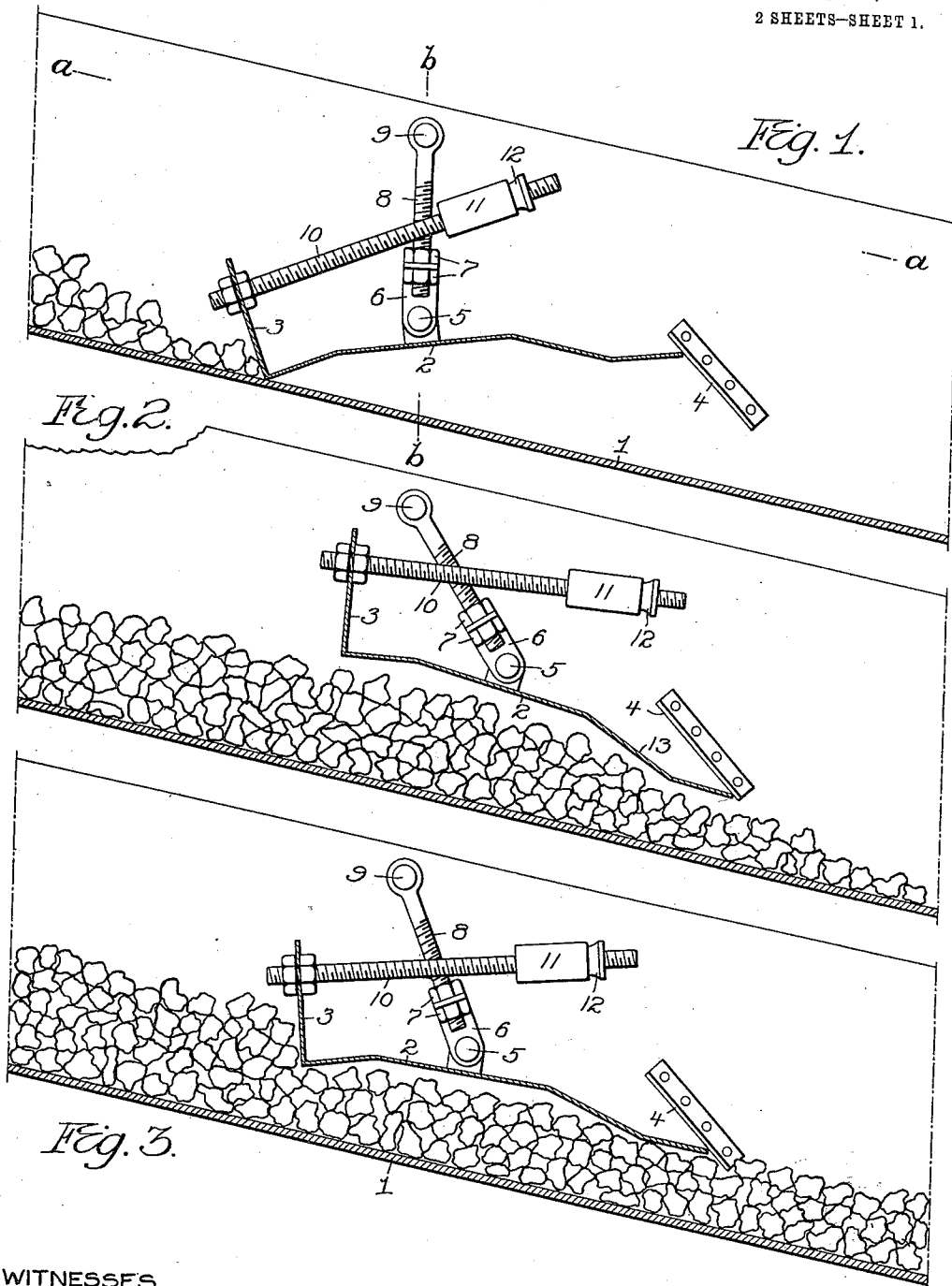


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 FEED REGULATOR.
 APPLICATION FILED DEC. 1, 1911.

