

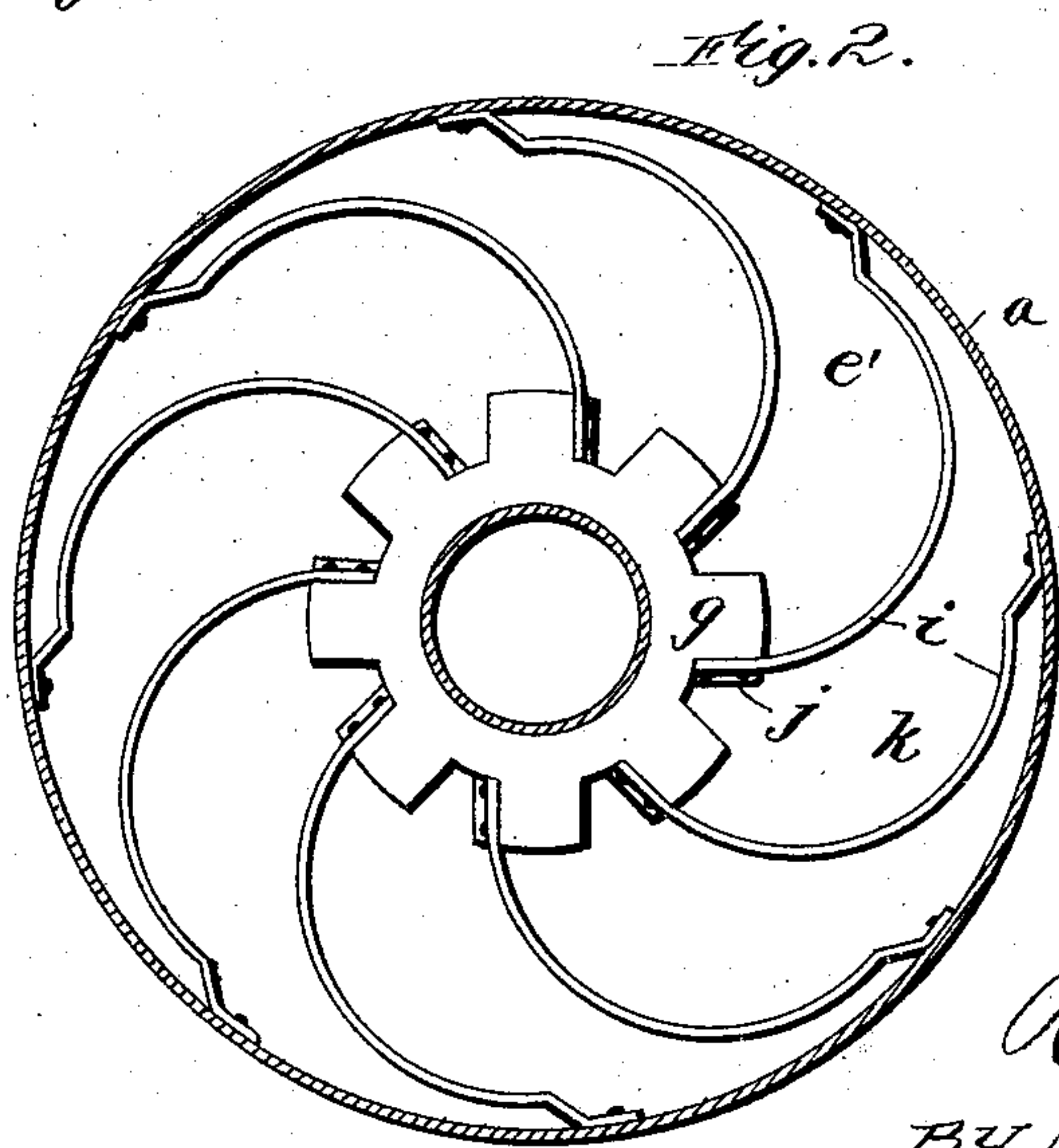
