

N. H. HENDERSON.
CHARGING MEANS FOR GAS PRODUCERS.
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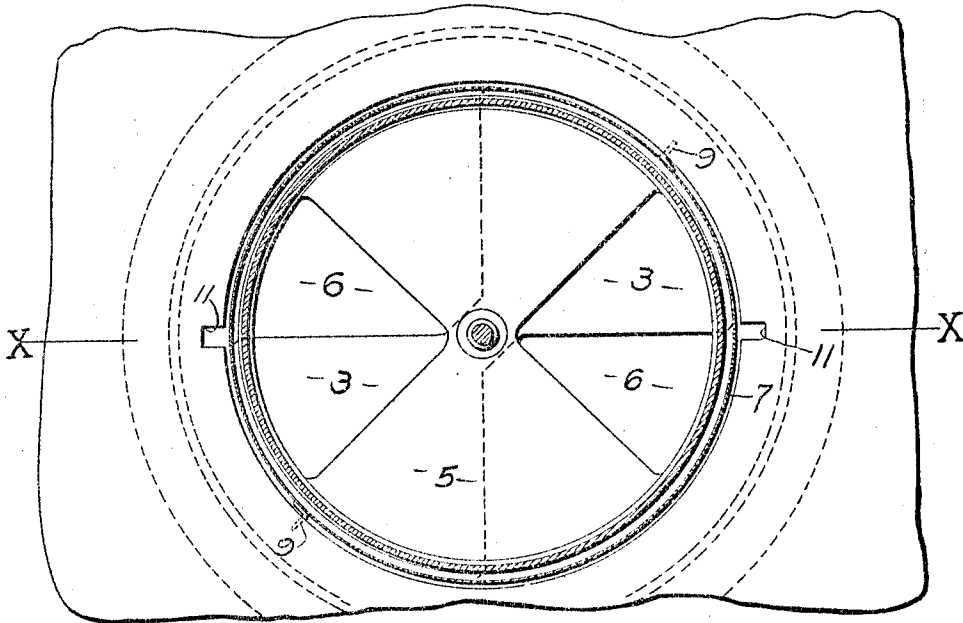


Fig. 1.

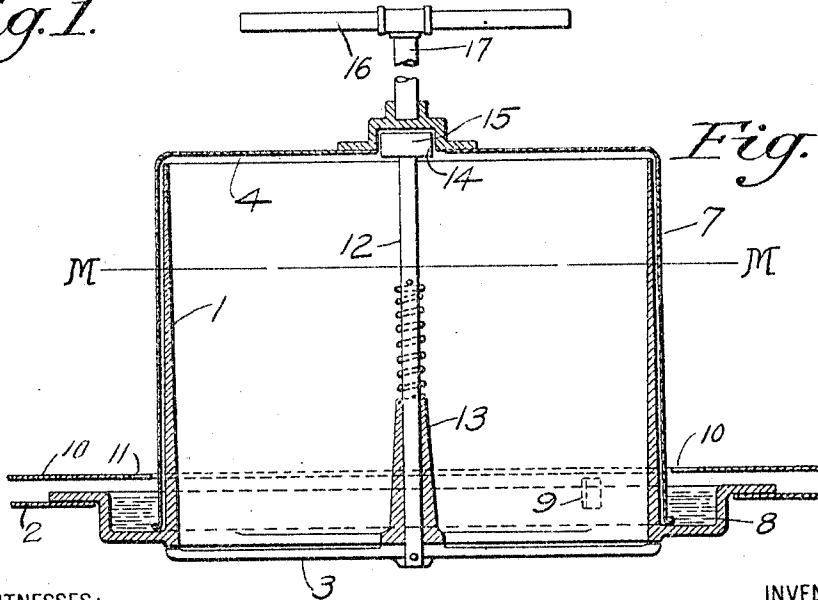


Fig. 2.

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NELSON H. HENDERSON, OF VERNON, NEW YORK, ASSIGNOR TO SYRACUSE INDUSTRIAL GAS COMPANY, OF VERNON, NEW YORK, A CORPORATION OF NEW YORK.

CHARGING MEANS FOR GAS-PRODUCERS.

1,005,832.

Specification of Letters Patent.

Patented Oct. 17, 1911.

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To all whom it may concern:

Be it known that I, NELSON H. HENDERSON, of Vernon, in the county of Oneida and State of New York, have invented a certain new and useful Charging Means for Gas-Producers, of which the following is a specification.

My invention relates to gas producers and particularly to means whereby the fuel can be introduced into the producer without opening the interior thereof to the outer atmosphere, and it consists in the combinations and constructions hereinafter set forth and claimed.

In describing this invention reference is had to the accompanying drawing in which like characters designate corresponding parts in all the views.

Figures 1 and 2 are respectively horizontal and vertical sectional views of the charging means for gas producers and contiguous parts, Fig. 1 being taken on line "M-M" Fig. 2 and Fig. 2 being taken on line "X-X" Fig. 1.

