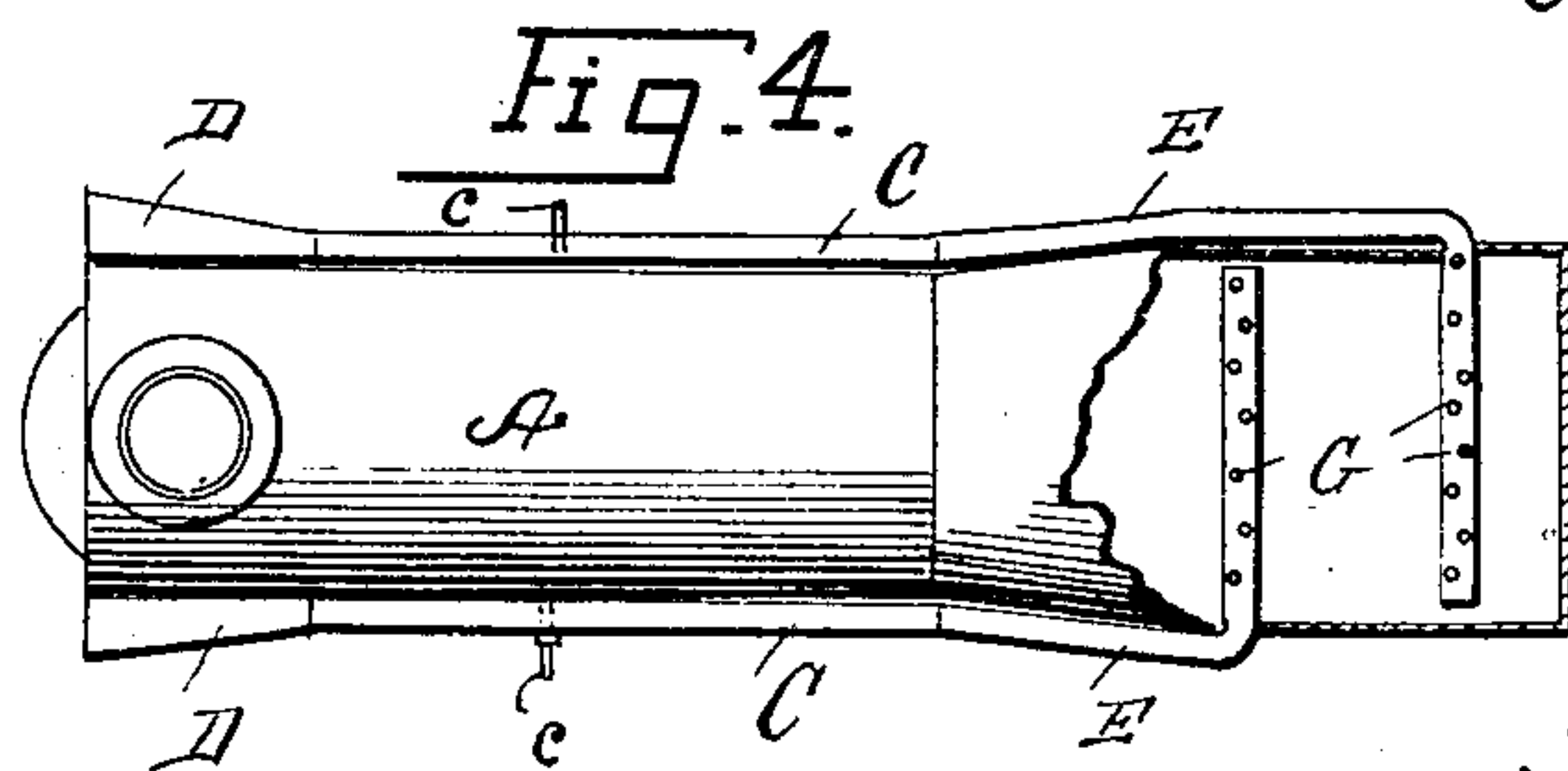
