICATION FILED FEB. 29, 1904.

NO MODEL.

Fig. 1.

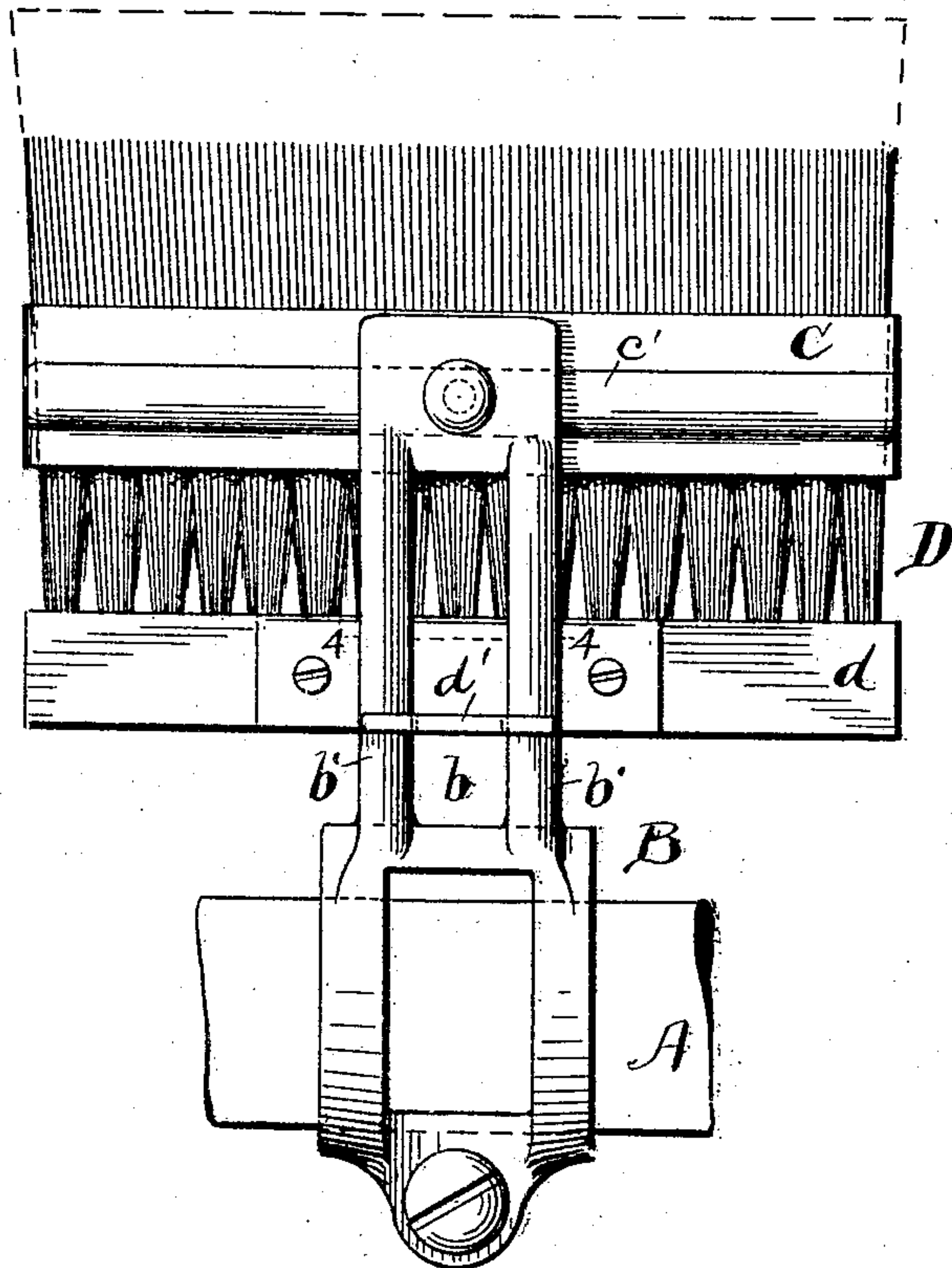


Fig. 2.