This means for permitting the introduction of fuel into the producer without opening the producer to the outer atmosphere comprises what is sometimes called a charging door and includes a hopper 1 mounted on the top 2 of the producer, a gate 3 for closing the bottom of the hopper 1, a cover or cap 4 for the hopper, and connections between the gate and the cover whereby the gate can be opened only when the cover is in position, and must be closed prior to the removing of the cover. The hopper is cylindrical in form and is here shown as provided with a bottom 5 having openings 6 therein located diametrically opposite to each other. The gate 3, in this embodiment of my invention is movable about an axis coincident with the axis of the hopper and comprises oppositely extending wings for closing the openings 6, the wings being movable into and out of alinement with the bottom 5 to uncover and cover said opening when the gate is moved about its axis.

The cover or cap 4 is provided with a cylindrical wall 7 which encircles the hopper and extends the entire length thereof when the cover is in position, and the lower edge thereof projects into an annular channel 8 containing water for sealing the cover when

it is in its closed position. The cover is also provided with radially extending lugs 9 extending outwardly therefrom and interlocking with means as a flange 10 associated with the body of the gas producer, the flange being formed with slots 11 with which the lugs move into alinement when the cover is turned for permitting the removing of the cover axially of the hopper for the purpose of permitting fuel to be inserted in the hopper upon the bottom 5 thereof and upon the gate 3. The cover is movable about its axis, which is coincident with the axis of the hopper and the gate, for bringing the lugs 9 into alinement with the slots 11 and for turning the lugs 9 under the flange 10 and thus locking the cover from removal axially.

The connections between the cover and the gate include an axial stem 12 provided on the gate and extending upwardly through a guide 13 provided on the bottom of the hopper, the stem coacting with the cover in order that the stem and gate may be turned to close the gate when the cover is turned to bring the lugs 9 into alinement with the slots 11 or to open the gate when the cover 4 is turned to carry the lugs 9 under the flange 10. As here shown one of said coacting parts as the cover 4 is formed with a non-circular socket 14 for receiving a head 15 provided on the other of said parts as the stem 12, the head fitting the socket. The lugs 9 are thick enough from their lower to their upper faces to prevent the socket 14 engaging the head 15 when the lugs are resting on the upper face of the flange 10 so that the gate 3 can be turned only when the lugs have passed through the slots 11 in the flange 10. A suitable handle 16 having a stem 17 connected to the socket is provided for facilitating the turning of the cover.

In operation when it is desired to introduce fuel into the gas producer, the cover 4 is moved about its axis until the lugs 9 are brought into registration with the slots 10 thereby turning the gate 3 so that the openings 6 in the bottom of the hopper are closed by the gate, and then lifting the cover off the hopper. The fuel is then placed in the hopper upon the bottom 5 thereof and upon the gate 3 and the cover again placed on the hopper with the lugs 9 passed through the slots 10, and the cover turned to interlock the

lugs 9 under the flange 10, and to move the gate 3 to uncover the openings 6 and permit the fuel to drop into the gas producer.

What I claim is—

5 1. A charging means for gas producers comprising a hopper having an opening in its bottom, a gate for opening and closing the opening, a removable cover for the hopper, means for locking the cover in its closed
10 position, and an operating member operable to unlock or lock the cover and to simultaneously close or open the gate, said member being carried by the cover and serving as a handle therefor, substantially as and for the
15 purpose described.

2. A charging means for gas producers comprising a hopper having an opening in its bottom, a gate for opening and closing the opening, a cover for the hopper, means
20 for locking the cover from removal when the gate is open, connections between the cover and the gate, whereby the locking means occupies its unlocked position to permit removal of the cover only when the gate is
25 closed, and a single operating member common to the cover and the gate and being carried by the cover and serving as a handle by which the cover is removed and replaced, substantially as and for the purpose specified.
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3. A charging means for gas producers comprising a hopper having an opening in its bottom, a gate for opening and closing the opening, a cover for the hopper, power-transmitting connections between the cover
35 and the gate, locking means for holding the cover from removal during the unlocking operation and until the gate is closed, and operating means carried by the cover and coacting with the power transmitting connections, substantially as and for the purpose set forth.
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4. A charging means for gas producers comprising a hopper having an opening in its bottom, a gate for opening and closing said opening, a cover for the hopper, power transmitting connections between the cover and the gate comprising interfitting parts associated respectively with the cover and
50 the gate, the part associated with the cover being carried thereby and removable therewith and serving as means by which the cover is removed and replaced, and locking means for holding the cover from removal while the gate is closing and until the gate is closed, substantially as and for the purpose described.
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5. A charging means for gas producers comprising a hopper having an opening in its bottom, a gate for opening and closing the opening, a cover for the hopper, the cover being movable about an axis and also axially, power-transmitting connections between the cover and the gate whereby when
60 the cover is moved about its axis, the gate is

