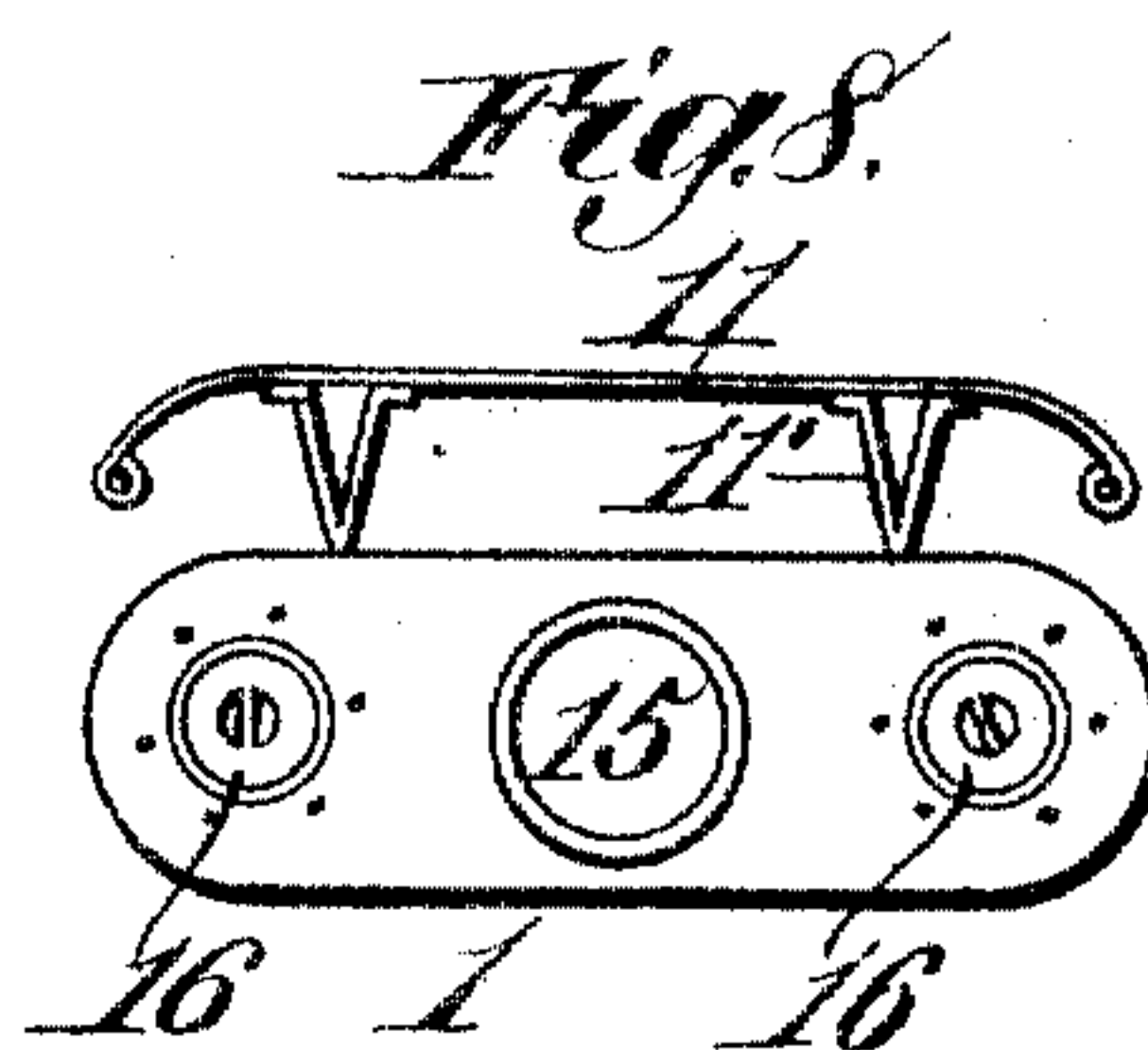
