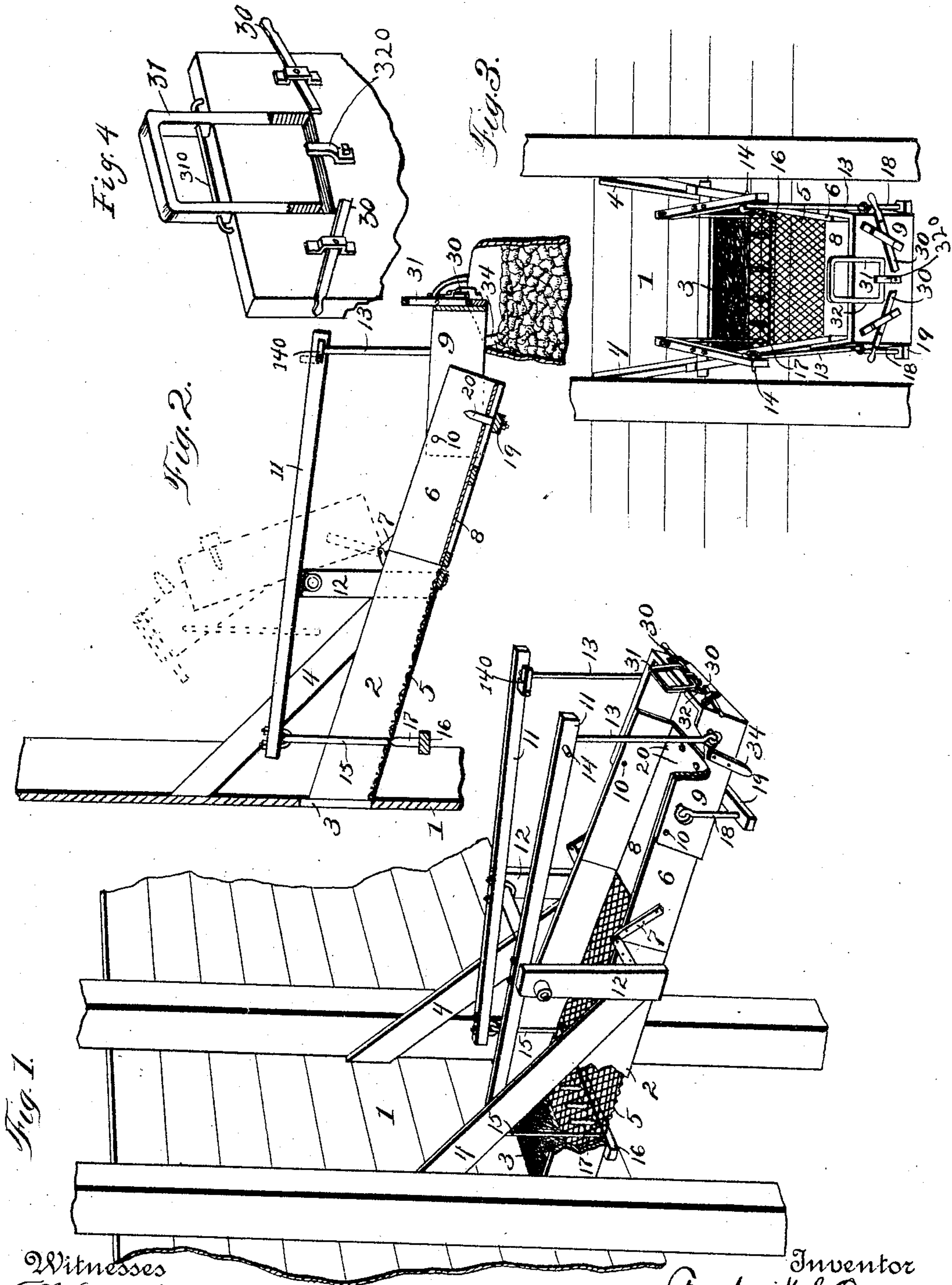


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F. S. CONVERSE.
COAL CHUTE.

APPLICATION FILED AUG. 2, 1901.



Witnesses
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UNITED STATES PATENT OFFICE.

FREDERIC S. CONVERSE, OF LYONS, NEW YORK.

COAL-CHUTE.

SPECIFICATION forming part of Letters Patent No. 779,529, dated January 10, 1905.

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To all whom it may concern:

Be it known that I, FREDERIC S. CONVERSE, a citizen of the United States, residing at Lyons, in the county of Wayne and State of New York, have invented certain new and useful Improvements in Coal-Chutes, of which the following is a specification.

This invention relates to chutes adapted for delivering coal or other granular substances, and pertains more particularly to the means for automatically checking the flow of the coal therein.

