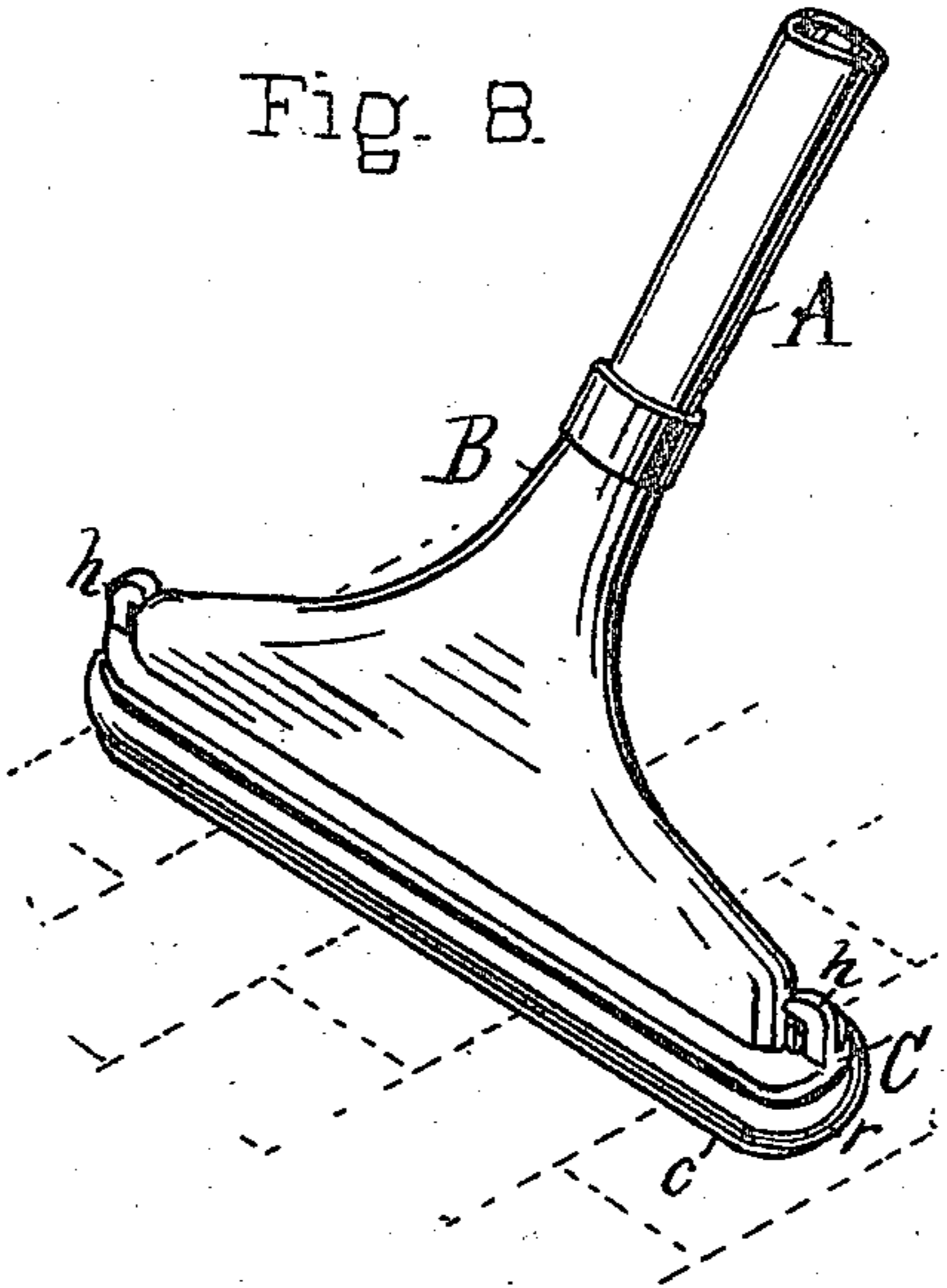