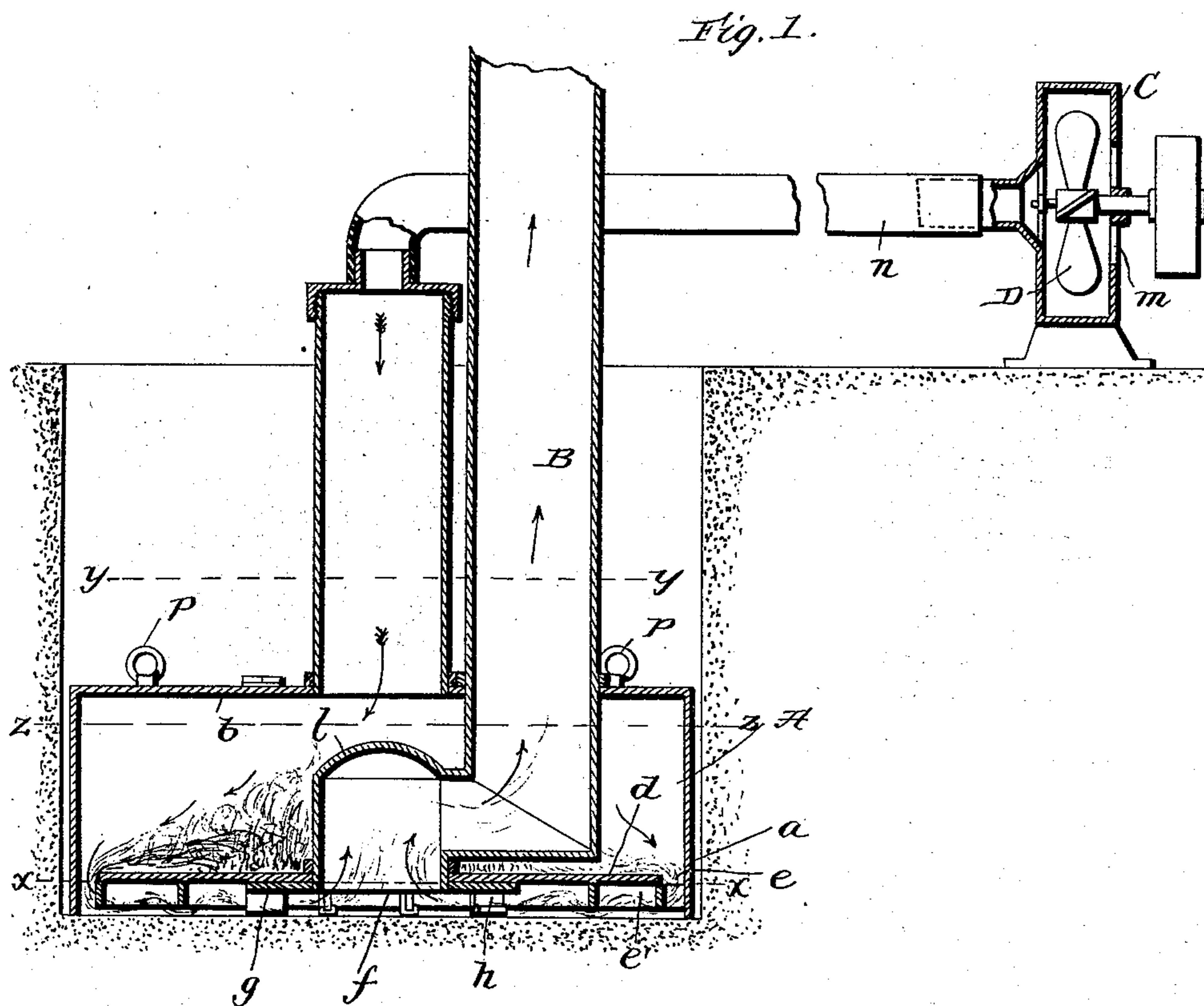
(No Model.)

