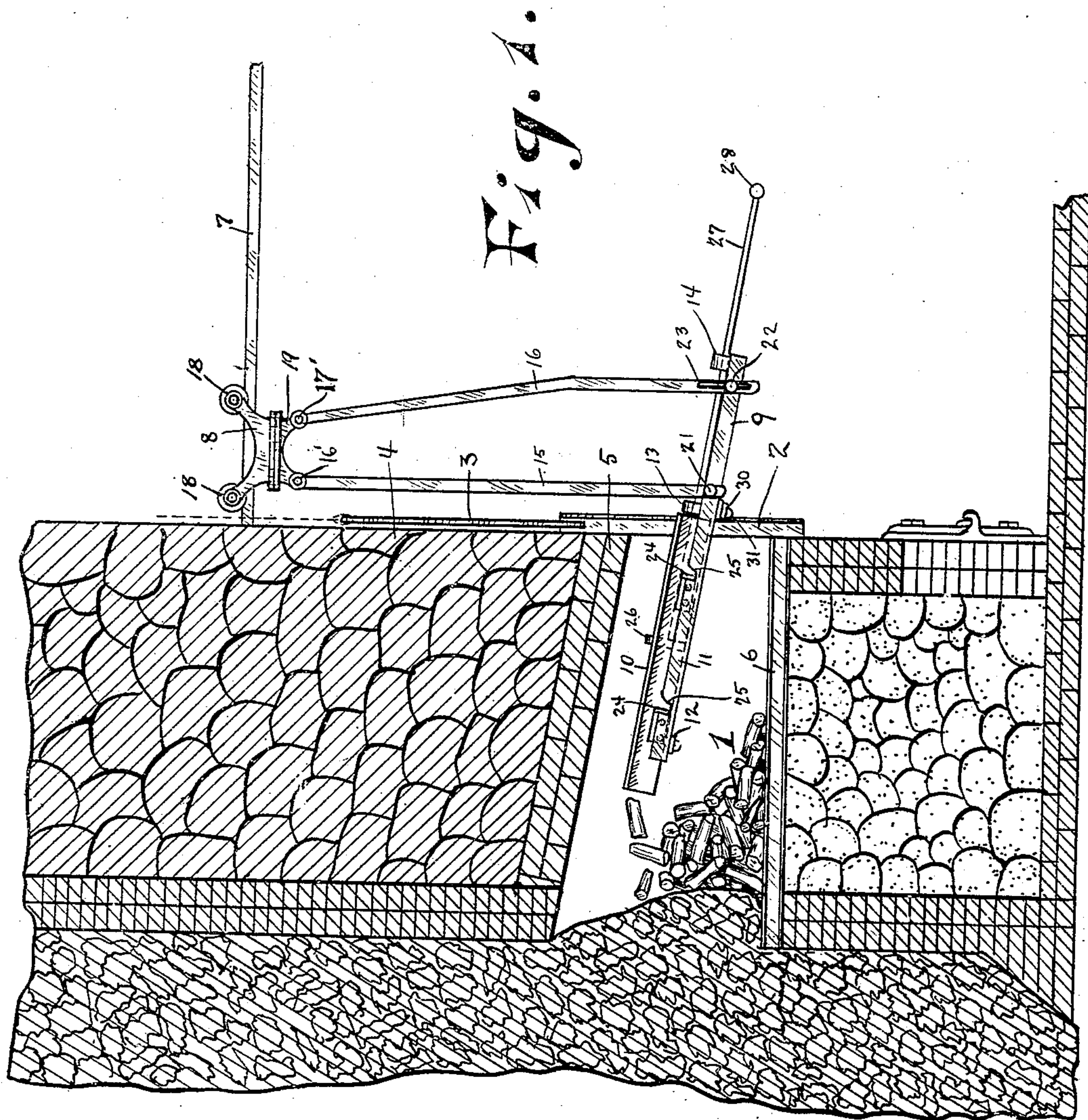


No. 875,371.

PATENTED DEC. 31, 1907.

