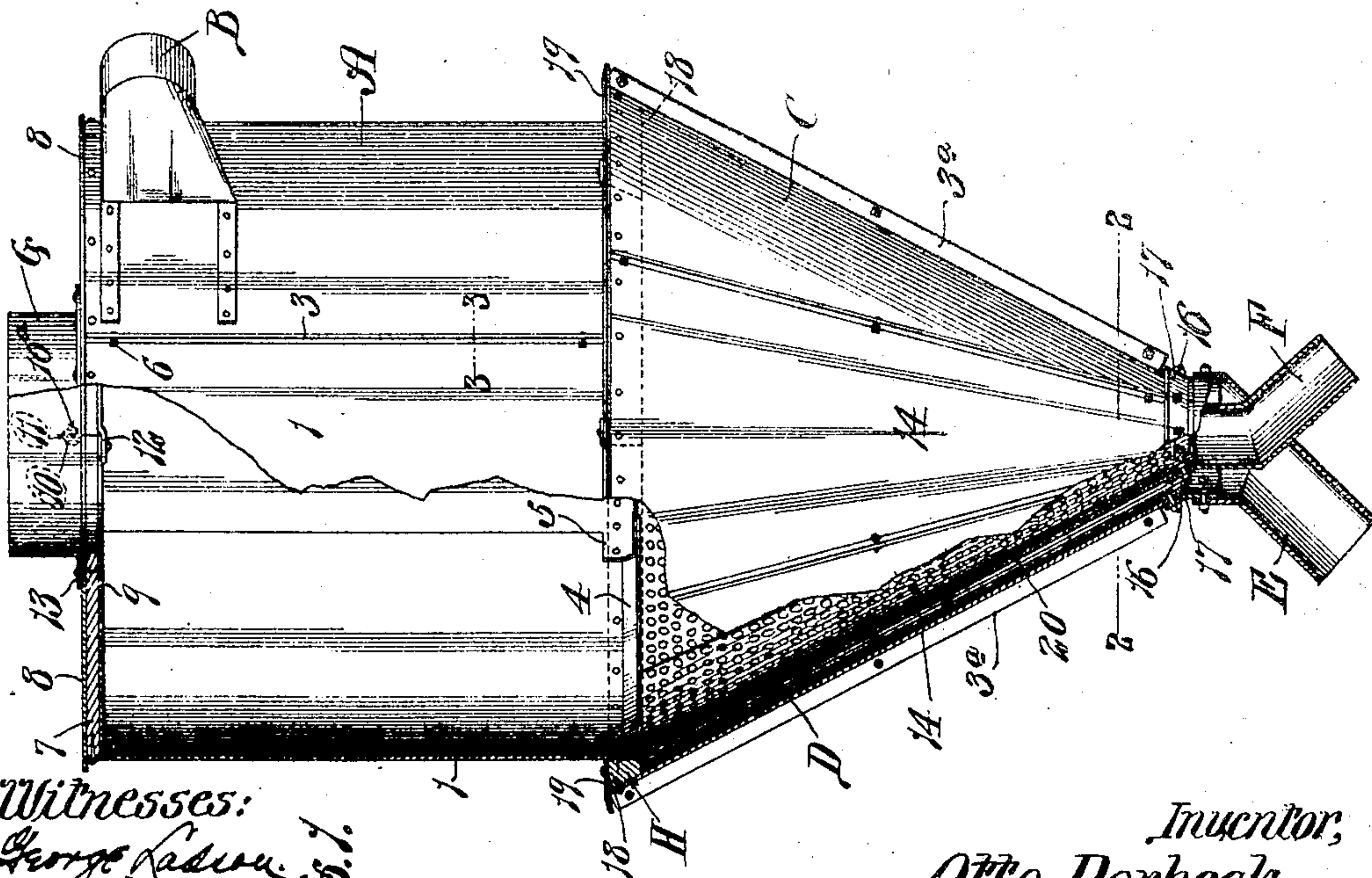