2 Sheets—Sheet 1.

R. B. ORMISTON.
THAWING APPARATUS.

No. 605,556.

Patented June 14, 1898.



witnesses:

C. H. Gaider
Jessie B. Koney

Inventor

R. B. Ormiston

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Attorney

(No Model.)

2 Sheets—Sheet 2.

R. B. ORMISTON.
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Fig. 3.

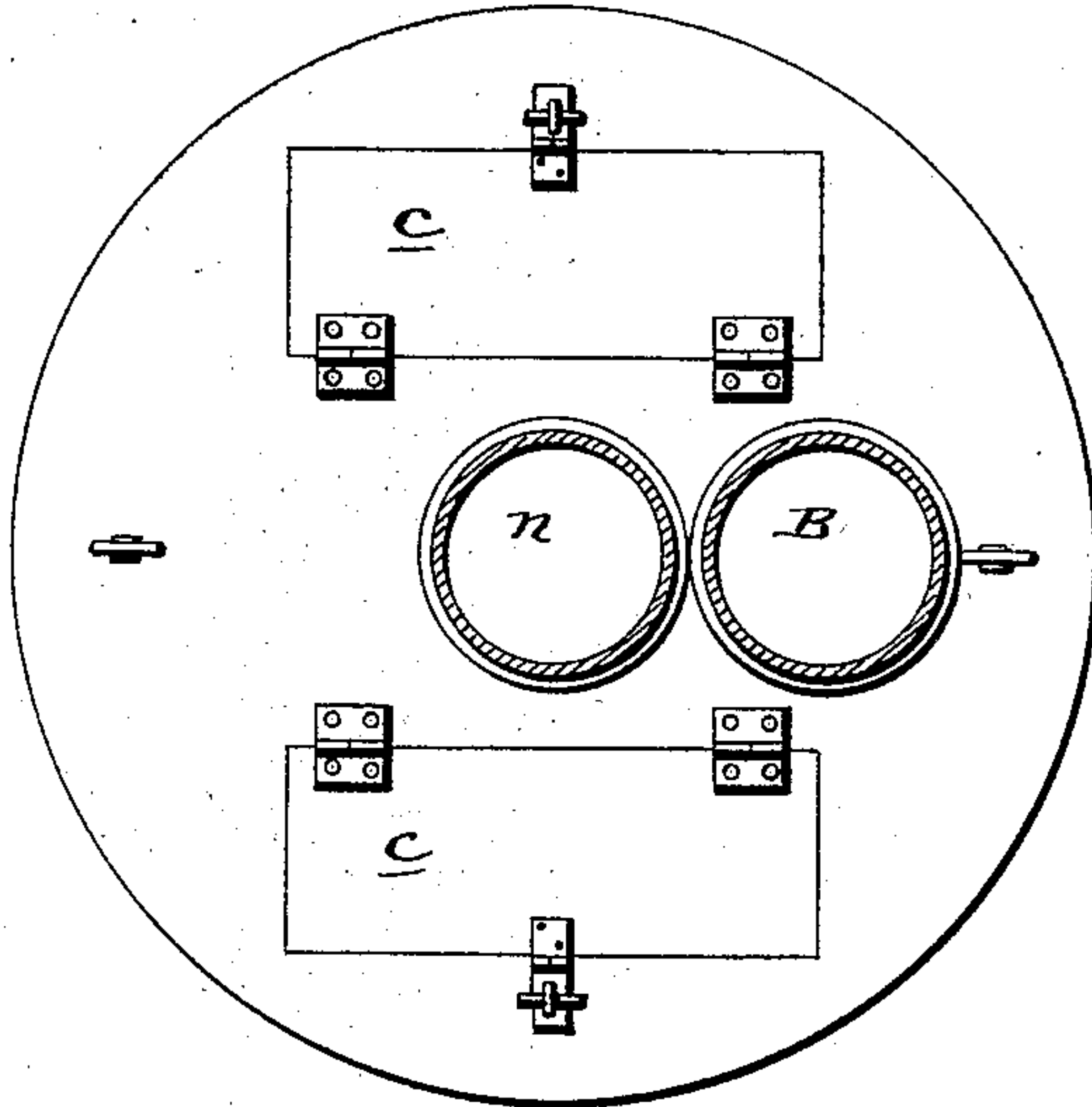


Fig. 4.

