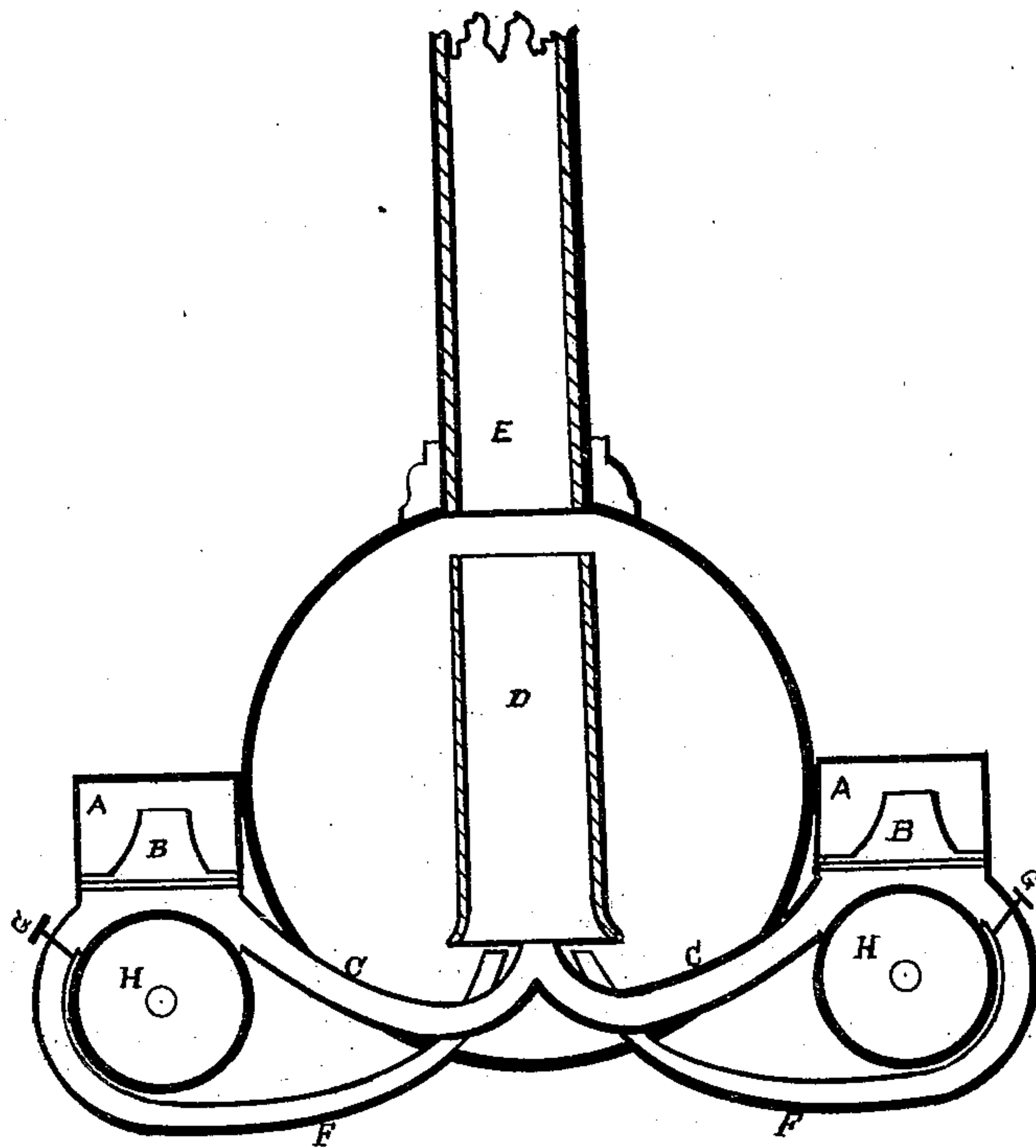


(No Model.)

J. D. BROWN.
Exhaust Mechanism.

No. 233,835.

Patented Nov. 2, 1880.



Witnesses,
William Weyer
William L. Brandt.

John Dunwell Brown
Inventor

UNITED STATES PATENT OFFICE.

JOHN D. BROWN, OF NEW YORK, N. Y., ASSIGNOR OF ONE-HALF OF HIS
RIGHT TO MATTHEW L. HARNEY, OF SAME PLACE.

EXHAUST MECHANISM.

SPECIFICATION forming part of Letters Patent No. 233,835, dated November 2, 1880.

Application filed April 27, 1880. (No model.)

To all whom it may concern:

Be it known that I, JOHN DUNWELL BROWN, of the city, county, and State of New York, have invented a certain new and useful Device
5 for Regulating the Blast or Draft of a Locomotive or Stationary Engine, of which the following is a specification.

My improvement relates to the exhaust-steam from the cylinders being discharged
10 into the stack, the force and intensity of which I propose to place entirely within the control of the fireman or engineer.

Heretofore various devices have been adopted for that purpose, which have been attached
15 to the nozzle of the exhaust-pipe and worked by a rod extending therefrom to the cab of the locomotive; but the heat being so great where those devices were situated it was impossible
20 to lubricate with oil, and consequently impossible for the fireman to work the same on account of the adhesion of the parts, and variable exhausts, for that reason, have been almost entirely discontinued.

To produce the effect of a variable exhaust
25 without the difficulty above described, I attach an auxiliary pipe to the port or opening into the exhaust-pipes and bring the same around the outside of the cylinders and up by the side of the exhaust-nozzle, the exhaust-
30 steam being let into this pipe as desired, by a cock attached thereto placed without the smoke-box.

The figure of the accompanying drawing represents a vertical section of the front end
35 of a locomotive with my improvement attached thereto, A being the steam-chest; B, a valve working therein; C, the exhaust-pipe; D, a

pipe within the smoke-box; E, the stack; F, an auxiliary pipe connected with the exhaust-cavity below the valve B; G, a cock worked
40 from the cab to regulate the flow of steam and thereby regulating the draft; H, the cylinder.

The nozzle of the regular exhaust-pipe C may be as small as admissible for the production of a sharp blast when the cock G is closed.
45 Then in proportion as the cock G is opened the intensity of the draft or blast is reduced, thus giving an easy control of the draft into the hands of the fireman or engineer, as the
50 cock G, being exterior to the heat of the smoke-box, can be oiled and kept in constant working order.

For the purposes of my improvement it is not necessary that the auxiliary pipes F should terminate at the exhaust-nozzle; but they may
55 be brought up into the stack or may discharge into the open air or be brought down and discharged into the ash-pan to increase the combustion of the coals in the furnace.

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

For regulating the blast or draft of locomotive or stationary boiler-furnaces, the independent auxiliary pipes F, connecting with the
65 steam-chests, and valve G, for regulating the flow of steam within said pipes F, in combination with the exhaust-pipe C, and uptake D, all constructed and arranged substantially as described, and for the purpose specified.

JOHN DUNWELL BROWN.

Witnesses:

CHARLES W. SPOONER,
EDWIN S. PRATT.