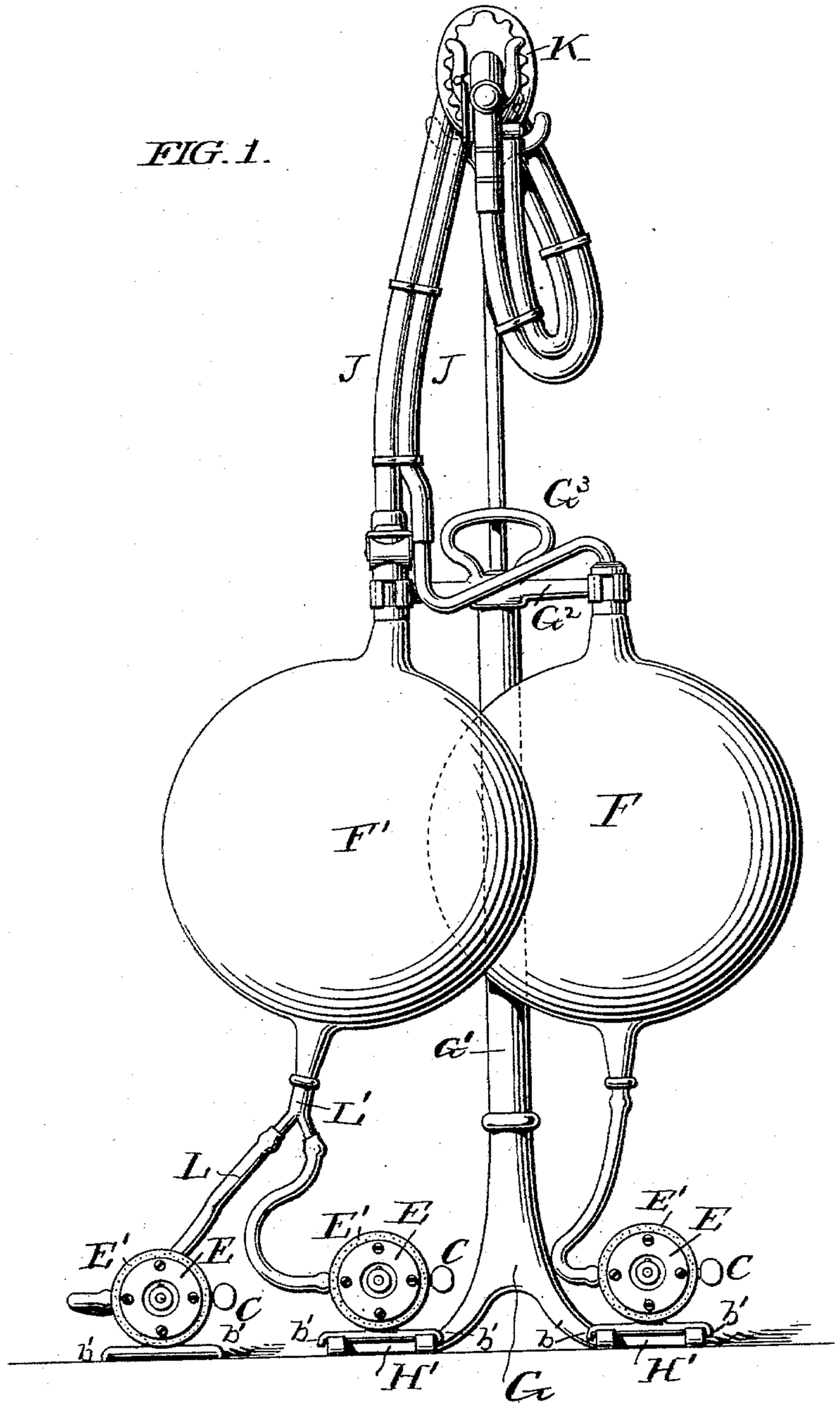
(No Model.) 3 Sheets—Sheet 1.

W. A. JOHNSTON & A. W. BROWNE.

GAS ADMINISTERING APPARATUS.

No. 597,719. Patented Jan. 25, 1898.

FIG. 1.



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(No Model.) 3 Sheets—Sheet 2.

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FIG. 2.