To this end the invention consists, broadly, in a chute-gate composed of fingers and in the employment with a slightly-inclined open-topped chute of a gate rising nearly vertically upward through the holes in the bottom of the chute to check the flow of granular substance along the latter in such a way that the movement of the gate into its closed position can never be prevented by the substance in the chute.

The invention as set forth in the following specification also consists in the employment, in connection with the chute, of two upwardly-moving gates or stops operating simultaneously and oppositely and a yoke connected with one of them and carrying the bag-holding devices; and it consists specifically in the details of construction for carrying out the general idea, all as hereinafter more fully described and claimed, and as illustrated in the drawings, wherein—

Figure 1 is a perspective view of this device, partly broken away, showing it as it appears when in use, but omitting the coal and the bag. Fig. 2 is a longitudinal section showing the device with its parts in position just as the bag is about to be removed, and this view shows in dotted lines how the chute can be folded. Fig. 3 is an outer end elevation with the bag removed. Fig. 4 is a detail further illustrating the bag-holding mechanism.

In the accompanying drawings the numeral 1 designates the bin, and 2 is the inner end of a chute leading outward and downward from a delivery-aperture 3 in said bin and supported by braces 4. The bottom 5 of this portion of the chute is preferably of wire-netting of the proper mesh to permit screenings and

fine coal to fall through, although this feature may be omitted.

6 is the outer end of the chute, hinged at 7 to the inner end and preferably having a solid bottom 8.

9 is a yoke pivoted at 10 to the outside of the outer end 6 of the chute and extending beyond the outer extremity of said chute, as best seen in Fig. 2.

11 11 are levers pivoted on supports 12, rising from the inner end 2 of the chute, and 13 designates rods connected with the yoke and having removable connection, as by out-turned ends 14, passing through the outer ends of said levers and held there by buttons 140. To the inner ends are attached rods 15, connected beneath the chute by a bar 16, from which rise teeth 17, passing upwardly through the wire-netting 5 or the bottom of the inner end of the chute and forming when elevated a gate or stop for the coal. 18 designates similar rods depending from the yoke and connected at their lower ends by a bar 19, and 20 designates teeth rising from this bar and passing upward through the bottom of the outer end of the chute, so as to form another gate or stop at that point.

It follows that when in use, as shown in Fig. 1, the inner gate is raised to check the flow of the coal while the yoke and the outer gate are lowered; but when said yoke is raised, as seen in Fig. 2, it raises the outer gate and depresses the inner one, so that the coal flows down the chute against the outer gate. The distance between the two gates is such that the coal which accumulates between them is about sufficient in volume to fill one bag. When not in use, the rods 13 are detached at their points 14 of removable connection with the levers 11, and the entire outer end 6 of the chute is swung upward to the position shown in dotted lines in Fig. 2.

In connection with the above-described mechanism for delivering coal or the like in charges of predetermined size or volume I preferably employ the following mechanism for attaching and detaching a bag or the like, both because this mechanism is convenient for that purpose and because its use permits the rocking of the levers to apportion off the

coal in charges. To the outer extremity of the yoke are pivoted two levers 30, whose inner extremities when depressed are adapted to be held down by a suitable frame-shaped handle 31, which is itself pivoted to the yoke 9 by a staple 310. As best seen in Fig. 4, this handle 31 when swung inward at its lower end fits into a groove 32 in the end of the yoke, at which time the inner ends of the levers can move upward past it, but when swung outward at its lower end the latter strikes a stop 320, and in this position it holds said inner ends depressed. At such time the outer ends of the levers are raised, as seen in Fig. 3, so as to engage handles or ears on the bag or other receptacle, or they might be stuck through the fabric thereof, and it is obvious that when these levers assume the opposite position the bag will slip off.

34 is a rib (or it might be pins) depending from the yoke to hold the mouth of the bag open.

With the parts of the chute standing in position as shown in Fig. 2 the empty bag is attached. The operator grasping the outer ends of the levers 30 depresses the yoke and bag until the parts of the chute stand as shown in Fig. 1, and the charge of coal below the uppermost gate then runs into the bag. The handle 31 is then manipulated to detach the filled bag and the parts again made to assume the position shown in Fig. 2, when a second charge of coal runs down the chute to the lowermost gate. This operation is repeated until the bags have all been filled, when the chute is turned back, as seen in Fig. 2 in dotted lines.

What is claimed as new is—

1. A chute-gate consisting of fingers passing up through the material from the bottom to cut off the supply; combined with a beam for supporting them.

2. A chute including a plate provided with openings; combined with a gate including fingers passing through said openings.

