

(No Model.)

F. S. CRIPPS.  
PURIFIER.

No. 561,203.

Patented June 2, 1896.

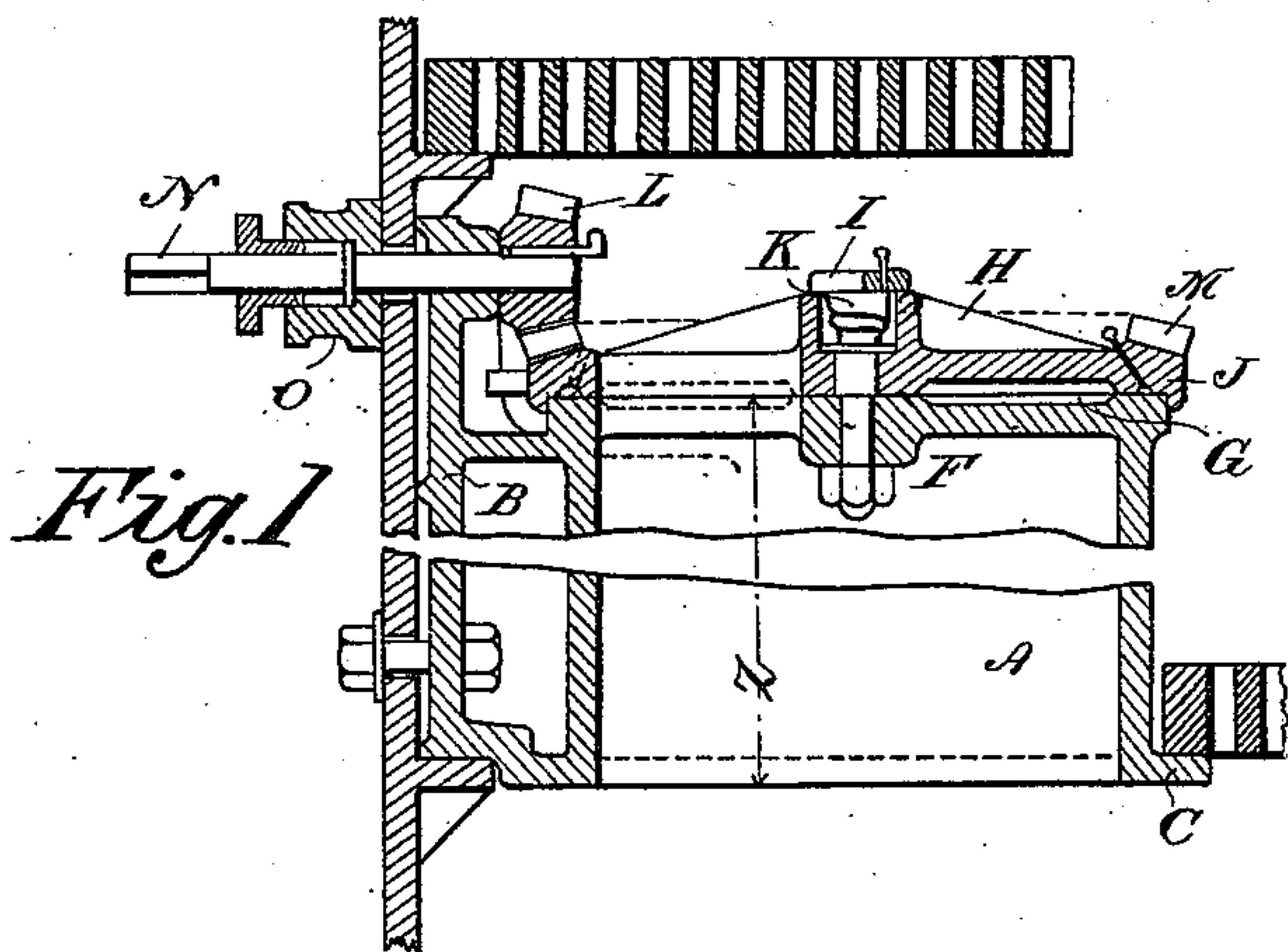


Fig. 1

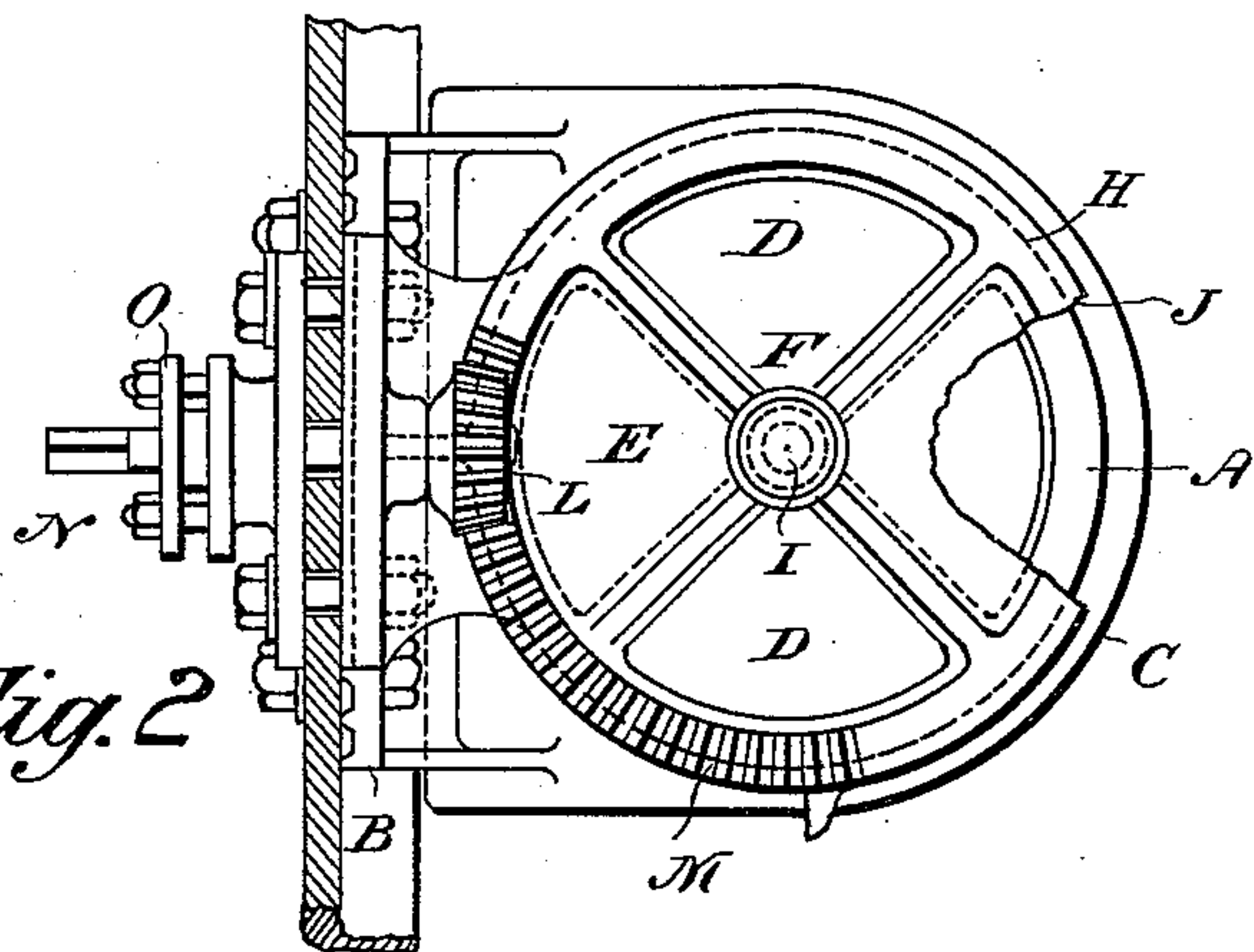


Fig. 2

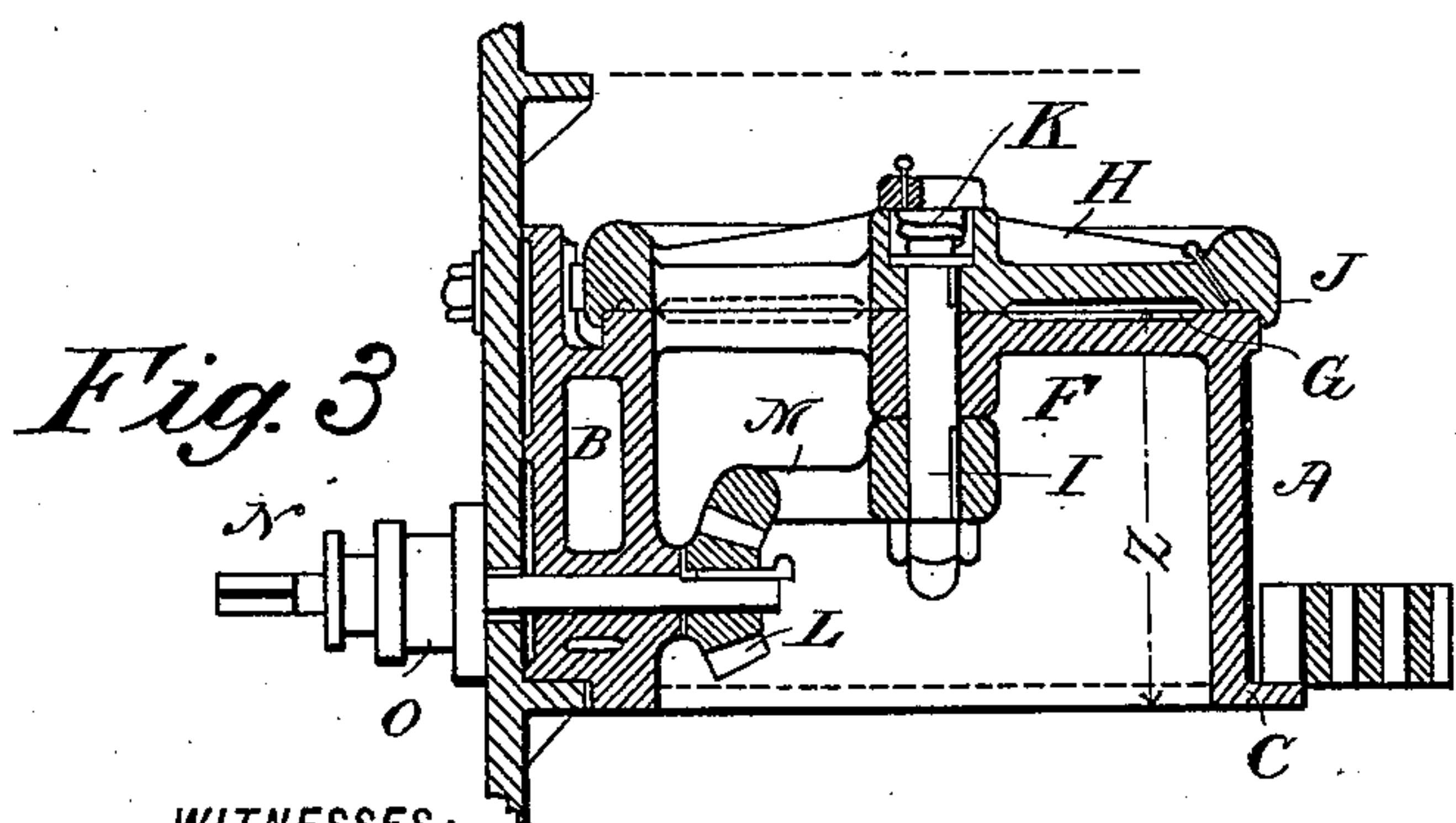


Fig. 3

