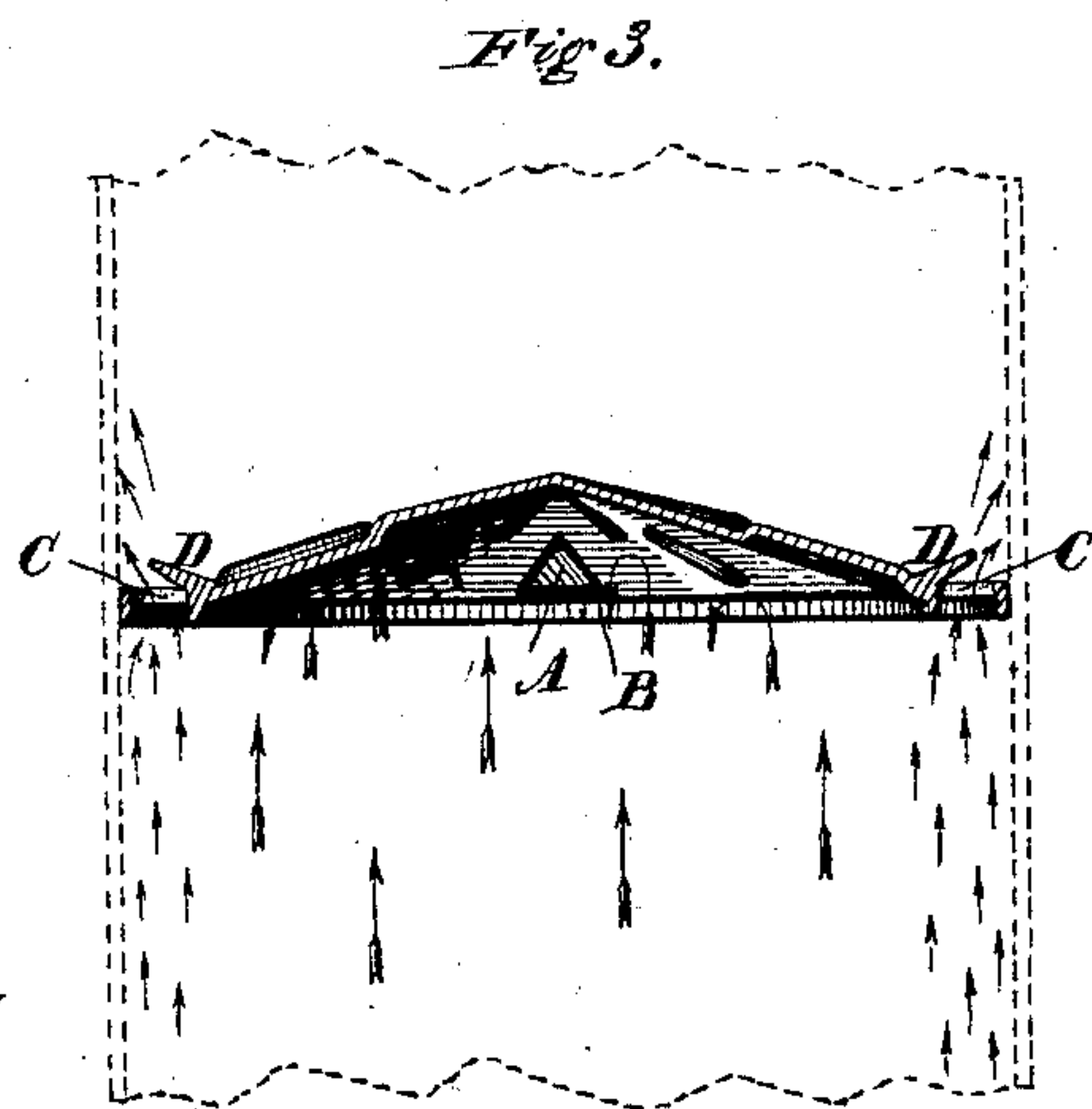
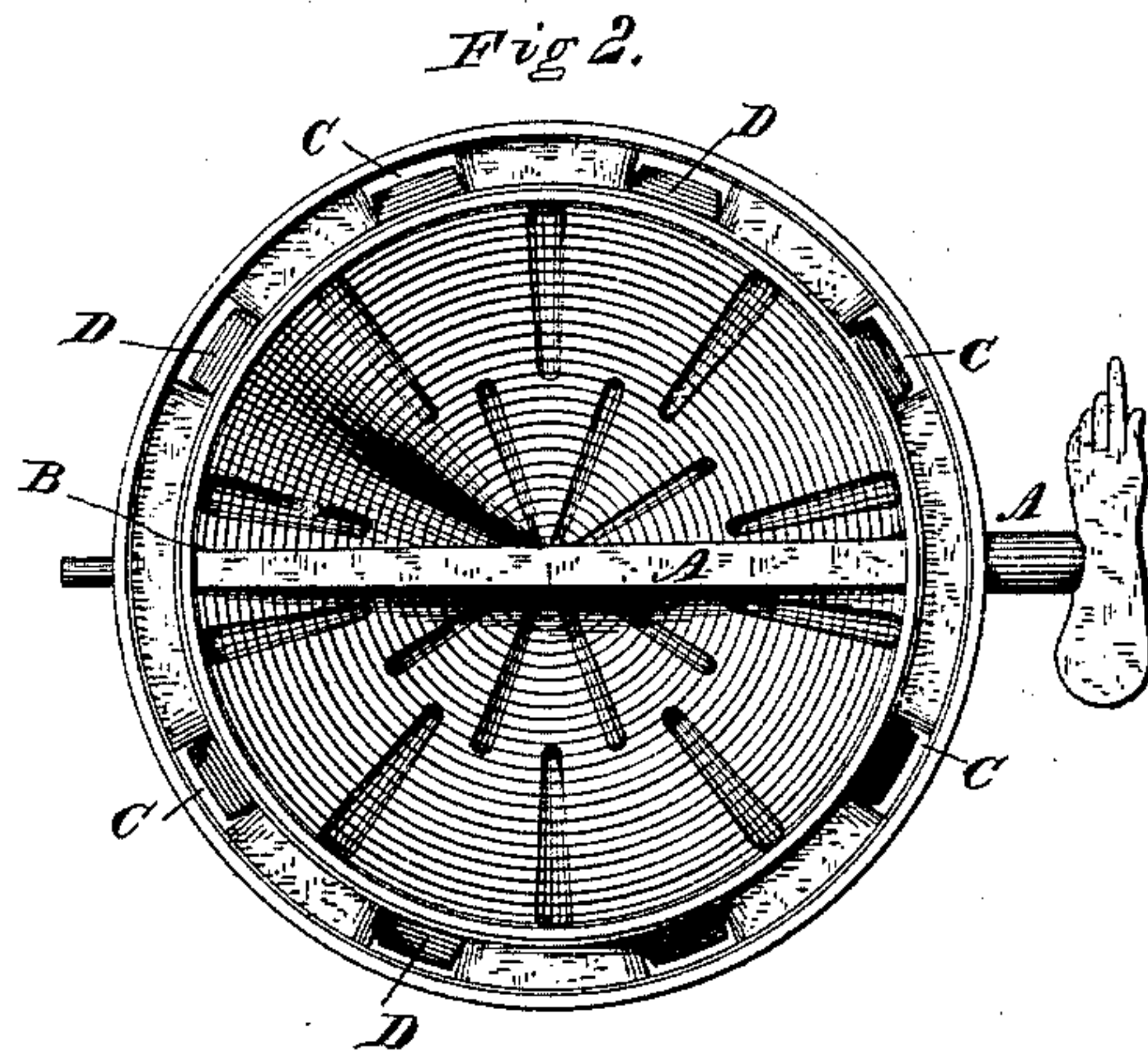