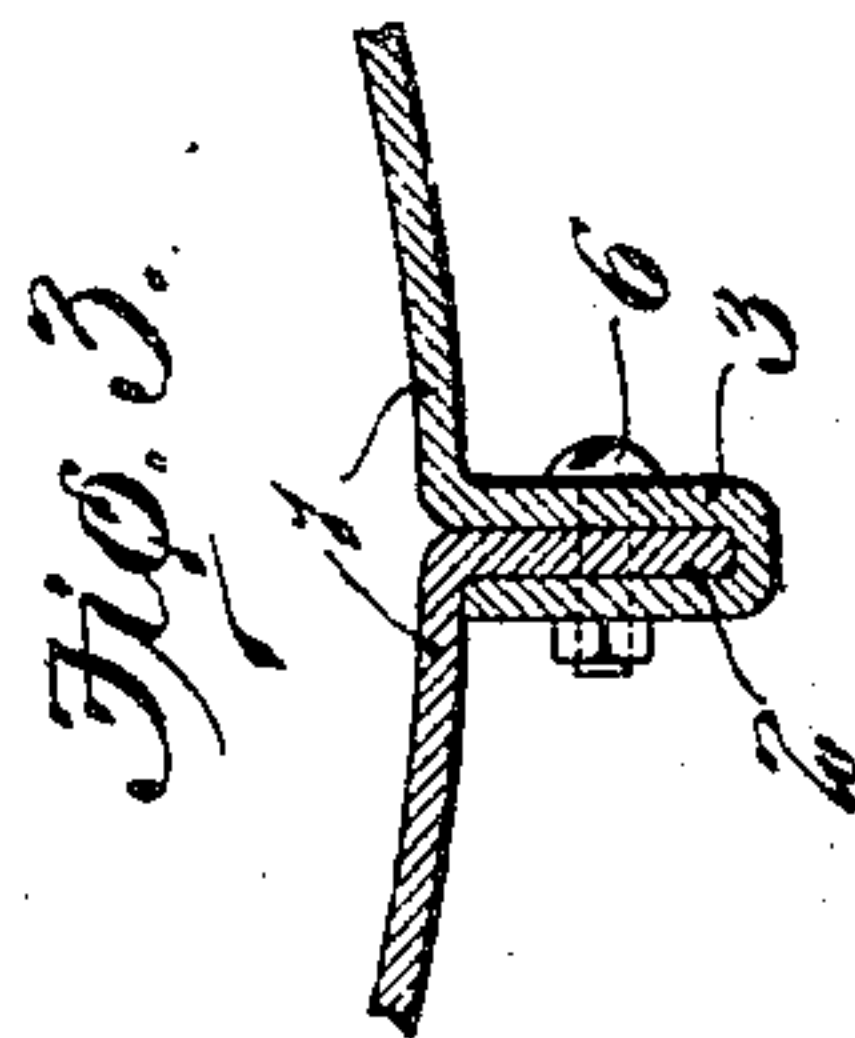