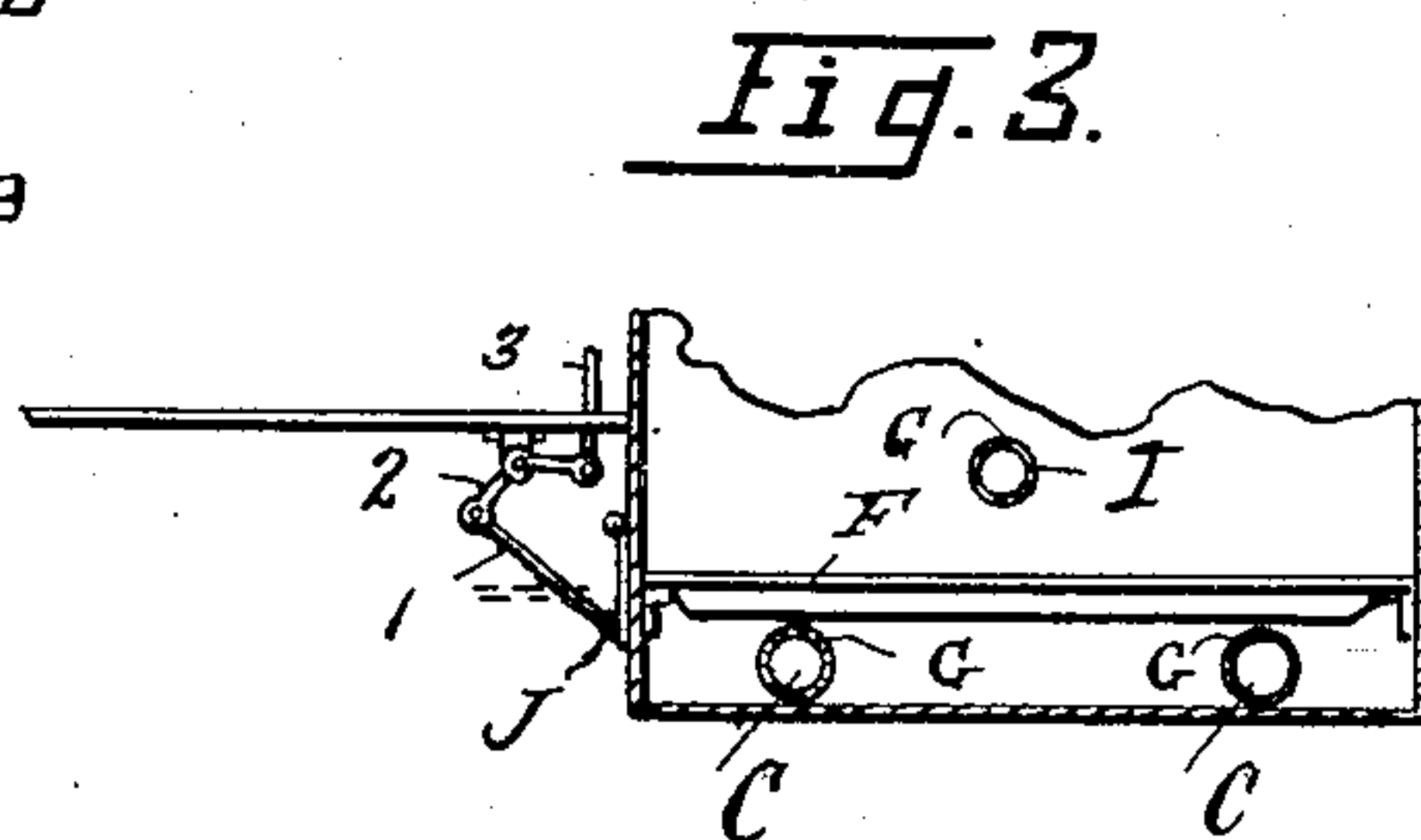
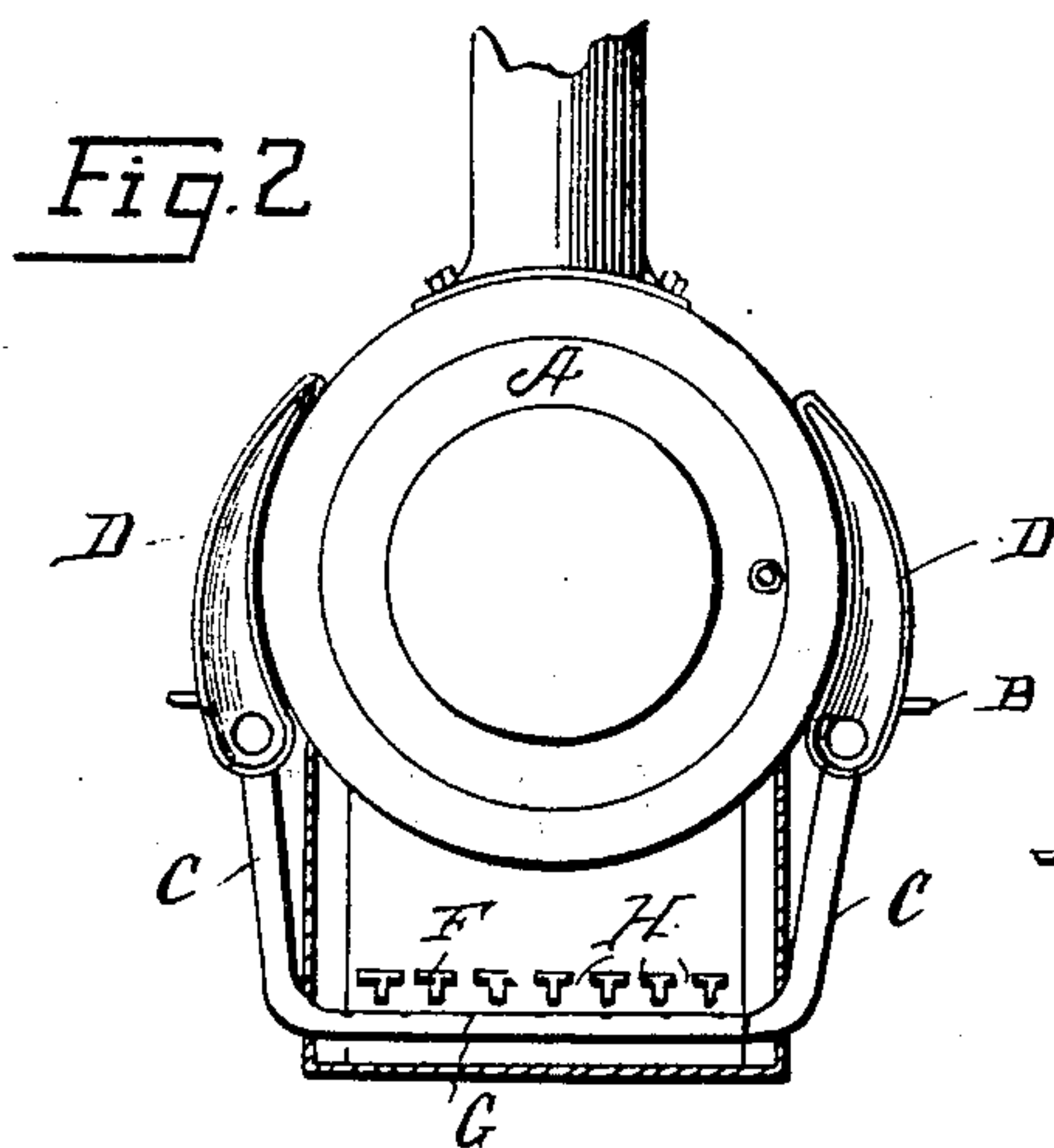