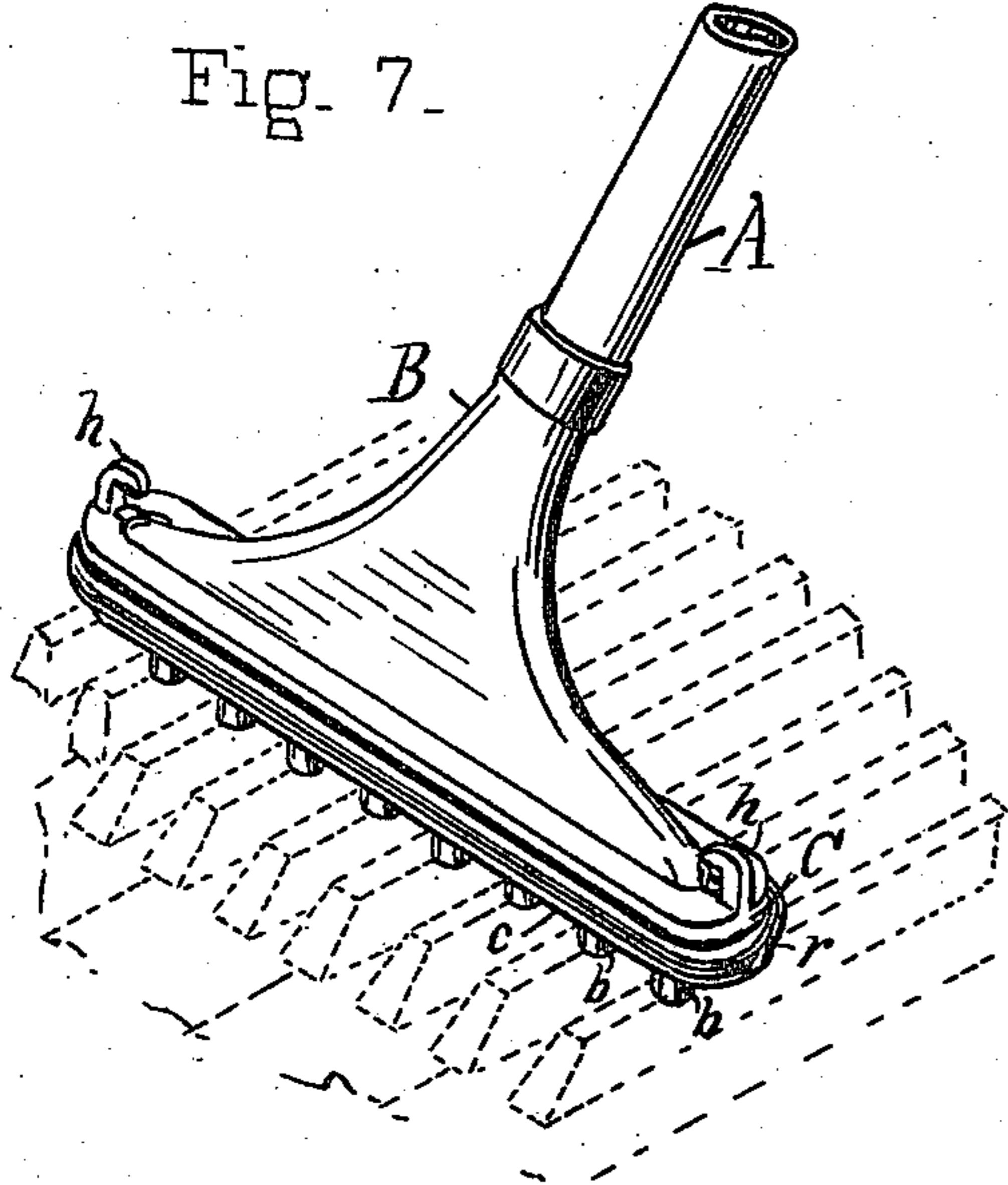
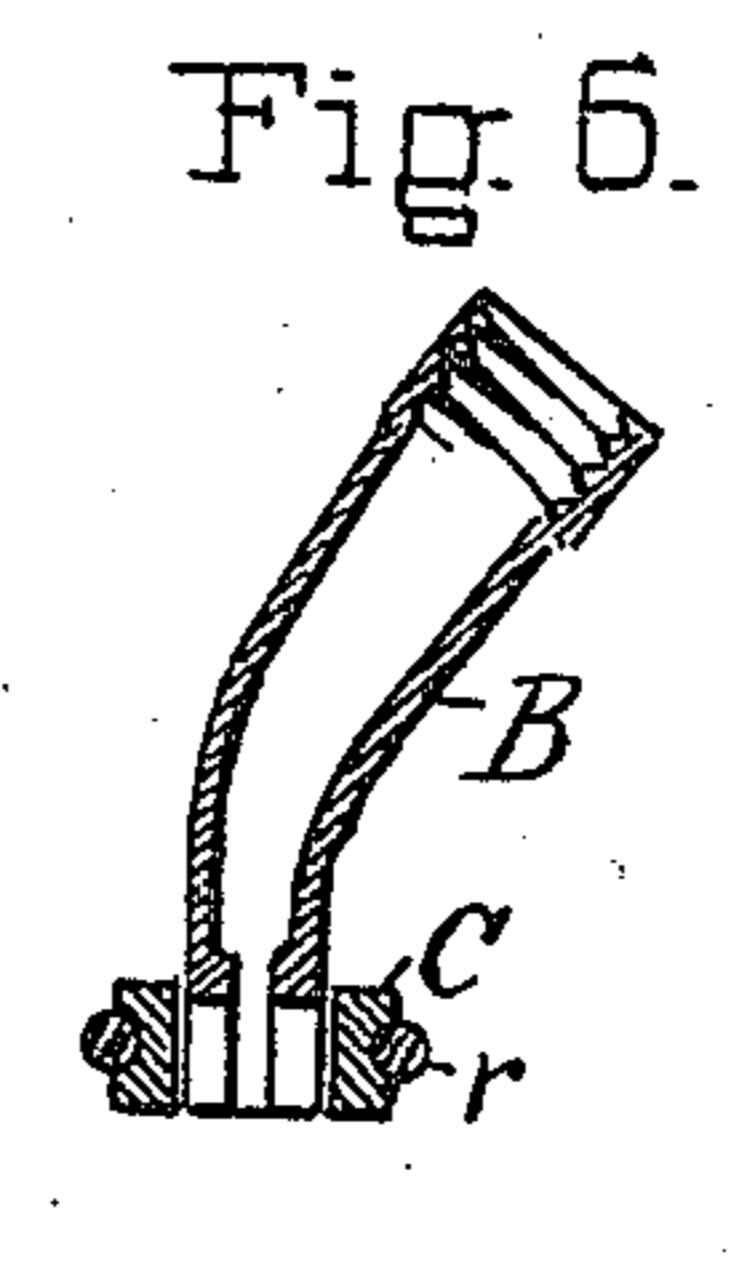