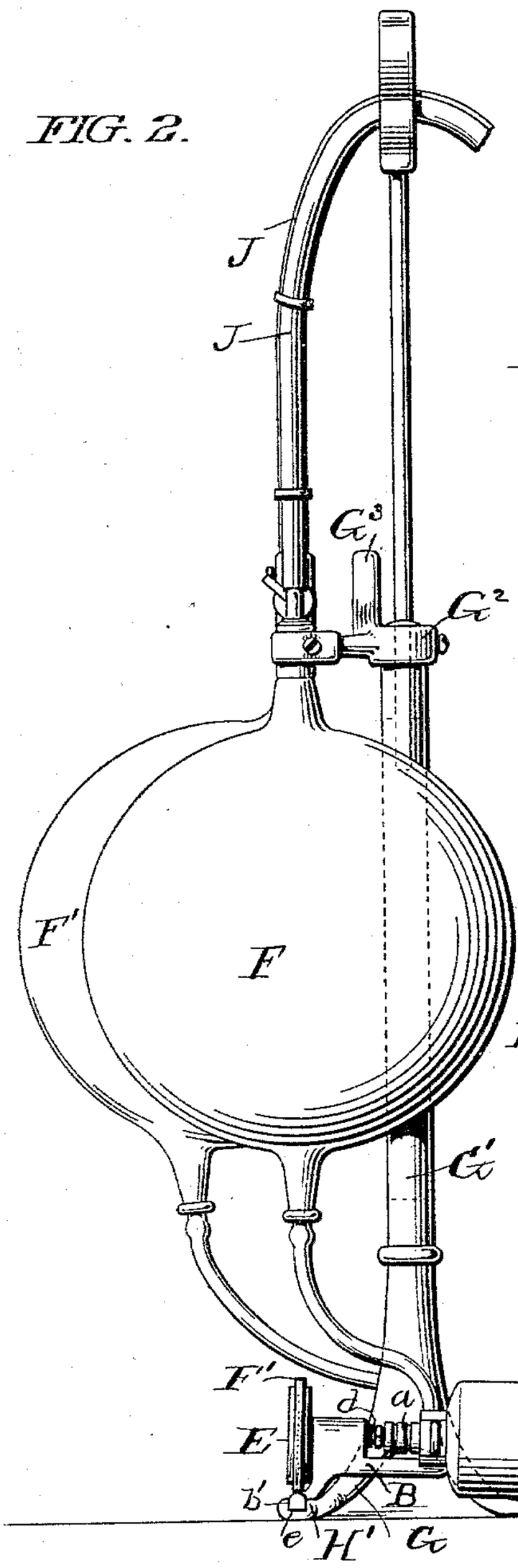


FIG. 4.

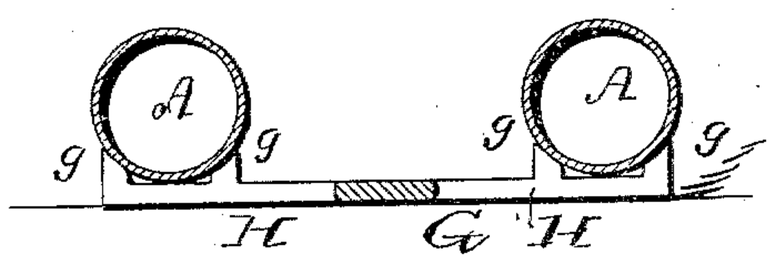
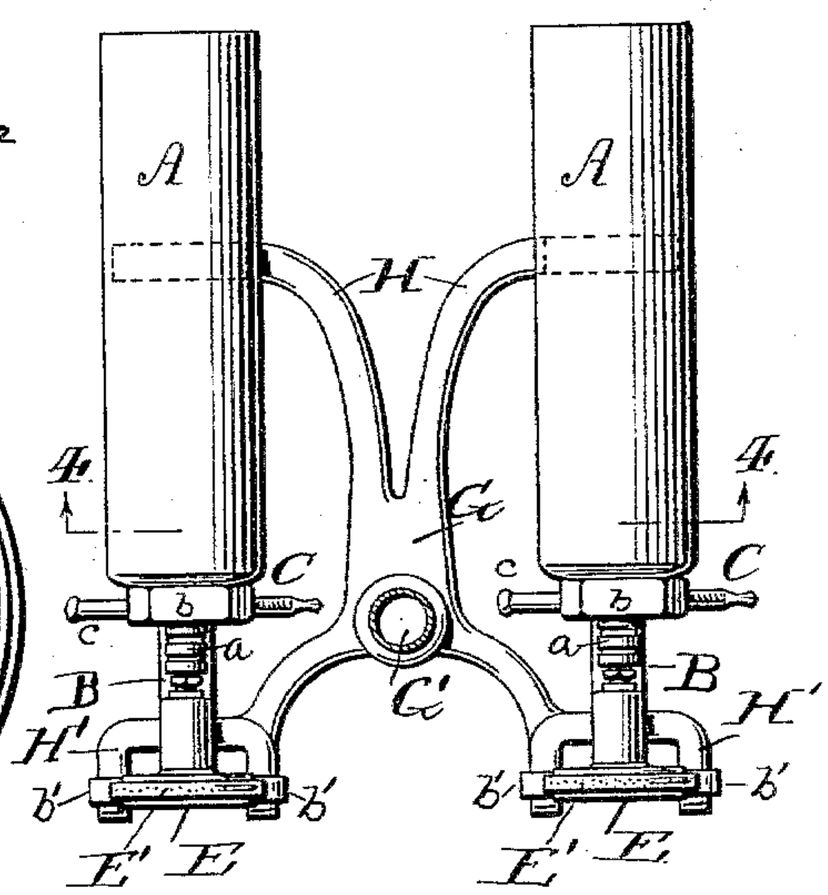


