

(No Model.)

2 Sheets—Sheet 1.

G. E. JOHNSON.

GASOMETER.

No. 337,065.

Patented Mar. 2, 1886.

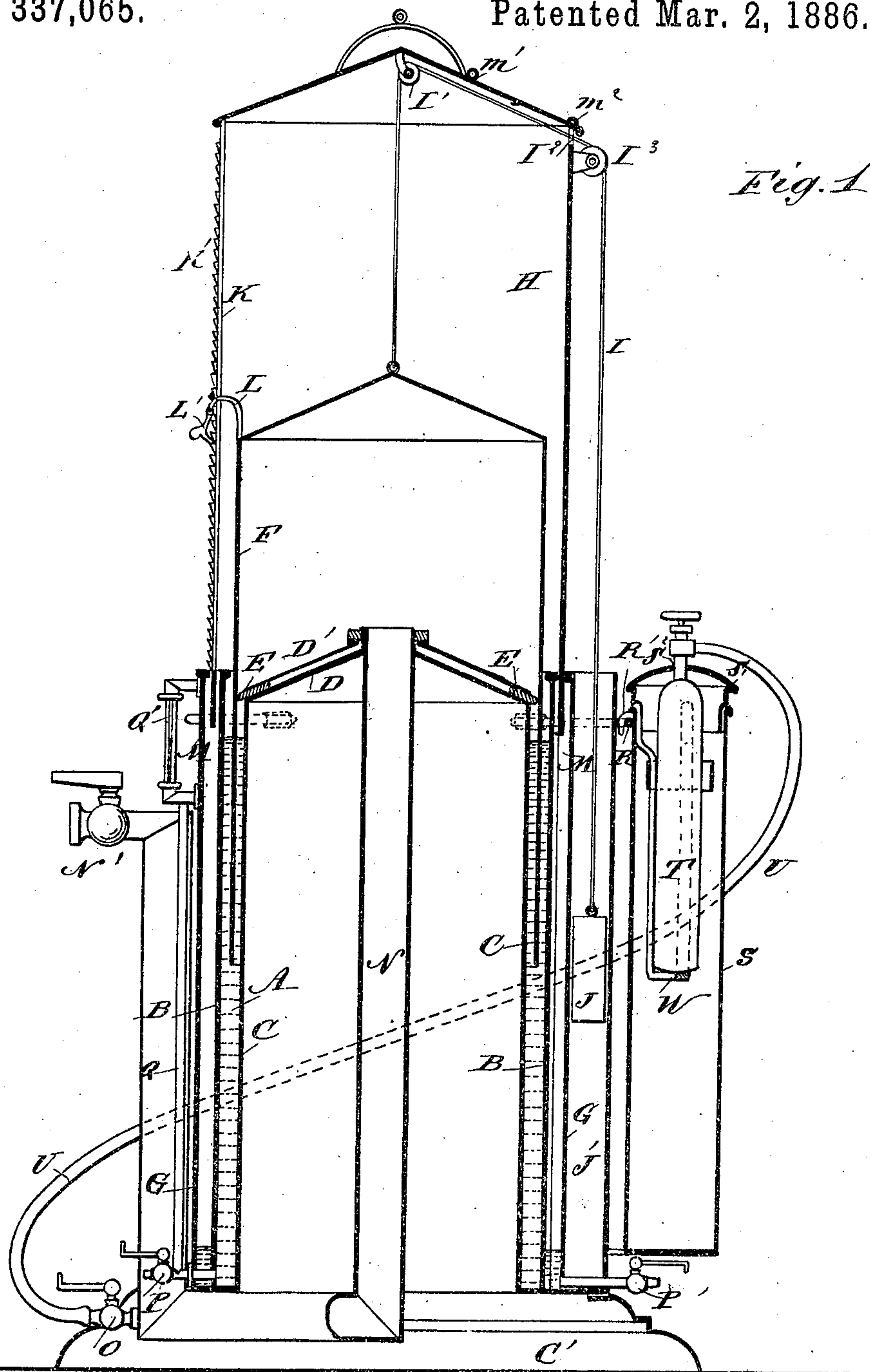


Fig. 1

WITNESSES:

C. Neveu
C. Sedgwick

INVENTOR:

G. E. Johnson

BY

Munn & Co

ATTORNEYS.

(No Model.)