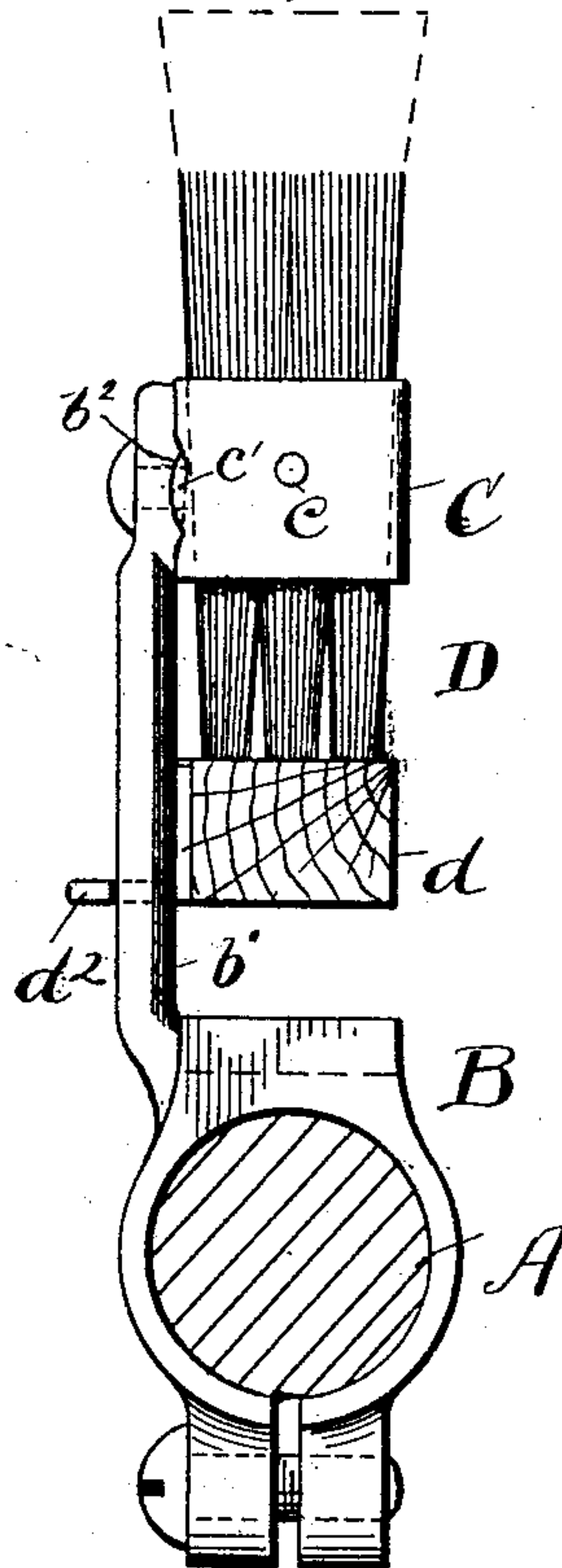


Fig. 3.

