

C. CLEARY.
DOOR OPENER.

APPLICATION FILED FEB. 18, 1910.

974,359.

Patented Nov. 1, 1910.

2 SHEETS-SHEET 1.

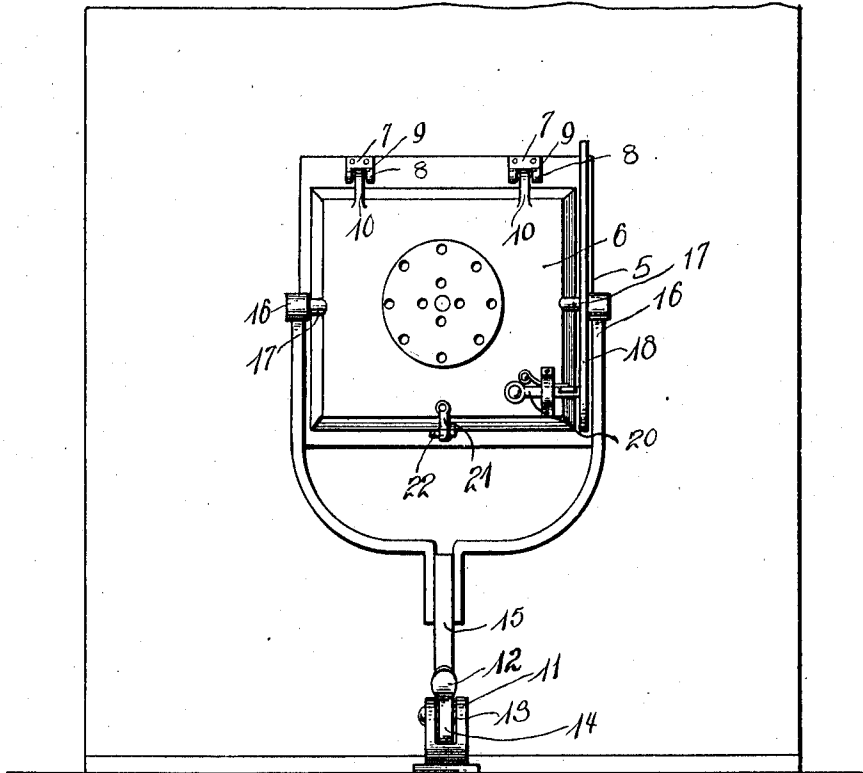


Fig. 1.

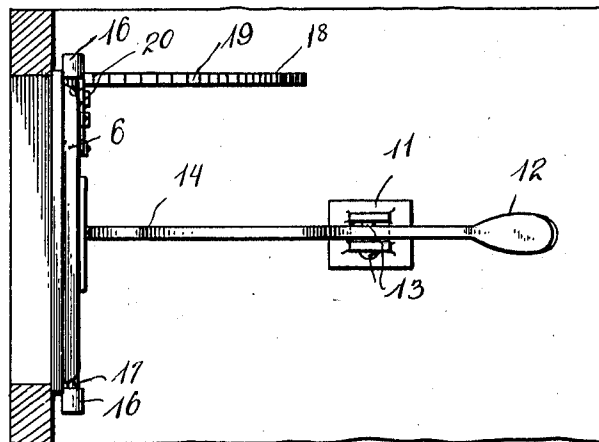


Fig. 4.