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Fig. 3

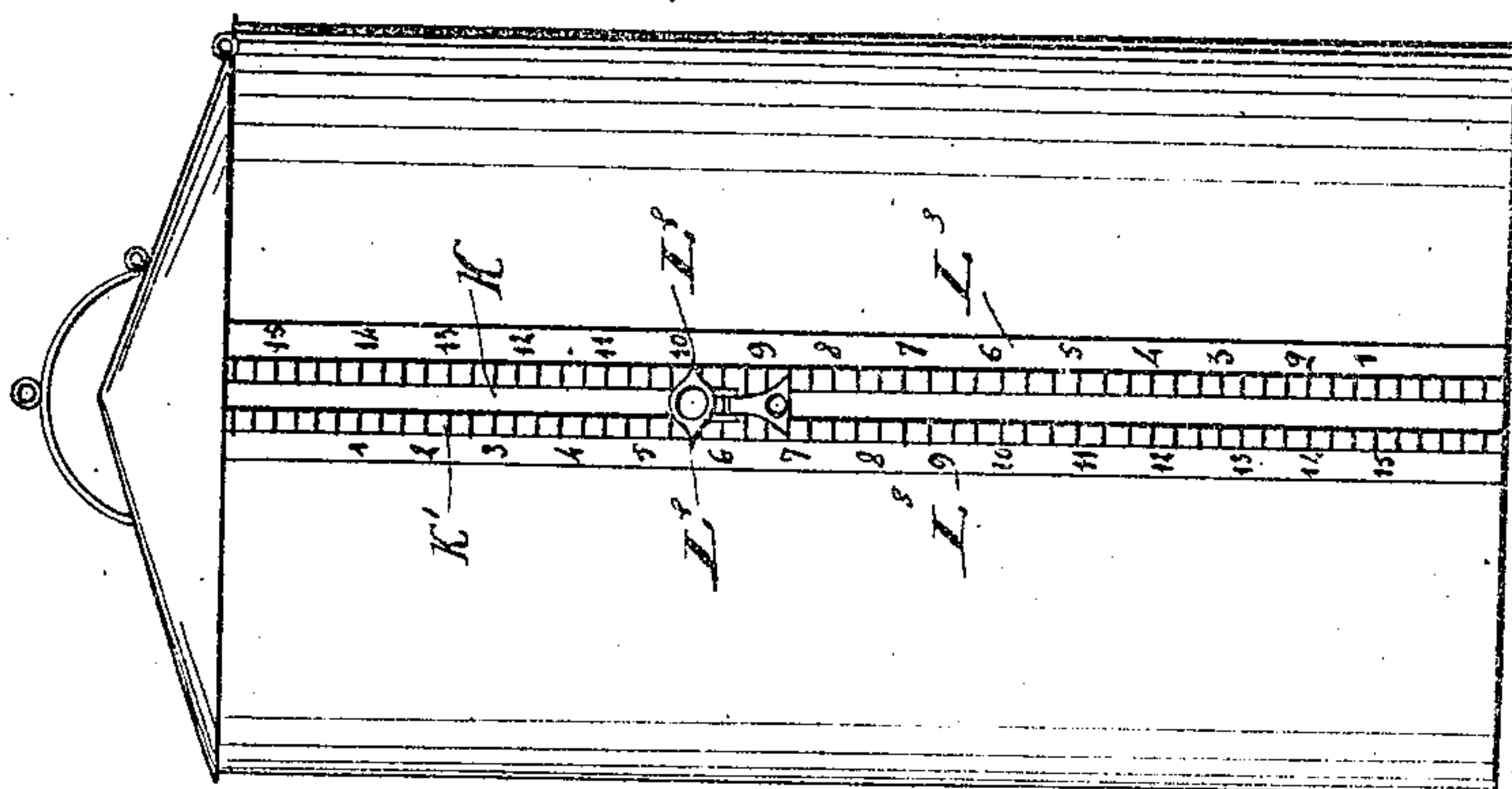


