

UNITED STATES PATENT OFFICE.

CHARLES M. WHELDEN, OF PITTSFIELD, MASSACHUSETTS.

BASE-BURNING STOVE.

Specification forming part of Letters Patent No. 71,347, dated November 26, 1867.

To all whom it may concern:

Be it known that I, CHARLES M. WHELDEN, of Pittsfield, in the county of Berkshire and State of Massachusetts, have invented a new and useful Improvement in Reservoir-Stoves; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawing, forming part of this specification, in which—

Figure 1 represents a central vertical section of a stove made according to my invention. Fig. 2 is also a central vertical section, but in a plane at right angles to that of Fig. 1. Fig. 3 is a horizontal section on the line *xx*.

This invention relates to that class of stoves which have a reservoir for fresh fuel above or convenient to the fire-chamber, so that the latter is supplied with fuel automatically as combustion proceeds.

The letter A designates the outer cylinder of the stove, and B the grate, from near whose outer edge rise the walls C of the fire-chamber. D is the fuel-reservoir, which contains the fuel-supply. The top of said reservoir may be sunken below the top of the outer cylinder, A, so as to open into or communicate with the flue-space E, or it may, as in this example, be carried upward through said flue-space to the level of the top of cylinder A. It has the usual cover, which is removed when the reservoir is to be filled with fuel.

The stove here shown is made with a descending flue, F, which conducts the products of combustion into the lower part of the stove on their way to the place of discharge; but the manner of conducting the flue can be varied without affecting my improvement.

The letters G G G designate draft-passages, which conduct atmospheric air from without and discharge the same into the fire-chamber at the top or upper part of the fire. Said draft-passages may consist wholly of pipes or tubes, or, as in this example, partly of pipes or tubes and partly of an annular passage formed in the walls of the reservoir; but said draft-passages may be formed in any suitable or convenient manner so long as the principle of my invention is adhered to of discharging the draft or atmospheric air into the fire at or near its surface.

It will be observed that the draft-pipes G commence at the lower part of the stove, where their open ends communicate through suitable registers (not shown) with the atmospheric air, and are taken upward through the combustion-chamber and flue-space F, and thence through the outer wall of the reservoir, where they communicate with the said annular passage G. By means of this arrangement the air-currents which pass through the pipes G become heated by the flames and gases from the fire, and are consequently in a more favorable condition for promoting combustion than if they were discharged into the fire in a cold state. The said air-currents may be taken downward through or along the reservoir in pipes or tubes, if preferred, in which case the walls of the said reservoir may be made single instead of double, as in this example; or the manner of conducting the draft or atmospheric air may be modified in other ways—as, for instance, the pipes G may commence elsewhere in the stove, or be carried to a less height than here shown. The arrangement of the annular draft-passage G here shown causes the draft-air to be well distributed at the time of its discharge into the fire, so that the air-currents come in contact with the incandescent fuel at different points and mix with the gases of the fuel over a wide area.

The reservoir D is perforated at any convenient place or places, preferably near its top, as at H H, in order to allow the gases which are generated in the reservoir by the heating of the fuel contained therein to enter a pipe or pipes, I, that are carried downward to the lower edge of the reservoir, where they discharge such gases into the fire. In this example I have placed said pipes I in the annular space G; but they may be placed outside of the wall of said annular space, if desired. The gas-pipes I and air pipes or passages G do not communicate with each other in their course, because it is desirable that the air and gases be not brought together in such pipes or passages, or in the reservoir itself, and they are kept apart until the moment of their discharge into the fire; or if they are brought together before, it should be at such a distance from the perforations H as to avoid the possibility of the entrance of atmospheric air into the reservoir.

C. M. Whelden

Base-Burning Stove.

