(No Model.)

H. N. EVANS.

HEAT AND GAS REGULATOR.

No. 273,716. Patented Mar. 13, 1883.

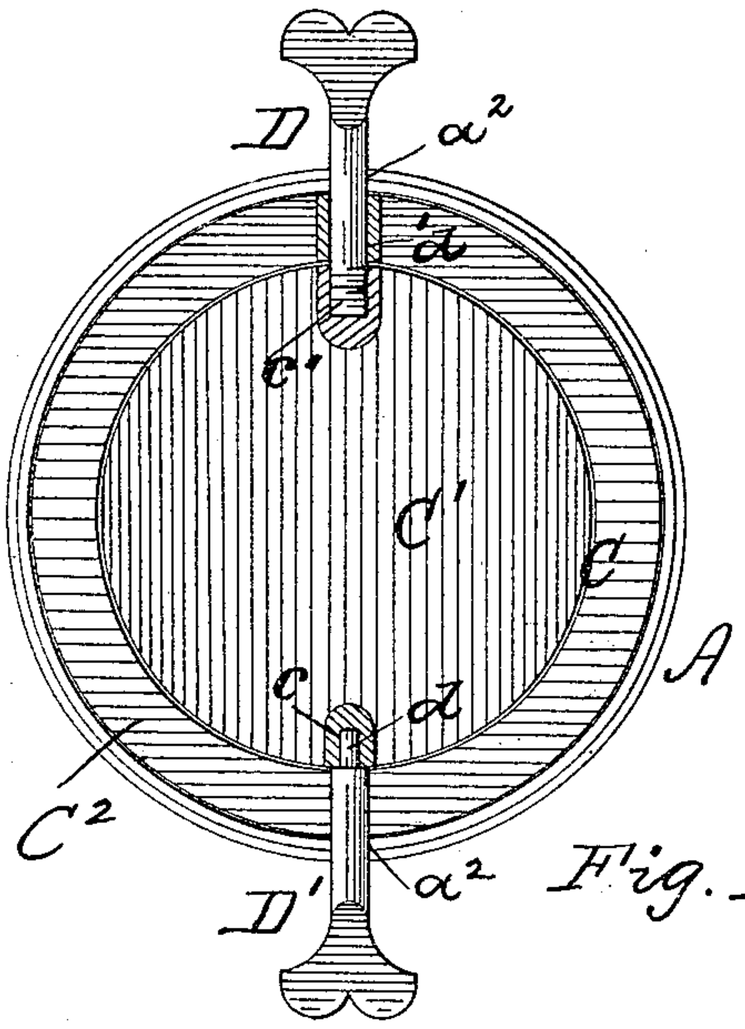

Fig. 1

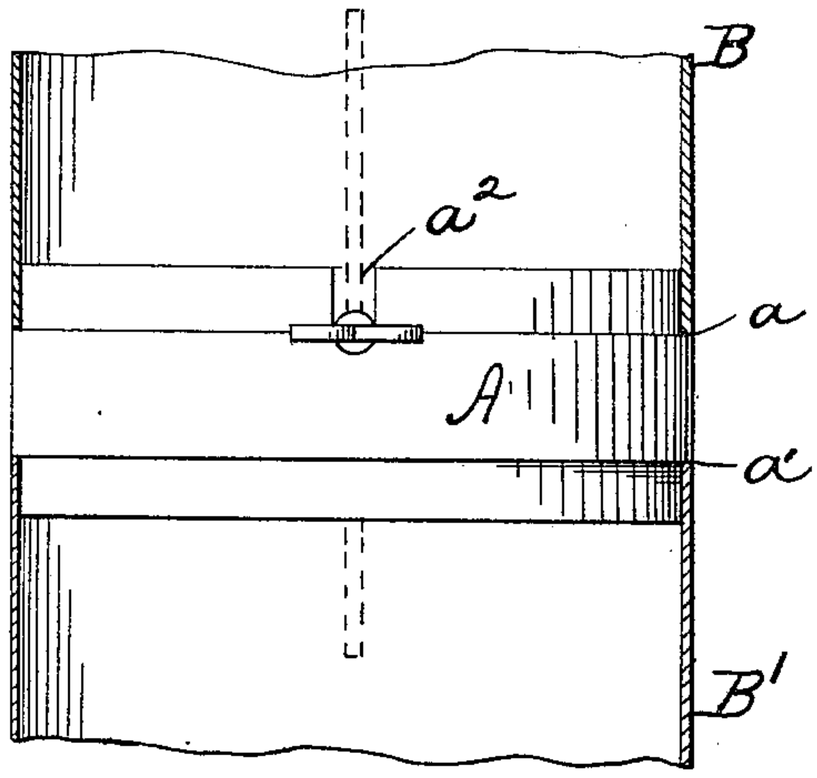

Fig. 2

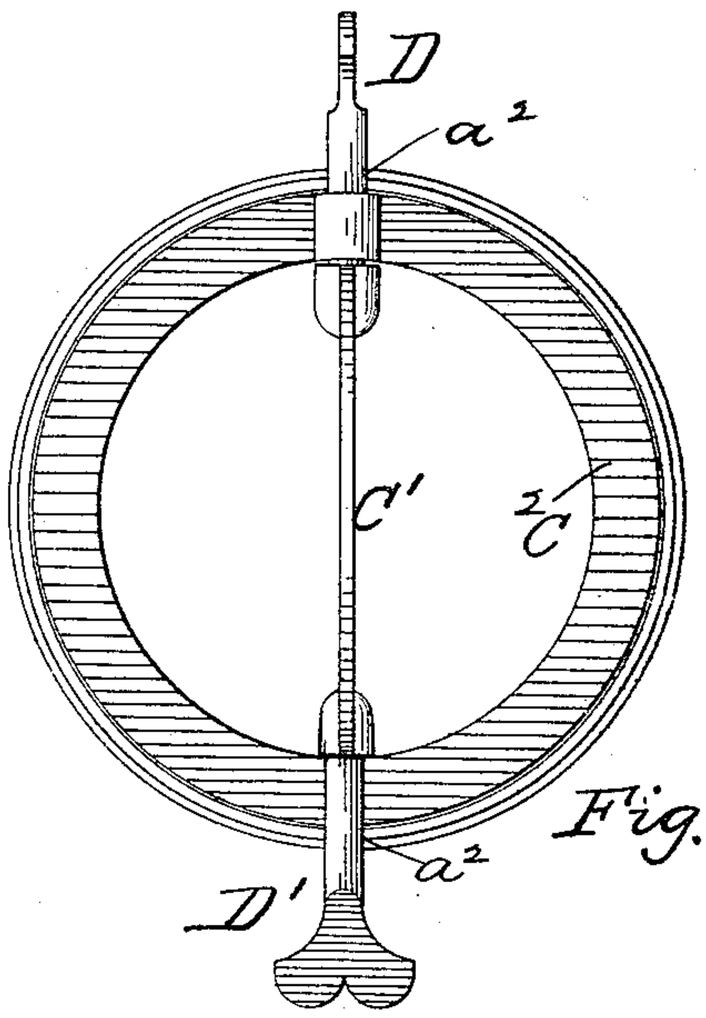

Fig. 3