FIG. 3.



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(No Model.) 3 Sheets—Sheet 3.

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FIG. 5.

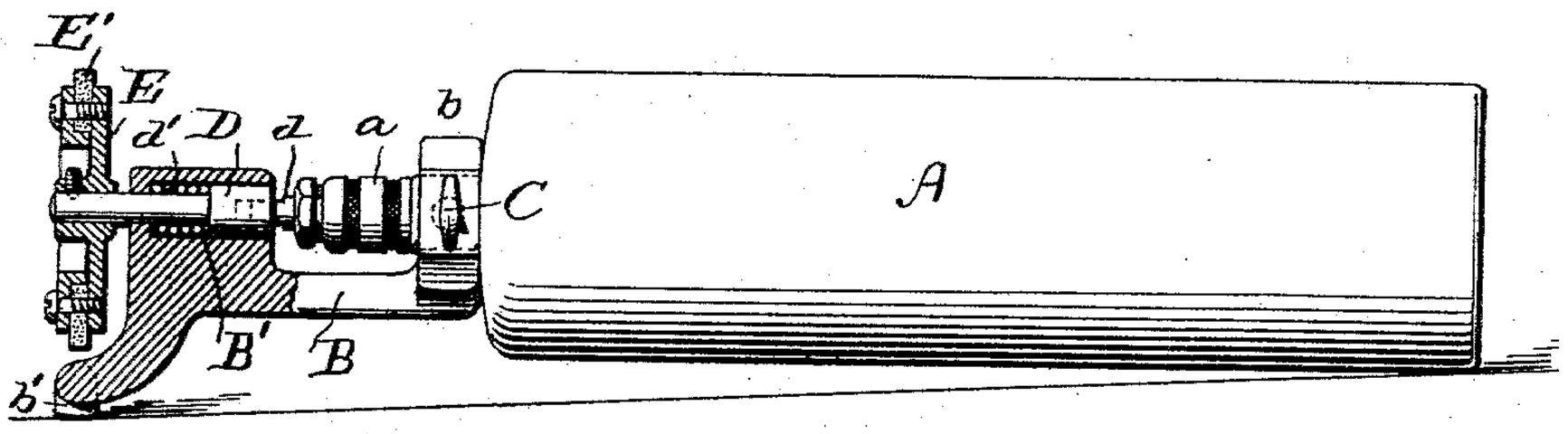


FIG. 6.

