No. 898,089. PATENTED SEPT. 8, 1908.

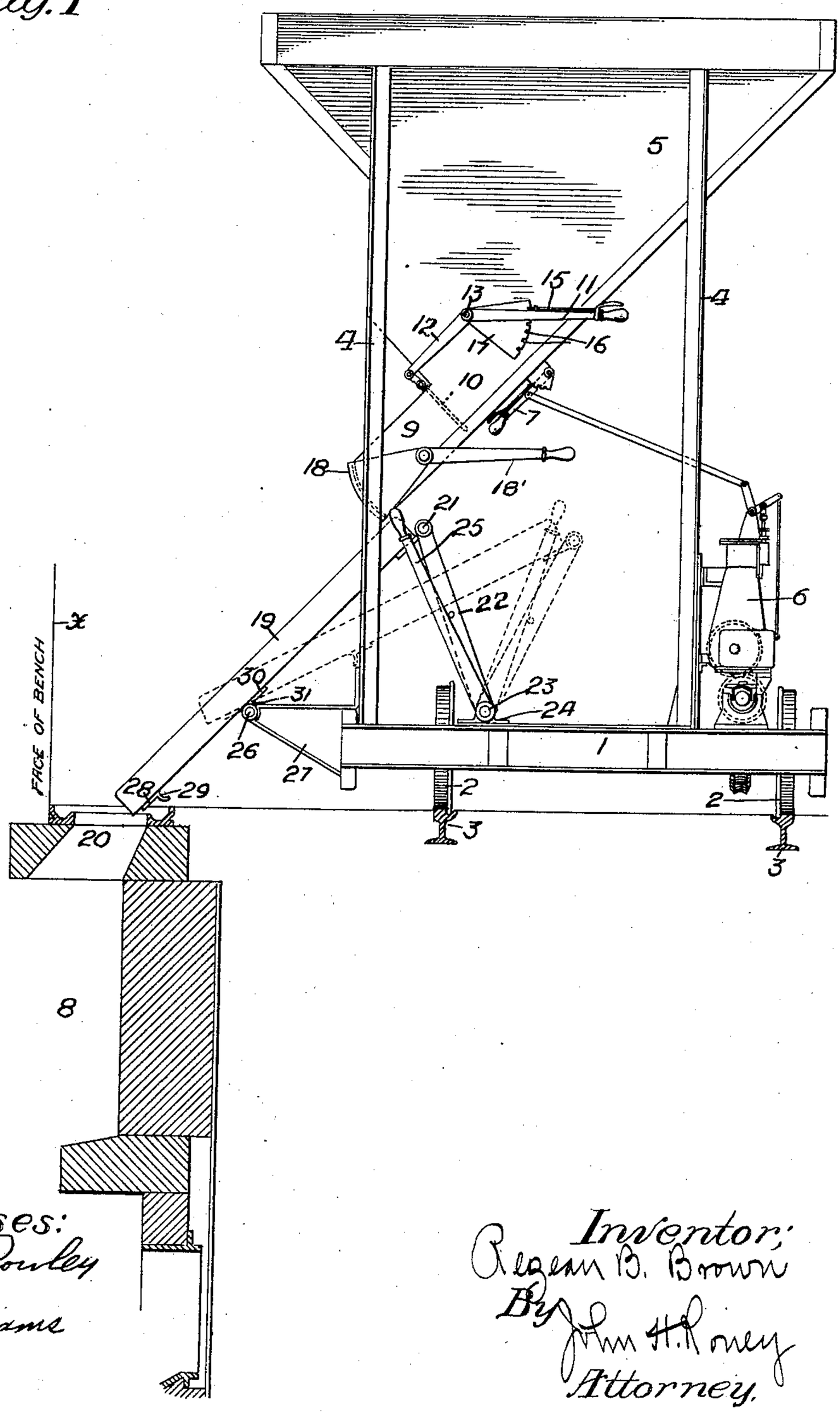
R. B. BROWN.

FURNACE CHARGING MACHINE.

APPLICATION FILED AUG. 7, 1903.

2 SHEETS—SHEET 1.

Fig. 1



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2 SHEETS—SHEET 2.