J. W. ORMSBY.
FUEL FEEDING DEVICE.
APPLICATION FILED MAR. 11, 1907.

2 SHEETS—SHEET 1.



WITNESSES:

O. R. Erwin
M. M. Schuch

INVENTOR

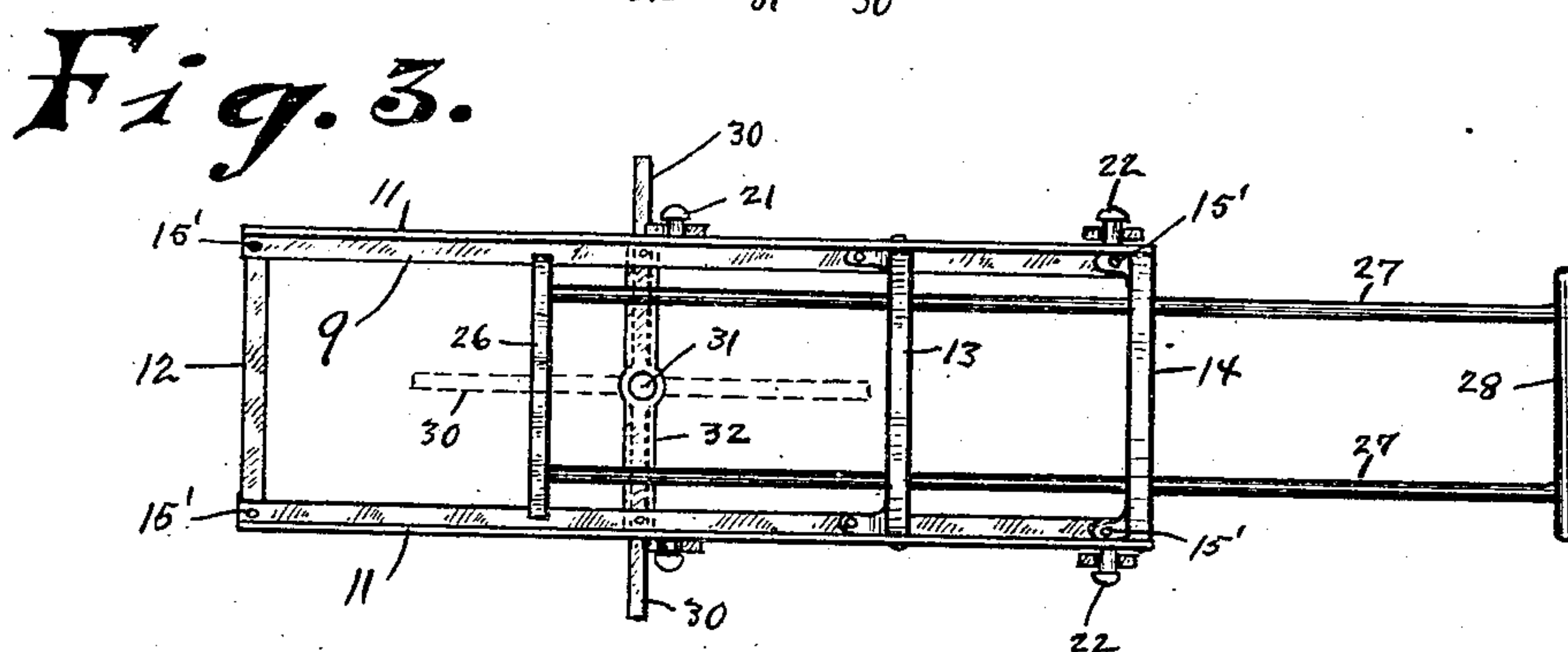