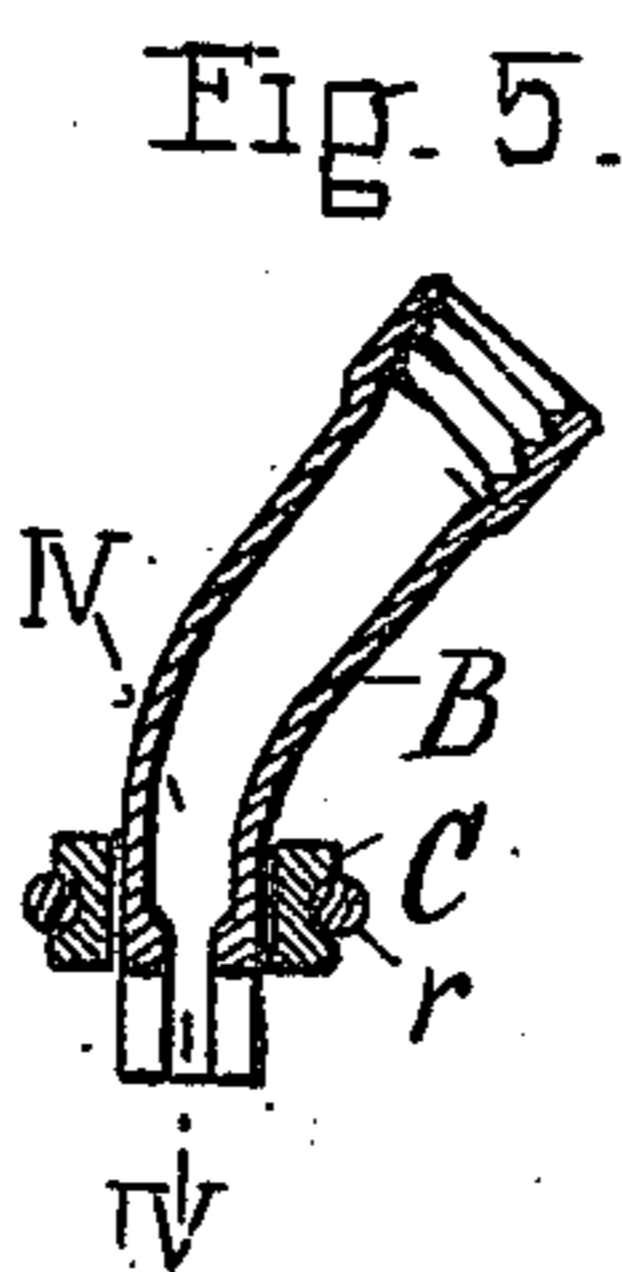
