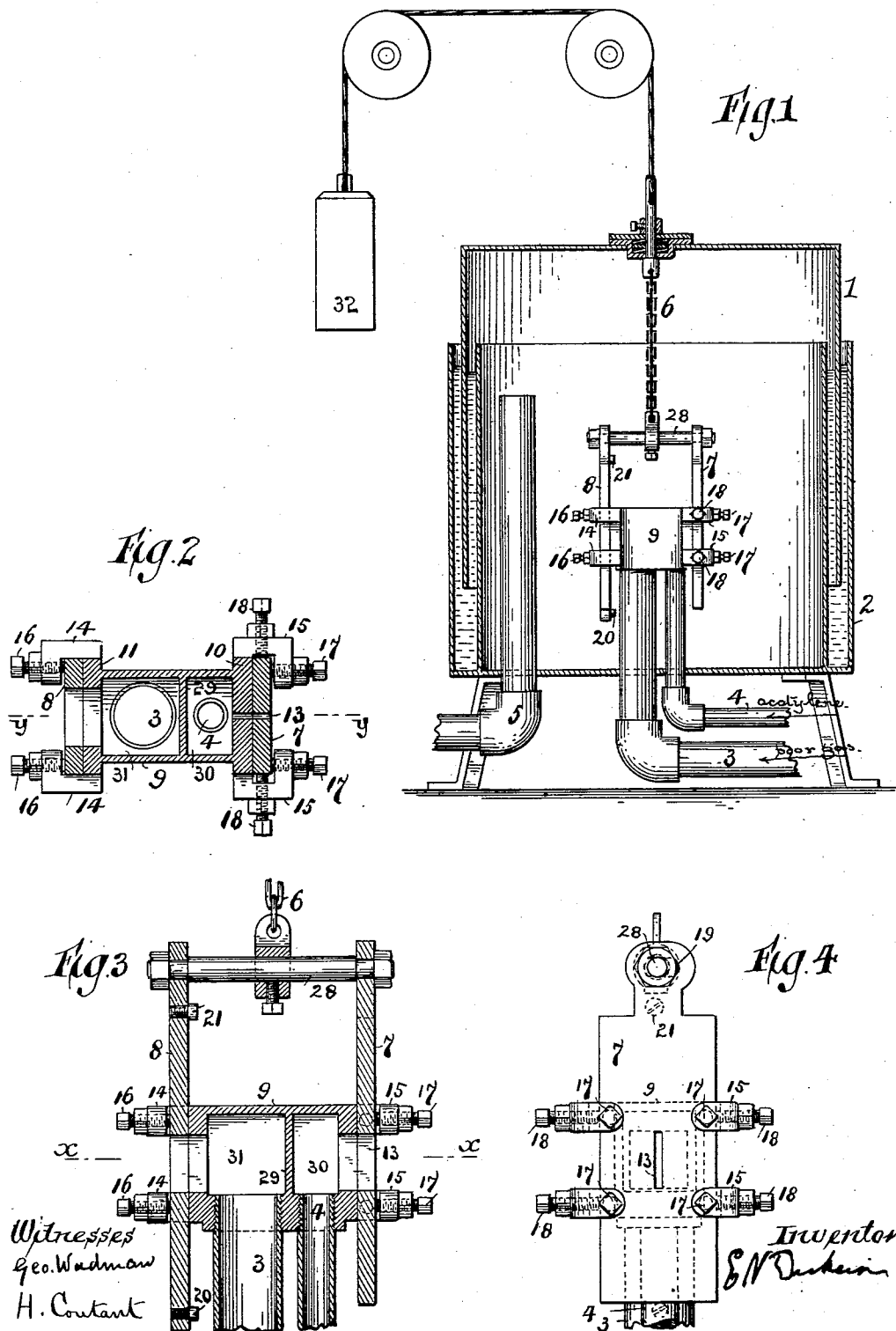


(No Model.)

E. N. DICKERSON.
GAS MIXING DEVICE.

No. 564,684.

Patented July 28, 1896.



UNITED STATES PATENT OFFICE.

EDWARD N. DICKERSON, OF NEW YORK, N. Y.

GAS-MIXING DEVICE.

SPECIFICATION forming part of Letters Patent No. 564,684, dated July 28, 1896.

Application filed March 9, 1896. Serial No. 582,370. (No model.)

To all whom it may concern:

Be it known that I, EDWARD N. DICKERSON, of No. 253 Broadway, in the city, county, and State of New York, have invented a new and useful Improvement in Adjustable Gas-Mixing Devices, of which the following is a full, true, and exact description, reference being had to the accompanying drawings.

