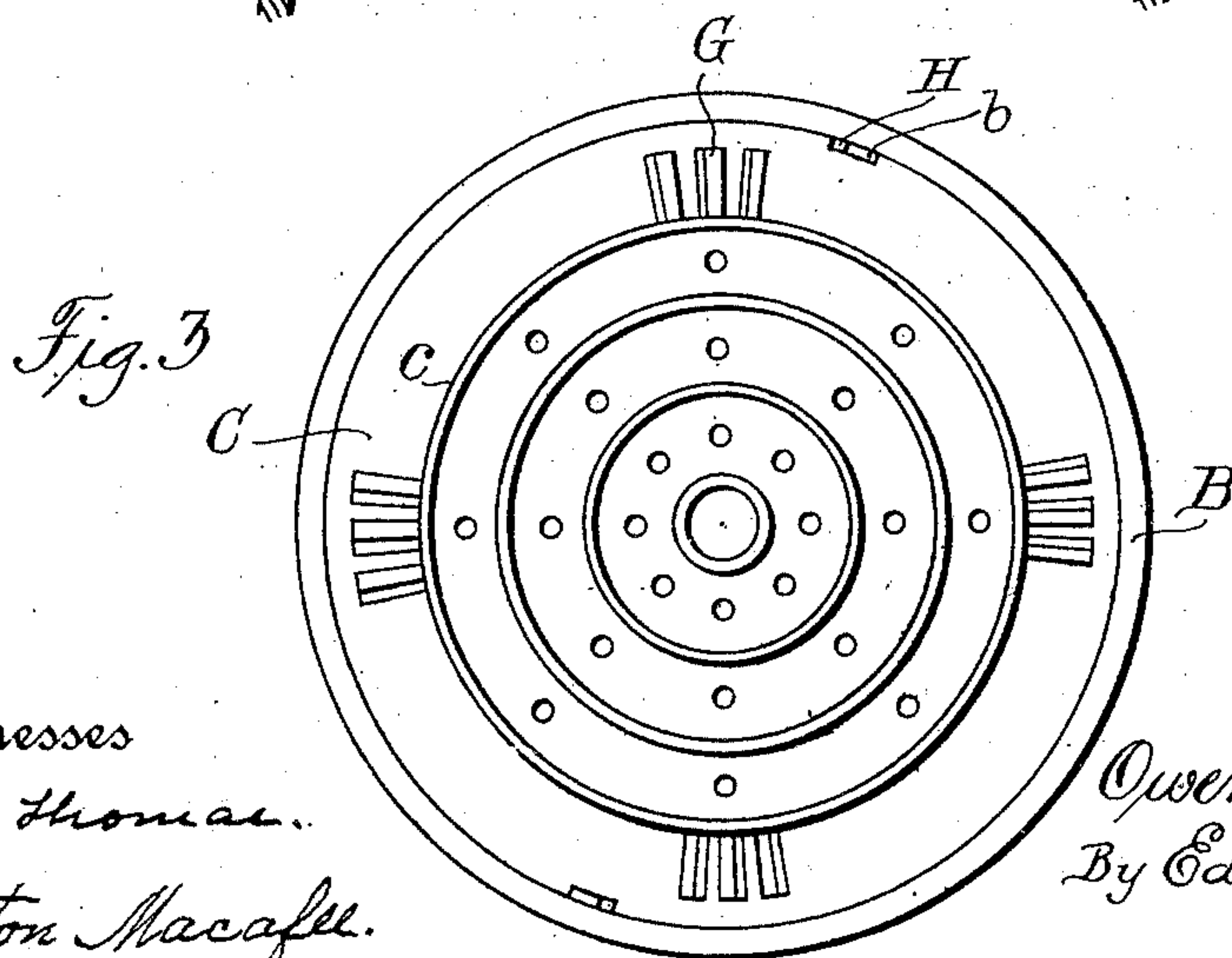