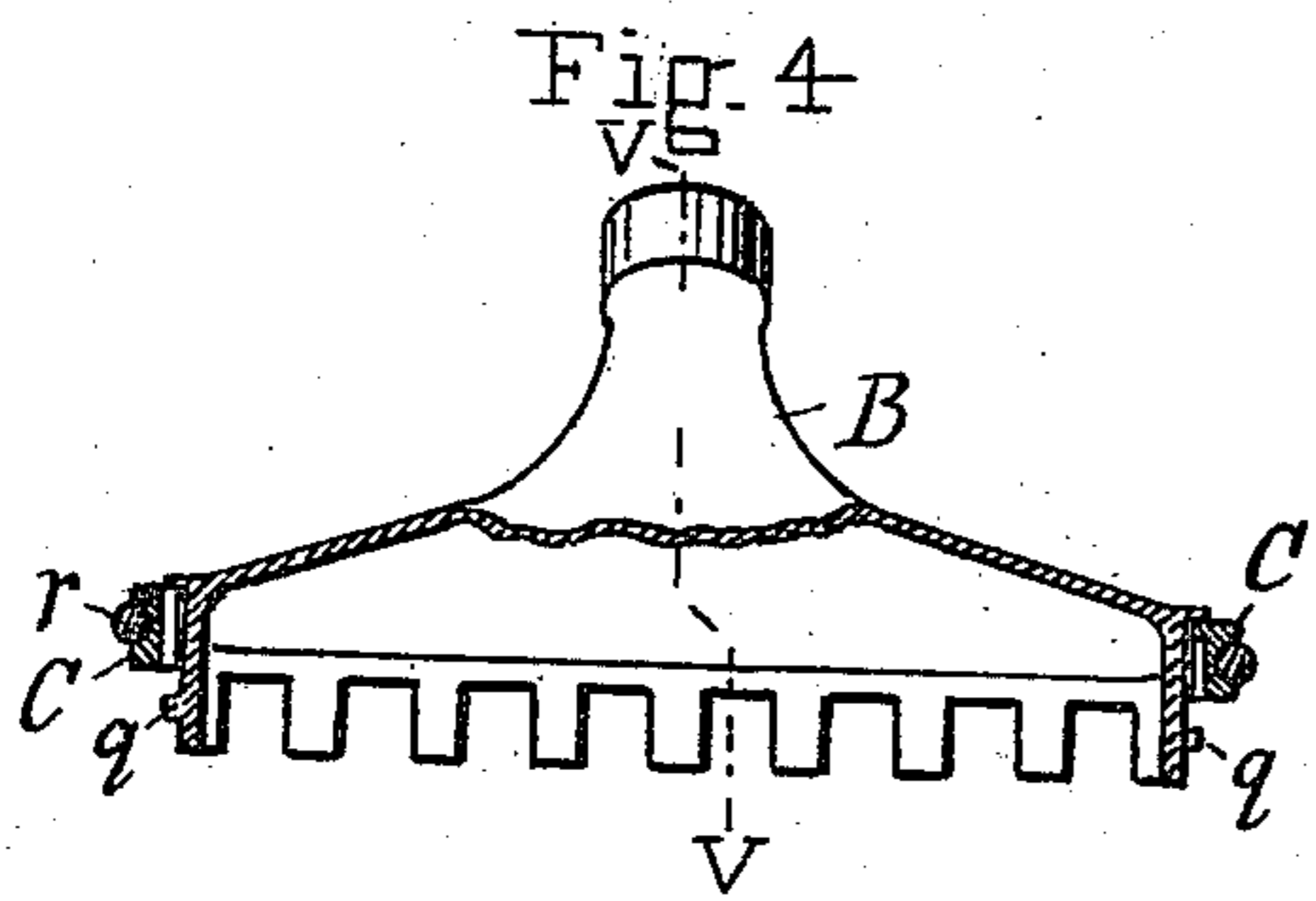