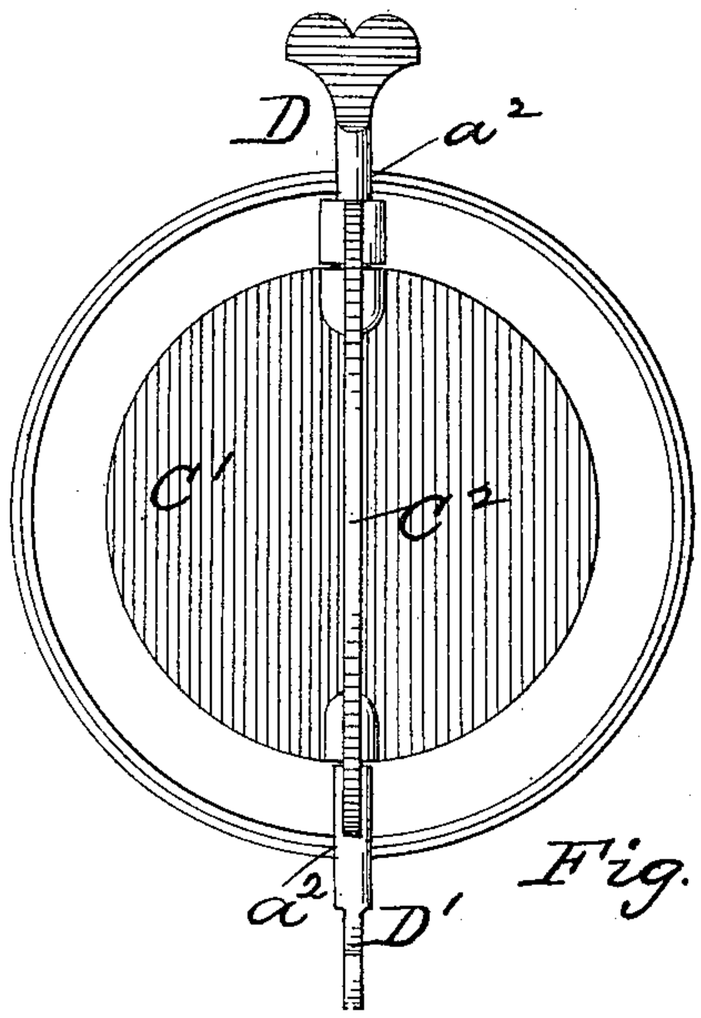

Fig. 4

Witnesses:
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UNITED STATES PATENT OFFICE.

HARRY N. EVANS, OF PHILADELPHIA, PA., ASSIGNOR OF TWO-THIRDS TO GEORGE CORBION, JR., AND WATSON D. MULL, BOTH OF SAME PLACE.