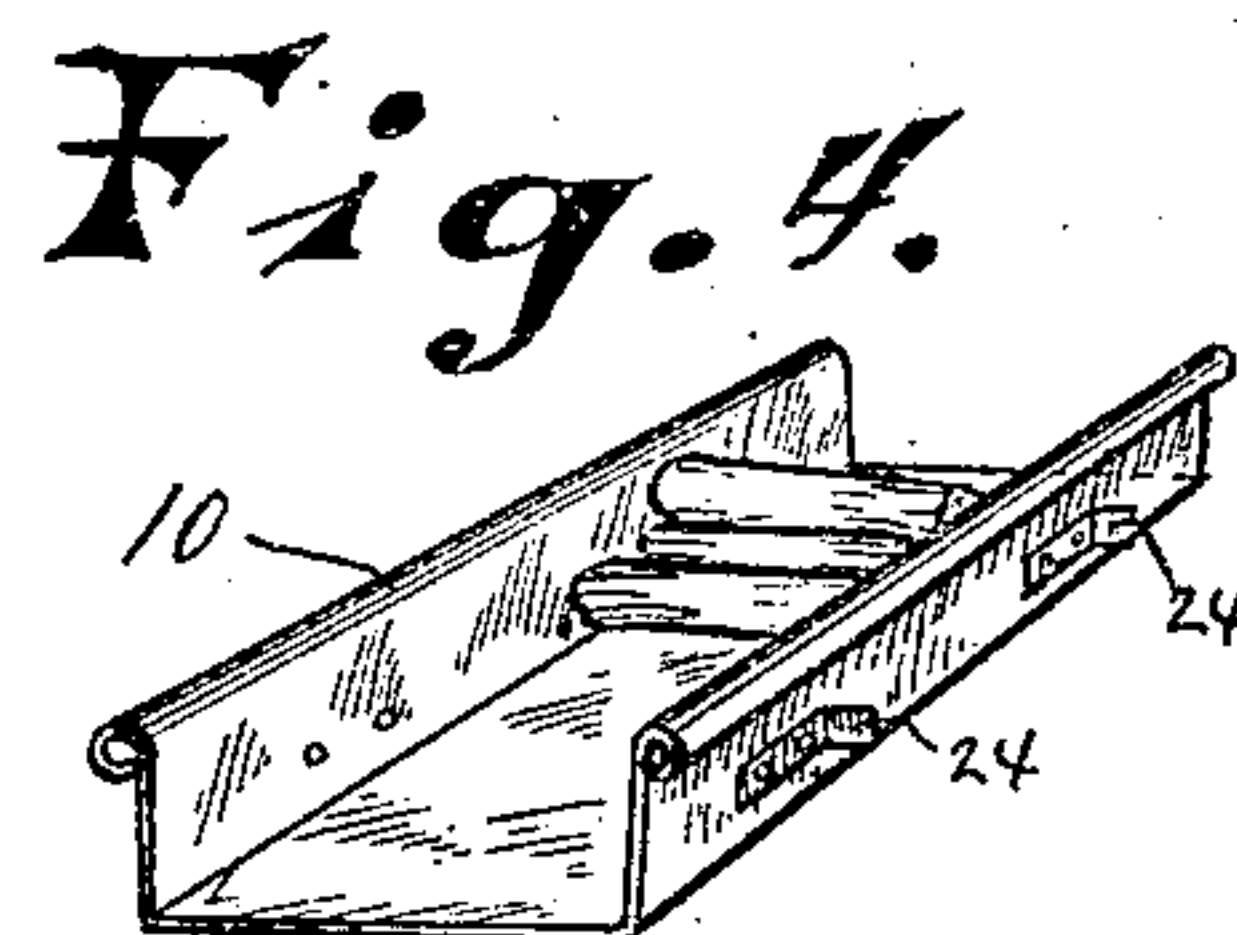
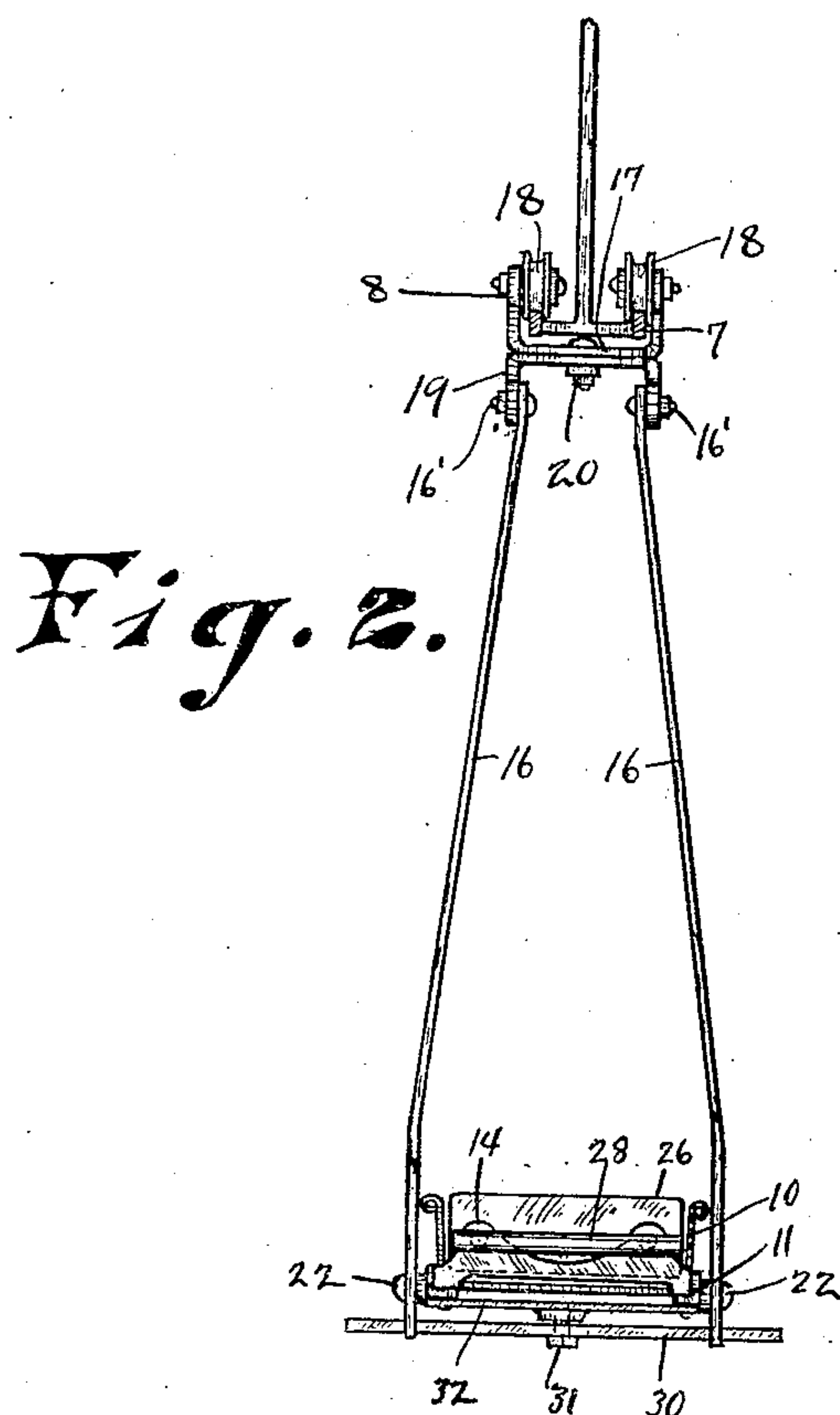
John W. Ormsby
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UNITED STATES PATENT OFFICE.