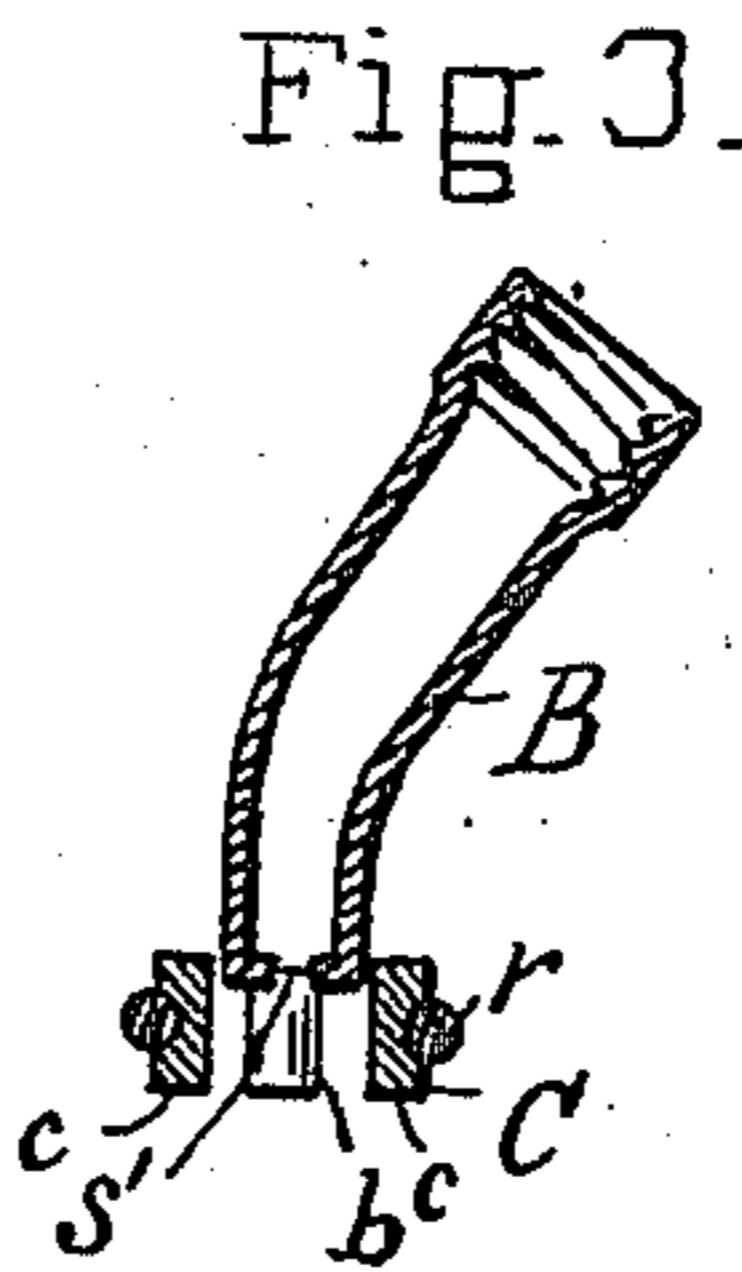
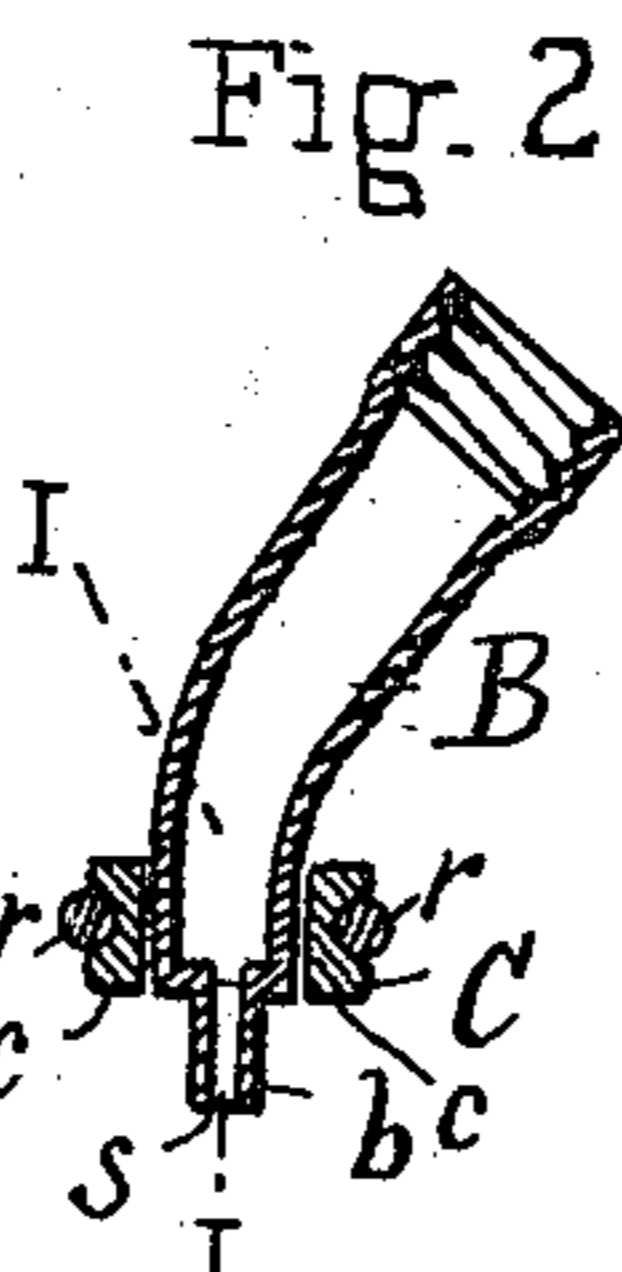
