

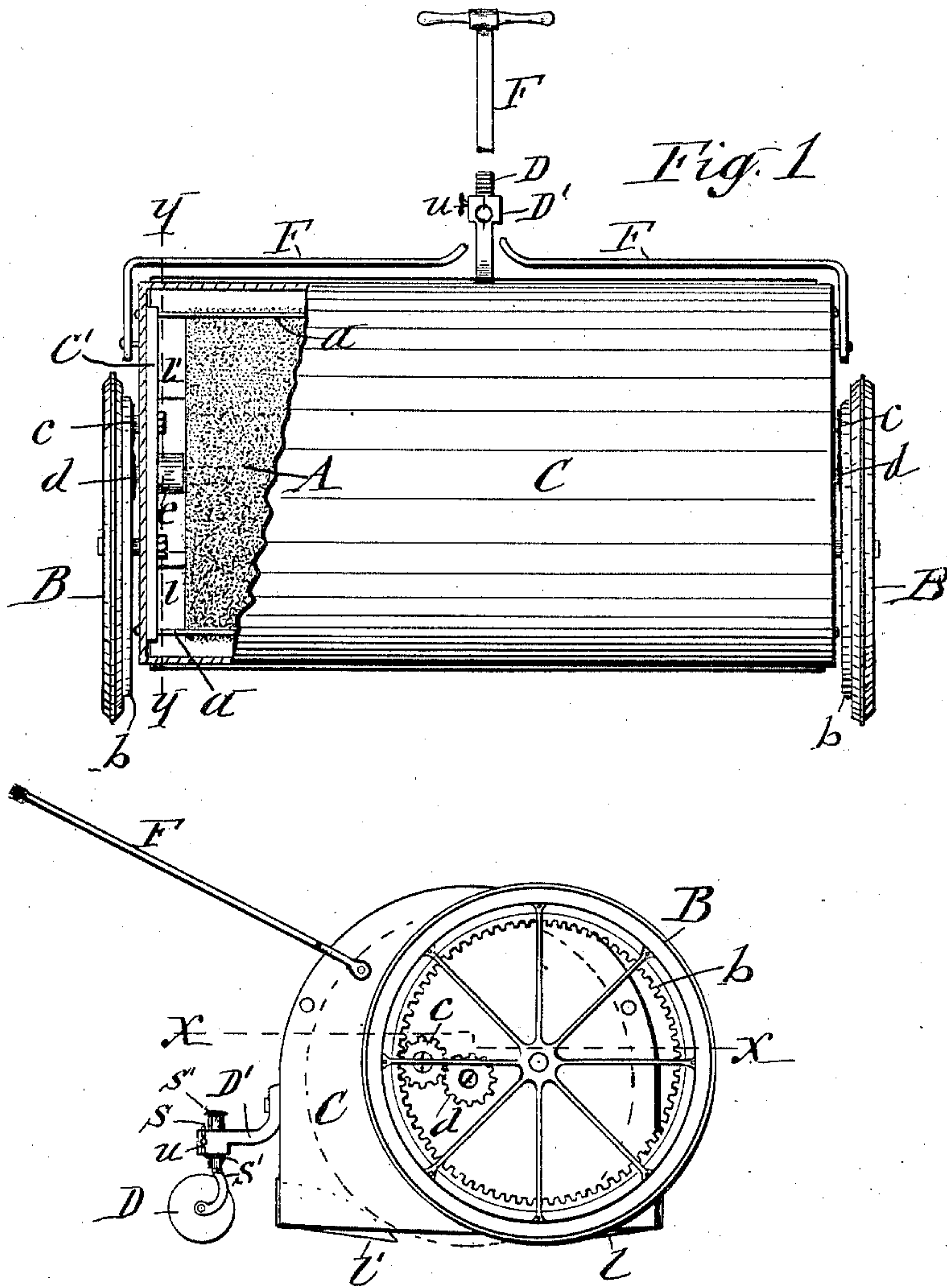
(No Model.)

3 Sheets—Sheet 1.

J. S. HITCHCOCK.
CARPET SWEEPER.

No. 584,307.

Patented June 8, 1897.



WITNESSES:
H. B. Smith
M. A. Leyden

INVENTOR:
John S. Hitchcock
By E. Laess
his ATTORNEY

(No Model.)

