Feb. 11, 1930. E. F. JONES ET AL 1,746,776

MEASURING APPARATUS

Filed Feb. 27, 1925 2 Sheets-Sheet 1

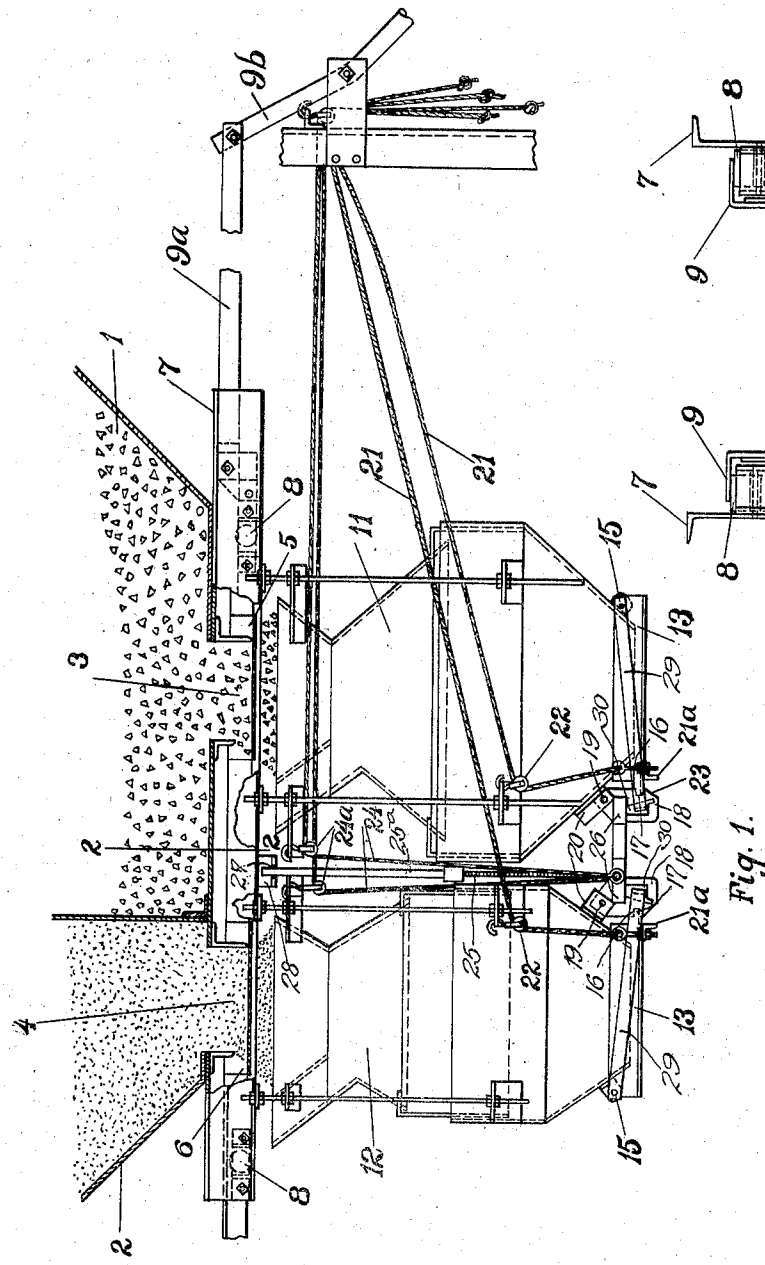


Fig. 1.

Fig. 2.