JOHN W. ORMSBY, OF MILWAUKEE, WISCONSIN.

FUEL-FEEDING DEVICE.

No. 875,371.

Specification of Letters Patent.

Patented Dec. 31, 1907.

Application filed March 11, 1907. Serial No. 361,676.

To all whom it may concern:

Be it known that I, JOHN W. ORMSBY, a citizen of the United States, residing at Milwaukee, county of Milwaukee, and State of Wisconsin, have invented new and useful Improvements in Fuel-Feeding Devices, of which the following is a specification.

Heretofore when using wood for fuel in the manufacture of lime or brick it has been common to replenish the fire at short intervals with a greater or less quantity of fuel at such intervals regardless of the special requirements of the kiln, and to thus replenish the fire manually by throwing one stick of wood at a time into the combustion chamber, or fire arch, whereby it becomes necessary to retain the door of the kiln open a much greater length of time than would otherwise be necessary were the required quantity of wood for a single firing simultaneously discharged into the combustion chamber. Also by such prior methods the cold air is permitted to rush into the combustion chamber through the open door an unnecessary length of time, the kiln and its contents are cooled, combustion is retarded and as a result a lavish waste of heat, fuel and time is incurred.

The object of my present invention is, among other things, first to provide a device by which the required number of sticks or quantity of wood or other fuel for a single firing may be simultaneously and instantaneously discharged into the kiln. In other words, the entire number of sticks of wood for a single firing may by my present device, be discharged into a kiln as quickly as a single stick of wood could be by the method heretofore employed.

A second object of my invention is to provide a device by which a uniform quantity of wood or other fuel may be discharged into the kiln with each firing, whereby the fireman is enabled, when firing the kiln at certain fixed intervals, to determine the exact quantity of fuel required for a given kiln to produce the best and most economical results. The danger of overburning or underburning the lime or other material in the kiln is prevented and all unnecessary waste of fuel is avoided, while the labor of feeding the fuel to the kiln and the exposure to excessive heat while firing heretofore experienced is avoided.