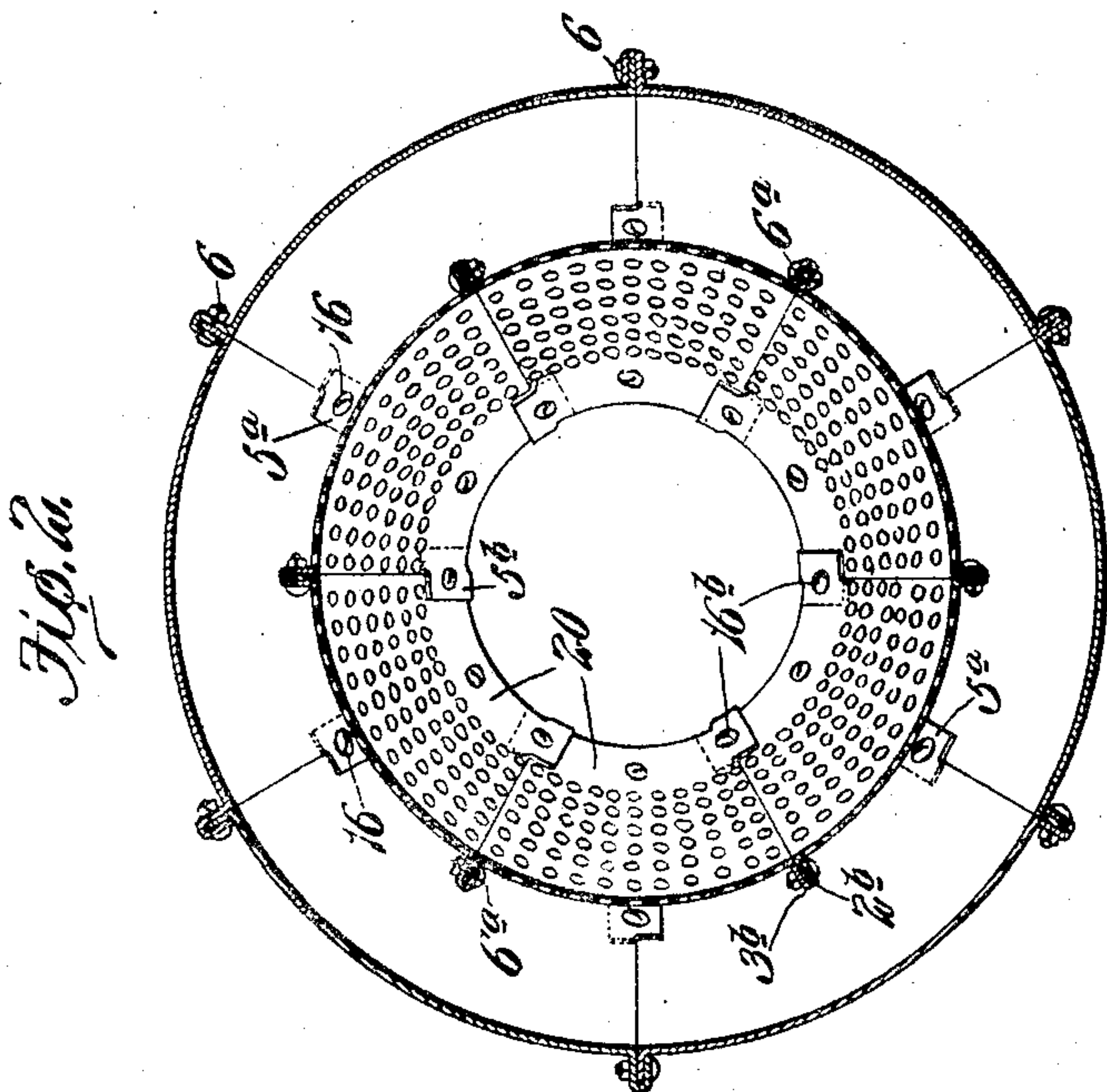