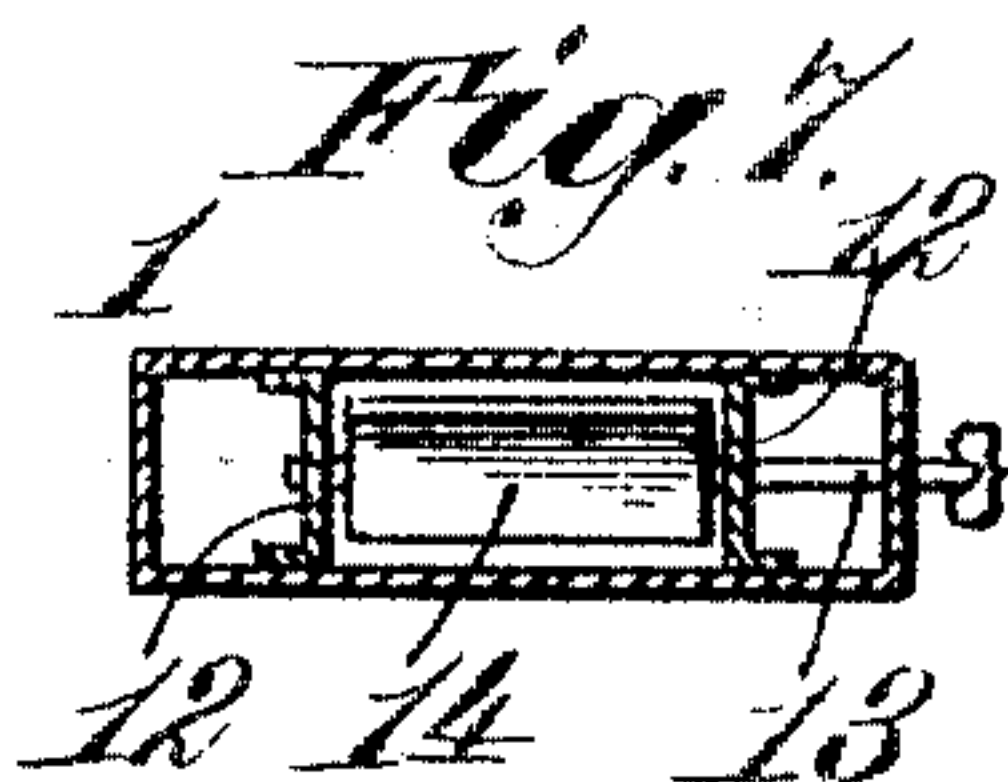
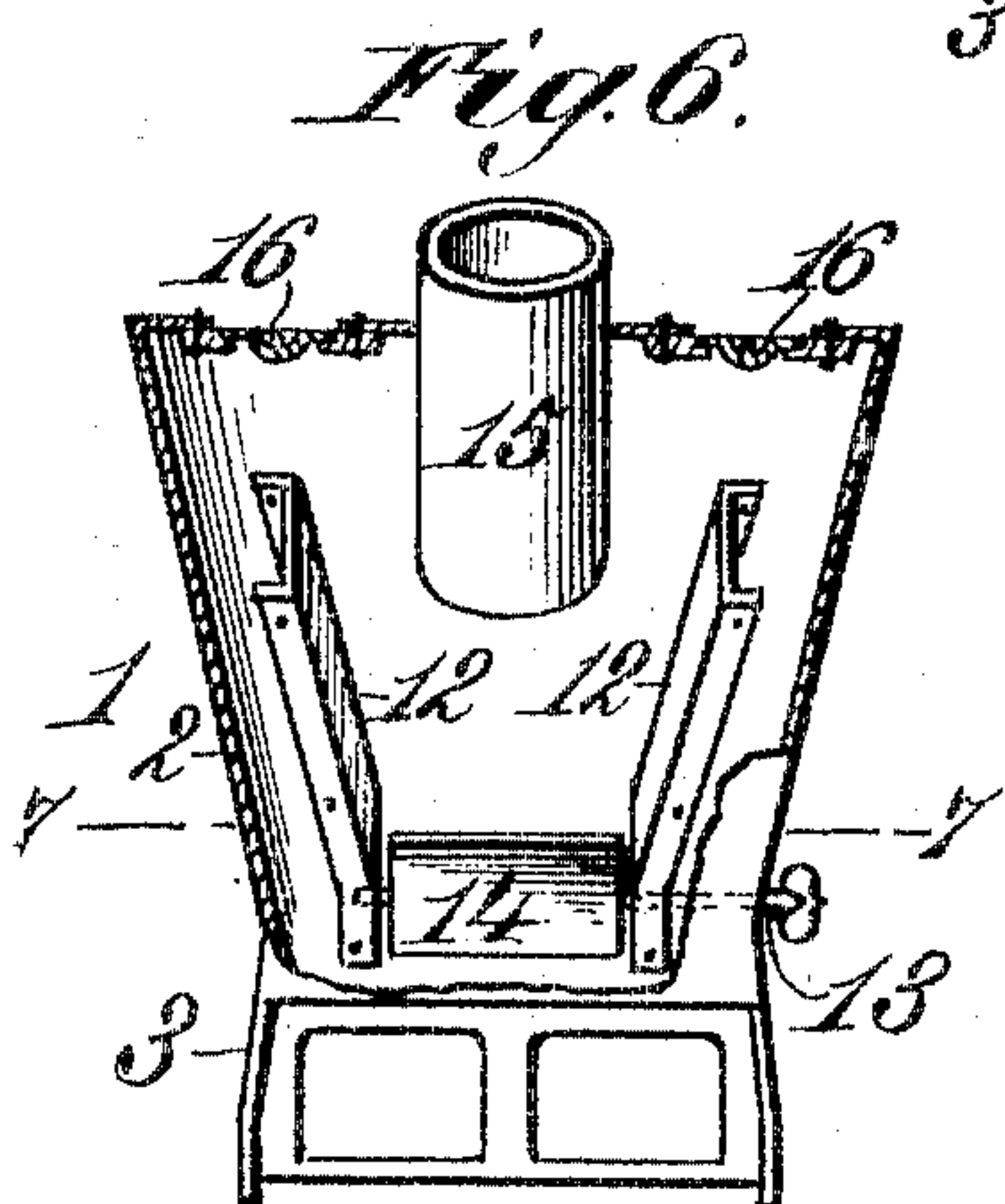