opened or closed, said connections comprising interfitting parts associated respectively with the cover and the gate, the part associated with the cover being carried thereby and movable therewith and serving as a
70 handle by which the cover is moved axially and locking means for holding the cover from removal while the gate is closing and until the gate is closed, substantially as and for the purpose specified.
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6. A charging means for gas producers comprising a hopper having an opening in its bottom, a gate for opening and closing the opening, a cover for the hopper, the cover being movable about an axis and also
80 axially, power-transmitting connections between the cover and the gate whereby when the cover is moved about its axis, the gate is opened or closed, said connections comprising interfitting parts associated respectively with the cover and the gate, the part
85 associated with the cover being carried thereby and movable therewith and serving as a handle by which the cover is removed axially, and locking means for holding the cover from removal while the gate is closing and until the gate is closed, the locking means comprising slidable interlocking members, one having an elongated downwardly facing surface arranged concentric with the
90 axis of the cover and having a slot extending therethrough and the other member projecting substantially radially relatively to the cover and being movable through the slot into and out of slidable interlocking engagement with said surface, substantially as and for the purpose set forth.
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7. A charging door for gas producers comprising a hopper, a gate for closing the bottom of the hopper, the gate being movable about an axis into and out of its closed position, a cover for the hopper, means associated with the cover for locking the cover in its closed position, the cover being movable about an axis for unlocking and locking said means and connections between the cover and the gate whereby the gate is movable about its axis into its closed position when the cover is turned to unlock said means and vice versa, substantially as and
100 for the purpose set forth.
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8. A charging door for gas producers comprising a hopper, a gate for closing the bottom of the hopper, the gate being movable about an axis coincident to the axis of the hopper into and out of its closed position, a cover for the hopper, means for locking the cover in its closed position including a part carried by the cover, the cover being movable about an axis coincident with the
120 axis of the hopper for moving the locking part to unlock the cover, and connections between the cover and the gate whereby the gate is moved to its closed position when the cover is turned to unlock said means and
125 130

vice versa, said connections being arranged coincident with the axis of the hopper, substantially as and for the purpose described.

9. A charging door for gas producers comprising a hopper, a gate for closing the bottom of the hopper, the gate being movable about an axis into and out of its closed position, a cover for the hopper provided with a radially extending lug, means non-movable with the cover for interlocking with the lug, said means being formed with a slot for permitting the passage of the lug into and out of interlocking engagement therewith, and the cover being movable about an axis for interlocking the lug with said means and for moving the lug into and out of alinement with the slot and being also movable axially when the lug is alined with the slot, and connections between the cover and the gate whereby the gate is moved about its axis to its closed position when the cover is turned to move the lug into alinement with the slot, and vice versa, substantially as and for the purpose specified.

10. A charging door for gas producers comprising a hopper, a gate for closing the bottom of the hopper, the gate being movable about an axis into and out of its closed position, a cover for the hopper, means for locking the cover in its closed position including a part carried by the cover, the cover being movable about an axis for locking and unlocking said means, one of the parts movable about an axis having means formed with a non-circular axial socket and the other of such parts having a head associated therewith for fitting the socket whereby the gate is turned to its closed position when the cover is being turned to unlock said locking means, and vice versa, substantially as and for the purpose set forth.

11. A charging door for gas producers comprising a hopper, a gate for closing the bottom of the hopper, the gate being movable about an axis into and out of its closed position, a cover for the hopper, the cover being formed with an outwardly extending lug, means non-movable with the cover for interlocking with the lug, said means being

formed with a slot, and the cover being movable about an axis for interlocking and unlocking the lug with said means and moving the lug into and out of alinement with the slot, one of the parts movable about an axis having means formed with a non-circular axial socket and the other of said parts having a head associated therewith fitting the socket whereby the gate is moved to its closed position when the cover is being turned to aline the lug with the slot and vice versa, substantially as and for the purpose specified.

12. A charging door for gas producers comprising a cylindrical hopper, a gate for closing the bottom of the hopper, the gate being movable about an axis concentric with the axis of the hopper into and out of its closed position, a cover for the hopper having a cylindrical wall encircling the hopper, and formed with an outwardly extending lug, a flange non-movable with the cover for interlocking with the lug, the flange being formed with a slot for permitting the passage of the lug into and out of interlocking engagement with the flange, and the cover being movable about an axis coincident with the axis of the hopper for moving the lug into and out of alinement with the slot, a rod connected to the gate and arranged with its axis coincident with the axis of the hopper, the rod coacting with the cover and one of the coacting parts being formed with a non-circular axial socket and the other being formed with a head fitting the socket whereby the gate is moved to its closed position when the cover is turned to aline the lug with the slot, substantially as and for the purpose specified.

In testimony whereof, I have hereunto signed my name in the presence of two attesting witnesses, at Vernon, in the county of Oneida, in the State of New York, this 27th day of June, 1910.

NELSON H. HENDERSON.

Witnesses:

C. W. CUSHMAN,
GEO. D. POHL.