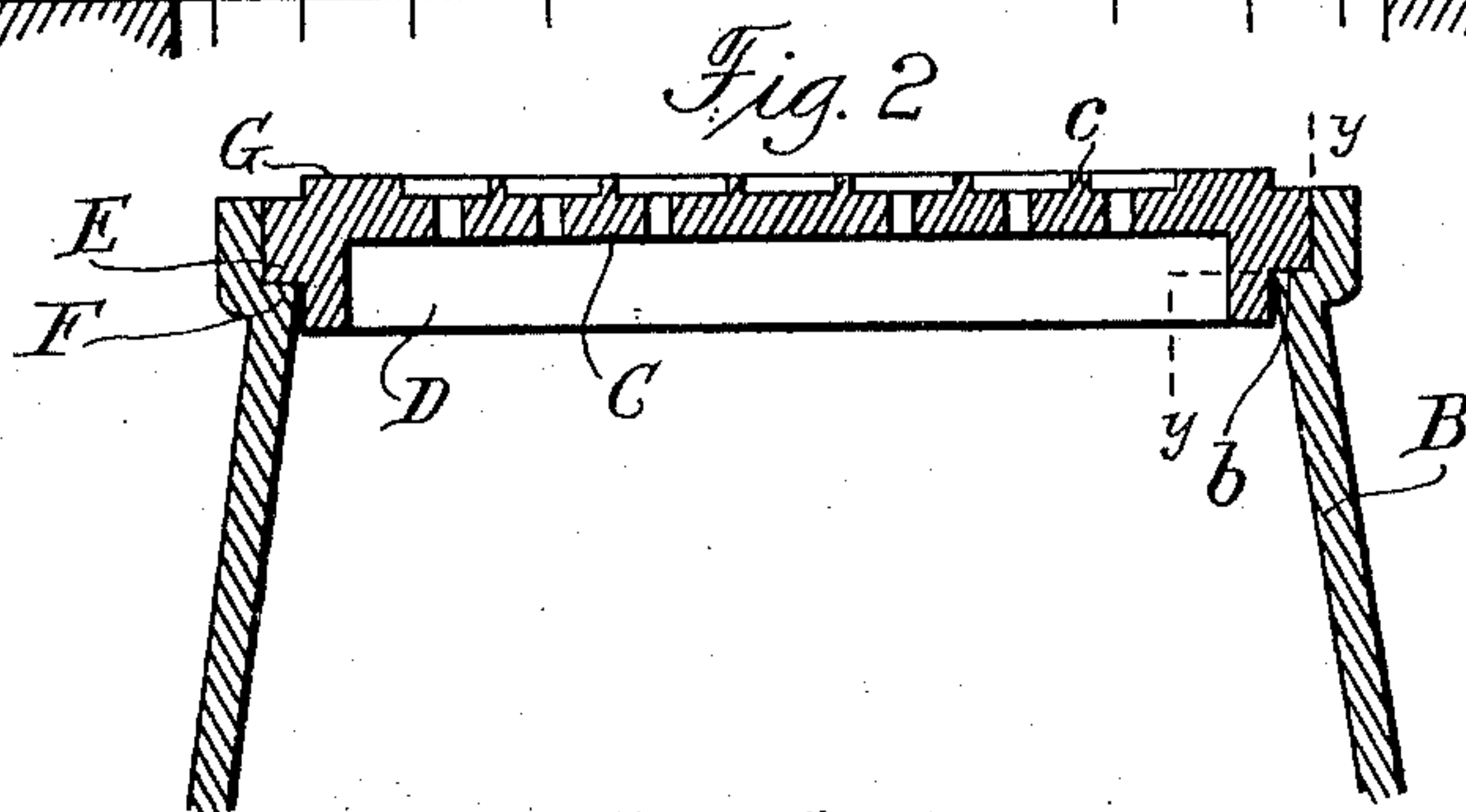