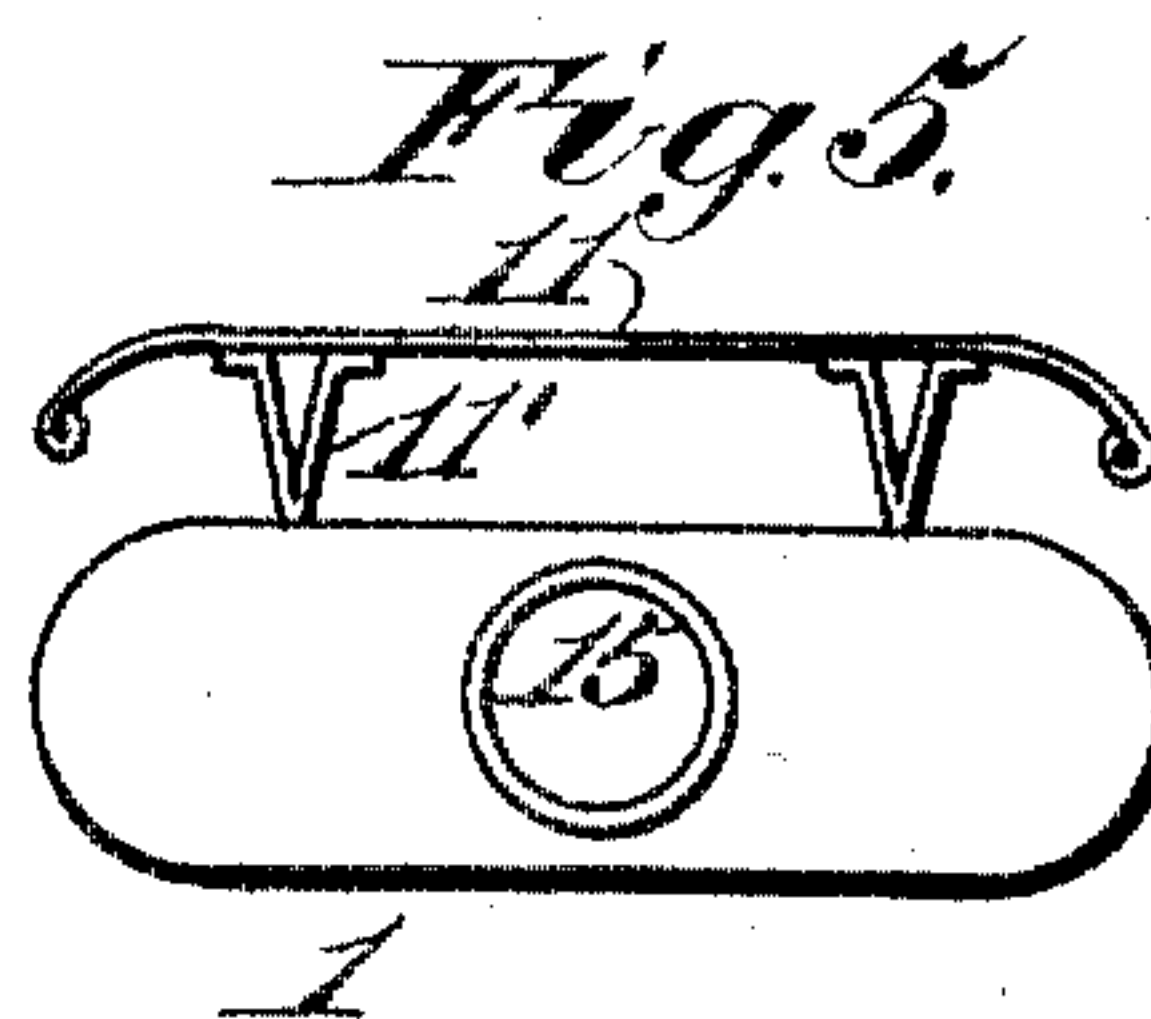