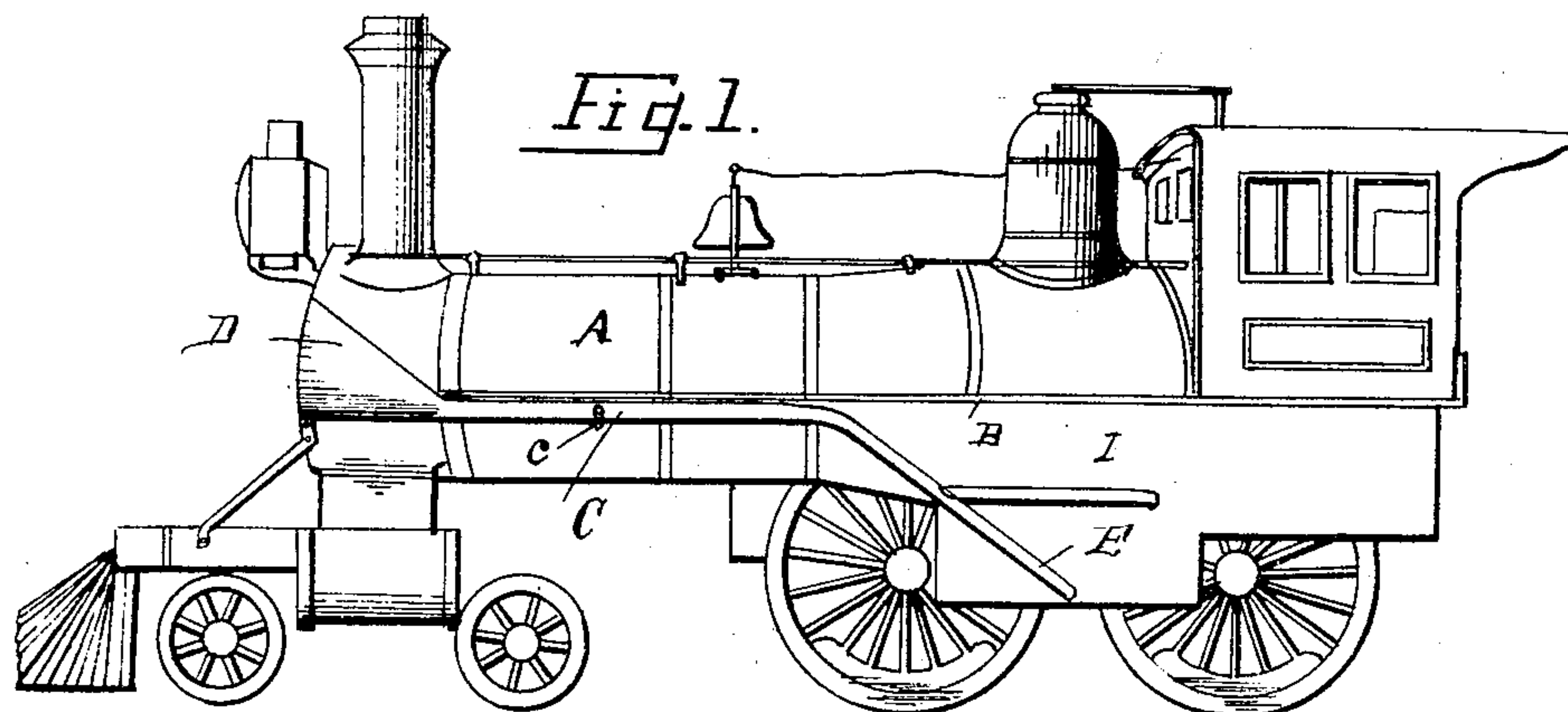