3 Sheets—Sheet 2.

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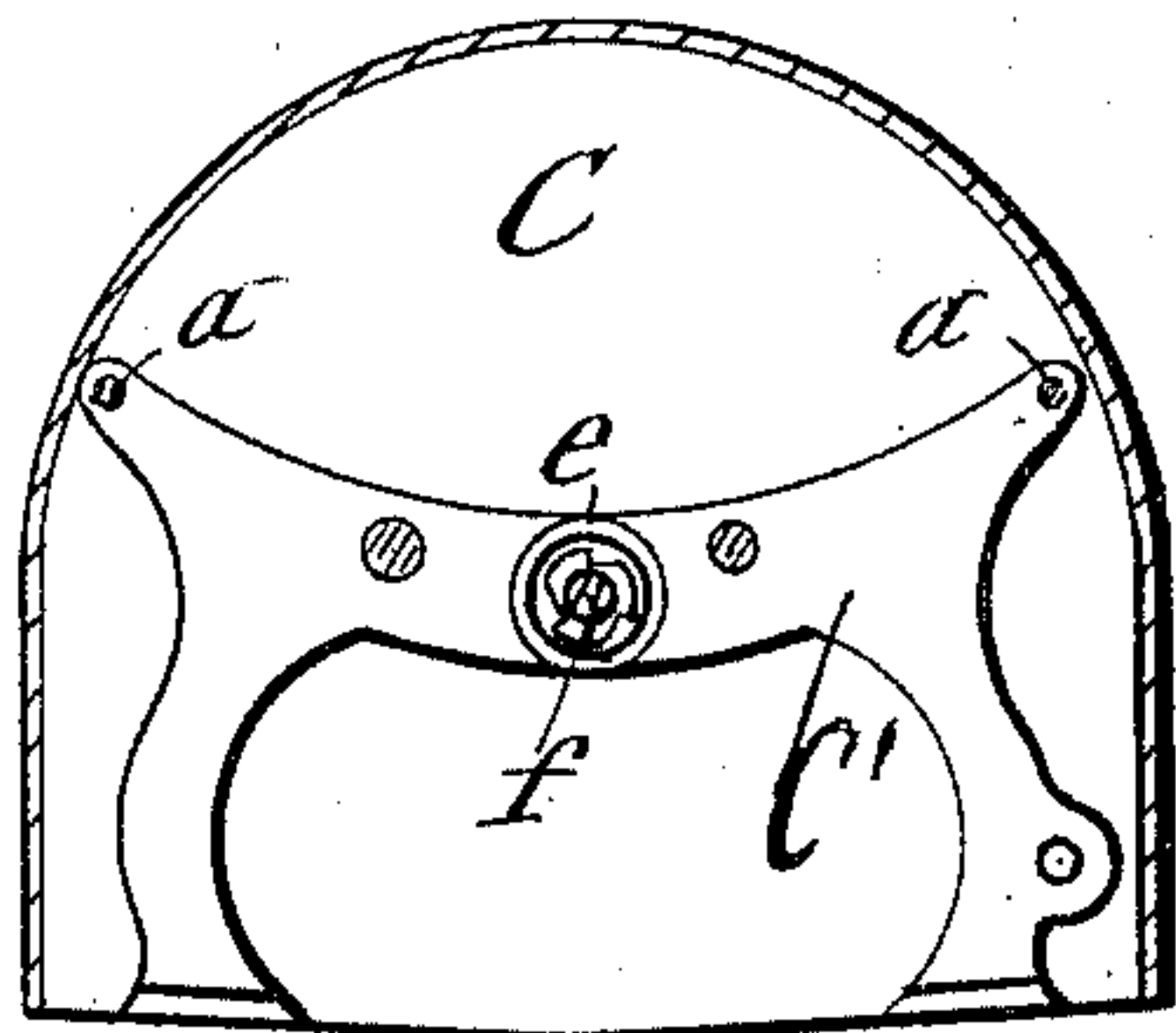
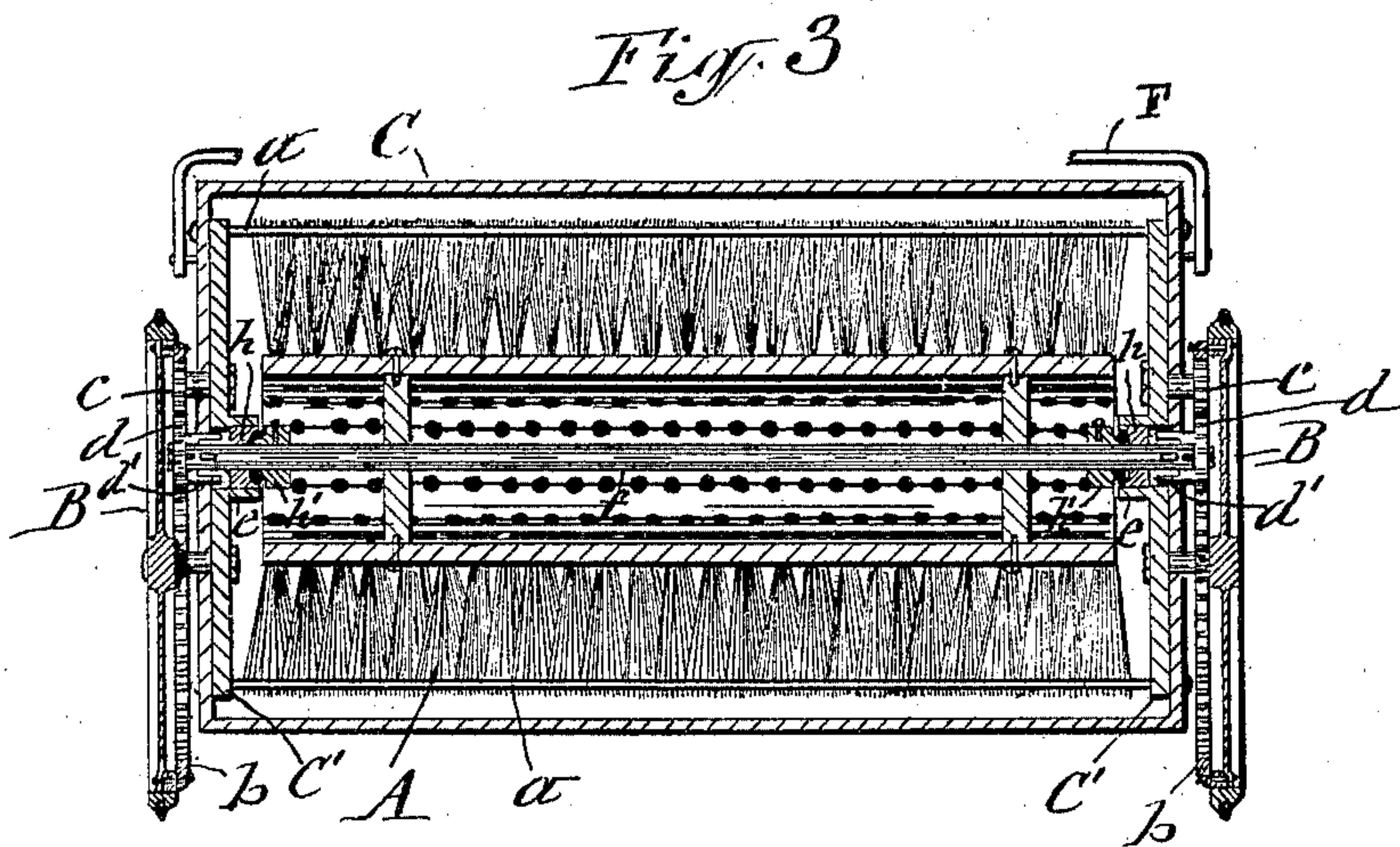