The construction of my invention is ex-

plained by reference to the accompanying drawings, in which,

Figure 1 is a preferred form of my fuel feeding device in connection with a lime kiln, which kiln is shown in vertical section. Fig. 2 is an end view, Fig. 3 is a top view of the fuel feeding device shown in Fig. 1, and Fig. 4 is a perspective view of one of the several fuel receptacles used with my device removed from the feeding mechanism.

Like parts are identified by the same reference characters throughout the several views.

1 represents the combustion chamber of the kiln which is of ordinary construction.

2 represents the open door way through which the fuel is introduced into the combustion chamber.

3 is the door in its open position.

4 represents the main wall of the kiln supported from the arch 5.

6 represents the grate upon which the fuel rests as it is being burned.

In the preferred form, my fuel feeding mechanism is suspended from an overhead track 7 from a carriage 8 which is adapted to move forwardly and backwardly upon such track. My fuel feeding device comprises the rectangular frame 9, and fuel receptacle 10, which is adapted to be supported from the side bars 11, 11, of said frame preparatory to discharging the wood therefrom. The frame 9 comprises the longitudinal side bars 11, and the several transversely arranged bars 12, 13 and 14 which parts are connected together by a plurality of rivets 15' or in any equivalent manner, and said rectangular frame in the preferred form is suspended from the carriage 8 by a plurality of suspension bars 15 and 16. The carriage 8 comprises the frame 17 provided with a plurality of rollers 18 which are adapted to roll upon the track 7 and the turn table 19 which is revolvably suspended from the frame 17 by the pivotal supporting bolt 20 which bolt permits the suspended bars 15 and 16 and the parts connected therewith to be turned at any desired angle to the suspension track 7.

The frame 9 is pivotally supported near its center from the suspension bars 15 by the pivotal bolts 21 which bolts are rigidly affixed at their inner ends to the side bars 11 of the frame, while the outer ends extend through apertures provided therefor in the lower ends of said suspension bars 15. The

rear end of the frame 9 is slidably connected with the suspension bars 16 by the transverse pins 22 operating in slots 23 provided therefor in the lower ends of the hanger bars 16, said pins 22 being rigidly affixed at their inner ends to said side bars 11, while their opposite ends extend through said slots 23, the length of the slots 23 being such as to permit the wood supporting frame 9 to be oscillated upwardly and downwardly upon the pivotal bolts 21, while the upper ends of the hanger bars 15 are connected with the turn table 19 by the pivotal bolts 16' and the upper ends of the hanger bars 16 are also pivotally connected with said turn table 19 by the pivotal bolts 17'.

The fuel receptacle 10 is adapted to be first filled with wood when it is placed between the longitudinal bars 11 of the frame 9 preparatory to discharging the wood into the combustion chamber of the kiln. The fuel receptacle 10 is provided with one or more lateral projections 24 which are adapted to engage in retaining notches 25 provided therefor in the side bars 11, whereby said receptacle is prevented from sliding forwardly in its supporting frame as the wood is being discharged therefrom. As a means of discharging the wood from the wood receptacle, I have provided a transversely arranged push bar or plate 26 which is slidably supported within the frame 9 upon the transverse bars 13 and 14 by the longitudinal push rods 27, said transverse bars 13 and 14 being provided with apertures for the reception of said push rods. The outer ends of the push rods 27, 27, are rigidly connected together by transversely arranged operating handle 28, while the opposite ends of said rods are rigidly connected with said push bar 26.

To limit the forward movement of the fuel receptacle and its supporting frame as it is being inserted through the doorway of the kiln, I preferably provide said frame with a transversely arranged stop bar 30, which bar is pivotally connected with the bottom of the frame at or near its center by the bolt 31, the upper end of said bolt being rigidly affixed to the transversely arranged bar 32 of said frame, whereby it is obvious that as the receptacle is being thus inserted through the door, the protruding ends of the transversely arranged bar 30 will be caused to contact against the vertical sides of the door way and prevent the forward movement of the frame 9 as the contents of the fuel receptacle 10 is being discharged, while owing to the fact that said bar 30 is pivotally connected with the supporting frame 9 it permits the operator to incline the supporting frame 9 to the right or left as desired, while the ends of said bar 30 remain in contact with the sides of the doorway. Thus it will be obvious that when the fuel receptacle 10 is secured in place within the supporting frame 9, the fuel therein may

all be simultaneously and instantaneously discharged therefrom by a quick forward movement of the push bar 26 which forward movement is communicated thereto from the fireman by pressing forward upon the operating handle 28.