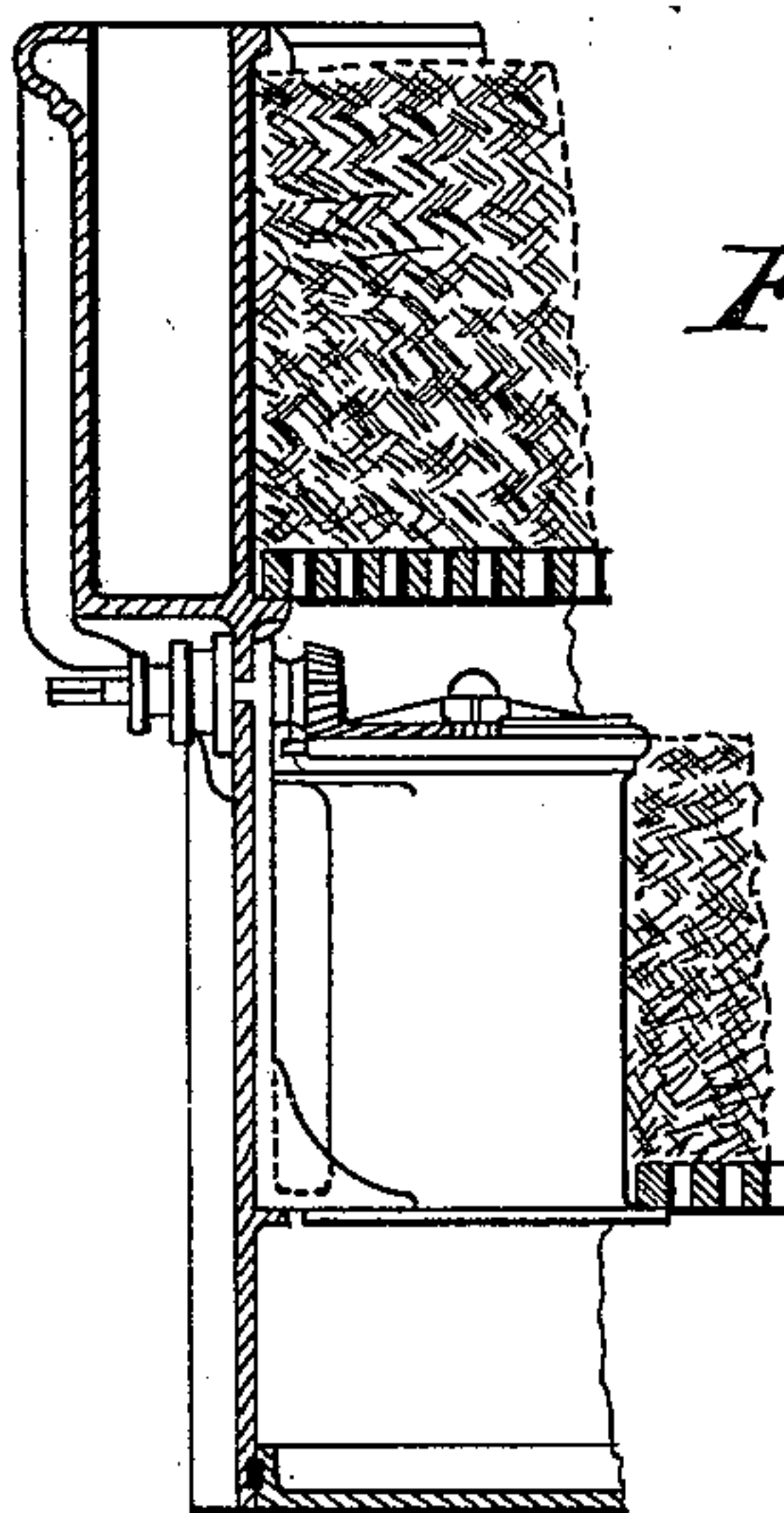


Fig. 4

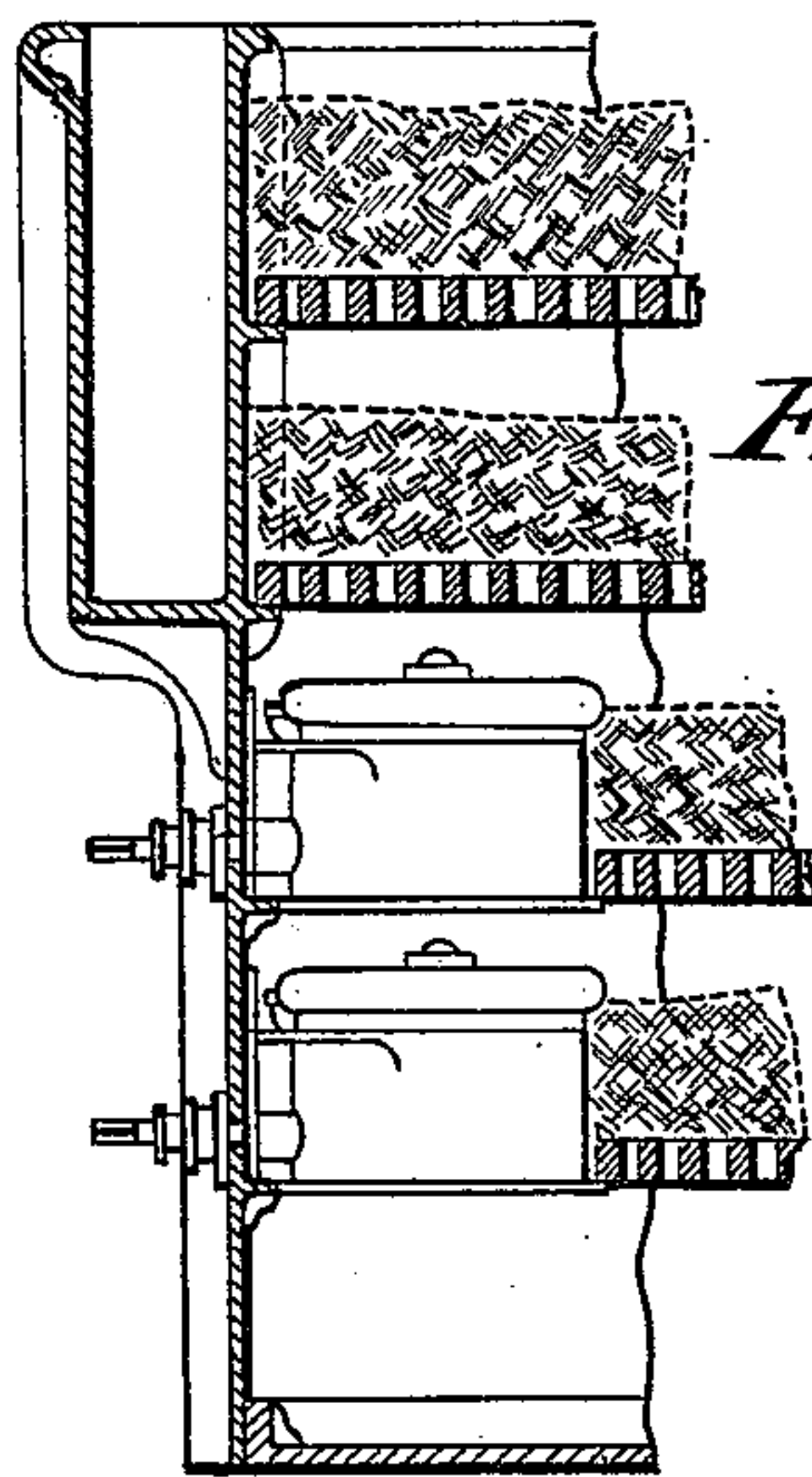


Fig. 5

WITNESSES:  
C. Gerst  
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ATTORNEYS



# UNITED STATES PATENT OFFICE.

FREDERICK SOUTHWELL CRIPPS, OF LONDON, ENGLAND.

## PURIFIER.

SPECIFICATION forming part of Letters Patent No. 561,203, dated June 2, 1896.

Application filed May 17, 1895. Serial No. 549,639. (No model.) Patented in England January 30, 1895, No. 2,092.

*To all whom it may concern:*

Be it known that I, FREDERICK SOUTHWELL CRIPPS, engineer, a subject of the Queen of Great Britain, and a resident of 27 Great George Street, Westminster, London, in the county of Middlesex, England, have invented certain new and useful Improvements in Purifiers, (for which a patent has been granted in Great Britain, No. 2,092, dated January 30, 1895,) of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof, in which similar letters of reference indicate corresponding parts.