O. PORBECK.
DUST COLLECTOR AND SEPARATOR.
APPLICATION FILED OCT. 10, 1908.

938,702.

Patented Nov. 2, 1909.
2 SHEETS—SHEET 1.



Witnesses:
George L. Church
Wells L. Church

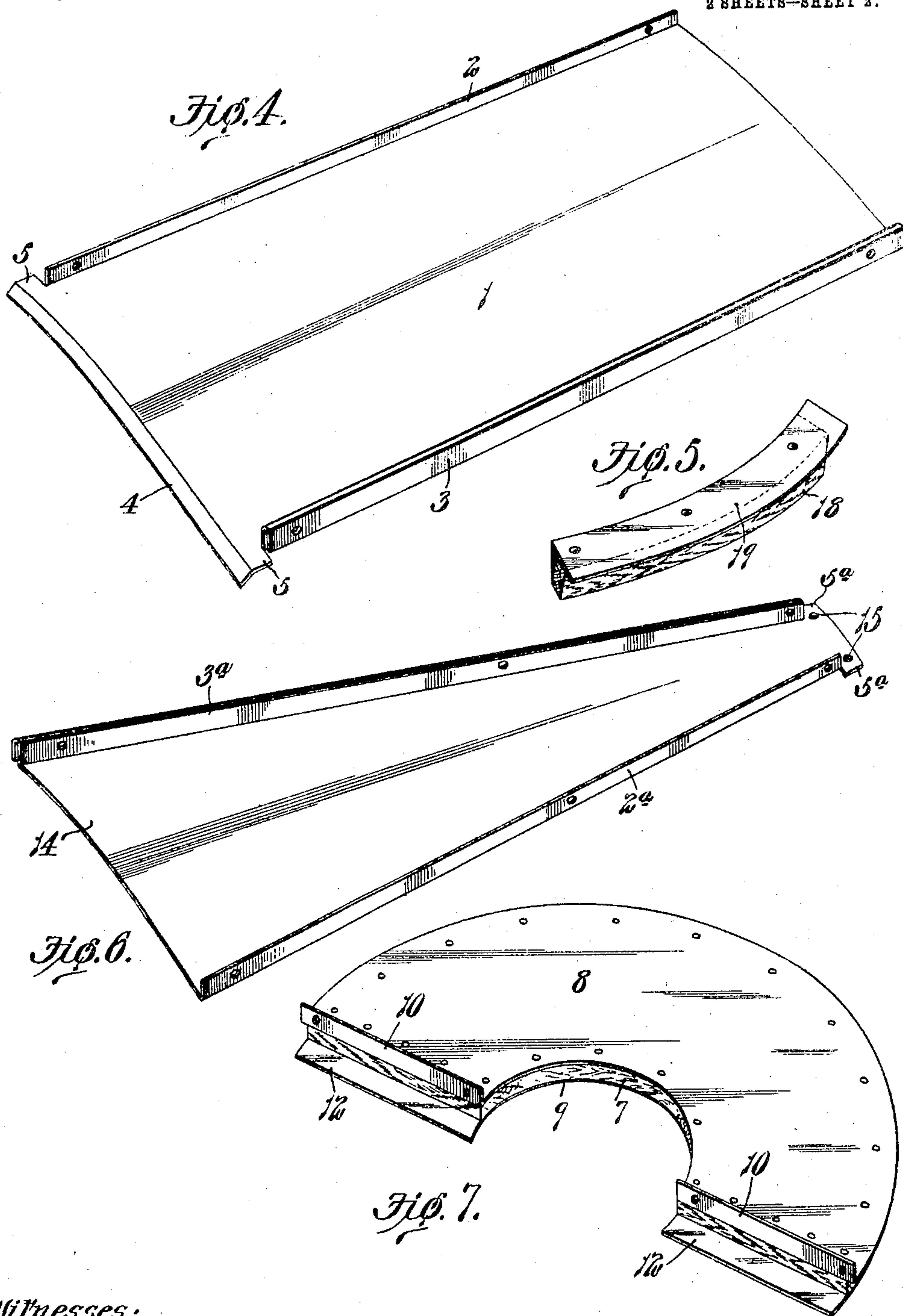
Inventor,
Otto Porbeck.
By Bakerwell & Cornwall Attys.

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George Adson.
Wells K. Church.

Inventor,
Otto Porbeck.
By Baker & Conover, Attys.

UNITED STATES PATENT OFFICE.

OTTO PORBECK, OF ST. LOUIS, MISSOURI.

DUST COLLECTOR AND SEPARATOR.

938,702.

Specification of Letters Patent.

Patented Nov. 2, 1909.

Application filed October 10, 1908. Serial No. 457,047.

To all whom it may concern:

Be it known that I, OTTO PORBECK, a citizen of the United States, residing at St. Louis, Missouri, have invented a certain new and useful Improvement in Dust Collectors and Separators, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is an elevational view partly in vertical section of a dust collector and separator constructed in accordance with my invention; Fig. 2 is an enlarged cross sectional view taken on approximately the line 2—2 of Fig. 1; Fig. 3 is an enlarged cross sectional view taken on approximately the line 3—3 of Fig. 1; Fig. 4 is a perspective view of one of the pieces from which the dust-collecting chamber is formed; Fig. 5 is a perspective view of one of the sections of the ring that is interposed between the lower end of the dust-collecting chamber and the casing arranged underneath same; Fig. 6 is a perspective view of one of the gusset-shaped pieces from which the screen casing is formed; and Fig. 7 is a perspective view of one section of the top of the dust-collecting chamber.