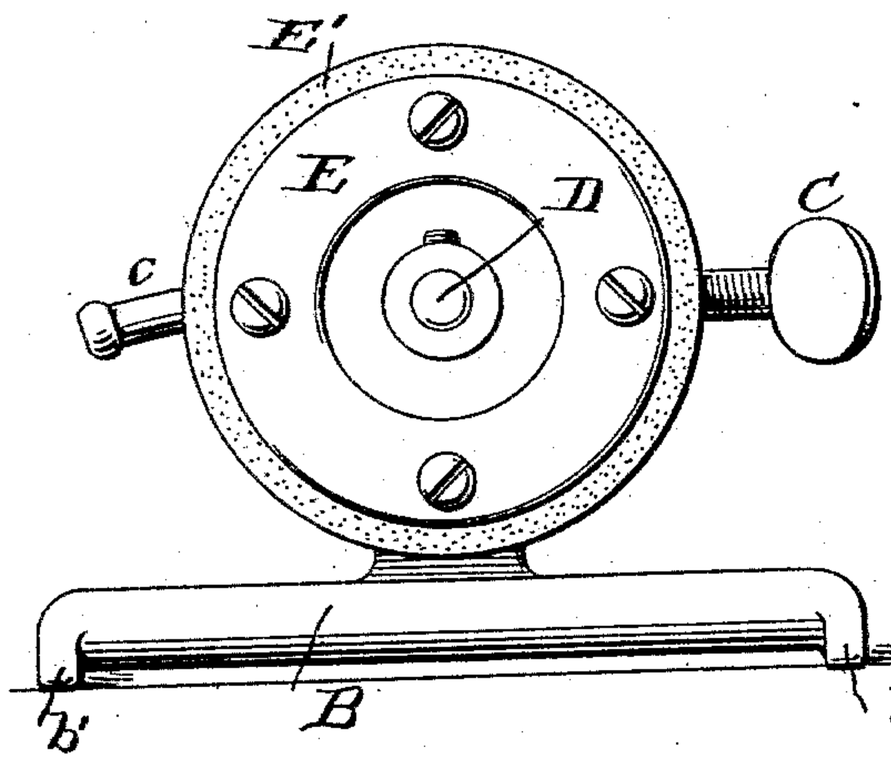


FIG. 7.

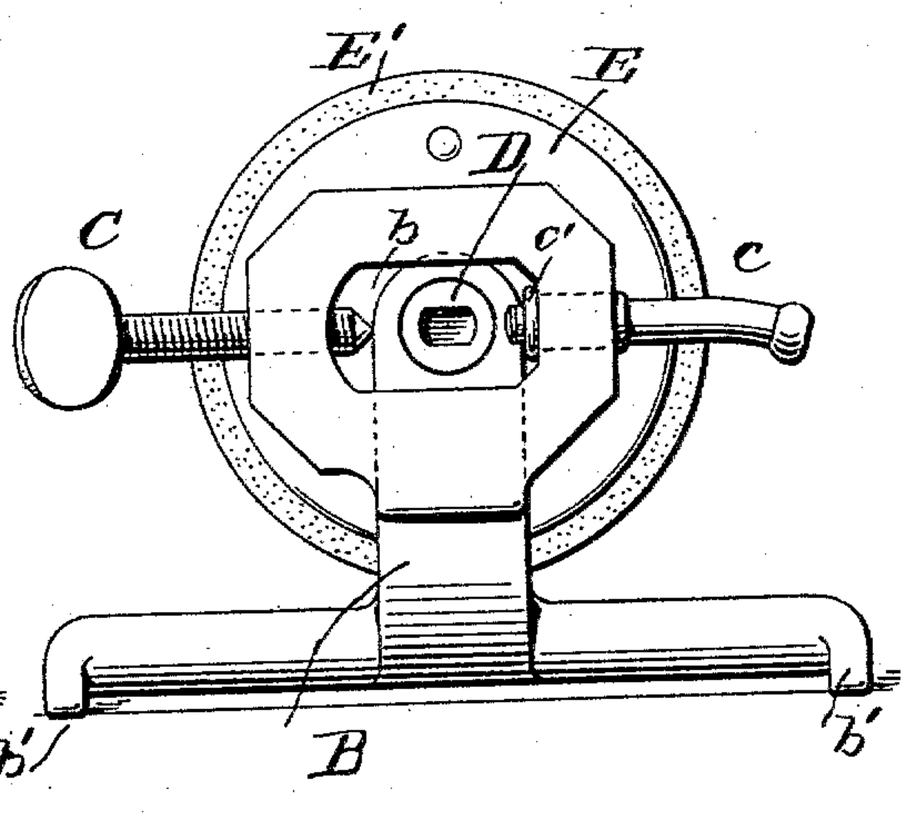
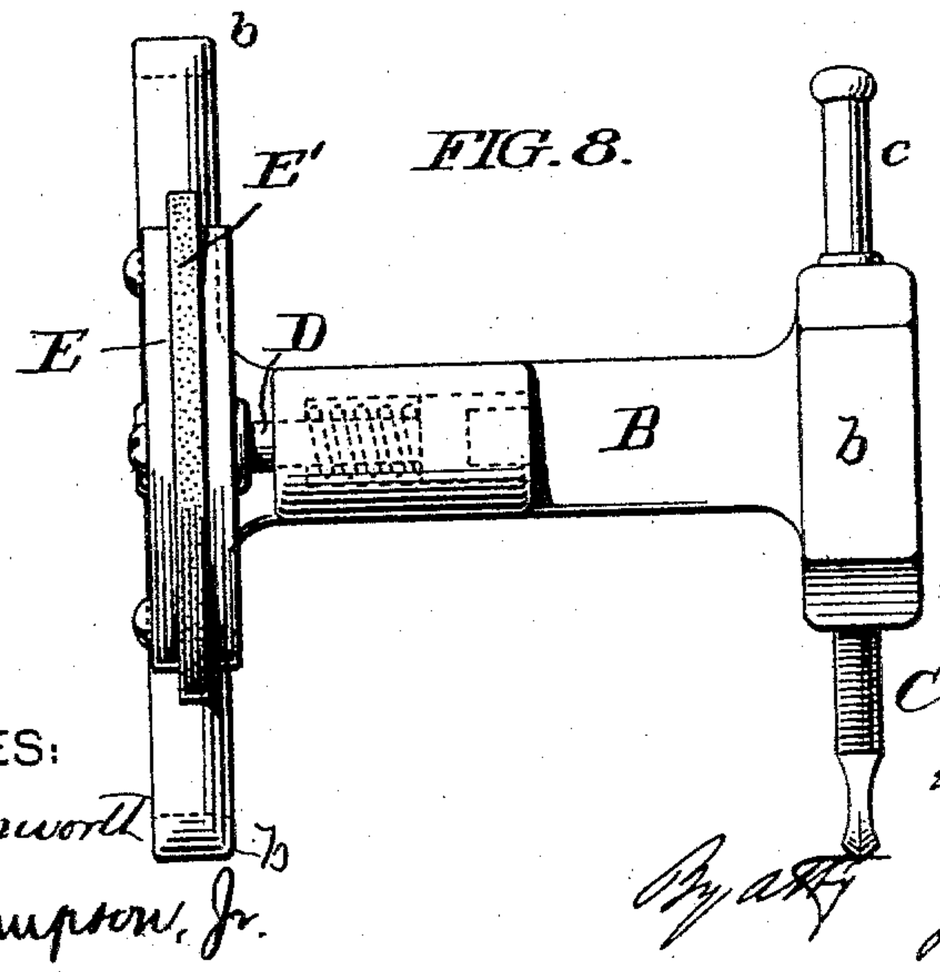