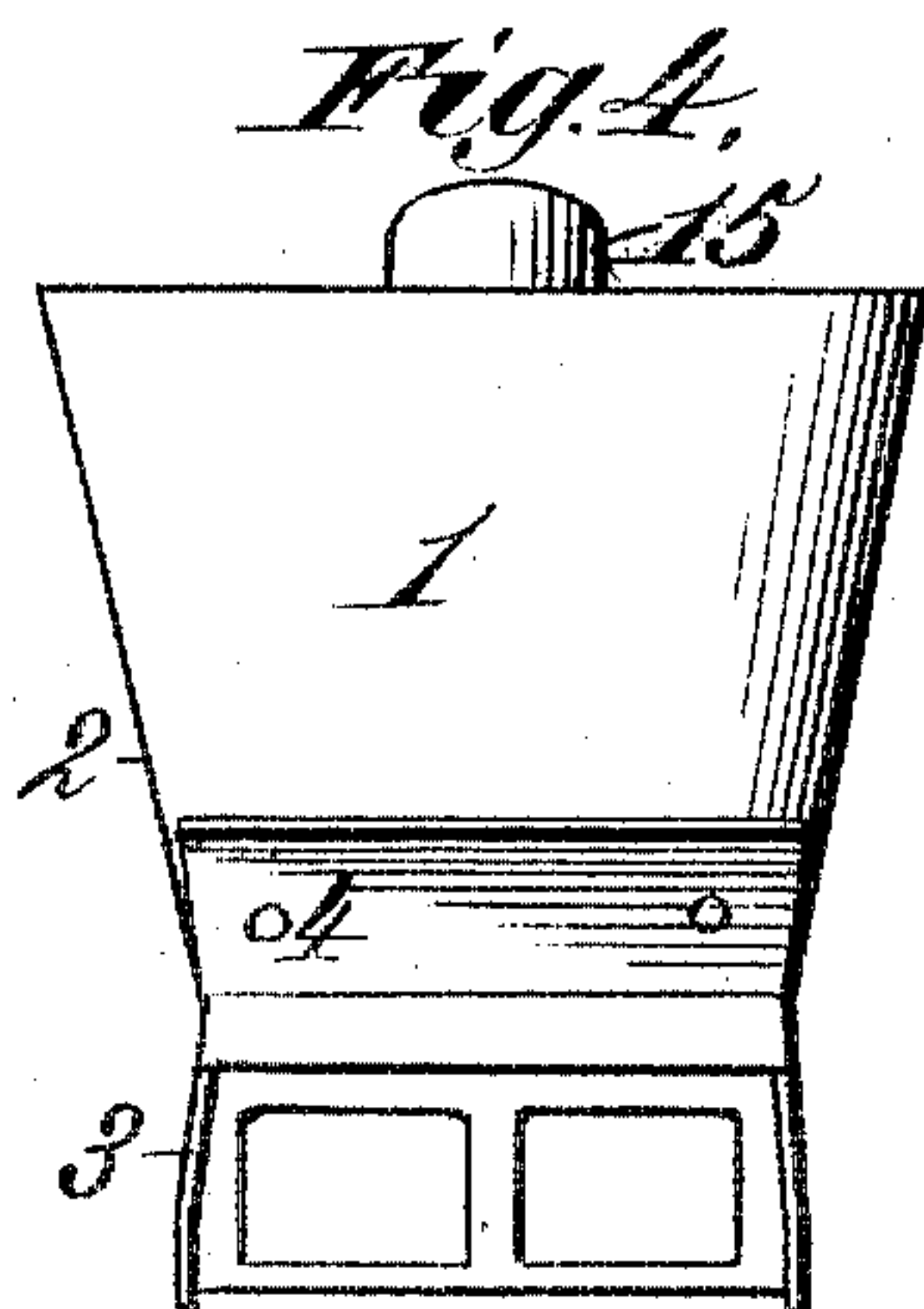