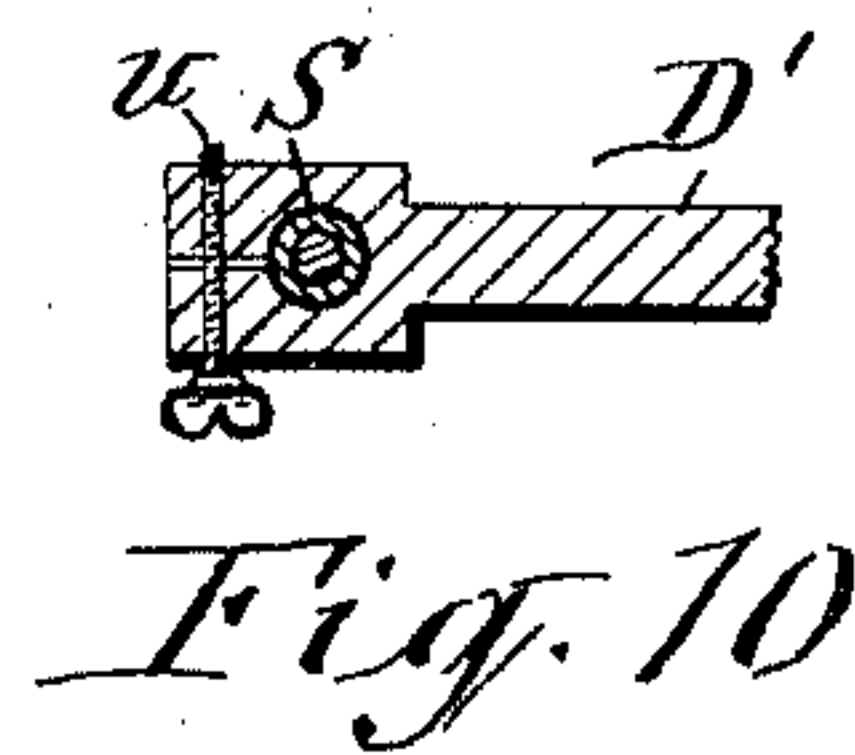
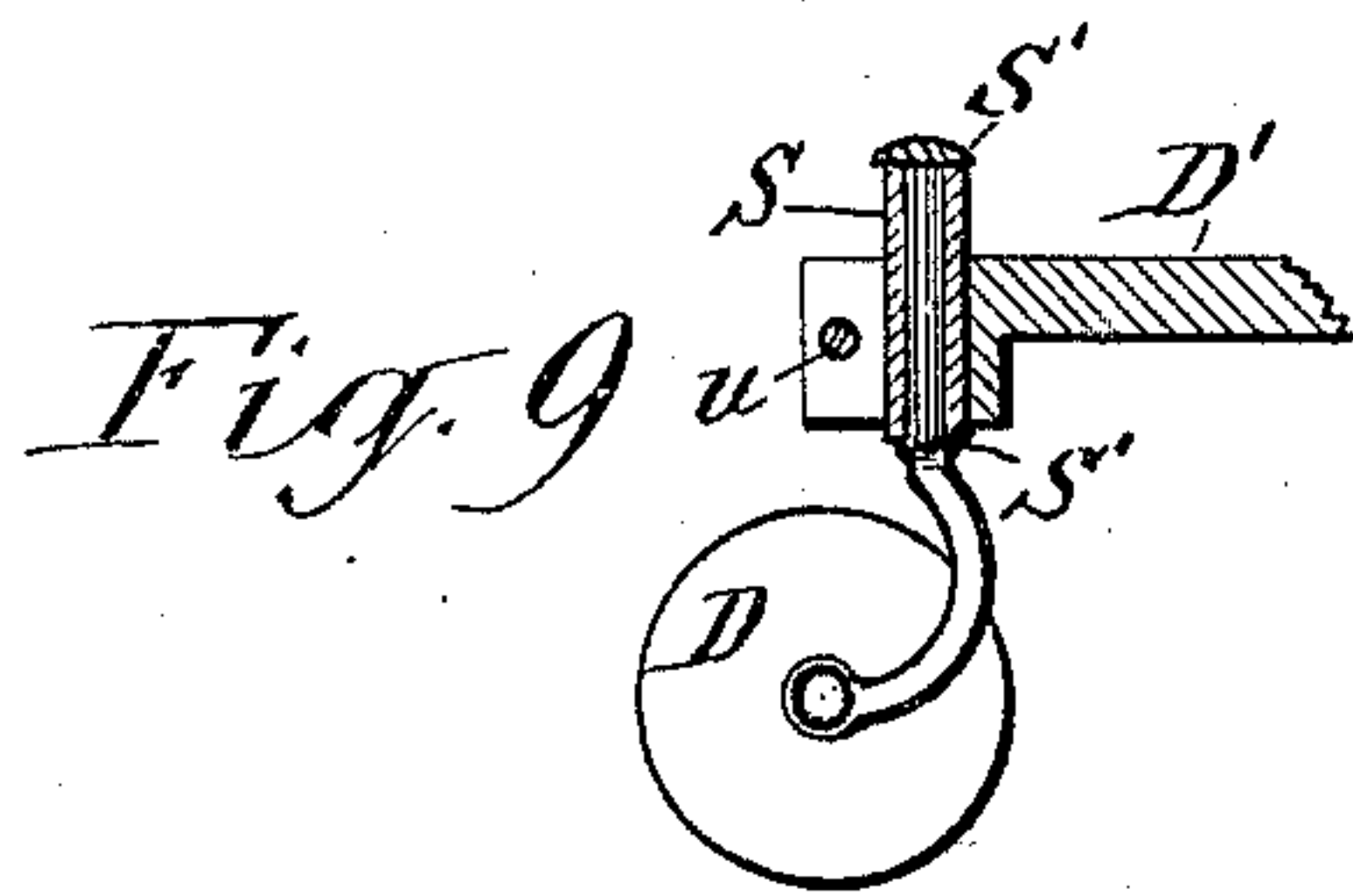