This invention relates to dust collectors and separators.

The main object of my invention is to provide a dust collector and separator which is so constructed that it can be shipped in knock-down shape from the manufacturer to the purchaser and erected by him without the aid of a skilled mechanic, thereby reducing greatly the cost of transportation owing to the fact that the device occupies very little space in its knock-down form.

Another object of my invention is to provide a dust collector and separator that is composed of a number of parts which are detachably connected together so that when one part becomes damaged or wears out it can be replaced by a new part. Other objects and desirable features of my invention will be hereinafter pointed out.

Referring to the drawings which illustrate the preferred form of my invention, A designates a cylindrical-shaped dust-collecting chamber into which the feed pipe B projects, and C designates an inverted conical-shaped casing arranged underneath the

dust-collecting chamber A. An inverted conical-shaped screen D is arranged inside of the casing C, and discharge pipes E and F are located, respectively, at the lower end of the casing C and at the lower end of the screen D, as shown in Fig. 1.

Prior to my invention the cylindrical-shaped member that formed the dust-collecting chamber of a separator and the inverted conical-shaped casing arranged underneath same were built complete by the manufacturer and shipped to the purchaser. As these parts occupied a great deal of space the freight rate on same was high and, furthermore, they were very apt to become bent or damaged in transit.

The main object of my invention is to provide a separator that can be shipped in knock-down form so that it will occupy very little space, and to this end I have devised a separator in which the cylindrical-shaped member A, the casing C and the screen D are composed of a plurality of parts that the manufacturer can ship in knock-down form and which can be assembled or connected together by the purchaser without the aid of a skilled mechanic.

The member A which forms the dust-collecting chamber is composed of a number of pieces 1 of sheet metal, each of which is provided on one of its longitudinal edges with an outwardly projecting flange 2 and on its other longitudinal edge with an outwardly projecting channel-shaped portion 3 that is adapted to receive the flange 2 of an adjacent piece 1 when the pieces 1 are assembled, as shown in Fig. 3. The pieces 1 are curved slightly so that they will form a cylindrical-shaped member when they are assembled, and each piece is provided at its lower end with an inwardly projecting flange 4 and a pair of wings 5 that project laterally beyond the marginal edges of the piece, as shown in Fig. 4. The cooperating flanges 2 and channel-shaped portions 3 of the pieces 1 can be connected together after they have been assembled by any suitable fastening devices, such, for example, as bolts 6, as shown in Fig. 2, and the wings 5 at the lower ends of the pieces 1 are also preferably connected to the adjacent pieces with which they contact so as to produce a very rigid structure.

The top of the member A is preferably composed of two semi-ring-shaped sections, each of which consists of a piece of wood 7

provided on its top and bottom faces with metal plates 8 and 9, respectively, as shown in Fig. 7. The top plate 8 of one section has an upwardly projecting flange 10 that is adapted to project into an inverted channel-shaped portion 11 on the top plate of the other section, and the bottom plate 9 of one section projects laterally at 12, as shown in Fig. 7, so that it will extend underneath the other section and support same when the sections are assembled, as shown in Fig. 1. After the sections have been assembled they are connected together by bolts or other suitable fastening devices 10^a that pass through the inverted channel-shaped portion 11 and the flange 10 of the top plates of the two sections. The air pipe G, through which the air escapes from the dust-collecting chamber A, is provided at its lower end with a laterally projecting flange 13 that can be connected to the top of said chamber by means of fastening devices that pass through said flange.