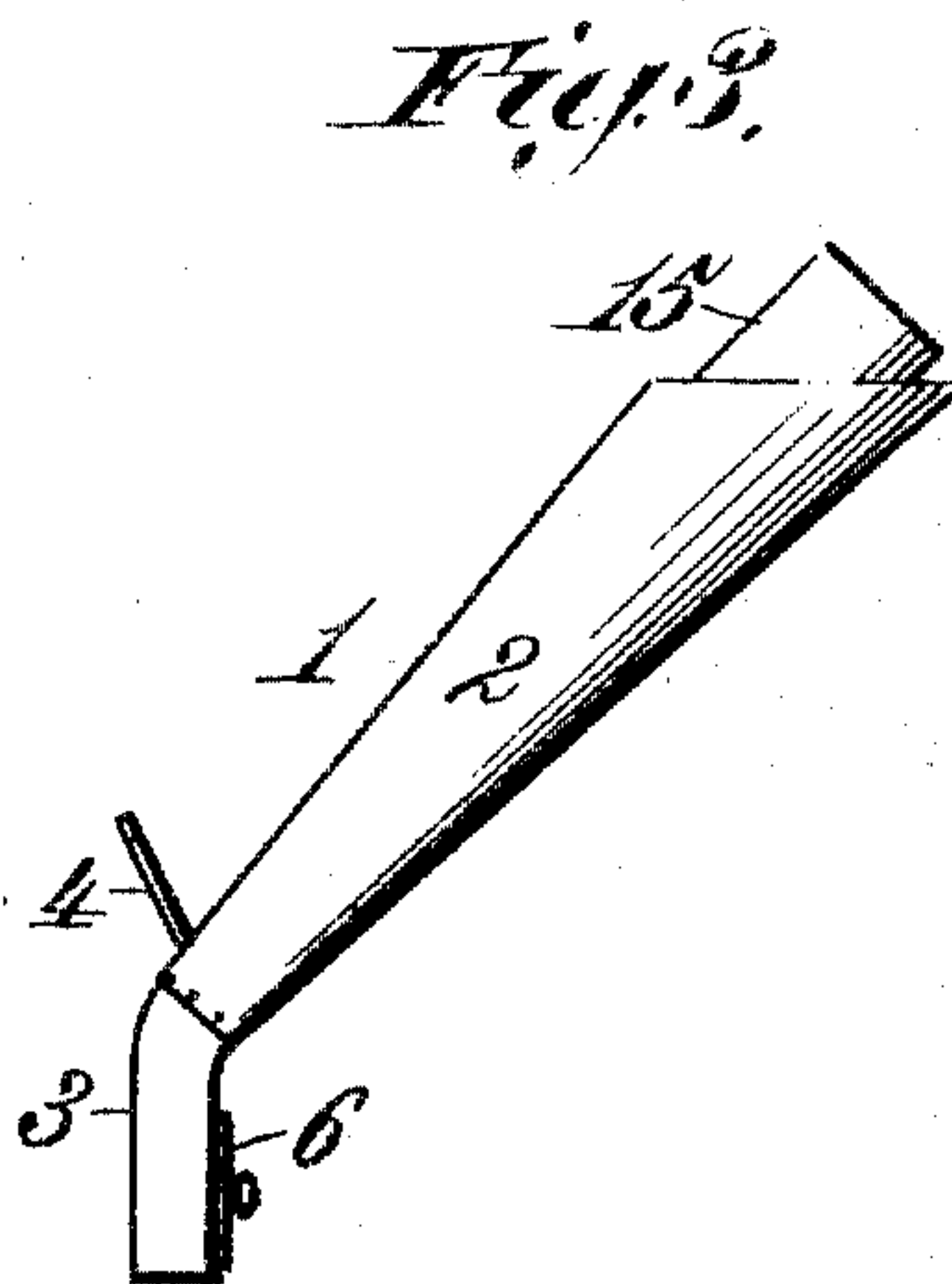
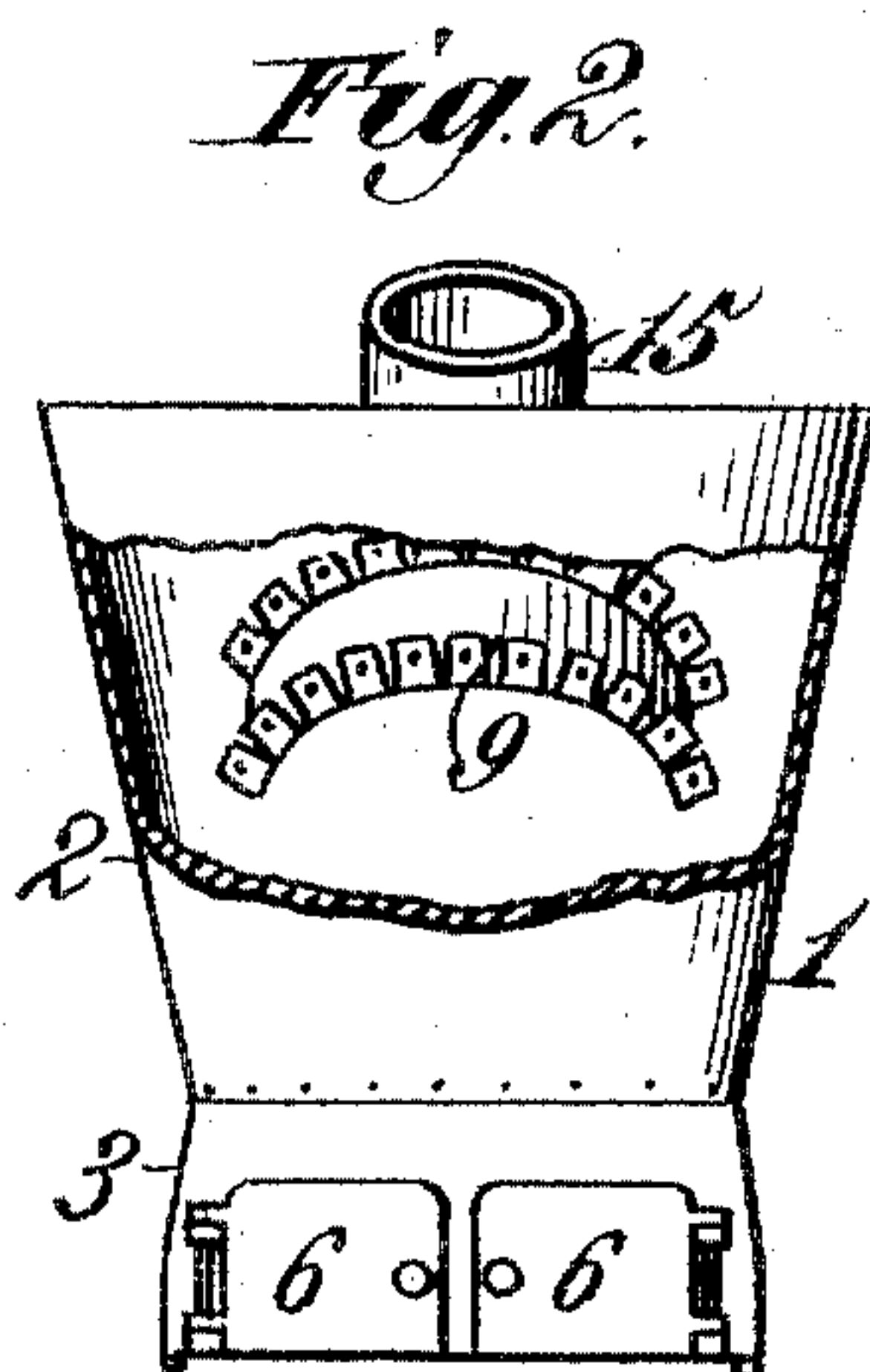