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Fig. 2

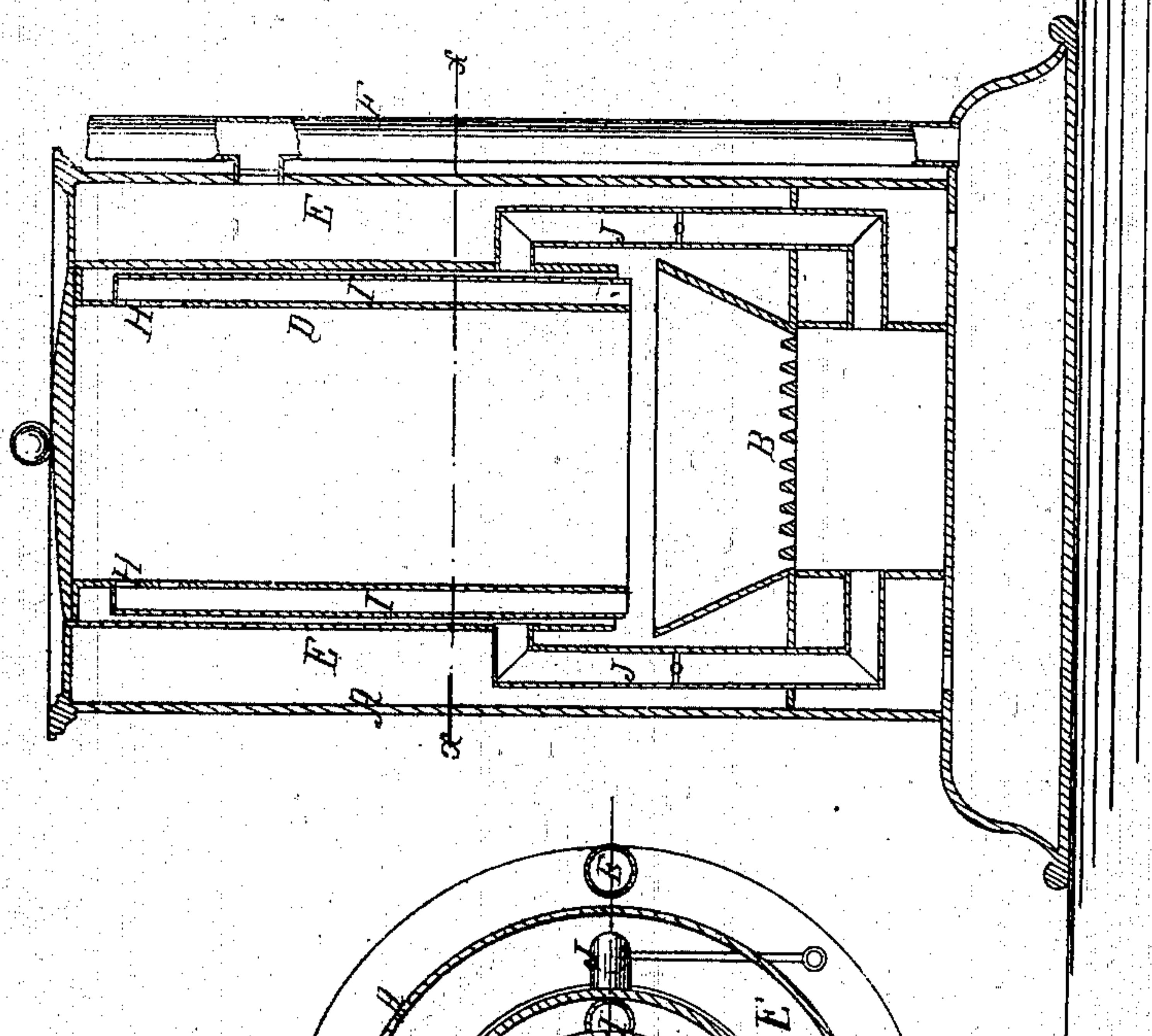