Fig. 4



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Fig. 5

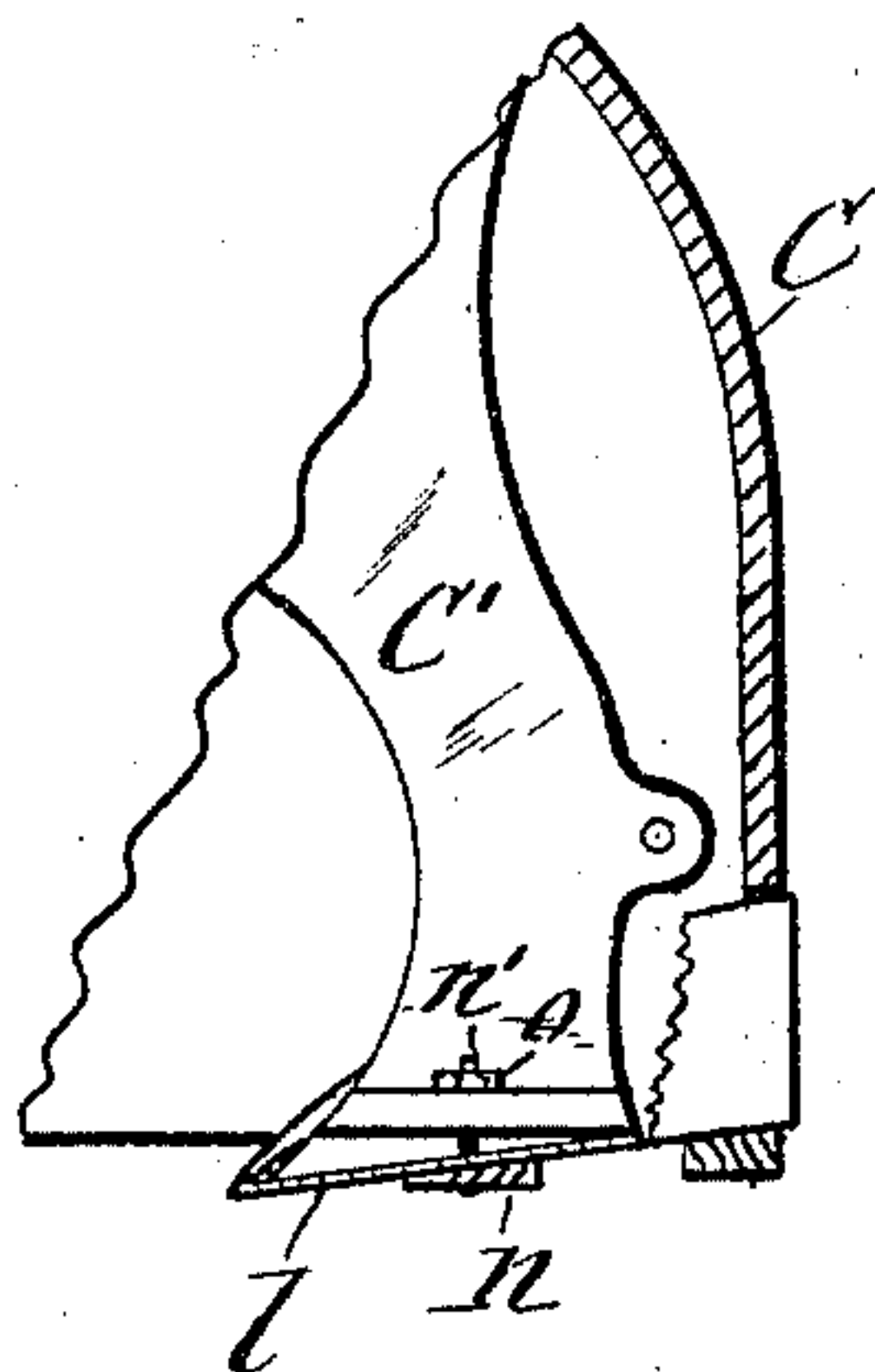
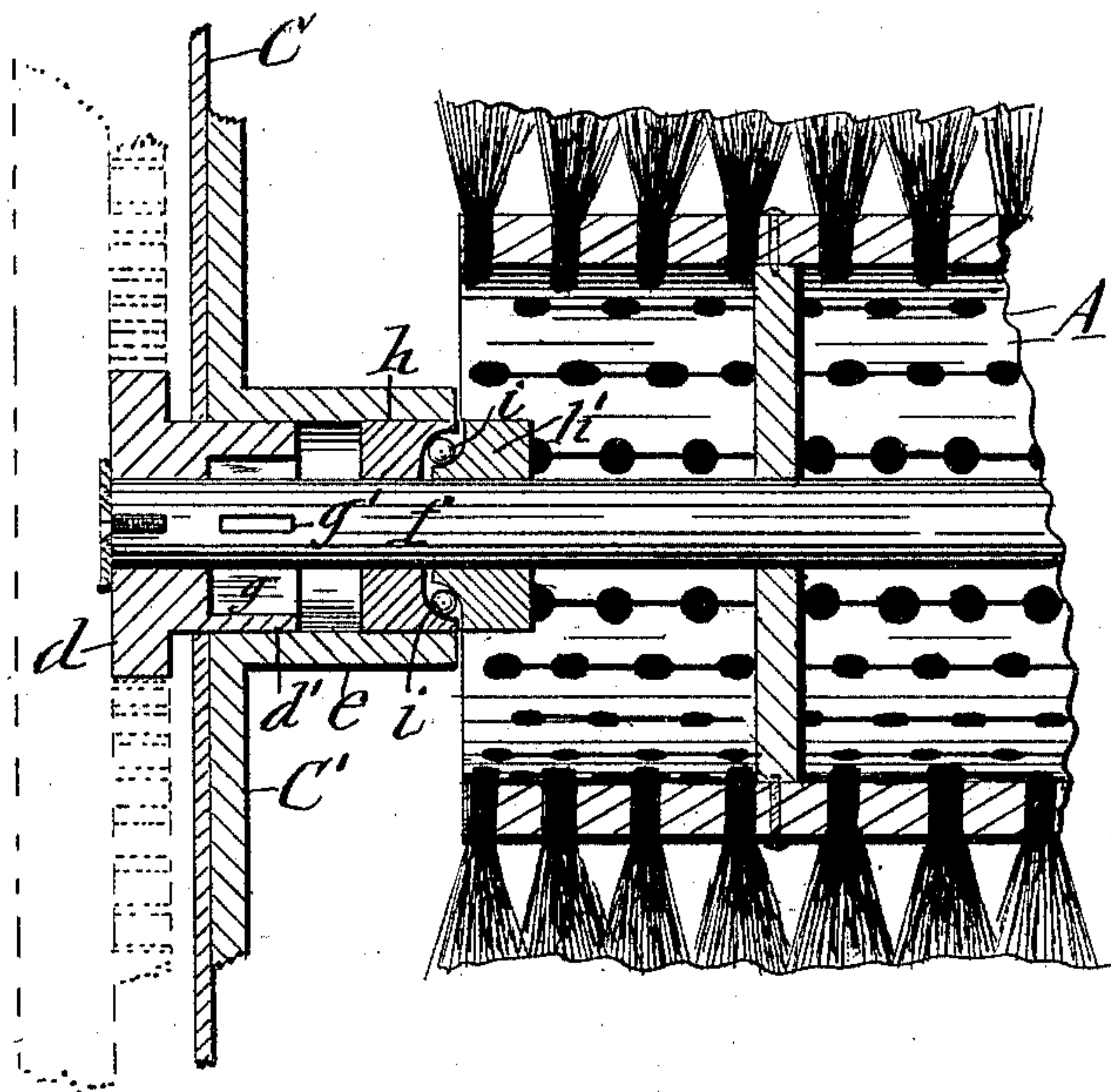