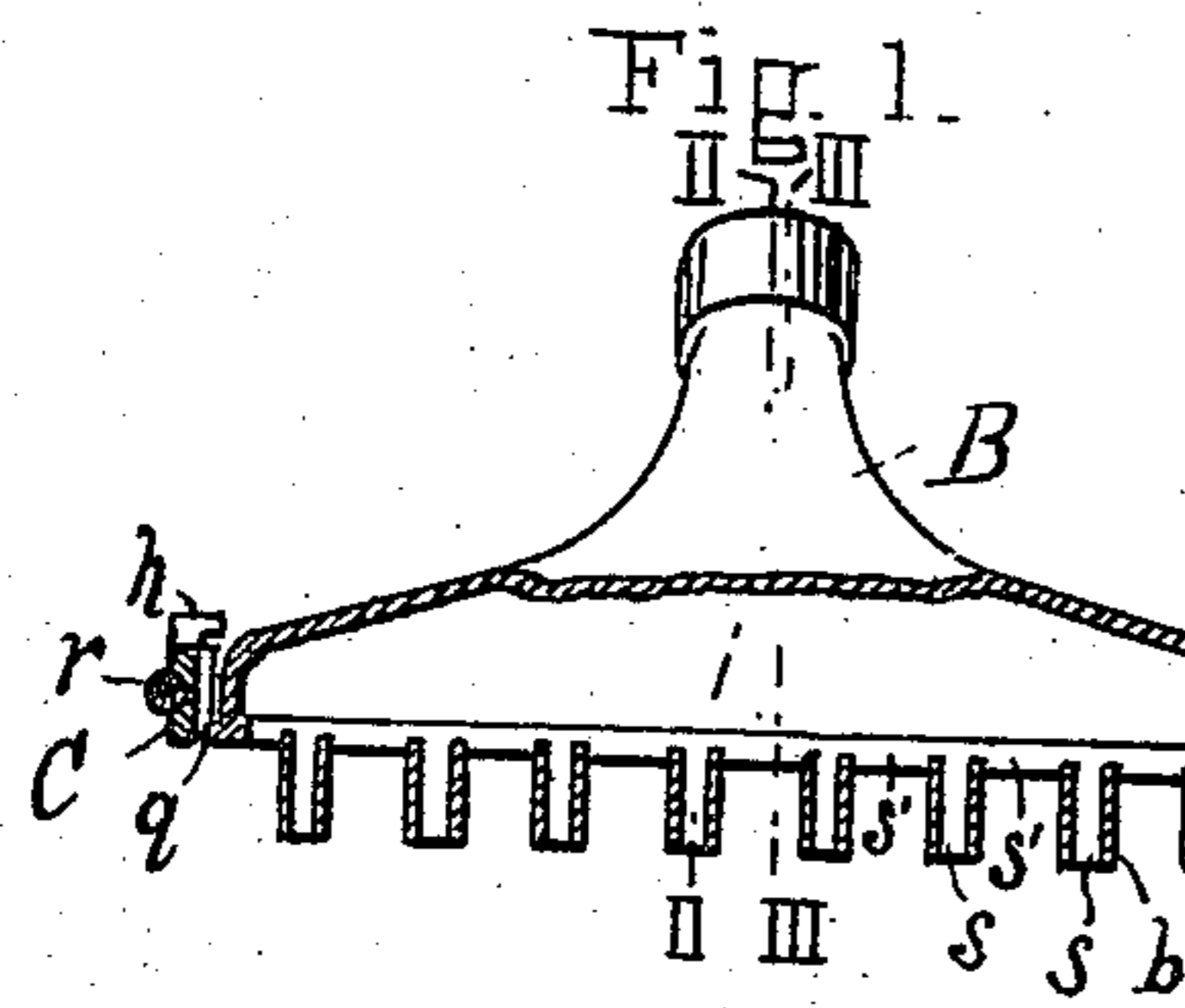