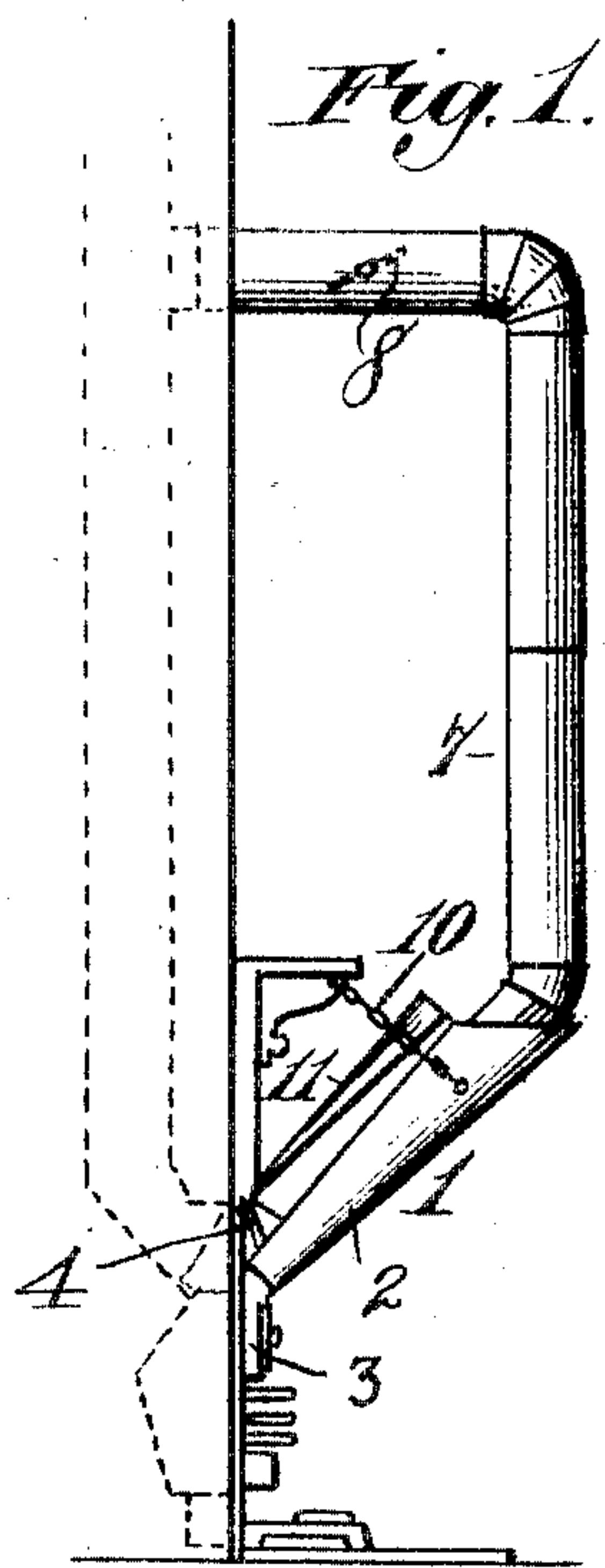