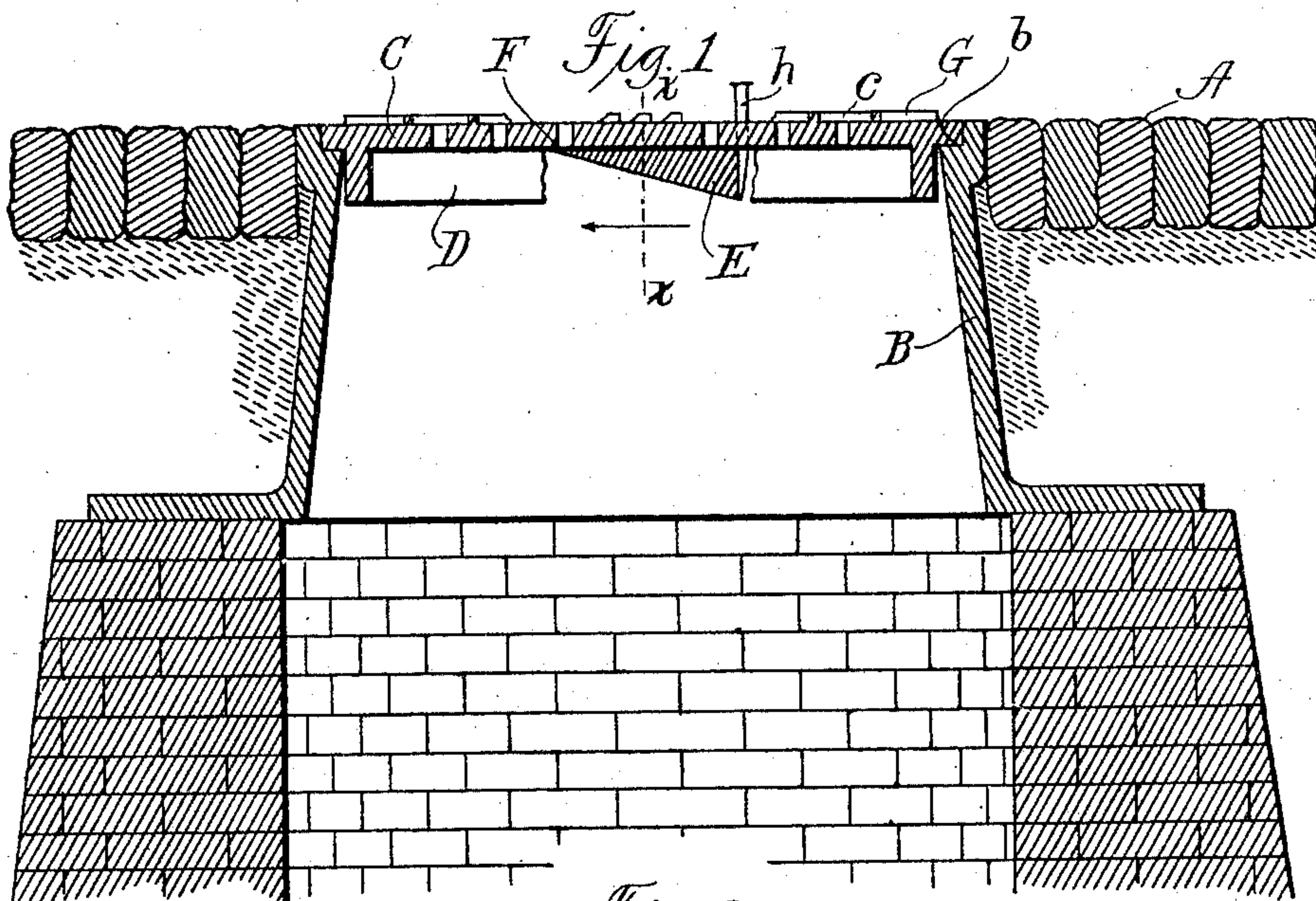