D. T. KENNEY.
 APPARATUS FOR REMOVING DUST.
 APPLICATION FILED JAN. 2, 1906.

963,049.

Patented July 5, 1910.



Witnesses:

Samuel W. Balch
 Charles A. Benton

Inventor,
 David T. Kenney,
 by Thomas Ewing, Jr.,
 Attorney.

UNITED STATES PATENT OFFICE.

DAVID T. KENNEY, OF NORTH PLAINFIELD BOROUGH, NEW JERSEY, ASSIGNOR, BY
MESNE ASSIGNMENTS, TO THE VACUUM CLEANER COMPANY, A CORPORATION OF
NEW YORK.

APPARATUS FOR REMOVING DUST.

963,049.

Specification of Letters Patent.

Patented July 5, 1910.

Application filed January 2, 1906. Serial No. 294,041.

To all whom it may concern:

Be it known that I, DAVID T. KENNEY, a citizen of the United States of America, and a resident of the borough of North Plainfield, county of Somerset, and State of New Jersey, have invented certain new and useful Improvements in Apparatus for Removing Dust, of which the following is a specification.

My invention relates to a hand-implement or cleaner to be used in connection with pneumatic dust-removing systems, such as are, for example, disclosed in my United States Letters Patent No. 739,263, granted September 15, 1903, wherein a vacuum system of dust removal is set forth.

The cleaner is designed especially for cleaning corrugated or uneven surfaces, such as the slatted floors of railway cars, switchboards, etc.

In the accompanying sheet of drawings, which forms a part of this application, Figure 1 is a front view of one form of nozzle of a cleaner embodying my invention, the nozzle being broken away on the line I—I of Fig. 2. Fig. 2 is a section through the nozzle on the line II—II of Fig. 1, the parts being in position for cleaning a corrugated surface. Fig. 3 is a section through the nozzle on the line III—III of Fig. 1, the parts being in position for cleaning a plane surface. Fig. 4 is a front view of another form of nozzle embodying my invention on the line IV—IV of Fig. 5. Fig. 5 is a section through the nozzle on the line V—V of Fig. 4, the parts being in position for cleaning a corrugated surface. Fig. 6 is a section through the nozzle on the same line, the parts being in position for cleaning a plane surface. Fig. 7 is a perspective view of a cleaner, the handle being broken away and the nozzle being that shown in Fig. 1, the parts being in position for cleaning a corrugated surface. Fig. 8 is a similar perspective view with the parts in position for cleaning a plane surface.