No. 792,318.

PATENTED JUNE 13, 1905.

R. F. COX.  
AIR DRAFT FOR LOCOMOTIVES.  
APPLICATION FILED AUG. 26, 1904.



Witnesses  
C. K. Davis.  
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Attorney

# UNITED STATES PATENT OFFICE.

RUPERT F. COX, OF MANSFIELD, OHIO.

## AIR-DRAFT FOR LOCOMOTIVES.

SPECIFICATION forming part of Letters Patent No. 792,318, dated June 13, 1905.

Application filed August 26, 1904. Serial No. 222,290.

*To all whom it may concern:*

Be it known that I, RUPERT F. COX, a citizen of the United States, residing at Mansfield, in the county of Richland and State of Ohio, have  
 5 invented certain new and useful Improvements in Air-Drafts for Locomotives, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to improvements in  
 10 air-drafts for locomotive-boilers; and the objects of my invention are to provide a means for supplying the furnace with air of sufficient quantity to make a perfect draft and to obviate the necessity of using a heavy ex-  
 15 haust, which is now common in locomotives. These objects I accomplish by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of a locomotive-  
 20 engine, showing the position in which I place the air-draft tubes. Fig. 2 is an enlarged front view of boiler, showing the fire-box in section to show the position in which I place the air-draft tubes under the grate-bars. Fig.  
 25 3 is a longitudinal sectional view of fire-box, showing the ends of the air-draft tubes. Fig. 4 is a top view of boiler and air-draft tubes to show more fully the arrangement of the same.

30 Similar characters of reference indicate the several parts throughout the views.

In the accompanying drawings the letter A designates a locomotive-boiler which is of general construction and now in general use.  
 35 Secured upon each side of the boiler and under the foot-rail B are the air-draft tubes C C. The front ends D D of the tubes C C are bell-mouthed and curved to conform to the diameter of the boiler, the portions C C being round and extending longitudinally with  
 40 the boiler. The said tubes extend downward on an incline E to a line with the under side of the grate-bars F, thence at right angles across the fire-box ash-pit. The upper walls  
 45 of the said tubes are provided with perforations G to allow the air to pass through the

openings H between the grate-bars F. A tube I may be connected with the tube E to enter the fire-box above the fire. Said tube is per-  
 50 forated to aid in the combustion of fuel in the furnace.

The construction and arrangement of the parts are fully illustrated and described.

In Fig. 3 I show the front of the ash-pit made to open. The door J is hinged upon its  
 55 upper edge and may be operated from the cab by link 1, lever 2, and rod 3, as will be understood. Dampers c may be placed within the air-tubes C and operated to reduce the  
 60 amount of air-current when necessary.

It will be readily seen by those skilled in the art that when the engine is in motion the air will pass into the bell-mouth tubes D, thence through the pipes C and E, and through  
 65 the perforations G, which will give all necessary draft to the fire, obviating the necessity of having heavy exhaust from the cylinders. It will also be seen that the velocity as it in-  
 70 creases gives more air-pressure.

I do not wish to limit myself to the num-  
 70 ber of tubes passing under or over the grate-bars, as any number can be used.

Having fully described my invention, what I claim as new, and desire to secure by Letters  
 75 Patent, is—

In combination with a locomotive-boiler a plurality of air-tubes having funnel-shaped mouths at their front ends and extended to the fire-box where they enter above and be-  
 80 low the grate-bars, said tubes being perforated within the fire-box to discharge air above and below the fire, dampers located in said air-tubes, and the front of the ash-pit hinged and the draft therein controlled from the cab  
 85 of the locomotive by link 1, lever 2, and rod 3, all combined substantially as described.

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

RUPERT F. COX.

Witnesses:

T. Y. McCray,  
 F. M. Bushnell.