HEAT AND GAS REGULATOR.

SPECIFICATION forming part of Letters Patent No. 273,716, dated March 13, 1883.

Application filed September 27, 1882. (No model.)

To all whom it may concern:

Be it known that I, HARRY N. EVANS, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Heat and Gas Regulators, of which the following is a specification, reference being had therein to the accompanying drawings, wherein—

Figure 1 is a plan of my improved regulator and sleeve therefor. Fig. 2 is an elevation of the same in the line of a pipe or flue, the latter being in section. Fig. 3 is a plan of the regulator with central disk open, and Fig. 4 is a like view with said disk closed and the concentric ring opened.

My invention has relation to regulators for stoves, heaters, ranges, &c., and has for its object to provide a regulator which may be adjusted to vary the draft to any desired extent, or which may be so manipulated that it will afford vent for the gases and retain the central core of heat, or give vent to the heat and retain the gases, or allow both heat and gases to simultaneously escape.

My invention has for its further object to provide a regulator which may be inserted in the pipes or flues without punching or forming holes in the latter, thereby avoiding the use of mutilated or unsightly pipes.

My invention accordingly consists of a regulator made in two parts—a central disk for the heat and an exterior concentric ring for the gases. Each said part is provided with a handle, in order that they may be manipulated independently of each other.

My invention further consists of a regulator designed and adapted to be inserted within and operated upon a sleeve, which in turn is placed within a pipe or arranged to couple the ends of two adjoining pipes together, said sleeve being constructed substantially as hereinafter specified and claimed.

Referring to the accompanying drawings, A represents a sleeve having exterior shoulders, *a a'*, and diametrically-located recesses a^2 a^2 for the reception of the journals of the regulator, so that when said sleeve is placed within or couples the ends of the pipes B B', as shown in Fig. 2, they will be caused to align with each other, and have the regulator in position thereon without necessitating the punching or mutilation of the pipes to form journal-bearings for the regulator, as has heretofore been the case.

C represents the regulator, composed of two parts—a central disk, C', for the heat and a concentric ring, C^2, for the gas—which are respectively provided with handles D D', having bearings in the recesses or slots a^2 a^2 of the sleeve A. The ring-handle D' has a pintle or stud, *d*, which enters an opening, *c*, in disk C', to form a support or bearing therefor, while the disk-handle D passes through an opening or slot, *d'*, in ring C^2, and screws into the disk C', as shown at *c'*. Such construction permits of the disk and the ring moving independently of each other; but I do not confine my invention to such special formation of bearings and arrangement of the handles for the disk and ring, as any other suitable or desirable construction may be employed without departing from the spirit of my invention.

The operation is as follows: If the regulator is designed to be turned to obtain the full draft through the pipes or chimney, both handles D D' are turned at the same time to simultaneously move both ring and disk to the position indicated by dotted lines, Fig. 2; or said parts of the regulator may be adjusted to any angle between said dotted line and the normal or closed position of the regulator to vary the degree of such draft. If it is desired to permit the heat to escape through the regulator, the handle D is turned to open disk C', as shown in Fig. 3, whereupon the central core of hot air in the pipe or flue will pass therethrough, while the ring C^2, being closed, prevents the gas in said pipe passing through the regulator. If, however, the disk C' is closed and the ring C^2 be opened, as illustrated in Fig. 4, then the gas escapes through the regulator, while the heat is prevented from so doing by the closed disk C'. Hence it is apparent that the escape of heat or gas from the furnace, stove, &c., is regulated at will by simply turning the handles D D'; or by rotating them both at the same time the amount or volume of draft may be varied as desired.

I have shown and described the sleeve A

provided with double shoulders; but, if desired, they may be dispensed with and a plain ring or sleeve be employed.

The parts of the regulator and the sleeve may be struck up from sheet metal or be cast in brass, iron, &c., or formed of any suitable material. The regulator and sleeve may be round, square, oval, or of any other desired configuration, and may be attached or applied to stoves, heaters, ranges, steam-boiler furnaces, or to any pipe or chimney attached to any coal-burning apparatus.

What I claim as my invention is—

1. A regulator composed of a central disk and a concentric ring, with operating mechanism, in combination with sleeve A, having exterior shoulders, *a a'*, and bearings a^2 a^2, substantially as shown and described.

2. A regulator composed of a central disk, a concentric ring, and operating mechanism therefor, substantially as shown and described.

3. A regulator composed of a central disk having an operating-handle, and a concentric ring and handle, and bearings for said parts, substantially as shown and described.

4. The combination of disk C', having handle D, threaded at *c'*, the ring C^2, having bearing *d'*, handle D', and pintle *d*, substantially as shown and described.

5. The combination of sleeve A, the disk C', and ring C^2, constructed and arranged substantially as shown and described.

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

HARRY N. EVANS.

Witnesses:

S. J. VAN STAVOREN,

CHAS. F. VAN HORN.