FIG. 8.



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UNITED STATES PATENT OFFICE.

WILLIAM A. JOHNSTON AND ARTHUR W. BROWNE, OF PRINCE'S BAY, NEW YORK, ASSIGNORS TO THE S. S. WHITE DENTAL MANUFACTURING COMPANY, OF PHILADELPHIA, PENNSYLVANIA.

GAS-ADMINISTERING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 597,719, dated January 25, 1898.

Application filed August 14, 1896. Serial No. 602,758. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM A. JOHNSTON and ARTHUR W. BROWNE, citizens of the United States, residing at Prince's Bay, in the county of Richmond and State of New York, have invented certain new and useful Improvements in Gas-Administering Apparatus; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

Our invention relates to certain improvements, as hereinafter claimed, in apparatus of the class employed for administering gases—such as nitrous oxid, oxygen, &c.—by dentists, surgeons, and physicians.

In connection with our present improvements are employed some features the same as or substantially similar to features embodied in our application, Serial No. 602,631, filed August 13, 1896. We make no claim herein to any improvements shown in said prior application.

In the accompanying drawings, Figure 1 is an elevation of the apparatus complete; Fig. 2, an elevation at a right angle with Fig. 1, with the inhaler omitted; Fig. 3, a plan view of the stand-base and the gas-holders supported thereby, the stand-upright being in section; Fig. 4, a section on the line 4 of Fig. 3. Fig. 5 shows, partly in side elevation and partly in section, a support for clamping the valved neck of a gas-holder and carrying the actuating devices of the holder-valve. Figs. 6 and 7 are views of said support and valve-actuating devices as seen from opposite ends; Fig. 8, a plan view thereof.