Fig. 2

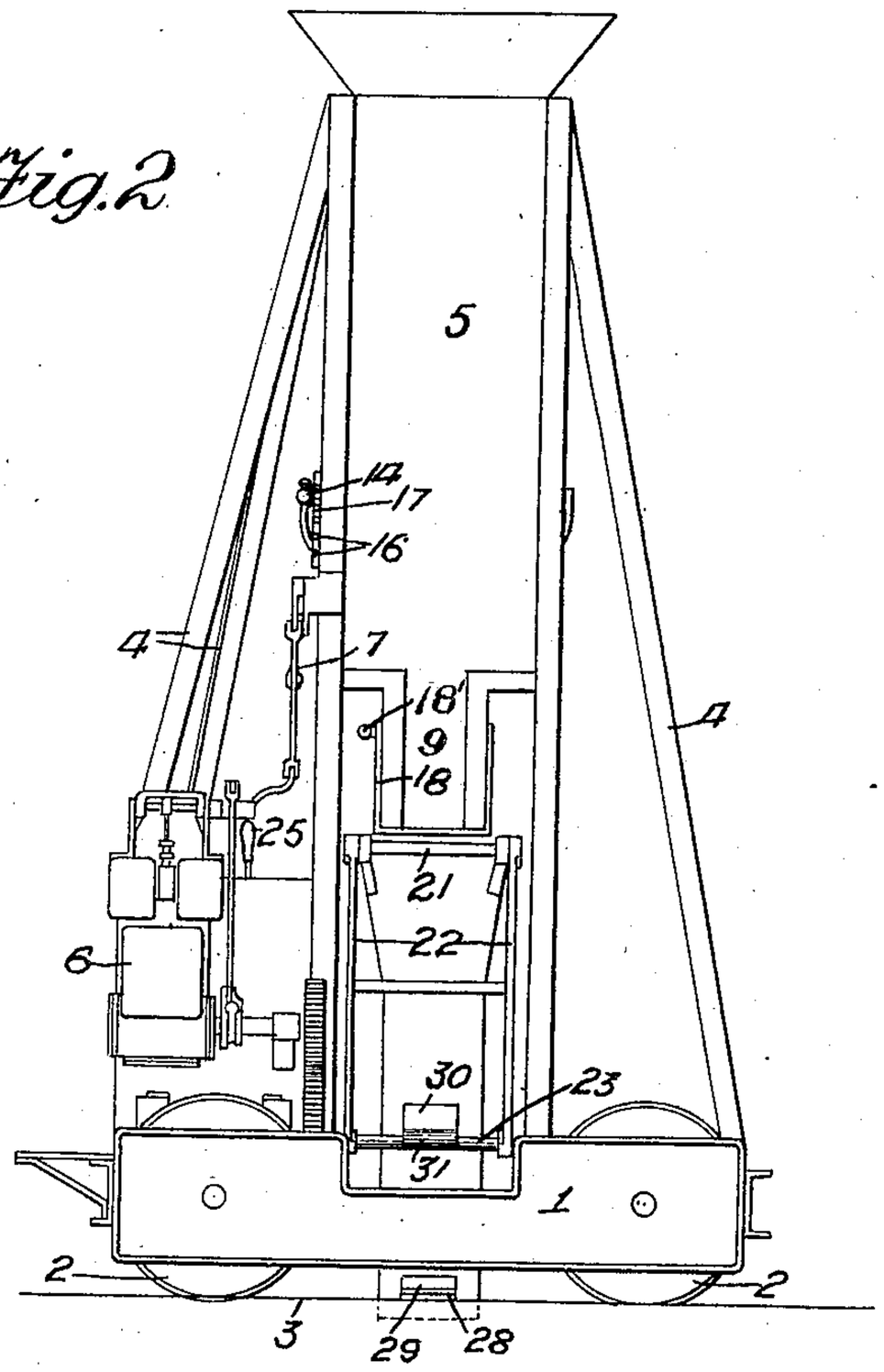


Fig. 3

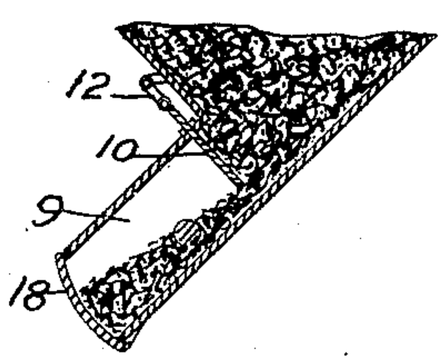
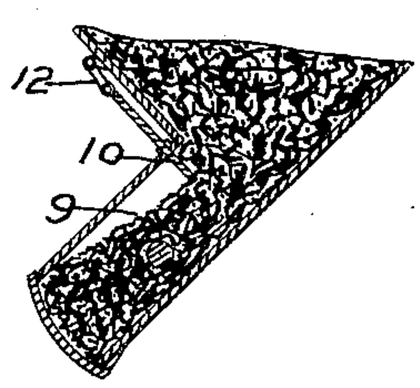


Fig. 4



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UNITED STATES PATENT OFFICE.

REZEAU B. BROWN, OF MILWAUKEE, WISCONSIN.

FURNACE-CHARGING MACHINE.

No. 898,089. Specification of Letters Patent. Patented Sept. 8, 1908.

Application filed August 7, 1903. Serial No. 168,608.

To all whom it may concern:

Be it known that I, REZEAU B. BROWN, a citizen of the United States, residing at Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented a new and useful Improvement in Furnace-Charging Machines, of which improvement the following is a specification.

My invention relates to improvements in machines for charging furnaces connected or used with bench retorts.