1,092,602.

Patented Apr. 7, 1914.
 2 SHEETS—SHEET 1.



WITNESSES

Hamilton D. Turner

Kate A. Beadle

INVENTORS
 RALPH A. SMITH &
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Fig. 4.

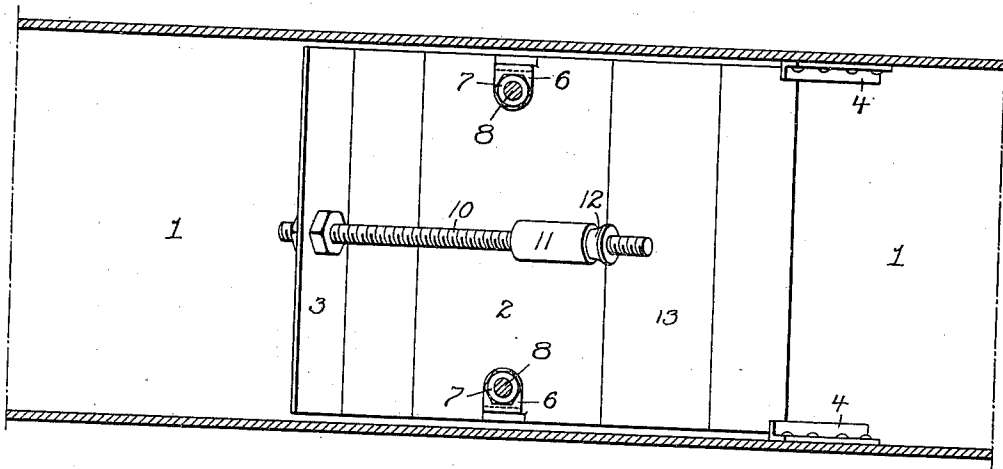
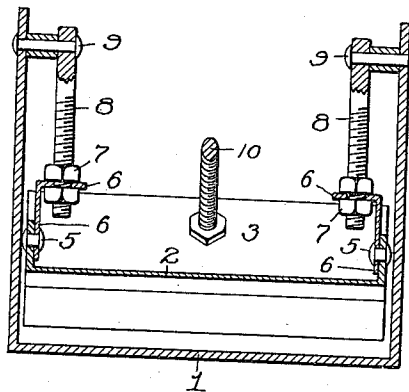


Fig. 5.



WITNESSES

Hamilton D. Turner
Kate A. Beadle

INVENTORS
RALPH A. SMITH &
NELSON MOWERY
BY THEIR ATTORNEY
Harry Smith

UNITED STATES PATENT OFFICE.

RALPH A. SMITH AND NELSON MOWERY, OF WILKES-BARRE, PENNSYLVANIA.

FEED-REGULATOR.

1,092,602.

Specification of Letters Patent.

Patented Apr. 7, 1914.

Application filed December 1, 1911. Serial No. 663,300.

To all whom it may concern:

Be it known that we, RALPH A. SMITH and NELSON MOWERY, both citizens of the United States, and residents of Wilkes-Barre, Pennsylvania, have invented certain Improvements in Feed-Regulators, of which the following is a specification.

The object of our invention is to provide an automatically acting valve for governing the volume of flow of coal or other granular material down a chute, an object which we attain in the following manner, reference being had to the accompanying drawings, in which—

Figures 1, 2 and 3 are sectional views illustrating in different positions an automatic flow-governing valve constructed in accordance with our invention; Fig. 4 is a sectional plan view on the line *a—a*, Fig. 1, and Fig. 5 is a transverse vertical section on the line *b—b*, Fig. 1.