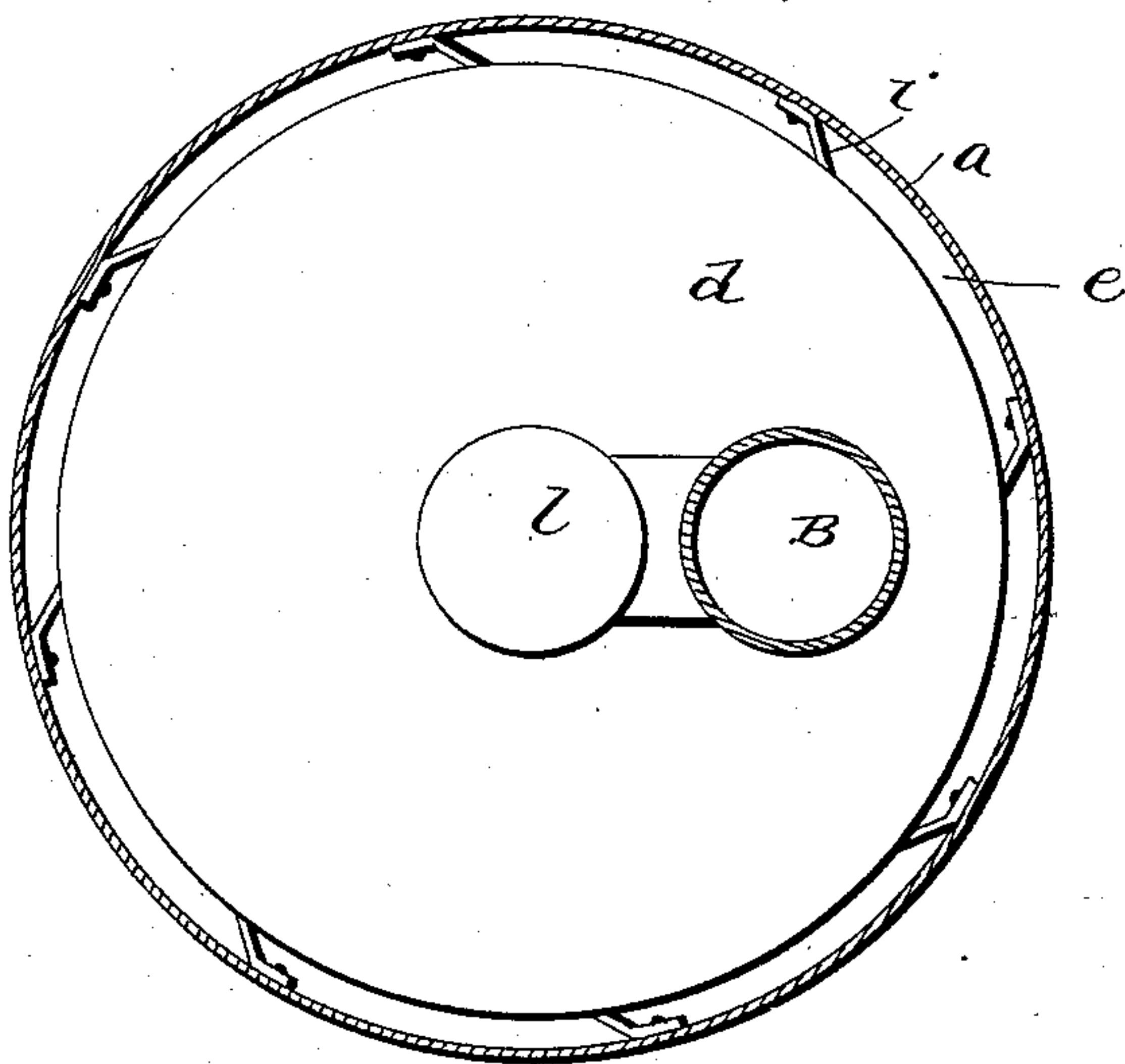