Fig. 3

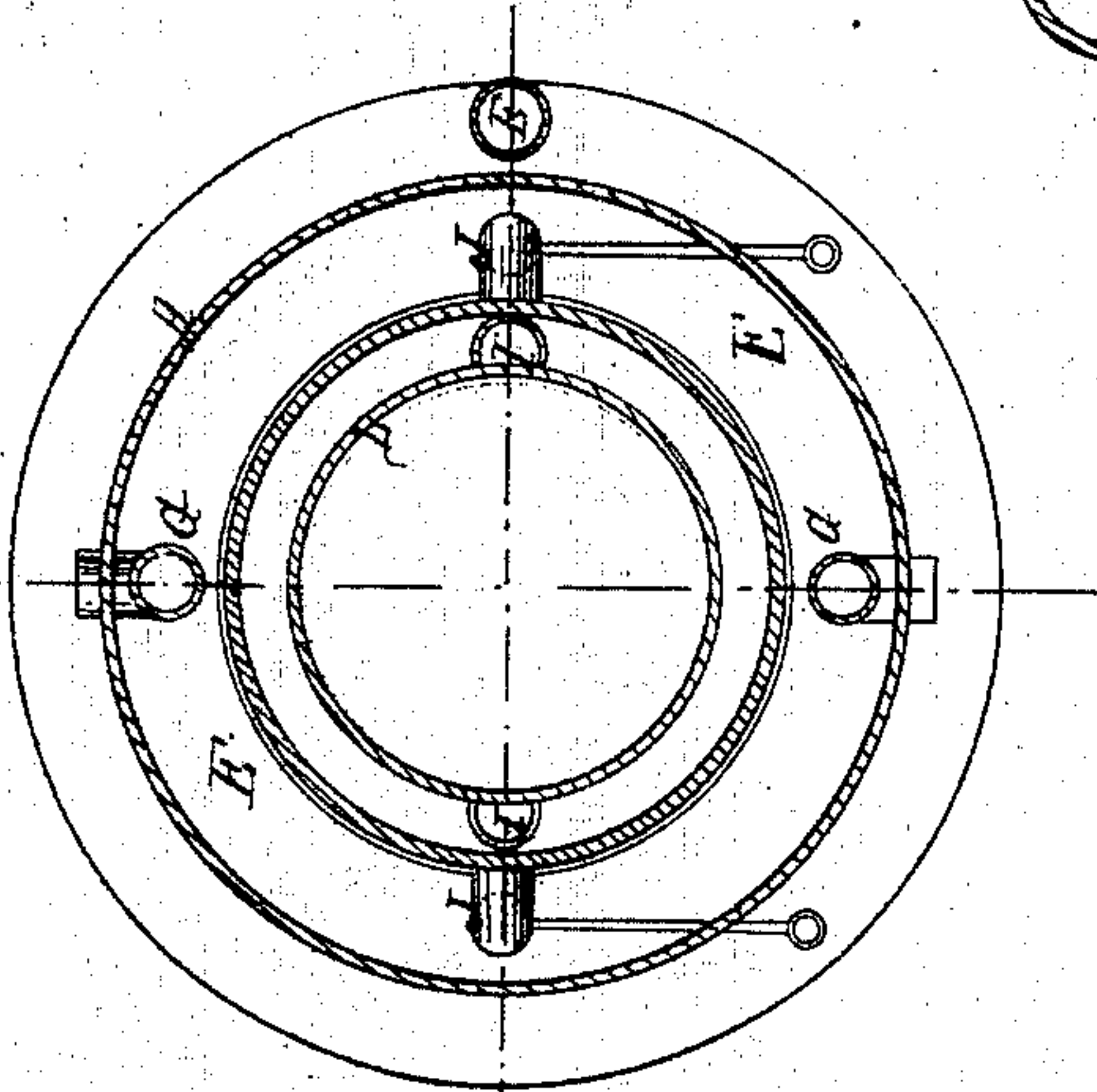
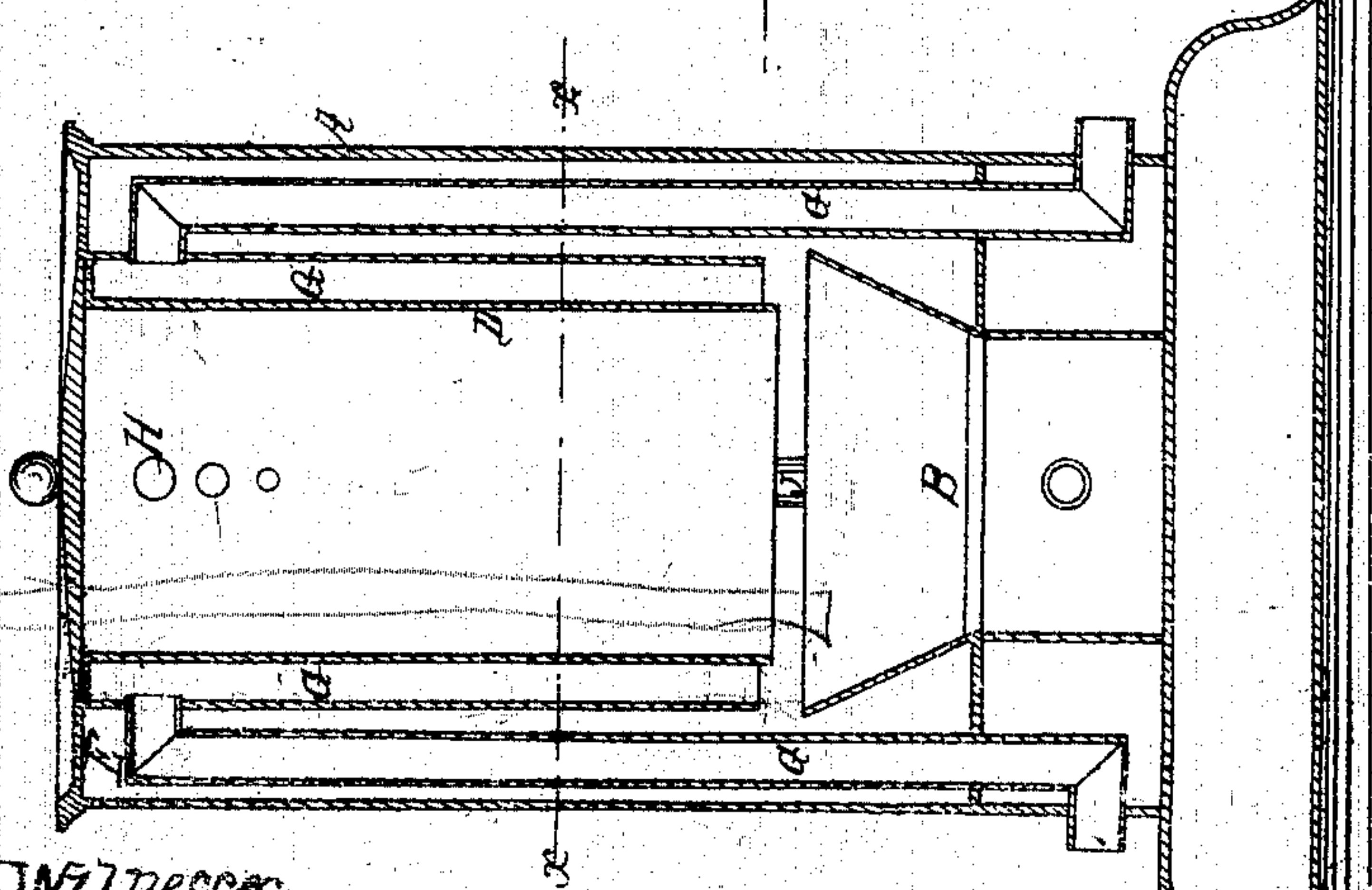


Fig. 1



WITNESSES

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