Inventors
Edwin F. Jones
John A. Auld
By
Attorney

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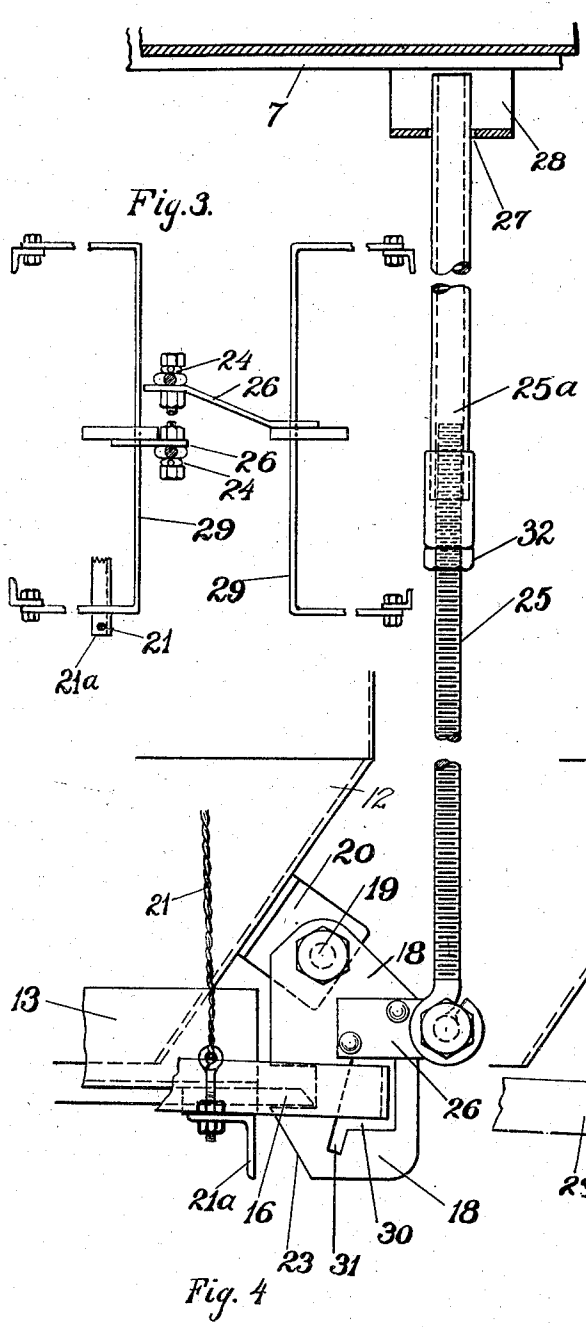


Fig. 3.

Fig. 4

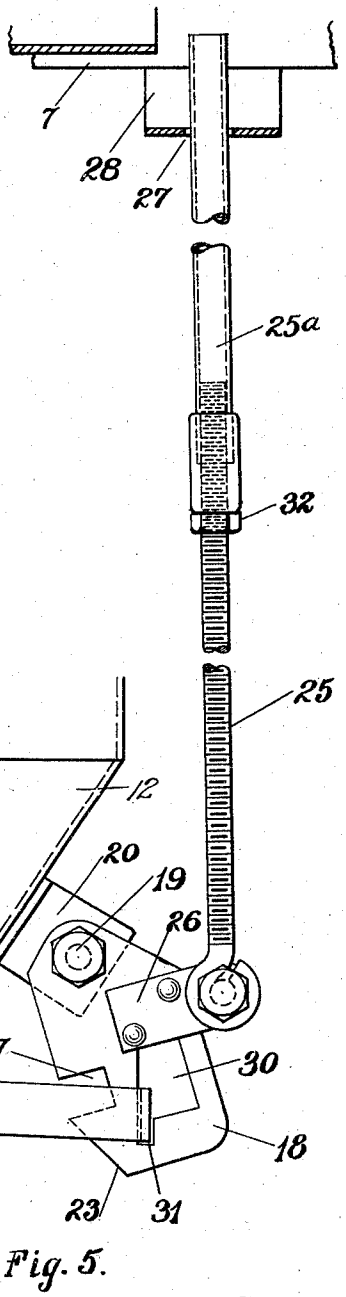


Fig. 5.

Inventors
Edwin F. Jones
&
John A. Auld
By
Attorney

Patented Feb. 11, 1930 1,746,776

UNITED STATES PATENT OFFICE

EDWIN F. JONES AND JOHN A. AULD, OF ERIE, PENNSYLVANIA, ASSIGNORS TO ERIE STEEL CONSTRUCTION COMPANY, OF ERIE, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA

MEASURING APPARATUS

Application filed February 27, 1925. Serial No. 12,040.

Measuring devices have heretofore been made for handling aggregate for paving purposes. It is desirable to prevent any failure of an accurate measuring of the materials in order that the mixture may be of uniform quality. Such devices usually have a supply bin from which material is supplied to a measuring box and it is desirable to compel the closing of the connection between the supply bin and the box prior to the opening of the measuring box because without this there is a possibility for leakage to pass from the supply bin to the measuring box during the discharge of the measuring box and thus augment the amount of material which the measuring box is designed to supply. Further it is also desirable to lock the connection between the supply bin and the measuring box until the closure of the measuring box is accomplished in order that there may be no leakage from the supply bin through the measuring box prior to the closing of the measuring box. The present invention is designed to accomplish these locking functions. Features and details of the invention will appear from the specification and claims.

The invention is illustrated in the accompanying drawings as follows:—

Fig. 1 is a side elevation of the apparatus, partly in section.