This invention relates to an improved device by means of which two gases or gas and air can be mingled in any desired proportions. Such apparatuses have been previously patented, and my invention therefore relates to an improvement in such devices whereby they are cheapened and simplified.

My invention will be readily understood from the accompanying drawings, in which—

Figure 1 represents a vertical elevation, partly in section, of my device; Fig. 2, a horizontal section through Fig. 3 on the line *xx*; Fig. 3, a vertical section through Fig. 2 on the line *yy*, and Fig. 4 an end elevation of the adjustable valve.

My apparatus consists generally of a gas-receiving governing-bell 1. Of course a diaphragm or piston might be substituted for this, if desired. I prefer, however, the construction shown. This governor is provided with inlets 3 4 and outlet 5 in the lower casting 2.

In case my apparatus is utilized for adding a richer to a poorer gas, as, for instance, acetylene to illuminating gas, the illuminating-gas enters by the pipe 3 and the acetylene by the pipe 4, and the gases escape by the pipe 5.

Supported upon the pipes 3 4, or in any other suitable manner, is the casting 9, containing the partition 29. With one of its chambers, 30, the pipe 4 connects. With the other chamber, 31, the pipe 3 connects. The casting is provided with two-faced surfaces 10 and 11, upon which the valves 7 and 8 slide. Corresponding openings are provided through the valve-seats and the valves, as shown, the opening 13 of the valve 7 being adjustable, as will hereinafter be described. These valves are simultaneously vertically moved in any suitable way. As shown, they are connected through their upper ends by rod 28, which connects with chain 6, supported by the bell 1. The valves 8 and 7 are kept in correspond-

ence with the valve-openings by means of lugs 14 14 15 15, carrying set-screws 16 16 17 17, and the valve 8 may be provided with stops 20 21, limiting its upward and downward motion. The end of the connecting-bar 28, which connects with the valve 7, passes through an oblong slotted opening 19, Fig. 4. The bar 28 is clamped by suitable set-screws when in position. The lateral position of the valve 7 upon its seat is determined by screws 18 18 18 18, passing through the lugs 15, as plainly shown in Fig. 2. By unscrewing the screws 18 18 on the left of Fig. 4 and screwing in the screws 18 18 on the right of said figure, the nut on the end of the bar 28 being simultaneously loosened, the opening 13 can be adjusted to any degree of correspondence with its corresponding opening in the valve-seat 10. When so adjusted, the nuts are tightened and the apparatus will operate uniformly, as presently to be described.

The operation of my device can now be readily understood. The valve being in the position shown in Fig. 1, gas is supposed to be entering, when, as the pressure increases within the bell, the bell will rise, carrying with it the double valve 7 8. The governed pressure is readily determined by the counter-balance 32. The rising of these valves 7 and 8, simultaneously and in the same ratio, cuts off the gas entering by the pipes 3 and 4. Ordinarily the pressure in the pipes 3 and 4 is supposed to be the same. Having risen to the point to supply the demand, the governor will remain practically in constant position.

The amount of gas to be supplied through the opening 13 depends upon its position of correspondence with its seat, which is adjustable by the screws 18, as previously determined. In case of the entire failure of the gas-supply, the valves 7 and 8 will then fall until their motion is arrested by the stop 21, thus cutting off the gas altogether. On the resumption of gas-pressure, under these circumstances, it is necessary to raise the bell 1 by hand until the gas-passages in the valves and seats correspond. The advantage of this arrangement is that in case a stoppage of the supply occurs, thereby extinguishing the burners in the house, the said burners cannot be relighted until the operator has been

informed of the difficulty. Of course this operation is non-essential, and the bar 28 could be connected at a point lower down in the valves 7 and 8, if desired.

5 What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a combined gas governor and mixer, the chambers 30 and 31, having vertically-faced seats 10 and 11, the valve 8; and the
10 valve 7, with mechanism for adjusting said valve 7, laterally upon its seat, and mechanism for operating said valves 7 and 8 by the varying pressure of the gas, substantially as described.

15 2. The combination of the chambers 31 and 30, with gas connections thereto, the valves 8 and 7, means for operating said valves, and the lateral adjusting-screws 18, 18, 18, 18, for

determining the lateral position of said valves upon their seats, substantially as described. 20

3. The combination of the casting 9, having chambers 31 and 30, and gas-passages 3 and 4, with the valves 8 and 7, mechanism for adjusting valve 7 laterally upon its seat, the rod 28 passing through slotted opening 19 in valve 25 7, and means for moving said rod 28 by the varying pressure of the gas, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of 30 two subscribing witnesses.

E. N. DICKERSON.

Witnesses:

ANTHONY GREF,
H. COUTANT.