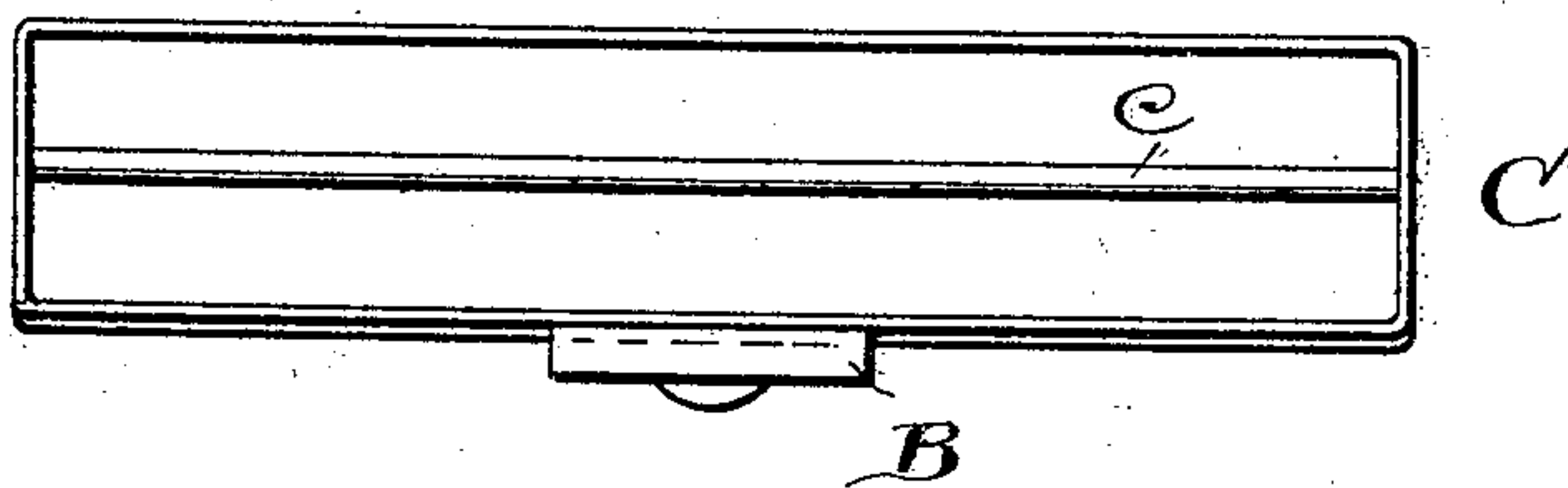
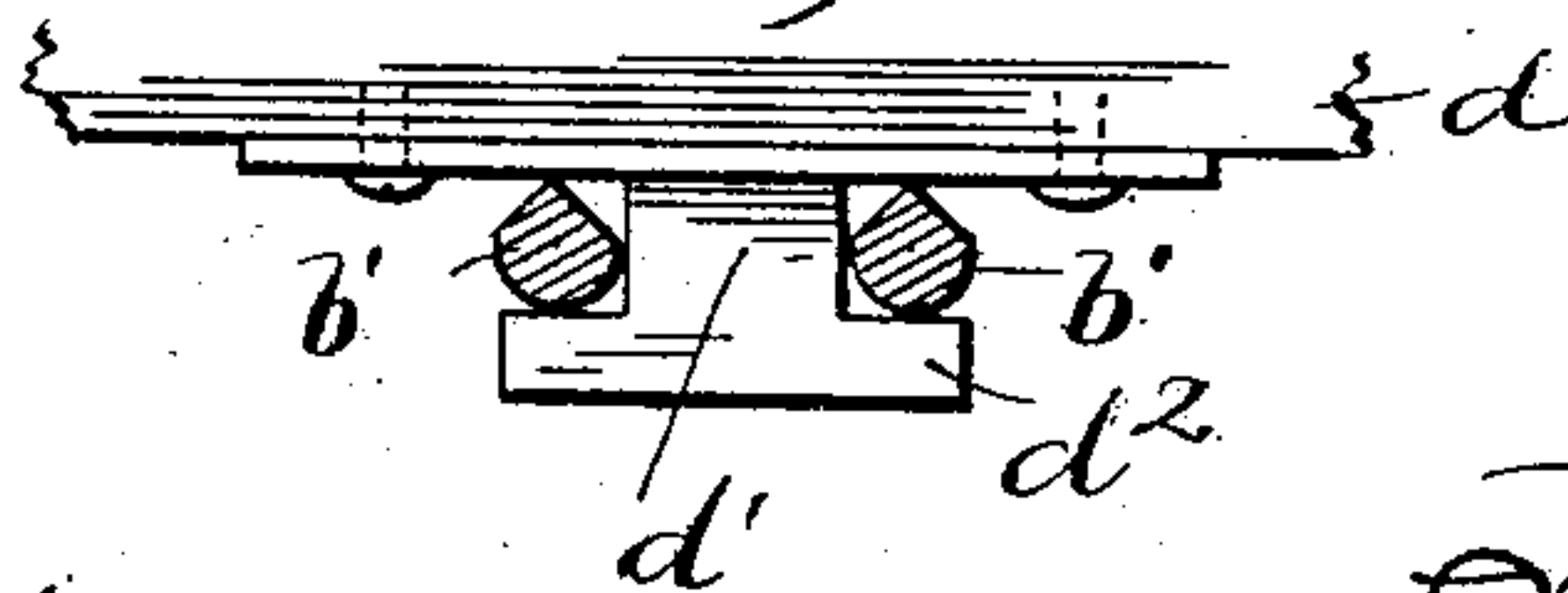


Fig. 4.



Witnesses.
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UNITED STATES PATENT OFFICE.

CHARLES H. LANE, OF CLEVELAND, OHIO.

BRUSH-HOLDER FOR AIR-SEPARATORS.

SPECIFICATION forming part of Letters Patent No. 771,020, dated September 27, 1904.

Application filed February 29, 1904. Serial No. 195,825. (No model.)

To all whom it may concern:

Be it known that I, CHARLES H. LANE, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented a certain new and useful Improvement in Brush-Holders for Air-Separators, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings.