Fig. 2 a section on the line 2—2 in Fig. 1.

Fig. 3 a view of a portion of the latch locking mechanism detached.

Fig. 4 an enlarged view of the locking parts with the upper gate open, the lower gate closed and the lower gate locked against opening.

Fig. 5 a similar view with the lower gate open and the parts in position to lock the upper gate.

1 marks the aggregate supply bin, 2 the sand bin, and 3 the discharge opening from the aggregate bin, 4 a similar opening from the sand bin, and 5 and 6 gates controlling said openings, respectively. Channels 7 one at each side support the supply bins and are provided with gate rollers 8. Angle irons 9 extend along the rollers, the horizontal part of the iron riding on the rollers and the vertical part being secured to the upturned edges 10 of the gates. The two gates are, therefore, locked together and open and close together and are operated by the control rod 9^a and lever 9^b. The aggregate measuring box 11 is directly below the bin 1 and a sand measuring box 12 directly below the bin 2.

The closure of the lower parts of the measuring boxes is accomplished by the swinging doors 13 which are pivoted on pins 15 on the sides of the boxes. Catches 16 extend from the doors 13 and are received in the notches 17 of the swinging latches 18. The latches 18 are pivotally mounted on pins 19 secured to brackets 20 on the bottoms of the boxes. Ropes 21 extend from the doors 13 over pulleys 22 to a convenient place of operation by means of which the doors may be closed. The lower part of the latches have the cam surfaces 23 so that the catches 16 swing past the latches to position the latches, the yielding permitting the closing of the door. Cords 24 extend from the arms 26 on the latches 18, these cords extending over pulleys 24^a to a convenient place of operation. By pulling the cords the latches are swung outwardly from the position shown in Fig. 4 so as to permit the doors 13 to open. Arranged on the arms 26 are adjustable rods 25 which are swung upwardly with the outward swinging of the latches. The upper ends of the rods 25 extend through perforations 27 in a strap 28 secured to the channels 7 and in their upper position extend into the paths of the gates 5 and 6, thus preventing the opening of either of these gates so long as the latch is swung to position to release the catch. In order to hold the rod in this position until the lower doors are closed the bails 29 are pivotally secured to the sides of the box and extend through openings 30 in the latches and these openings 30 are notched at 31 to receive the bails 29 when the latches are swung to their open position as shown in Fig. 5 and the doors are opened. The angle irons 21^a secured to the bottom of the door and to which the ropes 21 are secured extend beyond the door sufficiently to engage the bail as the door is lifted so as to lift the bail out of the notch 31 and thus permit the latch 18 to swing bringing the notch 17 under the catch 16. This swing-

ing movement depresses the rod 25 bringing it out of the path of the gate and into the position shown in Fig. 4. In this position the gates may be opened and as they move to open position the bottom of the gate 6 immediately passes over the top of the rod 25 and thus prevents the raising of the rod 25 and the swinging of the latch 18 to release the lower doors until the gate 6 and with it the gate 5 is moved to closed position. In order that the rod 25 may be readily adjusted I usually make it in two parts, one part being formed of the pipe 25^a and the other of a screw-threaded portion and provide an adjusting nut 32 by means of which it may be lengthened or shortened so that it will just clear the path of the gate 6 when in its lower position.

With this construction it will be seen that the lower doors are locked in their closed position by reason of the fact that the rods can not be swung so long as the gates 5 and 6 are in their open position and that when the gates 5 and 6 are closed and the doors are opened the bails maintain the locks in their upper position so that the gates cannot be opened until the doors are again closed. Consequently no leakage is possible from the supply bin through the measuring boxes and an alternate operation of these devices is compelled.

What we claim as new is:—

1. In a measuring apparatus, the combination of a supply bin; a measuring box; a closure gate for the bin; a closure door for the box; a latch locking the door in closed position; a locking bar connected with the latch extending into the path of the gate locking the gate in closed position with the latch open and locking the latch in closed position with the gate open; and means locking the bar in gate-locking position, said means being released by the door in closing.

2. In a measuring apparatus, the combination of a supply bin; a measuring box; a closure gate for the bin; a closure door for the box; a latch locking the door in closed position; a locking bar connected with the latch extending into the path of the gate locking the gate in closed position with the latch open and locking the latch in closed position with the gate open; and means comprising a bail locking the latch in open position, said bail being in the path of the door and released from the latch by the action of the door in closing.

In testimony whereof we have hereunto set our hands.

EDWIN F. JONES.
JOHN A. AULD.