Feb. 7, 1928. 1,658,247

N. M. LOWER ET AL

ELEVATOR CASING

Filed Feb. 9, 1925

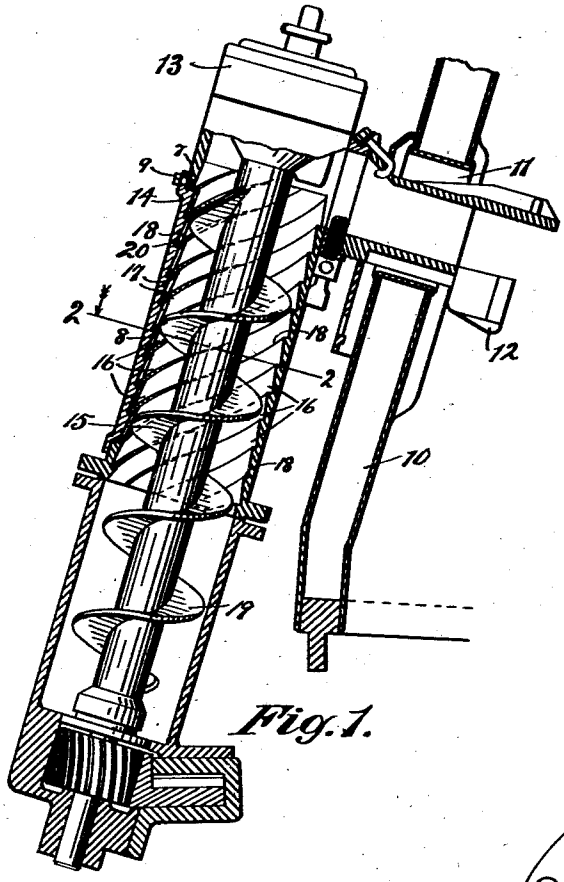

Fig. 1.

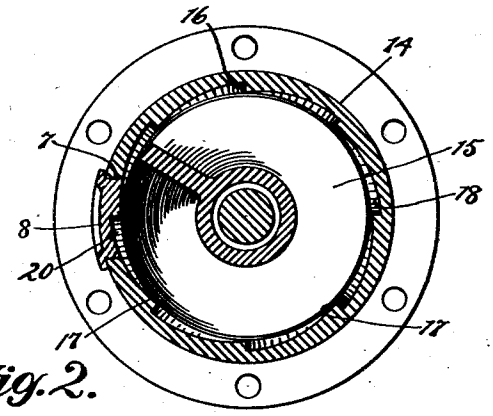

Fig. 2.

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Patented Feb. 7, 1928. 1,658,247

UNITED STATES PATENT OFFICE.

NATHAN M. LOWER AND PAUL ALLISON KETCHPEL, OF PITTSBURGH, PENNSYLVANIA, ASSIGNORS TO LOCOMOTIVE STOKER COMPANY, A CORPORATION OF PENNSYLVANIA.

ELEVATOR CASING.

Application filed February 9, 1925. Serial No. 7,833.

This invention relates to stokers, and more particularly to the fuel elevating mechanism.

The principal object of the invention is the provision of a new and improved elevator mechanism that is so constructed that fuel may be advanced upwardly through the same positively and efficiently.

Another object of the invention is the provision of new and improved means for assisting the screw elevator in its work of elevating the fuel delivered to the firebox.

Other objects of the invention are the provision of a new and improved elevator casing that is simple in construction, efficient in use, and that is not likely to become broken, distorted or get out of order.

Other and further objects and advantages of the invention will appear from the following description taken in connection with the accompanying drawings, in which

Fig. 1 is a vertical section of the back head of a locomotive showing our invention in position thereon, with parts in section and parts broken away; and

Fig. 2 is a section on line 2—2 of Fig. 1.

On the drawings the reference character 10 designates the backhead of a locomotive provided with the opening 11 through which the distributor member 12 of the stoker 13 is adapted to extend.

The stoker mechanism includes one or more elevator casings 14, only one of which is shown, within which is rotatably mounted the screw elevator screw 15. The casing is provided with a suitable door opening 7 through which access may be had to the interior thereof. A door or closure 8 is adapted to be secured over the opening 7 by any suitable means, as the fastening members 9. The elevator is rotated in any approved manner for elevating the fuel delivered to it from the tender by the conveyor screw as is usual in such constructions. Since the details of the stoker mechanism other than the elevator casing constitute no part of the present invention, it is not thought necessary to further describe such mechanism.

Considerable difficulty has been experienced in preventing fuel from rotating with the elevator during its elevation. In the present device, this has been accomplished by providing one or more grooves forming shoulders or projections on the interior of the elevator casing. As shown, the interior of the casing is provided with a plurality of grooves 16. The door or closure 8 may, if desired, be provided with corresponding grooves 20 which are adapted to align with the grooves 16 in the casing. The grooves are deeper at one margin and may be considered as being triangular in cross-section, forming inclined surfaces terminating in ribs or projections 17 with shoulders 18 whereby the fuel may slide upwardly over the shoulders, the shoulders preventing rotation of the fuel during its elevation, as will appear from an inspection of Fig. 2.

The grooves may be arranged in any suitable manner extending longitudinally of the casing, so long as the shoulders face in the direction to engage the fuel to prevent the same from rotating with the elevator. As shown on the drawings, the ribs and grooves are arranged spirally in the opposite direction from the flight 19 of the screw elevator 15 whereby as the elevator rotates it will tend to slide the fuel in engagement with the shoulders 18 upwardly along the same, the shoulders constituting projections or ribs for preventing the fuel from rotating with the screw.

It is thought from the foregoing taken in connection with the accompanying drawings that the construction and operation of our device will be apparent to those skilled in the art, and that various changes in size, shape, proportion and details of construction may be made without departing from the spirit and scope of the appended claims.

We claim as our invention:

1. In a stoker, an elevator casing having inclined grooves on its inner surface, each groove being formed by a shoulder and an inclined surface.

2. In a stoker, an elevator casing having inclined shoulders on its inner surface, and inclined surfaces leading upwardly and inwardly to form said shoulders.

3. In a stoker, an elevator casing, said casing being provided with inclined projections on its inner wall, said projections having their lower surfaces inclined upwardly and inwardly.

4. In a stoker, an elevator casing having a door opening therein, a door for said opening, said door being provided with inclined grooves, and a screw elevator within said casing, said casing being provided with in-

clined grooves on its inner wall, the grooves on said door being continuations of the adjacent grooves on said wall.

5. In a stoker, an elevator casing, a screw elevator rotatably mounted in said casing, said casing being provided with a groove on its inner surface, said groove being deeper at one side than at the other, whereby a shoulder is formed for resisting the rotation of fuel during its elevation by said elevator.

In testimony whereof we affix our signatures.

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