In my prior patent, No. 728,475, is shown an air-separator which includes, among other things, an inclined stationary cylinder through which an air-current flows in an upward direction and which is provided with means for slowly feeding into it the pulverized material whose constituent parts are to be separated. It also included a rotating shaft which extends axially through said cylinder and carries arms on which are outwardly-movable brushes which as the shaft rotates brush against the inner periphery of the cylinder, and so stirs up and lifts the pulverized material, which would otherwise settle to the bottom of the cylinder, and so continually presents it to the action of the air-current. The rapidity with which the shaft rotates and the weight of the brushes determine the force with which they press against the inner periphery of the cylinder. In practical use I have found that said brushes did not operate as satisfactory as could be desired.

The object of the present invention is to correct such defects as were developed by the practical use of the construction shown in said prior patent.

In the drawings, Figure 1 is a side elevation of a short section of the shaft and of one brush and the arm secured to the shaft on which said brush is movably supported. Fig. 2 is a sectional end elevation of the shaft, showing this same brush and its supporting-arm. Fig. 3 is a plan view of the frame carried by said arm, which embraces the brush-bristles; and Fig. 4 is a sectional view looking downward, this section being on the line 4-4 of Fig. 1.

Referring to the parts by letters, A represents the rotating shaft, and B an arm secured thereto, having an outwardly-extended slot b between two members b' of said arm. Se-

cured to the upper end of the arm is a rectangular frame C, preferably made of sheet metal. The brush-bristles are embraced by this frame, and the back d of the brush is provided with a T-shaped arm d' , which passes between the two members d , the laterally-extended fingers d'' engaging with the rear side thereof. A rod e extends between the two end members of this frame, consequently passing between the bristles of the brush.

The described construction is exceedingly simple and cheap. The brush will permit the movement freely lengthwise of the arm, and it is guided in its movement so that the end of all the bristles will bear squarely against the inner periphery of the cylinder. As these bristles wear off the brushes automatically move outward from the shaft, so that substantially the same length of bristles will project beyond the frame C however long or short the bristles may be. The flexibility of the bristles depends not upon their length, measured from the back outward, but upon the distance they project beyond the frame and the rod e , over which they bend when in action. The action of the brush will therefore be always the same until the bristles are worn down to such an extent that they cannot touch the inner periphery of the cylinder when the brush is moved as far out as the frame will permit.

It is desirable that the brush be rather wide, measured from right to left in Fig. 2, its efficiency depending to some extent upon such width. It is also desirable that all of the brushes be of substantially uniform flexibility, a result which is not attainable with a thick brush except by the employment of a rod e , over which the bristles will bend. Only one of such rods is shown; but more may be used, the number best adapted for the purpose being dependent upon the width of the brush.

The frame C is secured to the arm B by a single rivet E, the engaging surfaces of said arm and frame being provided with a rib c' and a recess b'' , which prevents the turning of the frame upon said rivet.

Having described my invention, I claim—
1. A brush-holder for use in air-separators,

consisting of an arm for attachment to a rotating shaft within the separator-cylinder, said arm having a longitudinal slot, and a rectangular frame secured to its outer end, combined
5 with a brush, the bristles of which are embraced by said frame, said brush having secured to its head, a T-shaped arm, which passes through said slot and has its fingers in engagement with the rear side of said arm
10 members, substantially as specified.

2. A brush-holder for use in air-separators, consisting of an arm for attachment to a rotating shaft within the separator-cylinder, a rectangular frame secured to the outer end of
15 said arm, and a rod extending between and secured to the end members of said frame, with a brush, the bristles of which pass through said rectangular frame on opposite sides of said rod, and means secured to the head of the
20 brush engaging with said arm and capable of freely moving thereon, whereby the brush is guided but permitted to move freely outward

under the influence of centrifugal force, substantially as specified.

3. A brush-holder for air-separators, consisting of an arm for attachment to a rotating shaft within the separator-cylinder, and a rectangular frame secured to said arm by a single rivet, the engaging surfaces of said arm and frame having respectively a groove and a rib
25 which enters it, with a brush, the bristles of which pass through said rectangular frame, and means secured to the head of the brush engaging with said arm and capable of freely moving thereon, whereby the brush is guided
30 but permitted to move freely outward under the influence of centrifugal force, substantially as specified.

In testimony whereof I hereunto affix my signature in the presence of two witnesses. 40

CHARLES H. LANE.

Witnesses:

E. B. GILCHRIST,
E. L. THURSTON.