The object of my invention is to produce a machine of this general character which is provided with a large coal or fuel receptacle adapted to be moved or traversed along the line of benches, and means, connected therewith, to feed to each furnace a fixed and measured quantity of fuel, and to accomplish this object my invention consists in the novel construction and arrangement of parts hereinafter more specifically described, reference being had to the accompanying drawings, forming part hereof, in which—

Figure 1 is a side elevation of my improved furnace charging machine. Fig. 2 is a rear elevation thereof. Figs. 3 and 4 are sectional detail views, showing the manner of operating the measuring device.

Referring to said drawings, 1 is a truck, mounted on wheels 2, and adapted to be moved on rails 3, arranged along the face of the bench of retorts *x*, a short distance therefrom.

4—4 are uprights constituting a frame which supports the hopper or bin, 5, which is secured to or upon said uprights in any suitable manner.

6 is a motor which is mounted upon the truck of said machine for the purpose of moving the machine along the bench of retorts, any usual and ordinary gear connections between the motor and the wheels of the machine being provided to accomplish this object. The said motor may be of any usual construction and is adapted to be controlled by the locking lever 7. The coal or other fuel contained in said hopper or bin, and which is to be charged into the furnaces 8 below the bench retorts successively, is permitted to drop by gravity from said hopper into the measuring chamber 9 through the opening between the same which is controlled by the gate 10, the bottom of the hopper and said chamber being inclined to admit of this. The said gate is connected to the lever 11 by means of links 12, and said lever is secured to the shaft 13, upon which the lever 11 is rigidly secured, whereby when said lever 11 is swung, the said gate is correspondingly opened or closed. The said lever has mounted thereon a lock rod or bar, 15, the lower end of which is adapted to engage in the notches 16 on the segmental plate, 17, adjacent to said lever to hold the same in any desired position. Immediately the gate 10 is opened, the chamber 9 receives a quantity of fuel dependent upon the extent to which said gate is opened. In Fig. 3 a comparatively small quantity is shown as having been permitted to enter; the angle of repose having been reached by the fuel therein, no greater quantity will enter. In Fig. 4 a larger quantity is shown in said chamber. After the said gate 10 is closed, the gate 18, which controls the lower end of the chamber 9 and which is controlled by the lever 18′, permits such measured quantity of fuel to drop into the chute 19, and from thence into the mouth or charging opening, 20, of the furnace.

In order that the carriage or truck may be moved along the line of retorts to charge fuel into the several furnaces connected therewith, without obstruction, and without spilling the fuel, the chute is so constructed that the lower end thereof is capable of being brought over or into the charging opening of the furnace, and when the machine is being moved to another furnace it may be drawn upward and backward as shown by dotted lines in Fig. 1. To enable this to be done, the said chute is supported at its upper end under the measuring chamber upon a shaft 21 secured upon the upper end of the arm 22, which is secured or mounted upon the rock shaft 23, secured in bearings, 24, secured to the base of the truck, and upon which is also mounted the arm or lever, 25. The said chute is supported near the lower end thereof upon the roller or shaft, 26, which is mounted in a bearing formed in the outer end of the bracket 27, which is secured to the side of the frame. A plate 28, having an inwardly projecting hook 29, is secured to the outer end of the chute to engage the roller or shaft 26, to limit its backward movement as shown in Fig. 1. A plate, 30, having a hook secured on said chute, similar to hook 29 to engage the upper side of roller 31 to support the chute when the same is in the charging position.

I claim as my invention, and desire to secure by Letters Patent:

1. In a furnace charging machine, the combination of a carriage to travel in front of the furnace, a fuel supplying hopper or receptacle carried thereon, a receiving chamber connected with said hopper and movable therewith, means to discharge a measured quantity of fuel from said hopper to said chamber and for retaining the measured quantity of fuel in said chamber, and a chute to receive the fuel from said chamber and discharge it into the furnace.

2. In a furnace charging machine, the combination of a traveling carriage, a fuel supplying hopper mounted on the said carriage and provided with a measuring chamber mounted on said carriage into which the fuel can pass direct from the said hopper, a gate or valve to admit a desired quantity of fuel from the hopper to the measuring chamber, a gate or valve at the discharge mouth of said measuring chamber to retain the desired quantity of fuel in said measuring chamber, and a delivery chute carried by said carriage to receive the fuel issuing from the measuring chamber.

3. In a furnace charging machine, the combination with a fuel hopper, of a slidable and tiltable chute adapted to receive the fuel from said hopper, a stationary support on which said chute pivotally and slidably rests, stops carried by the said chute on opposite sides of said support which are adapted to engage the support when the chute is in its proper retracted or extended positions, and means for sliding and tilting said chute on said support.

In testimony whereof I have hereunto signed my name in the presence of two subscribing witnesses.

REZEAU B. BROWN.

In the presence of—
D. E. WRIGHT,
C. A. WILLIAMS.