Inventor

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Witnesses

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By

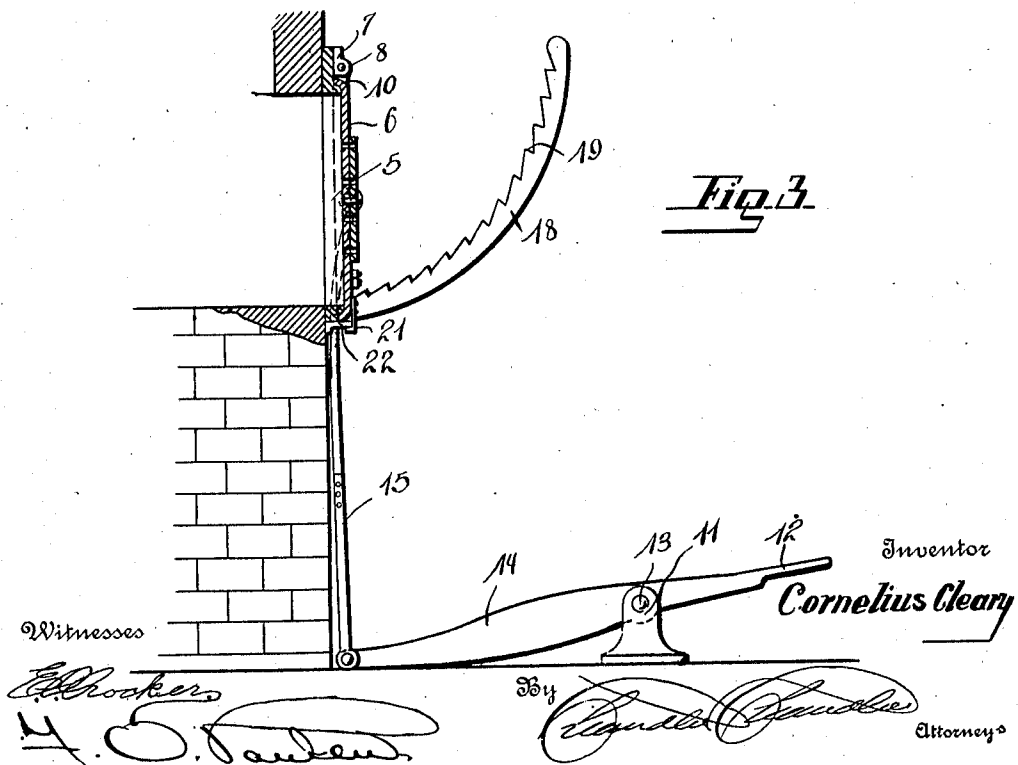
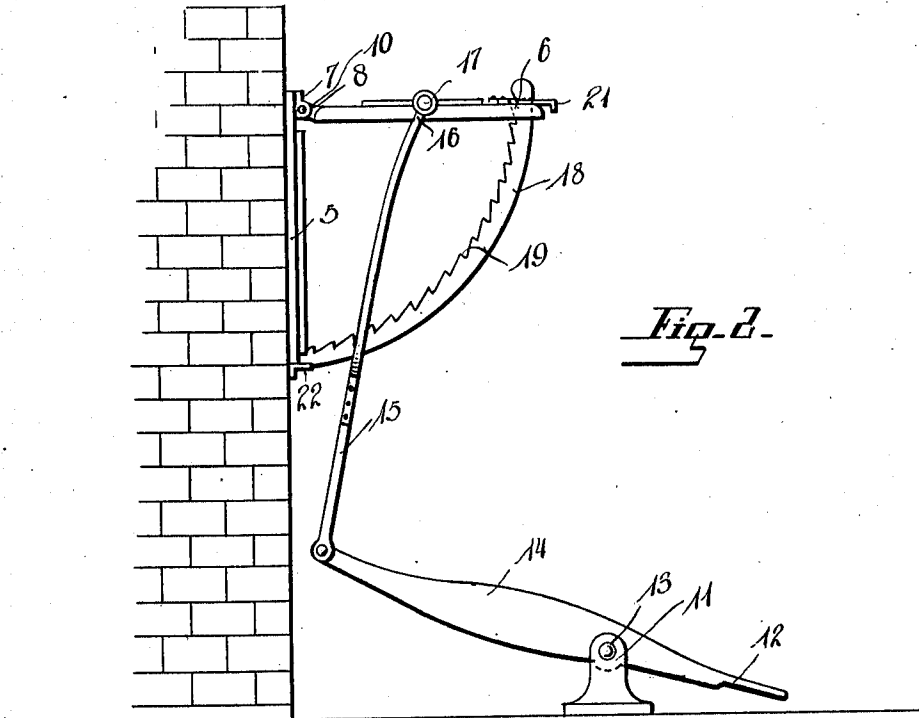
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2 SHEETS—SHEET 2.



UNITED STATES PATENT OFFICE.

CORNELIUS CLEARY, OF IRONTON, OHIO.

DOOR-OPENER.

974,359.

Specification of Letters Patent.

Patented Nov. 1, 1910.

Application filed February 18, 1910. Serial No. 544,604.