It will be understood that the fuel receptacle and the supporting frame may be readily drawn rearwardly away from the kiln to a convenient place for supplying the same with wood, that when thus moving the fuel receptacle and connecting parts toward and from the kiln, the weight of the same will be suspended from the track 7 by the carriage 8 and hangers 15 and 16 by which hangers the fuel receptacle is suspended at a convenient height for discharging the same through the door of the kiln. Preparatory to supplying the kiln with fuel, a large number of fuel receptacles 10 are first supplied with wood. This being done one of said receptacles is placed within the frame as indicated in Fig. 1 in front of the push bar 26. When this is done the carriage 8 and parts suspended therefrom are moved forward in close proximity to the kiln when the door 3 is raised and the discharge end of the fuel receptacle together with its supporting frame are quickly run through the door to the position shown in Fig. 1 when the contents of the fuel receptacle is instantaneously discharged therefrom as stated by pushing forwardly upon the operating handle 28. This being done, the fuel receptacle and carriage are quickly removed when the door of the kiln is closed. Thus it is obvious as stated that the entire contents of the fuel receptacle may be simultaneously discharged into the combustion chamber of the kiln and no greater time required for so doing than would ordinarily be required for manually throwing a single stick of wood into the kiln, whereby the necessity of leaving the doors of the kiln open, as heretofore, an unnecessary length of time and the resultant waste of heat, fuel and time incident to previous methods employed for feeding furnaces with fuel is avoided and the expense of burning lime or brick is thereby, as compared with the methods heretofore employed, greatly reduced.

While I have shown and described the fuel receptacle and its supporting frame suspended from an overhead track, it is obvious, if desired, that said receptacle and frame may be supported from a track along the surface of the ground without materially departing from the spirit of my invention.

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

1. A fuel feeding device for kilns and similar purposes comprising a carriage, a carriage supporting track, a frame pivotally supported from said carriage, a stationary fuel receptacle removably supported from

said frame, a push bar and bar operating means slidably connected with said frame, said push bar being adapted to be forced longitudinally through said fuel receptacle, 5 and thereby discharge its contents therefrom without moving said receptacle, substantially as and for the purpose specified.

2. The combination with a wall of a kiln, 10 of a track supported on a plane above the door of the kiln, a carriage mounted on said track, a fuel supporting frame, a pair of suspension bars pivotally connected at their upper ends to the front end of said carriage and at their lower ends to the front end of 15 said frame, a second pair of suspension bars pivotally connected at their upper ends to the rear end of said carriage and slidably connected at their lower ends to the rear end of said frame, a fuel receptacle located on 20 said frame, a push bar slidably connected with said frame and adapted to move longitudinally through said fuel receptacle and operating handle, and means connected with said handle for operating said push bar.

25 3. The combination with a wall of a kiln, of a track supported on a plane above the door of the kiln, a carriage mounted on said track, a fuel supporting frame, a pair of suspension bars pivotally connected at their 30 upper ends to the front end of said carriage and at their lower ends to the front end of said frame, a second pair of suspension bars pivotally connected at their upper ends to the rear end of said carriage and slidably 35 connected at their lower ends to the rear end of said frame, a fuel receptacle located

on said frame, a push bar slidably connected with said frame and adapted to move longitudinally through said fuel receptacle, an operating handle, means connected with 40 said handle for operating said push bar, and means for holding said fuel receptacle in place on its supporting frame as its contents is being discharged therefrom.

4. The combination with a wall of a kiln, 45 of a track supported on a plane above the door of the kiln, a carriage mounted on said track, a fuel supporting frame, a transversely arranged bar centrally pivoted to the lower side of said frame and adapted to contact at 50 its ends with the respective sides of the doorway and limit the forward movement of said frame and fuel receptacle, a pair of suspension bars pivotally connected at their upper ends to the front end of said carriage and at 55 their lower end to the front end of said frame, a second pair of suspension bars pivotally connected at their upper ends to the rear end of said carriage and slidably connected at their lower ends to the rear end of said 60 frame, a fuel receptacle located on said frame, a push bar slidably connected with said frame and adapted to move longitudinally through said fuel receptacle, an operating handle, and means connected with said 65 handle for operating said push bar.

In testimony whereof I affix my signature in the presence of two witnesses.

JOHN W. ORMSBY.

Witnesses:

JAS. B. ERWIN,

O. R. ERWIN.