Fig. 2

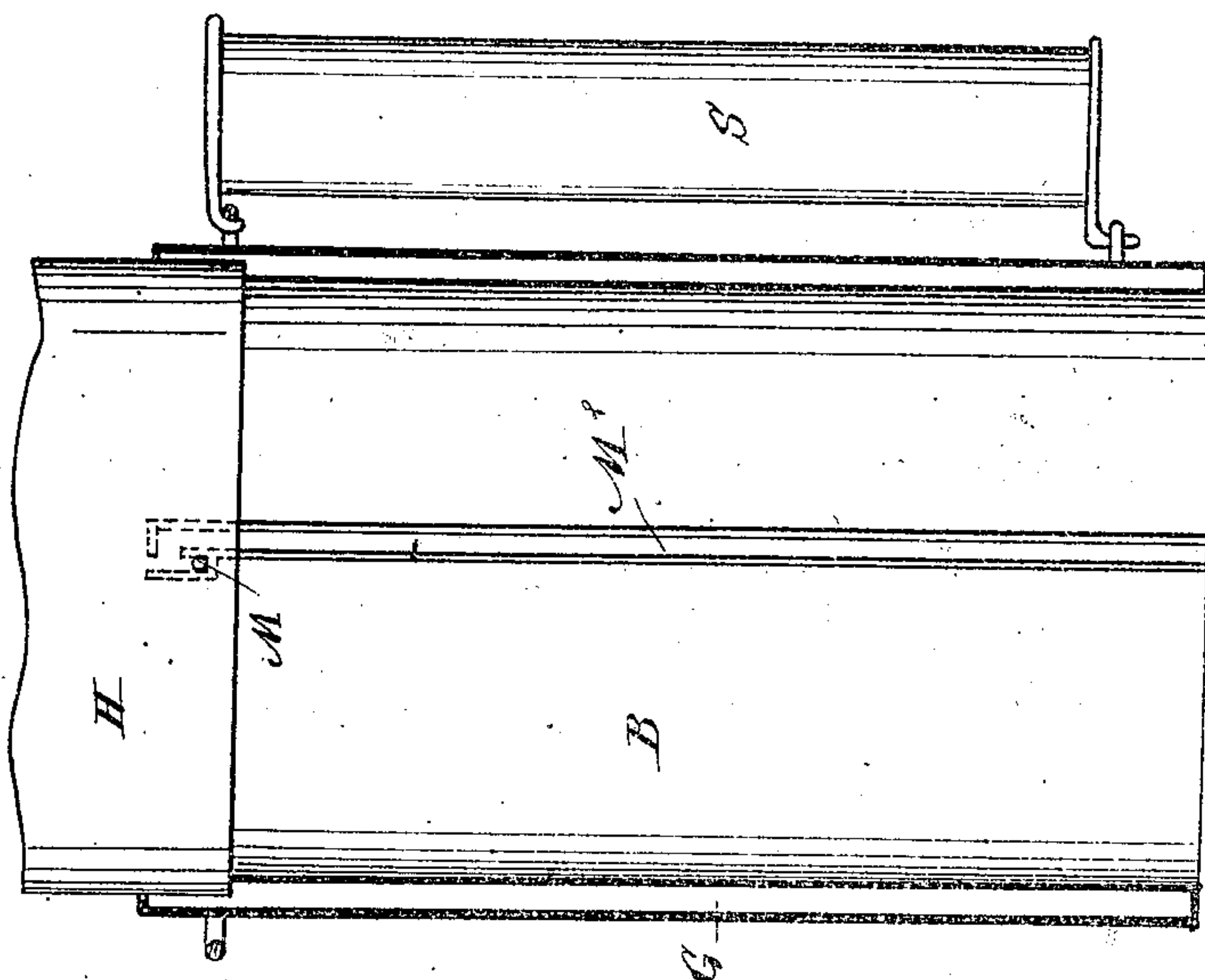
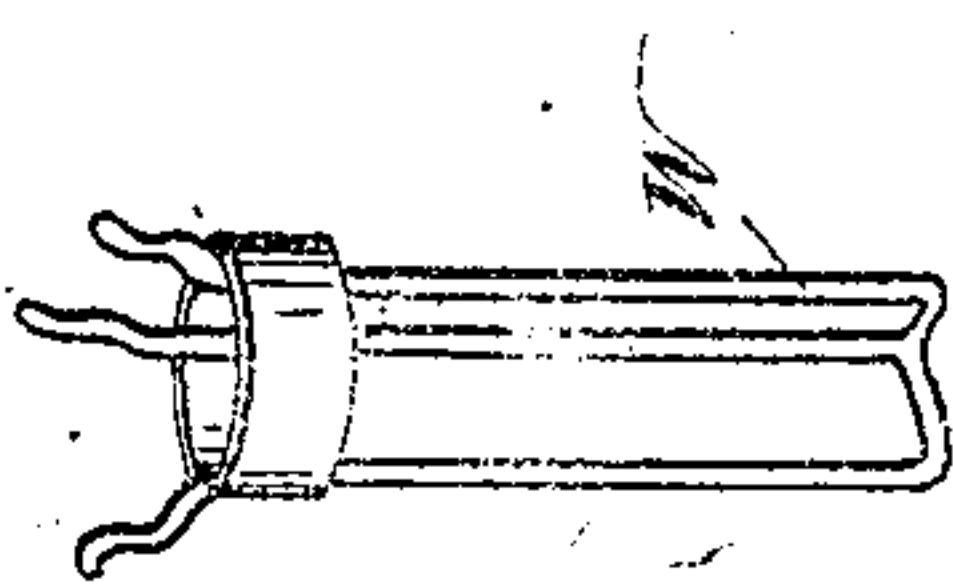