Fig. 7

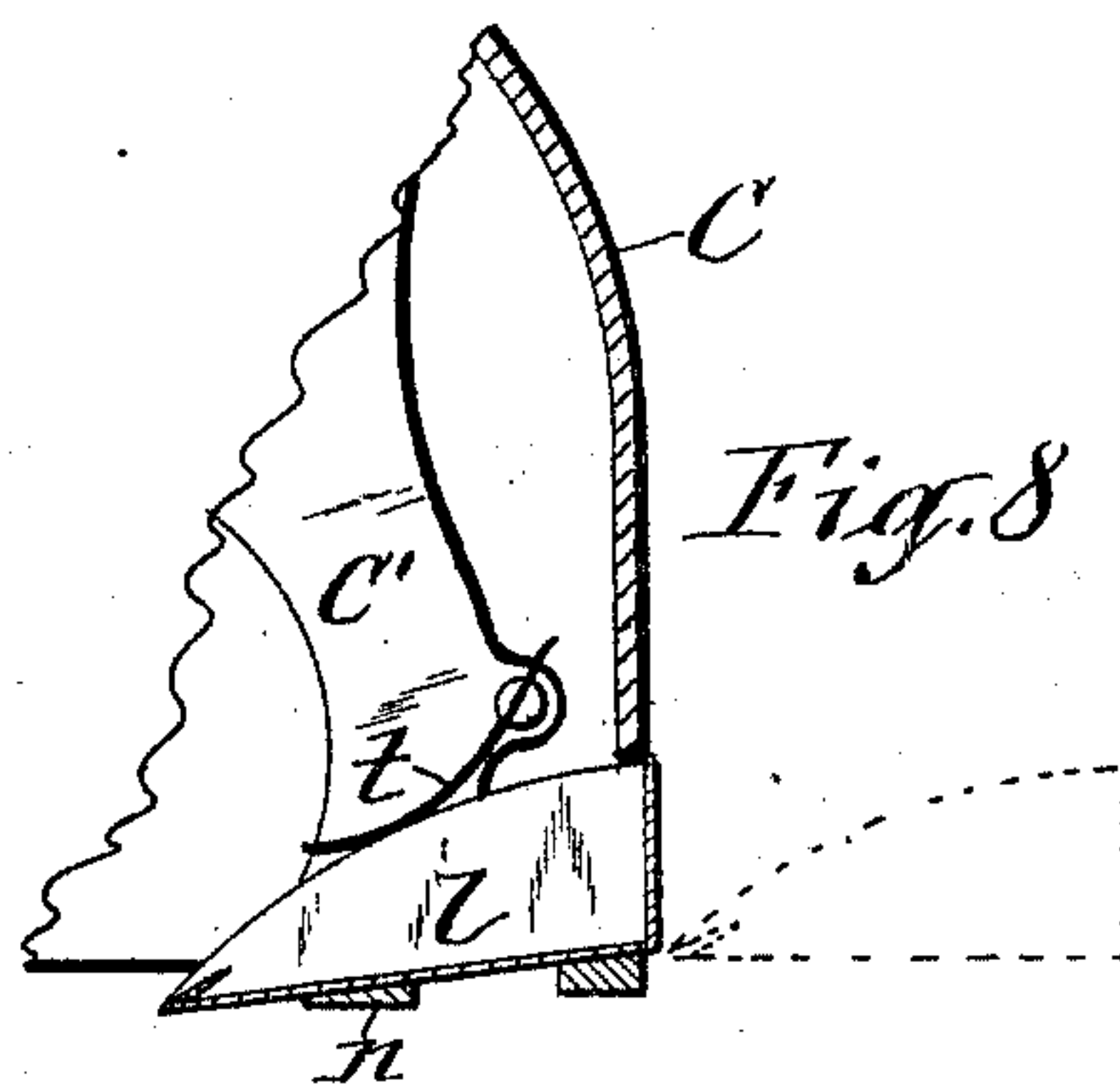


Fig. 8

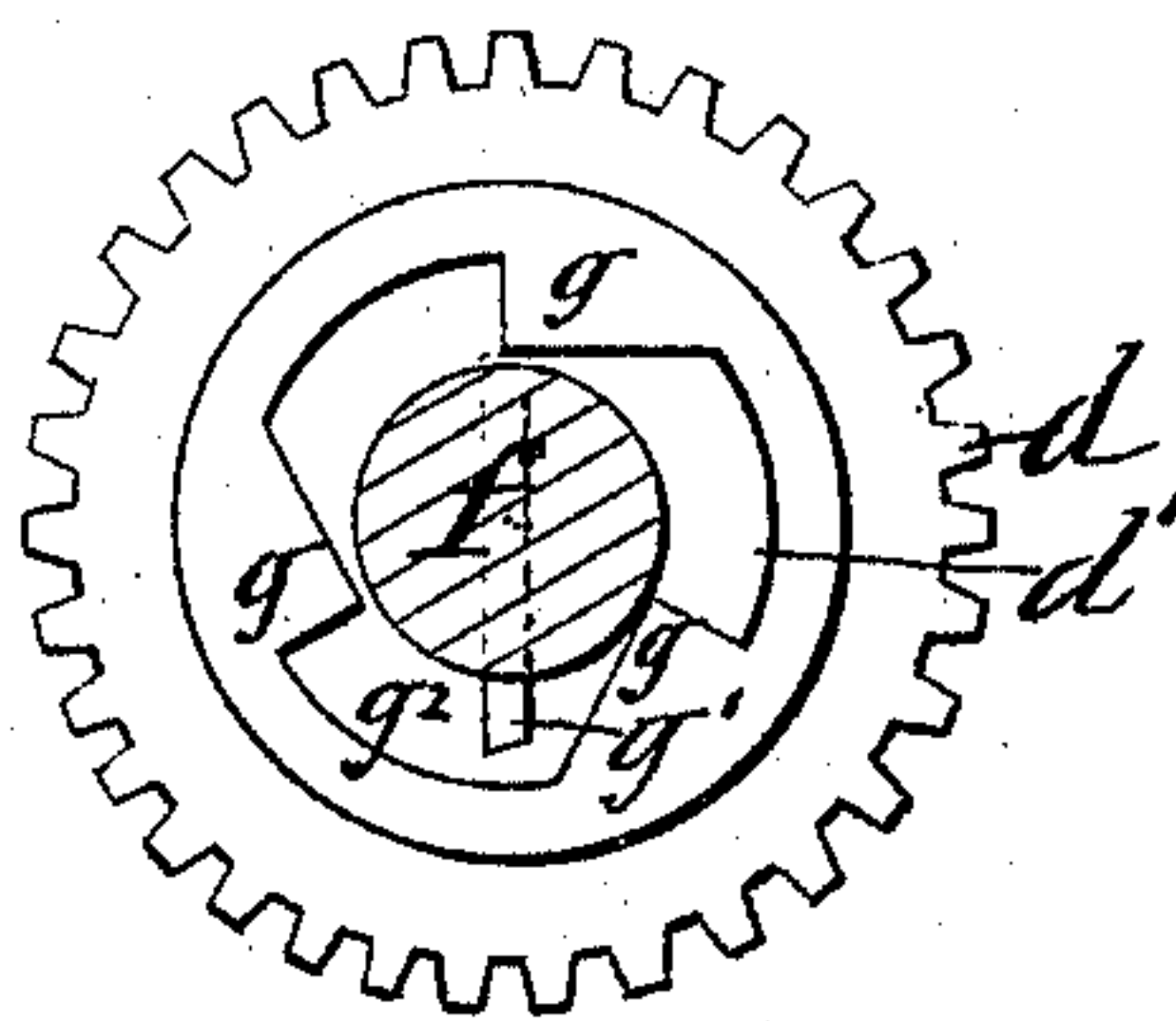


Fig. 6

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UNITED STATES PATENT OFFICE.

JOHN S. HITCHCOCK, OF SYRACUSE, NEW YORK, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, TO THE ONONDAGA SWEEPER COMPANY, OF SAME PLACE.

CARPET-SWEEPER.

SPECIFICATION forming part of Letters Patent No. 584,307, dated June 8, 1897.

Application filed September 12, 1896. Serial No. 605,594. (No model.)

To all whom it may concern:

Be it known that I, JOHN S. HITCHCOCK, of Syracuse, in the county of Onondaga, in the State of New York, have invented new and useful Improvements in Sweeping-Machines, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention relates to the class of sweeping-machines in which a cylindrical brush receives rotary motion from carrying-wheels supporting the machine and a dust-pan in the machine receives the sweepings from said brush.

The object of the invention is to provide a sweeping-machine which shall be simpler and more compact in construction and more efficient and durable in operation; and to that end the invention consists in the improved construction and combination of the component parts of the machine hereinafter described, and pointed out in the claim.

In the annexed drawings, Figure 1 is a top plan view of a sweeping-machine embodying my invention, a part of the inclosing case being broken away to illustrate the interior of the machine. Fig. 2 is a side view of said machine. Fig. 3 is a horizontal transverse section on line X X in Fig. 2. Fig. 4 is a vertical transverse section on