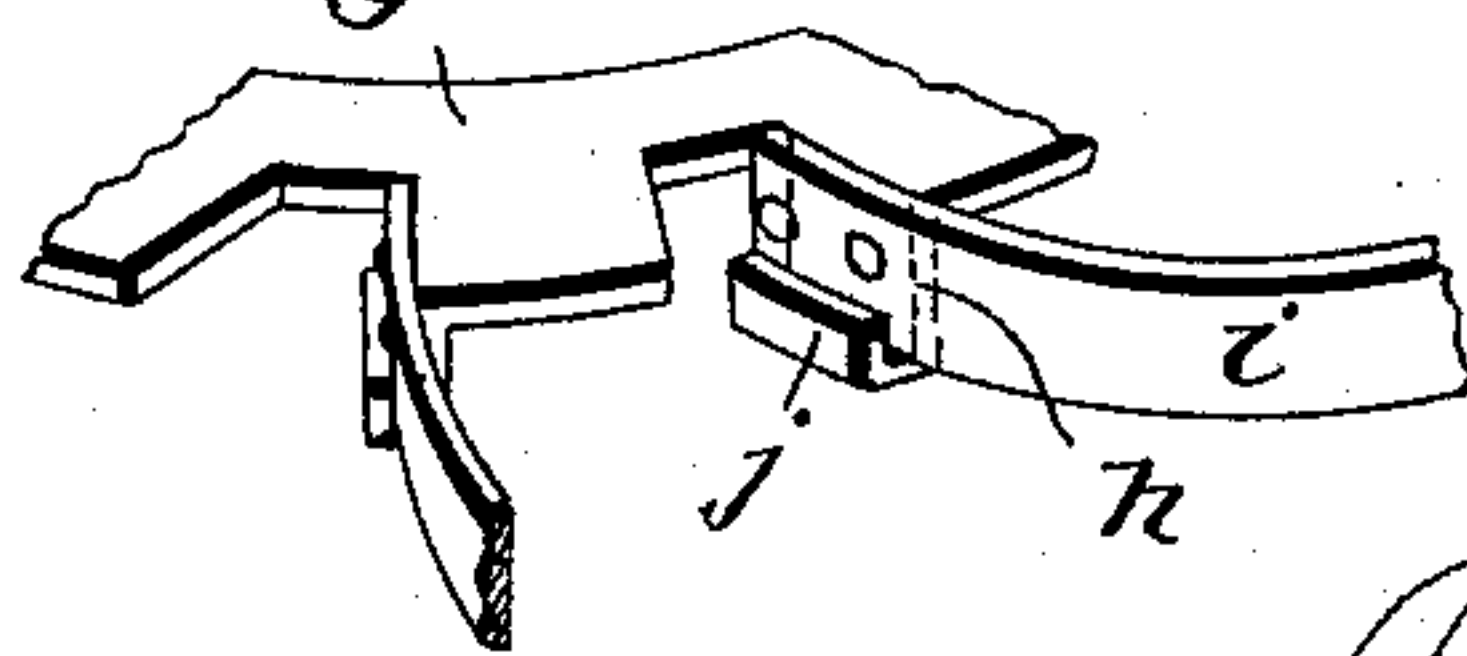