Fig. 4



WITNESSES:

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INVENTOR:

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UNITED STATES PATENT OFFICE.

GEORGE E. JOHNSON, OF ALBION, INDIANA.

GASOMETER.

SPECIFICATION forming part of Letters Patent No. 337,065, dated March 2, 1886.

Application filed June 26, 1885. Serial No. 169,814. (No model.)

To all whom it may concern:

Be it known that I, GEORGE E. JOHNSON, of Albion, in the county of Noble and State of Indiana, have invented a new and Improved Gasometer, of which the following is a full, clear, and exact description.

The object of my invention is to provide a new and improved gasometer or dental narcotizer for nitrous oxide used by dentists and others to produce anæsthesia.

The invention consists in the construction and combination of parts and details, as will be fully set forth hereinafter.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a vertical sectional view of my improved gasometer or dental narcotizer.

Fig. 2 is a detail sectional view of the lower part of the same, showing the device for holding the bell raised. Fig. 3 is a side view of the bell. Fig. 4 is a detail perspective view of the tripod for holding the liquid cylinder.

The well A for receiving the water is formed between the cylindrical casing B and the cylindrical casing C, united at the bottom and secured on a base, C'. The casing B is open at the top, and the casing C is provided with a double conical top, D D', the vertex of which is above the outer wall or casing, B, of the well A, so as to avoid any possibility of the water entering and obstructing the pipe N. Between the parts D D' of the conical top the rubber packing-strip E is held at the outer edges, which strip rests against the inner side of a bell, F, dipping into the water between the casings B and C. The casing B is surrounded by a cylindrical shell, G, open at the top, and between the casing B and the shell G the covering section or bell H passes, which covers and hides the bell F. A cord or chain, I, secured to the top of the bell F, passes over a pulley, I', on the inside of the top of the covering-bell H, which has a double hinged lid, having hinges at m' and m". The cord or chain I is passed through a slot, I", in the bell H, over a pulley, I", on the outside of the bell H, and to the lower end of said chain or cord a weight, J, is secured to balance the bell F, which weight is adapted to slide up and

down in the box J' on the outside of the shell G. The bell H has a vertical slot, K, at the edges of which racks K' are provided. An arm, L, secured on the bell F, passes through the slot K, and to its end the catch L' is pivoted, which can be engaged with the teeth of the racks K'. The arm L is provided with two opposite pointers, L", which point to two scales, L", at the sides of the racks, which scales have numerals arranged in opposite orders, so that the pointer shows on one scale how much gas is in the bell, and on the other scale how much gas has been removed. Lugs M or other projections are provided on the inside of the bell H, and slide in vertical guides M" on the outer surface of the casing B, as shown in Fig. 2, serving to support the bell H when the same is raised. The upper end of the space between the two guides is closed to prevent the lug M from passing out of the said slot accidentally, and a lateral opening leads from said closed end to a bracket forming a seat, the bottom wall of which is below the lower edge of the said lateral opening. A slot is formed between the upper end of the bracket and the closed top of the guides. By this construction the lug M may slide in the guides, and when it is desired to hold the bell H raised the lug is passed through the lateral opening at the upper end of the guides into the seat. By raising the bell H vertically when the lug M is in the seat the said bell may be removed from the casing B. The inlet and outlet pipe N is secured at its upper inner end in the middle of the top D D' of the casing C, extends downward, then outward and upward on the outside of the shell G, and is provided with the cock N' at its upper outer end. A cock, O, is provided at the lower end of the vertical outer part of the pipe N. The casing B is provided at the bottom with two cocks, P P', for drawing off the water from the well and from the space between the outside casing and the shell, should any water flow over the top of the casing B on account of too great pressure of gas while filling the bell F, each cock P being provided with an upright tube, Q, on the upper end of which the gage-glass Q' is held for showing the level of the water in the well between the casings B C. A rod or rail, R, is secured in a draw-band around