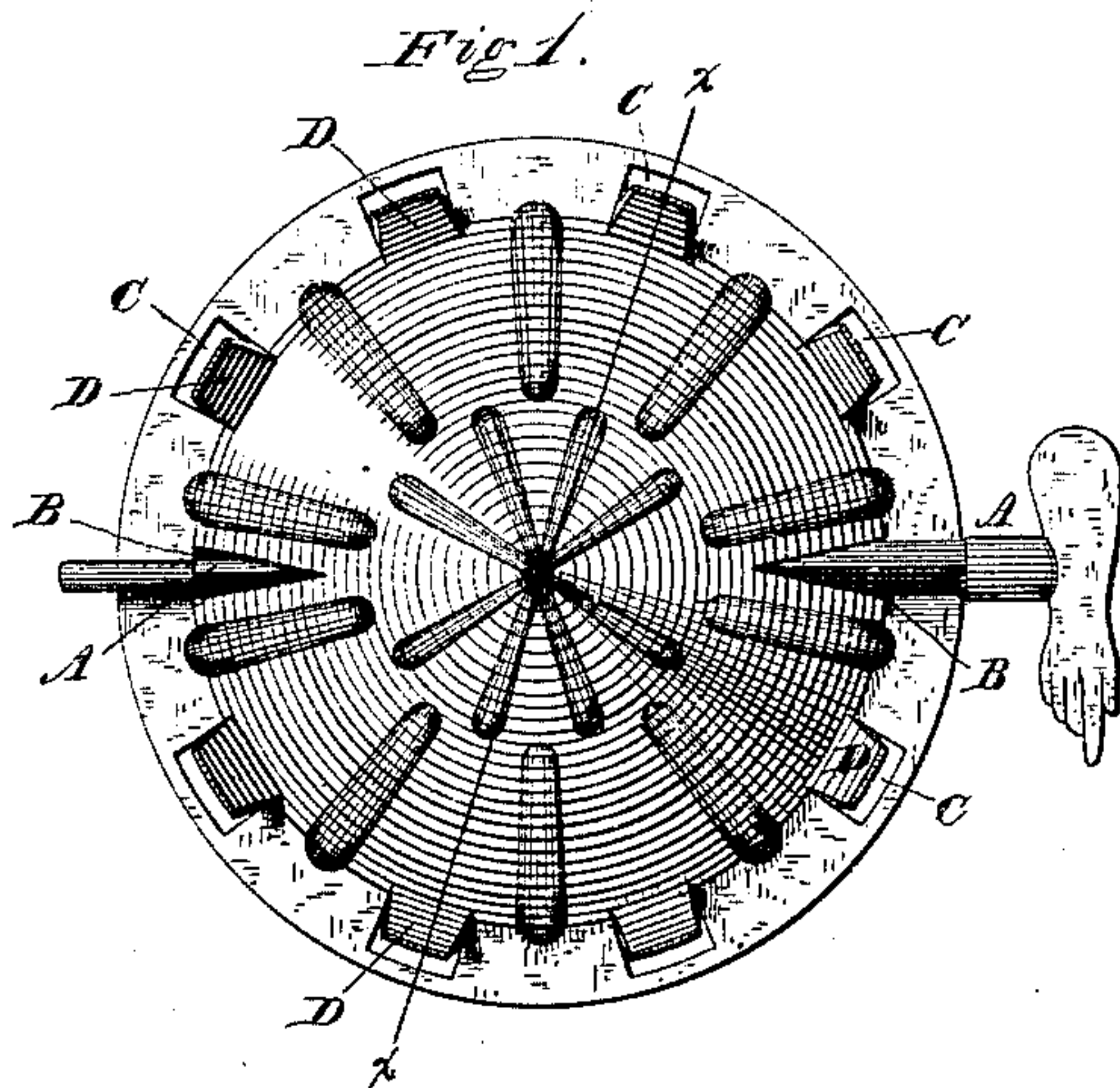