Fig. 5.



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UNITED STATES PATENT OFFICE.

ROBERT B. ORMISTON, OF WINNIPEG, CANADA.

THAWING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 605,556, dated June 14, 1898.

Application filed January 28, 1898. Serial No. 668,337. (No model.)

To all whom it may concern:

Be it known that I, ROBERT B. ORMISTON, a citizen of the Dominion of Canada, residing at Winnipeg, in the Province of Manitoba and Dominion of Canada, have invented new and useful Improvements in Thawing Apparatus, of which the following is a specification.

My invention contemplates the provision of an apparatus adapted to expeditiously thaw frozen earth and thereby facilitate the sinking of shafts or pits therein, and it will be fully understood from the following description and claims when taken in conjunction with the annexed drawings, in which—

Figure 1 is a vertical section of my improved apparatus in its operative position. Figs. 2, 3, and 4 are horizontal sections taken in the planes indicated by the lines xx , yy , and zz , respectively, of Fig. 1; and Fig. 5 is a detail perspective view illustrative of the preferred manner in which the partition-strips are connected with the center plate.

In the said drawings similar letters designate corresponding parts in all of the several views, referring to which—

A designates the fire-box of my improved apparatus, which is preferably of a general circular form, as shown, and is made of sheet-iron or other suitable material. The said fire-box comprises a side wall a , a top wall b , having one or more (preferably two) suitable doors c for the introduction of fuel and the removal of ashes and other products of combustion, and a bottom wall d , which is of a less diameter than the top wall, so as to form an annular passage e between its edge and the side wall a , and is disposed above the lower edge of the said wall a , so that when the fire-box is placed on the ground an inclosed space or chamber e' will be formed between its bottom wall and the ground for a purpose presently described. At its center the bottom wall d is provided with an aperture f , and it is also provided at its under side with a center plate g , which is suitably connected to it around the aperture f and is provided with the depending lugs h , the same being preferably formed after the manner illustrated in Fig. 5—that is to say, by forming right-angle cuts in the plate at the periphery thereof and bending the metal downwardly. The lugs h are designed for the connection of the inner

ends of vertically-disposed partition-strips i , and they preferably have their lower ends bent laterally and thence upwardly, as indicated by j , (see Fig. 5,) so as to form seats for the partition-strips and thereby strengthen the connection of the same. As best shown in Fig. 2, the said strips i are connected at their outer ends to the side wall a of the fire-box, so as to divide the space or chamber e' into ways k , extending from the passage e to points adjacent to the central aperture f in the bottom wall d , and in order to increase the length of the said ways k the strips i are preferably curved, as shown.

B designates an uptake or smoke-pipe, which may be of any suitable length and has its lower end connected with the aperture f in the bottom wall d , so as to receive smoke and other products of combustion from the inner terminals of the passages k . The said connection of the uptake or smoke-pipe B with the aperture f may be effected in any desired manner. I prefer, however, to connect it to the side of a hood l , which is connected to the bottom wall d and is provided with a dome-shaped top for a purpose presently described.

C designates a suitable blower-casing which has an inlet-opening m for air and is connected by a conduit n with the fire-box A, preferably at a point above the hood l , as shown. The said casing C contains a blower D, which may be of any suitable construction and may be actuated by hand or by a suitable motor, as desired.

In the practical operation of the apparatus the fire-box is placed on the ground at the point where it is desired to dig, and a fire is built in the same and lighted. As soon as this is done the blower D is actuated, with the result that a continuous blast of air will be forced down the conduit n , through the fire-box A, passage e , and passages k , and up and out through the uptake or smoke-pipe B. As the blast of air enters the fire-box it will strike the dome-shaped top of the hood l and will be spread thereby over the fire, so as to promote combustion and insure the occupation of the passages k by a continuous large volume of flame and heated air. The said passages k being contiguous to the earth, it follows that that portion of the same beneath the

fire-box will be quickly thawed to a considerable depth. With this done the apparatus is removed by a hoisting apparatus connected to rings *p* or by other suitable means, so as to permit of the thawed earth being removed. 5 After the removal of the thawed earth the fire-box is replaced in the pit or hole and the operation before described is repeated. This is done until the shaft or pit is of the desired 10 depth.

It will be appreciated from the foregoing that my apparatus is capable of quickly thawing earth no matter how hard the same is frozen and that it thus materially facilitates 15 the formation of shafts or pits in the ground when the weather is cold. It will also be appreciated that the apparatus is adapted to burn brush and the like and that it may therefore be operated very cheaply.

20 Having thus described my invention, what I claim is—

1. An earth-thawing apparatus comprising a fire-box having a side wall and a bottom wall disposed in a plane above the lower edge 25 of said side wall so as to form an inclosed space between said bottom wall and the ground and also having an open passage between the edge of said bottom wall and the

side wall, a suitable blower connected with the interior of the fire-box, and a smoke-pipe 30 connected with the space below the bottom of the fire-box at the center thereof and extending through said fire-box, substantially as specified.

2. An earth-thawing apparatus comprising 35 a fire-box having its bottom wall disposed in a plane above the lower edge of its side wall so as to form an inclosed space between said bottom wall and the ground and also having an annular passage between the edge of said 40 bottom wall and the side wall, an aperture in the center of its bottom wall, and partition-strips connected to and depending from its bottom wall and forming ways intermediate of the annular passage and the central aper- 45 ture, a smoke-pipe connected with the central aperture in the bottom wall of the fire-box, and a blower connected with the interior of the fire-box, substantially as specified.

In testimony whereof I have hereunto set 50 my hand in presence of two subscribing witnesses.

ROBERT B. ORMISTON.

Witnesses:

WALTER CHESTERTON,
A. BAUSLAUGH.