In the drawings, 1 represents the inclined chute down which the coal or other granular material is fed, and 2 represents the automatic valve whereby the volume of such flow is regulated. Said valve 2 consists of a plate, preferably of sheet metal, located above the floor of the chute, this plate having an upturned flange 3 at its forward end and bearing at its rear end against inclined plates 4 secured to the opposite sides of the chute or otherwise properly supported therein.

The valve plate is pivotally mounted at 5 at a point between its front and rear ends so that when either end of the valve is raised the other end will be depressed. The valve should also be mounted, in any suitable way, so as to have bodily forward or backward movement. In the present instance the valve plate is pivotally mounted at 5 upon hangers 6 secured by means of nuts 7 upon depending bolts 8 pivotally mounted at their upper ends, either upon pins 9 on the opposite sides of the chute or upon a transverse bar or other equivalent supporting means, so that the valve plate is susceptible of swinging upon either or both of its pivotal supports, and is also susceptible of being raised and lowered so as to vary its distance from the floor of the chute.

Projecting rearwardly from the forward flanges of the valve plate is a balance bar 10 and mounted upon said bar is an adjustable weight 11, provided with any available means for securing it in position after adjustment. In the present instance the weight

is internally threaded for adaptation to a thread cut upon the balance bar 10 and is retained in position after adjustment by means of a lock nut 12 on said bar. The balance weight 11 is so adjusted that when the chute is empty, the forward end of the valve will bear lightly upon the floor of the chute and the rear end of the valve will bear upon the inclined plates 4 near the upper ends of the latter, as shown in Fig. 1.

The coal descending the chute first strikes the flange 3 at the forward end of the valve and causes the entire valve to swing rearwardly upon the pivot 9, the effect of which is to cause the inclined plates 4 to depress the rear end of the valve thereby swinging it upon the pivots 5 so as to raise the front end of the valve and permit the coal to pass beneath it, as shown in Fig. 2. When the flow of coal strikes the under side of the rear portion of the valve it lifts the same, thereby depressing the forward end of the valve and causing it to restrict the flow of coal, as shown in Fig. 3, thereby establishing substantially the same area of inlet at the head of the valve as the area of outlet at the foot of the valve, or providing an automatic increase of area at the inlet end of the valve whenever the volume of coal at the outlet end falls below normal, or an automatic decrease of area at the inlet end whenever the volume of coal at the outlet end rises above the normal, thus maintaining a substantially uniform volume of flow down the chute.

In order to increase the lifting effect of the coal upon the rear end of the valve the latter may have a downwardly inclined portion at or slightly in advance of its rear end, as shown for instance at 13 in Figs. 1, 2 and 3.

We claim:

1. The combination of an inclined chute for granular material, with a valve located above the floor of said chute and having an upwardly inclined flange at its forward end and a downwardly inclined rear portion, said valve being pivoted between its front and rear ends whereby rise of either end will cause descent of the opposite end.

2. The combination of an inclined chute for granular material, with a valve located above the floor of the chute and having between its front and rear ends a longitudinally movable pivotal mounting, and fixedly mounted means for depressing the rear end

of the valve as said valve swings rearward and permitting rise of said rear end as the valve swings forward, the forward end of the valve being disposed transversely to the
5 line of flow of the body of granular material whereby the initial tendency of the latter will be to move the valve bodily rearward.

3. The combination of an inclined chute for granular material, with a valve located
10 above the floor of the chute and having between its ends a pivotal axis, and a pivoted and swinging carrier therefor, whereby bodily forward and rearward movement of the valve is permitted, and fixedly mounted
15 means for depressing the rear end of the

valve as the same swings bodily rearward and permitting rise of said rear end as the valve swings bodily forward, the forward end of the valve being disposed transversely to the line of flow of the granular material, 20 whereby the initial tendency of the latter will be to move the valve bodily rearward.

In testimony whereof, we have signed our names to this specification, in the presence of two subscribing witnesses.

RALPH A. SMITH.
NELSON MOWERY.

Witnesses:

R. F. ROBERTS,
PHILIP WALTERS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."