3. A chute-gate comprising fingers and a beam for supporting them; combined with a lever for operating the beam, and a plate.

4. A chute for granular substances having an open top; combined with a gate therefor consisting of a series of straight and substantially vertical fingers disposed in a row transverse to the length of the chute and rising through its bottom, a beam supporting them, and means for moving said beam.

5. An inclined chute for granular substances having a reticulated bottom; combined with a gate therefor consisting of a single row of upright fingers rising in substantially a vertical line through the meshes of the bottom of the chute.

6. An inclined chute for granular substances having an open top; combined with a gate therefor consisting of a transverse row of upright fingers rising in substantially a vertical

line through openings in the bottom of the chute, and means for supporting them.

7. An inclined chute for granular substances; combined with a gate therefor consisting of a series of fingers rising in substantially a vertical line through the bottom of the chute.

8. An inclined chute for granular substances having an open top; combined with a gate therefor consisting of a series of fingers rising in substantially a vertical line through the bottom of the chute.

9. An inclined chute for granular substances having an open top and a reticulated bottom; combined with a gate therefor which rises in substantially a vertical line through the bottom of the chute.

10. An inclined chute for granular substances having a reticulated bottom; combined with a gate therefor consisting of teeth rising through the bottom of the chute.

11. An inclined chute for granular substances having side bars, an open top, and a reticulated bottom; combined with a gate therefor consisting of a row of teeth, and means for causing them to rise simultaneously through a reticulated bottom of the chute.

12. An inclined chute for granular substances having a reticulated bottom; combined with a gate consisting of a row of teeth adapted to rise through said reticulated bottom of the chute, a cross-bar supporting said teeth in parallelism, and means for moving the cross-bar vertically.

13. An inclined chute for granular substances having side bars and a bottom; combined with gates respectively near the upper and lower ends of the chute and adapted to move upwardly through its bottom, and means for causing simultaneous and opposite movements of said gates.

14. An inclined chute for granular substances having side bars, a reticulated bottom, and an open top; combined with gates consisting of rows of teeth and located respectively near the upper and lower ends of the chute, cross-bars supporting said teeth in parallelism, and means for moving said cross-bars vertically, as and for the purpose set forth.

15. An inclined chute for granular substances having side bars and a bottom; combined with gates respectively near the upper and lower ends of the chute and adapted to move upwardly through its bottom, levers pivotally supported between their ends on said chute, and connections between their extremities and said gates whereby the latter are simultaneously and oppositely operated.

16. An inclined chute for granular substances having side bars and a bottom; combined with gates respectively near the upper and lower ends of the chute and adapted to move upwardly through its bottom, a yoke pivoted to the outer end of the chute and supporting the outer gate, and centrally-pivoted

levers whose extremities are connected with the inner gate and with said yoke, whereby the two gates are caused to move simultaneously and oppositely.

5 17. A downwardly-inclined chute whose inner and outer ends are connected by hinges, gates near the extremities of the chute each comprising a cross-bar beneath the bottom thereof and teeth rising through the latter, 35
0 and a yoke pivoted outside the lower end of the chute; combined with rods connecting the lower cross-bar with the yoke, centrally-pivoted levers, rods connecting their inner ends with the inner cross-bar, and other rods piv-
5 oted to the yoke and detachably connected with the other ends of said levers.

18. A downwardly-inclined chute, a yoke pivoted to its outer end, and oppositely-moving gates near its upper and lower extremities; combined with bag-holding devices carried by said yoke, substantially as described.

19. A downwardly-inclined chute, a yoke pivoted to its outer end, and oppositely-moving gates near its upper and lower extremities; combined with two levers pivoted to the 5
end of the yoke with their pointed ends projecting beyond its sides, means for holding the inner ends of these levers depressed, and

ribs for engaging the mouth of the bag, substantially as described. 30

20. A downwardly-inclined chute, a yoke pivoted to its outer end, and oppositely-moving gates near its upper and lower extremities; combined with two levers pivoted to the end of the yoke with their pointed ends projecting beyond its sides, and a frame-shaped 35
handle pivoted to the end of the yoke and adapted to be housed in a groove therein or to be swung outward over the inner ends of said levers. 40

21. The combination with a chute, and a yoke projecting beyond its outer end; of ribs depending from said yoke, levers pivoted to its outer end with their outer extremities projecting beyond its sides, and a frame-shaped 45
handle pivoted to the yoke and detachably holding said levers in position to keep their outer ends raised above a horizontal, substantially as described.

In testimony whereof I affix my signature in 50
presence of two witnesses.

FREDERIC S. CONVERSE.

Witnesses:

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