the shell G at one or both sides, and over the same hooks R' are passed, which are secured on the side of the case S, containing a tripod-frame, W, for holding the nitrous-oxide cylinder T, which is connected by a hose or tube, U, with the cock O of the pipe N. The case S has a cover, S', provided with an aperture, S'', through which the neck of the nitrous-oxide cylinder T can pass. When the tripod-frame is removed from the case S, a larger nitrous-oxide cylinder can be passed into the case. This tripod-frame, which forms a holder for the nitrous-oxide cylinder, is formed of wires bent inward and connected at their lower ends, and bent outward and formed with hooks at their upper ends. A band secures the wires together near their upper ends. When the holder is inserted in the case S, the hooked ends engage the upper edge of the case and support the holder therein.

The operation is as follows: The cylinder T is placed in the case S, and the tube U connected with the cock O, and the cock N' is closed. The valve of the cylinder T, containing the liquefied gas, is opened and the gas passes through the tube U and the pipe N into the bell F, which is raised and locked in place by the catch L' engaging with teeth of the racks K'. As the bell F ascends, the weight J descends. When the desired quantity of gas is in the bell F, the cylinder T is closed and the tube U may be uncoupled from the cock O. To administer the gas, a flexible tube provided with a mouth-piece is coupled on the end of the pipe N, and the latch L' is raised, to permit the bell F to descend to exert the pressure on the gas.

When the apparatus is empty and not in use, the bell F is lowered, as is also the bell H, which is provided for the purpose of covering the bell F when the same is raised.

The space between the casing B and the shell G serves as an overflow, to catch the water that is forced out of the well, thus preventing the water from flowing on the floor.

The advantages of my improved gasometer are as follows: The gas-chamber is dry, and thus the water forming the seal cannot absorb much gas. The gasometer is small in relation to its capacity, and, as very little water is required the apparatus and water in the same weigh very little.

The cylinder-case can be hung on either side of the apparatus.

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

1. The combination, with the casings B C, of the bell F, a top on the casing C, and a packing-strip held on the bottom edge of the top and resting against the inside of the bell, substantially as herein shown and described.

2. The combination, with the casings B C and the shell G, of the bell F between the casings B C, the bell H between the casing B and the shell G, the cord I, secured to the bell F and passed over pulleys on the bell H, and the weight J on the end of the cord, substantially as herein shown and described.

3. The combination, with the casings B C, of an imperforate cover on the casing C, the bell F, and the pipe N, having its inner open end held in the middle of the said cover, substantially as herein shown and described.

4. In a gasometer, the combination, with the shell G, of the rail R, around said shell, and the gas cylinder case S, having hooks R' hung on the said rail, substantially as herein shown and described.

5. In a gasometer, the gas-cylinder case S, in combination with the holder within said case, having a supporting-hook at its upper end engaging the upper edge of the said case, substantially as set forth.

6. In a gasometer, the nitrous-oxide holder W, formed of a wire tripod having the upper ends of the wires formed with hooks, substantially as set forth.

7. In a gasometer, the combination, with the casing B, having vertical guides M', and a lateral seat at the upper ends of said guides, of the bell H, provided with a lug, M, adapted to slide within the guides and to engage said seat, substantially as set forth.

8. In a gasometer, the combination, with the casing B, having vertical guides M', closed at the upper end and provided with a lateral opening in one side, and a bracket open at its top and forming a seat communicating with the lateral opening in the guides, of the bell H, having a lug, M, within the guides, substantially as set forth.

9. In a gasometer, the combination, with the casings B C, of the shell G, the bells F H, the racks K, the arm L, and the catch L', substantially as herein shown and described.

10. The combination, with the casings B and C and the shell G, of the bells F H and the outlet-cocks P P', substantially as herein shown and described.

11. The combination, with the bell F, of the bell H, surrounding it, and provided with the slot K, the racks at the sides of the slot, scales at the sides of the racks, the arm L, the latch L' on the end of the arm L, and pointers on the end of the arm L, substantially as herein shown and described.

GEORGE E. JOHNSON.

Witnesses:

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CHARLES M. CLAPP.