The cleaner in the form shown in Figs. 1, 2, 3, 7 and 8 comprises a tubular handle A through which the dust-laden air is drawn, and a suction-chamber or nozzle B which is coupled to the tubular handle. The nozzle is broadened out at its mouth so as to present a contact surface of some length to the object to which it is applied for cleaning.

The outer ends of the rigid projections illustrated as tubes *b b*, form the edge of the nozzle along this surface, and the mouths *s s* of the tubes constitute dust-inlets into the suction-chamber. These tubes are of such diameter and length and are set at such distances apart between centers and in such positions as the dimensions and spacing of the slats or corrugations on the surface to be cleaned require. There may be a second series of dust-inlets *s' s'* between the inner ends of the tubes. These inlets open directly into the suction-chamber so that when the cleaner is operated, for example, over a slat-covered floor (such a floor being indicated in dotted lines in Fig. 7), the series of dust-inlets at the outer ends of the tubes will come in contact with the floor between the slats, and the series of dust-inlets between the inner ends of the tubes will come in contact with the tops of the slats.

In the form shown in Figs. 4, 5 and 6 the mouth of the nozzle is formed with projections along which there is a single continuous dust-inlet slot bounded by similarly serrated lips with their teeth in register, so that the dust will be drawn in and the sides of the slats thereby cleaned, as well as the tops of the slats and the floor between the slats. As there is also, usually, in the cars, a considerable amount of surface not slat-covered which requires cleaning, it is desirable that a cleaner (intended for use in cars) should be so constructed as also to operate efficiently on plane surfaces. This is accomplished by a multiple-part construction of the nozzle, which consists of parts having a movement with respect to each other whereby the serrated nozzle is converted into a nozzle adapted for use on a plane surface. This is most simply effected by making the nozzle in two parts, one part being the nozzle proper with the notched edge, as above described, and the other part being a sleeve C freely movable over the nozzle. This sleeve is pushed upwardly when the cleaner is applied to a slat-covered floor, the lips *c c* of the sleeve resting on the tops of the slats, but, when the cleaner is applied to an ordinary floor or other plane surface the sleeve falls and its lower bounding edge constitutes the contact lips of the inlet slot, thereby formed. Hooks *h h* inwardly project from the sleeve

and pins *q q* outwardly project from the body of the nozzle and prevent the sleeve from falling off when the cleaner is lifted from the floor. By this construction of nozzle-body and surrounding sleeve, a single part relatively movable with respect to the nozzle body affords a simple, substantial and thoroughly practicable arrangement. A rubber band *r* encircles the sleeve and prevents the metal parts of the cleaner from striking and marring walls or other objects in the event of the cleaner being forcibly driven against them.

It will be observed that in one aspect the invention consists in a pneumatic tool, wherein the relations of the several inlets may be changed to suit different conditions of operation; and in another aspect, the invention consists in a pneumatic tool comprising a series of projections open at their ends and a mouth provided with contact lips and means whereby either the ends of the projections or the contact lips of the mouth may be brought into contact with the surface of the object to which the tool is applied for cleaning.

What I claim as new and desire to secure by Letters Patent of the United States is:

1. In a pneumatic cleaning tool, the combination of a suction-chamber, a multiplicity of rigid downward projections from the

bottom of the suction-chamber which provide passageways from the ends thereof to the interior of the suction-chamber, substantially as described. 35

2. A pneumatic cleaning tool comprising a broad nozzle having a slot in its bottom, the slot being bounded by similarly serrated lips with their teeth in register, substantially as described. 40

3. A pneumatic cleaning tool comprising a suction-chamber and rigid projections which provide passageways from their outer ends to the interior of the suction-chamber, and a sleeve surrounding the base of the suction-chamber and slidably mounted thereon, its lower edges forming contact lips, substantially as described. 45

4. A pneumatic cleaning tool comprising a broad nozzle having a slot in its bottom, the slot being bounded by similarly serrated lips with their teeth in register, and a sleeve surrounding the base of the nozzle and slidably mounted thereon, its lower edges forming contact lips, substantially as described. 50 55

Signed by me at New York city, this 30th day of December, 1905.

DAVID T. KENNEY.

Witnesses:

SAMUEL W. BALCH,
JOHN M. MOYNIHAN.