line Y Y in Fig. 1. Fig. 5 is an enlarged longitudinal section of the pawl-and-ratchet connection of the brush-shaft with its actuating-pinion. Fig. 6 is an enlarged transverse section of the ratchet mechanism. Fig. 7 is a side view of one of the adjustable supports of the dust-pan. Fig. 8 is a transverse section of said dust-pan. Fig. 9 is an enlarged longitudinal view of the adjustable caster or third carrying-wheel of the machine, and Fig. 10 is a horizontal section of said caster.

Similar letters of reference indicate corresponding parts.

A denotes the rotary brush of the sweeping-machine, which brush is cylindrical and disposed horizontally within the inclosing case C, to the sides of which it is pivoted in the manner hereinafter described. The case is preferably formed of sheet-iron and stiffened by brackets C', secured to the inner sides of the case and tied together by means of transverse rods *a a*. To each of said brackets

is pivoted one of the two driving-wheels B B, which carry the front end of the case C and have their axes in line with each other and parallel and eccentric to the brush-shaft, which is at the rear of said wheel-axes. Said wheels are preferably provided with rubber tires to obtain the requisite frictional hold upon the floor to insure the rotation of said wheels in moving the machine over the floor to be swept. To each of these driving-wheels is attached an internally-toothed gear *b*, which meshes with a pinion *c*, pivoted to the bracket C' of the case. This pinion meshes with a pinion *d*, which transmits motion to the brush A by means of the following pawl-and-ratchet mechanism.