No. 776,894.

PATENTED DEC. 6, 1904.

C. E. DITTRICH.
GRATE ATTACHMENT.
APPLICATION FILED MAR. 29, 1904.

NO MODEL.



Witnesses.
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UNITED STATES PATENT OFFICE.

CHARLES E. DITTRICH, OF BIRMINGHAM, ALABAMA.

GRATE ATTACHMENT.

SPECIFICATION forming part of Letters Patent No. 776,894, dated December 6, 1904.

Application filed March 29, 1904. Serial No. 200,573. (No model.)

To all whom it may concern:

Be it known that I, CHARLES E. DITTRICH, a citizen of the United States, residing at Birmingham, in the county of Jefferson and State of Alabama, have invented new and useful Improvements in Grate Attachments, of which the following is a specification.

This invention relates to a grate attachment, the object of the invention being to provide a simple and effective article of this character which can be readily and quickly applied to an open grate of the ordinary kind without changing the structure thereof and which radiates considerable heat.

The attachment possesses other advantages, which will be set forth at length in the following description, while the novelty of the invention will be embraced by the claims succeeding such description. In the latter I will explicitly set forth certain convenient forms of the device which I have found wholly satisfactory; but I do not limit myself to the exact disclosure thus made, for the organization may be varied in some respects without departing from the spirit of the invention.

Referring to said drawings, Figure 1 is a side elevation of an attachment including my invention, showing the manner of using the same. Fig. 2 is a front view of the attachment with the upper part thereof broken away. Fig. 3 is a side, Fig. 4 a rear, and Fig. 5 a top plan view of the same. Fig. 6 is a sectional front elevation of a modified form of the attachment. Fig. 7 is a horizontal sectional elevation, the section being taken on the line 7 7 of Fig. 6. Fig. 8 is a top plan view of the said modified form.

Like characters refer to like parts throughout the different views.

The attachment is denoted in a general way by 1, and it may be made wholly of sheet or cast metal, of composite structure, or of any other desirable material. In the present instance the heating-drum 2, constituting the upper part of said attachment, is made of sheet metal, while the casing or lower part 3 thereof is composed of a casting, the said two parts being disposed at an obtuse angle with each other, so that when the casing is attached to the front of a grate the heating-drum will ex-

tend upward and outward at an angle to said front and naturally away from the mantel, leaving a space in which a guard can be introduced, as will hereinafter appear, to protect such mantel from excessive heat.

It will be evident from the foregoing statement that my grate attachment involves a casing adapted to form a closure for the front of a fireplace and a heating-drum secured thereto at angle, so as to project outwardly and upwardly from said casing, the drum being provided with a smoke-pipe to carry off the products of combustion therefrom.

The inner side of the attachment is provided with a flange, as 4, which is located approximately at the junction of the two parts 2 and 3 and which can be bolted or otherwise suitably attached to the grate-front in order to bring the casing 3 of the attachment into parallelism or substantially into parallelism with said front and into position to receive the products of combustion rising from the grate or grate-basket. The bottom and inner side of the casing 3 are open for the passage of the products of combustion into and through the attachment 1 to effectually heat the latter. The attachment is made of only one thickness or is of single wall construction.

Before applying the attachment I close up the usual flue leading from the grate at approximately its junction with the grate-opening. This can be accomplished by bricking up or cementing the lower end of the flue or by closing the damper at such place, provided such damper is present and will effectually close the entering end of said flue. To carry off the products of combustion from the attachment, I provide, as will hereinafter appear, a pipe connected to the horizontal top thereof, which itself will radiate heat and which can be passed through several rooms arranged one above the other and at its delivery end can be introduced into the said ordinary flue at a point above the place where the latter is sealed, or, said pipe can be led out of the building independently of said flue.

In the lower portion of the forward wall of the casing 3, to which reference has been made, an opening is formed for the introduction of fuel, which opening when the device

is in use is closed by doors, as 6, two of such doors being shown. The top of the drum 2 is closed, except for an approximately central opening surrounded by a collar, such as that
 5 ordinarily used in stoves. Fitted to this collar is the lower terminal portion of a pipe, as 7, for carrying off the products of combustion, which pipe can be connected with the flue above the grate, or the delivery end of
 10 the pipe can be disposed of as previously set forth. The pipe 7 may be provided at a suitable point in its length with a damper, as 8, serving its usual function.

In the drum 2 I mount a hood, as 9, of semi-
 15 cylindrical form and having along its front and rear edges flanges riveted or otherwise suitably attached to the corresponding walls of the said drum 2. The apex or top of the hood is situated below the outlet in the top of said
 20 drum, and the hood, as will be apparent, causes the products of combustion which rise through the attachment 1 to take a circuitous course before entering the said outlet. In other words, said products of combustion cir-
 25 culate through the attachment instead of directly passing from the inlet to the outlet thereof, whereby the drum 2 is thoroughly heated, or the best possible effect is obtained from the heat rising from the grate. To aid
 30 the bolts which pass through the flange 4 in maintaining the casing or shell in an operative position, I show the chains 10, which are adapted to be suitably connected with the opposite sides of the drum 2 of said attachment
 35 and likewise united to suitable means supported on the mantel. When I use the term "chains," it will be understood that such term is employed in its broad sense to include equivalent devices, for wires or like means
 40 could be substituted for the chains.