The inverted conical-shaped casing C which is arranged underneath the member A is composed of a number of gusset-shaped pieces 14, each of which is provided on one of its edges with an outwardly projecting flange 2^a and on its other longitudinal edge with an outwardly projecting channel-shaped portion 3^a that is adapted to receive the flange 2^a of an adjacent piece 14 when said pieces are assembled, said pieces being connected together by bolts or suitable fastening devices 6^a that pass through said flanges and channel-shaped portions. Each of the gusset-shaped pieces 14 is provided at its lower end with a pair of laterally projecting wings 5^a and when said pieces are assembled one of said wings projects over one of the adjacent pieces 14 and the other wing projects under the other adjacent piece 14, said wings being provided with openings through which bolts or other suitable fastening devices 16 pass to connect the wings of the various pieces together, as shown in Fig. 2. A flanged ring 17 is arranged at the lower end of the casing C and the bolts 16 that pass through the wings 5^a of the pieces that constitute said casing, also pass through the flange of said ring to retain it in position, the discharge spout E of the casing C being connected to the ring 17, as shown in Fig. 1.

The upper edge of the casing C and the lower edge of the member A are connected together by means of a wooden ring H that is composed of a number of segmental-shaped sections 18, as shown in Fig. 5, each of said sections being provided with a top plate 19 that laps over the end of an adjacent section and is secured thereto by suitable fastening devices. The outer edge of this ring H is beveled slightly so as to conform to the inner face of the casing C and

the plates 19 on the top side of said ring project laterally over the upper edge of the casing C, as shown in Fig. 1, the casing C being connected to the ring H by any suitable fastening devices. The lower end of the member A projects into the ring H and is secured thereto by fastening devices, as shown in Fig. 1.

The screen D is also composed of a number of gusset-shaped pieces 20 of the same construction as the pieces 14 which form the casing C, the screen pieces being provided with cooperating flanges 2^b and channel-shaped portions 3^b and also laterally projecting wings 5^b through which fastening devices 16^b pass. The discharge pipe F which is arranged at the lower end of the screen D is provided with a flared flange into which the lower end of the screen projects and this discharge pipe projects laterally through an opening in the discharge pipe E, as shown in Fig. 1, the upper edge of the screen D being interposed between the inner face of the ring H and the inwardly projecting flanges 4 on the pieces 1 which constitute the member A. The pieces which constitute the member A, casing C, screen D, ring H, and top of the member A, are not connected together when the manufacturer ships them to the purchaser so that the device occupies very little space and therefore can be shipped at a low freight classification. When the purchaser receives the device he can erect it quickly and without the aid of a skilled mechanic for the various parts are so constructed that they interlock with each other and can be permanently connected together by inserting a few fastening devices.

Another desirable feature of a dust-separator of this construction is that the various elements are composed of a number of pieces or parts that are detachably connected together so that if one piece becomes damaged or wears out a perfect piece can be substituted therefor and thus repair the device quickly and at a low cost.

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

A dust-collector and separator provided with a cylindrical-shaped dust-collecting chamber, a top for said chamber composed of sections provided with cooperating flanges that are detachably connected together, an inverted conical-shaped casing arranged underneath said chamber and composed of a number of gusset-shaped pieces of metal, each of which is provided on one of its longitudinal edges with an integral flange and on its other longitudinal edge with an integral channel-shaped portion that receives the flange on an adjacent piece, overlapping wings on the lower ends of said gusset-shaped pieces, removable fastening devices passing through said wings and through

said flanges and channel-shaped portions to
secure said pieces together, a screen arranged
inside of said casing and composed of a num-
ber of perforated pieces of material pro-
5 vided on their longitudinal edges with inte-
gral flanges and channel-shaped portions
that are detachably connected together by
removable fastening devices, and a member
arranged between said dust-collecting cham-
10 ber and said casing and provided with plates

that project laterally over the upper edge of
said casing.

In testimony whereof I hereunto affix my
signature in the presence of two witnesses,
this seventh day of October 1908.

OTTO PORBECK.

Witnesses:

WELLS L. CHURCH,
GEORGE BAKEWELL.