15 This invention relates to improvements in valves for use in connection with purifiers employed in gas-works.

This valve is so constructed as to admit of by-passing any layer or layers of purifying material in the apparatus known as "purifiers" in gas-works. It is designed to be fixed at one or more of the lower tiers of sieves or grids carrying the purifying material, so that in the case of excessive back pressure being given by any particular layer the valve can be opened and render immediate relief by by-passing that layer only. Then instead of having to force the gas through the purifying material, which has become used up, choked, and hard, it can be passed direct to the fresher and more open material above, thereby obviating the necessity of changing the purifier simply on account of the material in the lower portion being choked. The valve is fixed inside the purifier, but it is actuated and worked entirely from the outside of the purifier.

It consists, essentially, of three (3) parts, viz: the body, the valve, and the gear for opening and shutting it; but in order to render the nature of my invention clear I refer in the following description to the sheet of illustrative drawings, of which—

Figure 1 is a sectional elevation with the gearing situated above the valve. One half shows the open ways through the valve and seating and the other half the solid webs of the valve and seating. Fig. 2 is a plan showing valve open for passage of gas. Fig. 3 is a section showing the gearing when placed below the valve. Figs. 4 and 5 are elevations showing the manner of fixing same in purifiers.

The body A is a rectangular or circular pipe-

casting, prepared with flanges B for fixing to the side plate of purifier in such a way as not to damage or weaken the same. The body is of about the same depth as the layer of purifying material through which it passes, and around its bottom edge a shelf C is cast to carry the sieves abutting against it. The upper end of the body is divided into several segments, half of which are open D and half are solid E alternately, and in the center is a boss F for carrying the valve-spindle. The upper edges and surfaces G are faced to form the seating for the valve to work upon. The valve H is a circular disk or grid valve of cast-iron, turning on a center-pin I and having divisions alternately open D and closed E, being in this respect the exact counterpart of the faced body on which it works. A lip J projects downward, so as to clasp the circular face and seating on which the valve works and exclude grit, &c., from the working faces G. The under surfaces and lip are faced, and it is provided with means for lubrication in all working parts.

In addition to the weight of the valve keeping it down on its face a volute spring K surrounds the center spindle, causing increased pressure between the surfaces and insuring perfect gas-tightness, so that gas shall not pass the valve when it is shut. The gearing for actuating the valve consists of a bevel-pinion L and wheel or segment M. The wheel or segment is either cast solid on the rim of the upper surface of valve, or is in a separate casting fixed below the valve, as in Fig. 3. In the latter case the valve and wheel or segment are both fixed to the center spindle I. The pinion is turned by a short spindle N, passing through a small stuffing-box and gland O on the purifier side plate, and a guide bracket or boss cast on the body.

A quarter-turn of the valve will open or shut it. Stops are cast on the valve and body to indicate when the valve is fully open or shut. It is constructed and fitted so that no faces are uncovered or in contact with or exposed to the action of the gas or purifying material when the valve is either open or shut.

The depth of the body Z is made to suit the pitch of the sieves or the depth of purifying material in the purifier.

Having thus fully described the nature of

my said invention and in what manner the same is to be performed, I declare that what I claim is—

1. In a device of the class described, the  
5 combination with a series of sieves and adjacent side plates arranged in tiers, of a valve-casing secured to each plate below the sieve of the tier next above and provided with a  
10 seat and ports, a valve arranged to move in said seat and open or close the ports, a rotary shaft for the valve extending therebelow, and a pinion meshing with the gear to contribute motion thereto.

2. In a device of the class described, the  
15 combination with a sieve and adjacent side

plate, of a valve-casing secured to said plate and provided with a seat and ports, a valve arranged to move in said seat and open or close the ports, a rotary shaft for the valve extending vertically therefrom and a pinion 20 meshing with the gear to contribute motion thereto.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 29th day of April, 25 1895.

FREDERICK SOUTHWELL CRIPPS.

Witnesses:

UTTON BLYTH,

GEORGE ARTHUR LURCOCK.