A guard is shown at 11, it having projections or parallel ridges 11' resting against the rear face of the drum 2. The lower end of this guard is adapted in practice to fit against
 45 the grate-front, which holds it in place against downward movement, while the two chains 10 prevent lateral movement of said guard. The guard may be made in the shape of a plate or sheet of metal, having slightly in-
 50 turned or rounded side portions beaded along their edges and wired to protect the same from injury. The top of the guard may be similarly beaded and wired for the same purpose. The body of the said guard, by the
 55 provision of the elongated projections 11', is separated from the part 2 of the attachment in order to provide for the circulation of air between said parts and serves to prevent injury to the mantel by heat radiating from the
 60 casing.

The foregoing description relates particularly to the form of the device represented by Figs. 1 to 5, inclusive, which is one form of the attachment. Another form is represented
 65 by Figs. 6, 7, and 8, which I will now de-

scribe, using the same characters to denote parts which correspond with those shown by Figs. 1 to 5.

Within the drum 2 are the partitions or walls 12, which may consist of plates having
 70 flanges along their front and rear edges adapted to be riveted or otherwise suitably attached to the front and rear walls of said part 2. The lower portions of the partitions are vertically disposed and constitute suitable bear-
 75 ings for the stem 13 of the valve 14, which is of plate form and is designed when closed to prevent the products of combustion rising through the space between the two walls or partitions 12. The stem 13 extends through
 80 a side wall of the casing 3 and is equipped with a handle, by which it, and consequently the valve, can be readily operated. By moving the valve to a horizontal position it will close the entering end of the space between
 85 said partitions, so as to cause the products of combustion positively to circulate around the outer sides of said partitions and over the tops thereof. Through the top of the drum 2 a
 90 pipe-section 15 projects and is suitably united in place, the lower end of the pipe-section extending below the upper and horizontally-aligned edges of the two partitions, whereby when the products of combustion are caused
 95 to take a circuitous course by being made to pass on the outer sides of the partitions their course will be further deviated by the disposition of the lower end of the pipe-section 15. In this way I am enabled to secure positively
 100 a circulation of such products of combustion through the shell or casing. When the valve or damper 14 is opened or occupies a vertical position, the products of combustion will take a direct course from the grate to the pipe-section 15. The drum 2 has openings in its top
 105 by which access may be had to the interior of said drum to clean the same. The walls of the openings are rabbeted to receive the circular plates 16, the rabbets being of such
 110 depth that the tops of the plates will not extend above the corresponding portion of the drum or shell. The said plates, it will be understood, are removable.

The attachment hereinbefore described is simple and practicable. It can be applied to
 115 a grate without any change in the latter except the closing of the flue in the manner hereinbefore described. By such closing of the flue the products of combustion from the grate are caused to enter and traverse the at-
 120 tachment. The pipe which leads off the products of combustion from the attachment may be disposed of in either of the ways hereinbefore described, or it can be passed through
 125 several rooms to heat the latter.

The attachment is light and compact, so that in view of the latter advantage it can be readily packed away when not in use.

As the device is above the basket of a grate, the latter can be removed. The attachment
 130

eliminates all the top draft of an open grate and possesses other advantages which will be apparent at once upon an inspection of the drawings, taken in connection with the foregoing description.

The form and disposition of the attachment in practice afford better protection against accidents from open-grate fires than screens with which I am familiar.

What I claim is—

1. In a grate attachment, the combination with a casing adapted to form a closure for the front of a fireplace, of a heating-drum secured thereto at an angle so as to project outwardly and upwardly from said casing, and a smoke-pipe connected with said heating-drum.

2. In a grate attachment, the combination of a casing adapted to form a closure for the front of a fireplace and having an opening for the introduction of fuel, doors arranged to close said opening, a heating-drum secured to said casing at an angle so as to project outwardly and upwardly from said casing, and a smoke-pipe connected with said drum.

3. In a grate attachment, the combination with a casing adapted to form a closure for the front of a fireplace, of a heating-drum secured thereto at an angle so as to project outwardly and upwardly from said casing, a smoke-pipe connected with said heating-drum, and means in the drum for causing the products of combustion rising from the casing toward said pipe to take a circuitous path.

4. A grate attachment comprising a casing adapted to form a closure for the front of a fireplace, and a heating-drum secured thereto at an angle so as to project outwardly and upwardly from said casing, one of said parts being provided with a flange to connect the attachment to a grate-front, and a smoke-pipe connected with said heating-drum.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

CHARLES E. DITTRICH.

Witnesses:

C. O. WITTE,

C. H. HARRIS.