J. T. FARRELL.
Damper.

No. 223,222.

Patented Jan. 6, 1880.



Witnesses.

Harry King
Thos E Davis

Inventor.

John T Farrell
per H. A. Seis
att'y

UNITED STATES PATENT OFFICE.

JOHN T. FARRELL, OF WEBSTER, MASSACHUSETTS.

DAMPER.

SPECIFICATION forming part of Letters Patent No. 223,222, dated January 6, 1880.

Application filed February 18, 1879.

To all whom it may concern :

Be it known that I, JOHN T. FARRELL, of the town of Webster, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Dampers for Pipe-Flues, of which the following is a specification.

It is a well-known fact that mingled with the gaseous products of combustion is generally found a certain quantity of heated air or oxygen which has been admitted in excess of that required for combustion. I have found by experiment that as the products of combustion mingled with this heated air ascend a flue they tend to its sides, while the heated air tends to its center.

One object of my invention is to retard this oxygen in its ascent from the fire, while at the same time I permit the waste products of combustion, which can no longer assist in supporting combustion, to escape. Accordingly I have formed my damper of a hollow conical or concavo-convex outline, and provided exit-apertures for the products of combustion near its circumference, while its center is closed and presents a barrier to check and turn back the heated air.

Another object of my invention is to effect the heating of the flue-pipe to a greater degree than usual above the damper in cases where it is desirable to utilize the pipe as a radiator to warm apartments through which it may pass. This object I effect in a measure by the apertures near the circumference of the damper for the passage of the hot products of combustion in close proximity to the inner circular surface of the pipe; but I accomplish it more perfectly by the aid of projecting deflectors, which incline partly over the apertures and deflect the hot gases directly against the inner surface of the pipe all around.

In the accompanying drawings, Figure 1 is a plan view of my improved damper; Fig. 2, a reverse view, and Fig. 3 a section through the line *x x* of Fig. 1.

A indicates a spindle or hand-piece for centrally pivoting and turning the damper. This I prefer to make detachable and conical, or otherwise angular, except at its bearing ends, and to connect it to the damper by entering it into a correspondingly-shaped diametrical aperture, B.

C indicates the hot-gas apertures, and D the outwardly-projecting and inclining deflectors over the apertures.

The damper may be of cast or sheet metal, as usual, and it can readily be applied to replace an ordinary damper by housekeepers and others without the services of a mechanic.

Another object of my invention is to provide at all times, when a damper is in use, a means of escape for the noxious gases generated in the stove or heating apparatus. This I accomplish by means of or through the apertures C, heretofore described, which, when the damper is turned down flat, afford a means of escape up the flue of a certain amount of the products of combustion.

I am aware that it is not new in dampers to employ a disk with the circumferential edge serrated or sinuated.

I am also aware that it is not new in dampers to employ near the outer edge thereof a double series of concaved plates, the plates in one course standing opposite the apertures in the other.

I am also aware that it is not new in dampers to employ a concave annular disk with central opening, above which, supported upon brackets, is another disk of smaller diameter, which smaller disk is intended to answer the purpose of a deflector.

I am also aware that it is not new in dampers to employ a convex plate with certain deflectors projecting from near the circumferential edge and upon the side opposite the convex side, and therefore I do not lay claim to such contrivances.

Having thus described my invention, what I claim, and wish to secure by Letters Patent, is—

A concavo-convex damper formed from a single plate, provided with circumferential apertures C C and deflectors D D, projecting from the convex side of the damper, and pitched at substantially the angle shown.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

JOHN T. FARRELL.

Witnesses:

VERNON KIBBY,
H. J. CLARKE.