Each of the brackets C' is provided with an inwardly-projecting tubular boss *e*, in which the hub *d'* of the pinion *d* is journaled, so as to carry the pinion close to the side of the case, as more clearly shown in Fig. 5 of the drawings. This allows the machine to be operated close to the wall of a room. This hub is tubular and receives through it one end of the brush-shaft *f*, which is journaled to rotate freely therein. The interior of said hub is formed with an uneven number of ratchet-teeth *g*, and the inclosed end portion of the brush-shaft is provided with a transverse slot in which slides the pawl *g'*, consisting of a steel plate which is of a length to extend from the point of a tooth *g* at one side of the brush-shaft into the interstice *g²* at the opposite side of said shaft, as illustrated in Fig. 6 of the drawings. Said pawl is thus always forced into a position to engage one of the ratchet-teeth in the forward movement of the machine.

The brush-shaft *f* is pivoted to the case C by antifriction ball-bearings consisting of the cup or annular concave plate *h*, fitted tightly into the tubular boss *e*, the cone *h'*, fastened to the shaft *f*, and the balls *i i*, interposed between said cup and cone, as illustrated in Fig. 5 of the drawings.

l represents the main dust-pan, which is of the form of a drawer inserted removably in the base of the front portion of the case C to receive the dust immediately from the brush during the operation of the machine. Another dust-pan *l'* is placed in a similar manner in the rear portion of the case to collect the

dust carried over the brush by rapid motion thereof.

In order to allow the dust-pan to be adjusted to a proper distance from the floor or in close proximity thereto, if desired, I support the inner portion of the dust-pan upon a plate *n*, which is connected at its ends to the sides of the case *C* by means of screws *n'*, pivoted vertically to said plate and passing through nuts *o*, secured to the sides of the case *C*, as shown in Fig. 7 of the drawings. By turning said screws the plate *n* and part of the dust-pan resting thereon are lowered or raised, as may be desired. Inasmuch as this adjustment is effected without disturbing the brush-shaft, the said dust-pan can be set toward or from the brush, as may be desired.

To hold the dust-pan steadily on the plate *n* during the operation of the machine, a suitable spring *t* is connected to the case *C* and made to bear on top of the end of the dust-pan, as shown in Fig. 8 of the drawings. The rear portion of the case *C* is supported by a caster *D*, swiveled to a bracket *D'*, attached to the center of the rear end of the case. The brush-shaft being located back of the axes of the driving-wheels, as hereinbefore described, causes the weight of the brush to be distributed between said driving-wheels and caster. However, the chief object of locating the brush-shaft back of the axis of the driving-wheels is to overcome the tendency of tilting the case *C* forward by the engagement of the intermediate pinions *c* with the upwardly-moving rear portions of the gears *b b* on the driving-wheels when the sweeping-machine is in operation. Such tilting of the case or lifting of the rear portion thereof is effected when the brush-shaft is arranged in line with the axis of the driving-wheels, inasmuch as this arrangement deprives the inclosing case *C* of proper support in front of the brush. This defect I overcome by pivoting the driving-wheels to the case at points in front of the brush-shaft and thus providing a positive support for the front portion of the case and

causing the weight of the brush to be carried between the driving-wheels and the caster on the rear portion of the case, as shown in Fig. 2 of the drawings.

Another important feature of my invention resides in the novel arrangement of the ball-bearings for the ends of the brush-shaft in combination with the pawl-and-ratchet mechanism, transmitting motion to said shaft as hereinbefore described. In order to allow said caster to be adjusted to support said portion of the case a greater or less distance from the floor, I split the bracket *D'* vertically from the free end thereof to the vertical eye in which the caster is secured. Said end of the caster is thus rendered expansible and contractible. The stem of the caster is swiveled in a sleeve *S*, which is confined vertically on the stem by collars *S'* on said stem at opposite ends of the sleeve, which passes through a vertical eye in the bracket and is of sufficient length to allow it to be shifted vertically in the eye of the bracket. By means of a screw *u*, connected to the free end of the bracket, the sleeve *S* is clamped in its adjusted position.

F represents the handle, by which to operate the machine.

What I claim as my invention is—

The combination with the case of the brackets *C'*, each provided with the inwardly-projecting tubular bosses *e e*, the pinions *d d* having tubular hubs *d' d'* journaled in said bosses, and provided in their interiors with ratchet-teeth *g g*, the brush-shaft *f* journaled in said hubs, the pawls *g' g'* connected to the brush-shaft, the concave plates *h h* seated on the inner ends of the bosses *e e*, the cones *h' h'* attached to the brush-shaft and the balls *i i* interposed between said cones and plates substantially as described and shown.

In testimony whereof I have hereunto signed my name this 28th day of August, 1896.

JOHN S. HITCHCOCK. [L. S.]

Witnesses:

J. J. LAASS,
H. B. SMITH.