O. T. DOUGHERTY.  
MANHOLE COVER.  
APPLICATION FILED AUG. 20, 1909.

965,163.

Patented July 26, 1910.



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# UNITED STATES PATENT OFFICE.

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## MANHOLE-COVER.

965,163.

Specification of Letters Patent. Patented July 26, 1910.

Application filed August 20, 1909. Serial No. 513,863.

To all whom it may concern:

Be it known that I, OWEN T. DOUGHERTY, citizen of the United States, residing at St. Paul, in the county of Ramsey and State of Minnesota, have invented certain new and useful Improvements in Manhole-Covers, of which the following is a specification.

This invention relates to manhole covers, and has for its object the production of a manhole cover having parts of special arrangement and construction, and intended for use on sewer manholes exposed to severe weather in winter, whereby it is believed the cover may be more easily and quickly removed when desired than in other like devices in common use.

The construction and arrangement constituting this invention are set forth in the accompanying drawings, of which—

Figure 1 represents a vertical section of an ordinary street sewer manhole with this invention applied. Fig. 2 is a section of this invention on a plane at right angles with that of the section in Fig. 1. Fig. 3 is a top plan view.

The same letters are employed throughout the description and drawings to refer to the same part.

The paving and surface of the street is marked A, and the metal manhole casting B is sunk below the surface.

The removable cover of the manhole is designated by the letter C. It has the usual concentric ridges *c*. The cover C rests in the annular shoulder *b* of the manhole B. A depending flange D is formed integrally with the cover C and extends downwardly within the manhole B and below the shoulder *b*. In Fig. 1, part of the flange D is broken and cut away in order to leave and exhibit the incline E, which is in fact an outward extension of the flange D as illustrated in Fig. 2, which is a section on line *x—x* of Fig. 1 and in a plane at right angles with that of the section in Fig. 1. That portion of the flange D cut away is the part below the incline E, following line *y—y* of Fig. 2. It will be understood that the incline E is integral with the flange D, but projects like a triangular block outside of the flange D. Obviously, the shoulder *b* of the manhole casting B must be recessed to receive the incline or inclined block portion of the flange D. The recess in the shoulder *b* designated by letter F in Fig. 1 is one of the recesses. In the construction

there are two such recesses in opposite parts of the shoulder *b*.

The explanation of this invention is as follows: Let it be assumed that the winter weather or other causes have rendered it impracticable for the cover to be raised by a hook or tool inserted in the perforations in the customary manner. The next expedient is for the workman to strike the lugs G shown upon the outer surface of the cover C, in such direction as would tend to turn the cover contrary to the movement of the hands of a watch. Supposing that this hammering fails to promptly start the turning of the cover. The workman inserts in an opening H a wedge-shaped chisel *h*. Now, by driving the chisel down into the opening H, it is possible to start the cover to turning almost without failure. Once started, it may be easily kept turning until sufficiently loose to be raised in the customary manner. The opening H into which the chisel *h* is driven, is formed by making the recess F in the shoulder *b* of the manhole B somewhat larger than the inclined portion E previously described as projecting on the outside of the flange D of the cover C. It is now thought to be also made out, that as the cover is forced to turn, it is also forced to rise, because the incline E slides upwardly upon the inclined bottom of the recess F. This effect aids the loosening of the cover.

Having now described this invention, and explained the mode of its operation, what I claim is:—

1. In a manhole cover, the combination with a cover having a projecting inclined portion, of a manhole constructed to receive and support the said cover, and the said manhole having an inclined recess adapted to receive the inclined portion of the cover.

2. In a manhole cover, the combination with a cover having a projecting inclined portion, of a manhole having an annular shoulder constructed to receive and to support the said cover, the said shoulder having an inclined recess adapted to receive the inclined portion of the cover.

3. In a manhole cover, the combination with a cover having a depending annular flange and a projecting inclined portion on the surface of the said flange, of a manhole constructed to receive and support the said cover, and the said manhole having an inclined recess adapted to receive the inclined portion of the cover.

4. In a manhole cover, the combination  
with a cover having a projecting inclined  
portion, of a manhole constructed to receive  
and to support the said cover, the said cover  
5 having an opening through it adjacent to  
the greater end of the said inclined portion,  
and the said manhole having an inclined  
recess adapted to receive the said inclined  
portion of the cover, the said recess being

somewhat larger than the said inclined por- 10  
tion of the cover.

In testimony whereof I affix my signature  
in presence of two witnesses.

OWEN THOMAS DOUGHERTY.

Witnesses:

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