To all whom it may concern:

Be it known that I, CORNELIUS CLEARY, a citizen of the United States, residing at Ironton, in the county of Lawrence, State of Ohio, have invented certain new and useful Improvements in Door-Openers; and I 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.

The invention relates to door operating mechanism and more particularly to the class of furnace door openers.

The primary object of the invention is the provision of a door opener of this character in which the door may be swung to opened position so as to permit ready and easy stoking of the furnace, thus obviating the necessity of manually handling the door for firing purposes.

Another object of the invention is the provision of a device of this character in which a door by partially automatic action may be swung to an opened position, thereby enabling rapid firing or stoking of a furnace and which door may be held in various adjusted opened positions whereby the temperature of the fire may be controlled or regulated.

A further object of the invention is the provision of a door opener in which a furnace door after having been swung to opened position may be subsequently closed by gravity when the foot of an operator has been removed from the foot lever of the door opening mechanism.

With these and other objects in view, the invention consists in the construction, combination, and arrangement of parts, as will be hereinafter more fully described in detail, illustrated in the accompanying drawings, which disclose the preferred form of embodiment of the invention, to enable those skilled in the art to practice the invention, and as pointed out in the claim hereunto appended.

In the drawings:—Figure 1 is a front elevation of a furnace door with the invention applied thereto. Fig. 2 is a side elevation thereof, the door being shown in a partially opened position. Fig. 3 is a longitudinal vertical sectional view. Fig. 4 is a top plan view showing the door closed.

Similar reference characters indicate corresponding parts throughout the several views in the drawings.

Referring to the drawings by numerals, 5 designates a furnace door frame which is of the ordinary well known construction having mounted thereon a vertically swinging door 6, the latter being connected to the frame 5, by means of hinges 7, each comprising a leaf hinge section 8, to which latter is connected by a pivot 9, an ear 10, integral with and rising from the upper edge of the door 6, so that the said door will swing in an arc of a circle when vertically raised to an opened position in a manner as will be hereinafter more fully described.

Rising from a suitable foundation or flooring at the front of the furnace door are spaced vertical lugs 11, between which is disposed a foot treadle 12, the latter being connected to the lugs intermediate its ends by a pivot 13, so that the said lever may be rocked when actuated by the foot of a person and to this lever at one end is pivoted the stem portion 14, of a yoke frame 15, the ends of which terminate in eyes 16, loosely receiving laterally extending lugs or trunnions 17, projecting outwardly from opposite ends of the door 6, and by this yoke frame 15, upon actuating the foot treadle the door may be swung to opened position.

Secured at one side of the door 6, to the door frame 5, is an upwardly and outwardly extending segment-shaped rack bar 18, provided with ratchet teeth 19 on its inner or concave edge, and engaging the said teeth 19, is a pivotal latch 20, the latter mounted upon the door 6, so that upon opening the door the latter may be held in various adjusted opened positions. The rack bar 18, serves as a keeper for the latch 20, pivoted to the door 6, the latch 20, being released from the keeper in any suitable manner when it is desired to have the door swing to closed position by its own gravity of movement. The said door 6, is also provided with a suitable latch 21, engageable with a keeper 22, and this latch 21, is adapted to slide over the keeper when the door is being moved or swung to opened position upon actuating the treadle of the door opening mechanism.

What is claimed is:—

In combination, a furnace having a door-frame, a door hinged on its upper edge to the frame, trunnions rigid with the sides of the door, a yoke having eyes pivotally connected with the trunnions, a lever pivoted to the lower end of the yoke, a fulcrum sup-

port pivotally connected to the lever, said
lever having a treadle portion, a segmental
rack fixed at its lower end to one side of the
door-frame and extending outwardly and
5 upwardly from the lower part of the door-
frame, said segmental rack having teeth on
its inner concave edge and its upper end
formed into a rounded terminal, a latch piv-
oted to one side of the door and adapted to
10 engage the teeth of the rack, a spring fixed

to the door and adapted to hold the latch
normally against the teeth of the rack, and
a strap mounted over the spring and latch.
In testimony whereof, I affix my signature,
in presence of two witnesses.

CORNELIUS CLEARY.

Witnesses:

THOS. D. SHIRHEY,
EMMA JACKSON.