The gas holder or cylinder A is of usual construction, its neck being provided with a valve, the casing *a* of which is secured to the neck in ordinary way. A support B for the gas-holder is adapted to clamp its neck firmly. The holder-neck enters a clamp-socket *b* of its support, and a set-screw C of the clamp-socket is adapted to engage a recess in the neck, opposite which there is an opening above the valve-seat in the neck for engagement of the inner end of an outlet-nipple *c*, carried by the clamp-socket of the support. A collar *c'* on the nipple prevents its withdrawal from its opening in the clamp-socket. By adjusting the clamp-screw the nipple is caused to properly enter its opening in the holder-neck, a rubber washer being employed to prevent leakage of gas, as will readily be understood. The outer end of the nipple is adapted to have a flexible tube secured to it by way of which to supply gas from the holder to a suitable gas-receiver. The support B carries a turning-rod D, provided at its inner end with a key for engaging the stem *d* of the valve in the gas-holder neck, so that by turning the key-rod the valve may be actuated to allow gas to flow from the holder by way of the nipple and tube connected therewith. A spring *d'* in the bearing-opening B' in the support for the key-rod serves, as will readily be seen, to maintain the key in engagement with the valve-stem. A foot-actuated wheel E is secured to the outer end of the key-rod and is provided with a rubber or equivalent peripheral portion E', suitably clamped thereto so as to be removable. This peripheral portion affords a desirable frictional contact with the foot for turning the wheel. The support is provided with feet *b' b'*, which adapt it to rest either in recesses or receptacles *e e* in a stand-base or upon the floor, a table, &c.

A suitable stand for two gas-receivers F F' and two supports B B is provided. The stand is shown as consisting of a base G and an upright G', to the top of which is secured an arm G^2, having a handle G^3. The two gas-holders, shown as having their necks clamped in the supports, are supported near their bases in seats formed between two pairs of lugs *g g* in arms H H of the base opposite the base-arms H' H', and in recesses in which the feet of the supports rest.

As will be understood by reference to Fig. 5, a gas-holder may be supported in a substantially horizontal position against accidental or rolling movement by the support for its neck, while its base rests directly upon the floor or upon a table or other convenient surface.

The flexible tubes by which the necks of the holders are connected with their gas-receivers are engaged with the inlets of the receivers

in well-known way. The receivers are suspended at their outlet necks from the stand by way of the arm G^2 of the stand, and flexible tubes J J serve to make communication in proper way between the outlets of the receivers and a suitable inhaler K. Appropriate valves for controlling the flow of gas from the receivers to the inhaler are provided, but they form no part of our present improvements.

An extra gas-holder may be connected with the gas-receiver F′ by means of a tube L, connecting with one branch of the forked coupling L′ at the inlet of the receiver. By the employment of the extra gas-holder it will be seen that one holder may be detached for charging with gas, while the other remains in position for use.

One of the holders and the receiver with which it communicates is for one kind of gas, say oxygen, and the other holder or holders for another kind of gas, say nitrous oxid, these gases being administered independently or together, as occasion may require. Where the use of but one kind of gas is contemplated, only one gas-receiver, F′, and two holders, both carried by the stand, might obviously be employed.

We claim as our invention—

1. The combination, in gas-administering apparatus, of the support for the valved gas-holder neck, adapted to support the gas-holder in a substantially horizontal position, provided with the clamp-socket, the clamp-screw, the nipple and the bearing-opening, the rod provided with the key for engaging the stem of the gas-holder valve and mounted in said bearing-opening in the support, and the foot-actuated wheel carried by said rod for turning it, substantially as and for the purpose set forth.

2. The combination in gas-administering apparatus, of the support for the valved gas-holder neck, provided with the clamping devices for the holder-neck and with the feet, the foot-operated devices for actuating the valve in the holder-neck and carried by the support, and the stand provided with the base having recesses for engaging the feet of the support, substantially as and for the purpose set forth.

3. The combination in gas-administering apparatus of the support for the valved gas-holder neck provided with the clamping devices for the holder-neck, and also with the feet, the foot-operated devices for actuating the valve in the holder-neck and carried by said support, and the stand provided with the base having means for engaging the feet of the support and having the seat for supporting the gas-holder near its base, whereby the base of the stand is adapted to support and carry the gas-holder and its attached support, substantially as and for the purpose set forth.

In testimony whereof we affix our signatures in presence of two witnesses.

WILLIAM A. JOHNSTON.
ARTHUR W. BROWNE.

Witnesses:
SEYMOUR CASE,
M. A. COLE.