(No Model.) 2 Sheets—Sheet 1.

T. E. MURRAY.

CONSTRUCTION OF BINS OR POCKETS FOR CONTAINING COAL, GRAIN, &c.

No. 490,258. Patented Jan. 17, 1893.

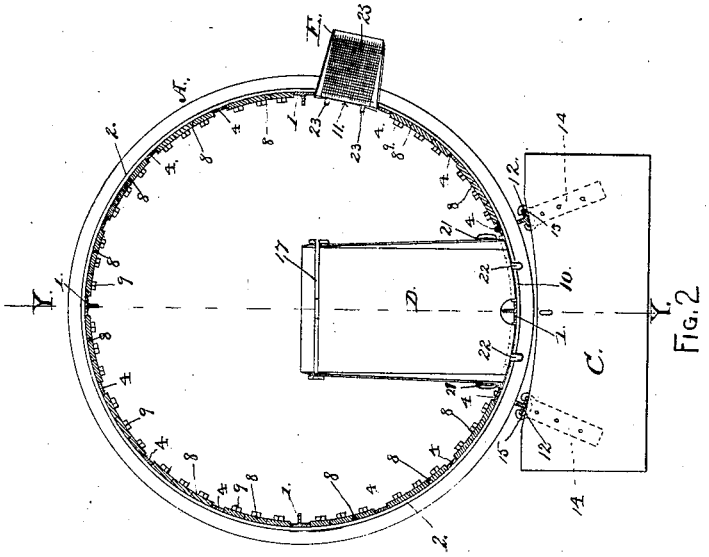

FIG. 2.

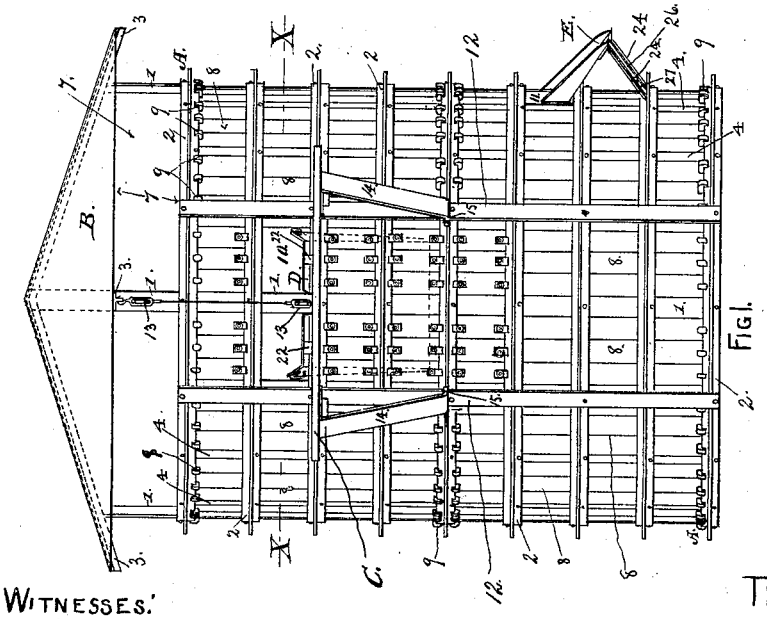

FIG. 1.

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Alice Hathorne.

INVENTOR:
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by William W. Low.
Attorney.

(No Model.)

2 Sheets—Sheet 2.

T. E. MURRAY.

CONSTRUCTION OF BINS OR POCKETS FOR CONTAINING COAL, GRAIN, &c.

No. 490,258. Patented Jan. 17, 1893.

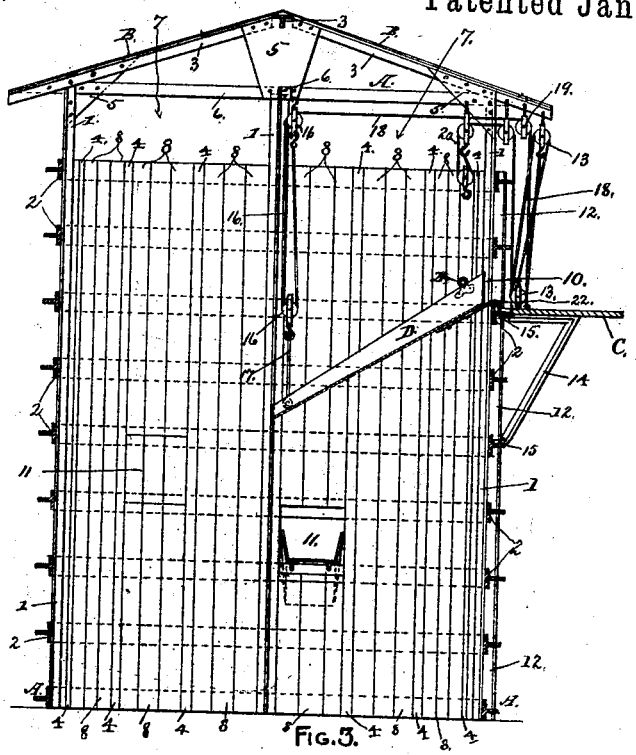

FIG. 3.

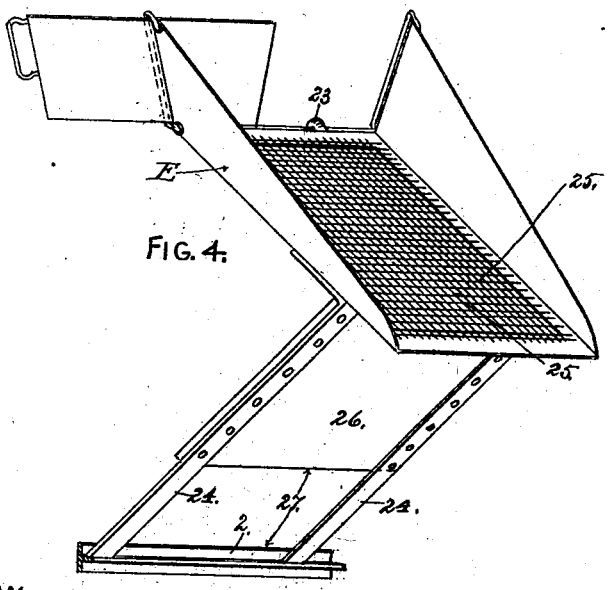

FIG. 4.

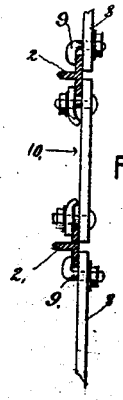

FIG. 5.

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UNITED STATES PATENT OFFICE.

THOMAS E. MURRAY, OF ALBANY, NEW YORK, ASSIGNOR OF ONE-HALF TO WILLIAM McEWAN, OF SAME PLACE.

CONSTRUCTION OF BINS OR POCKETS FOR CONTAINING COAL, GRAIN, &c.

SPECIFICATION forming part of Letters Patent No. 490,258, dated January 17, 1893.

Application filed October 25, 1892. Serial No. 449,974. (No model.)

To all whom it may concern:

Be it known that I, THOMAS E. MURRAY, of the city and county of Albany, in the State of New York, have invented new and useful Improvements in the Construction of Bins or Pockets for Containing Coal, Grain, and other Material, of which the following is a specification.

My invention relates to the construction of receptacles for the storage and delivery of coal and other materials in large quantities, and it is specially designed for use on wharves, for receiving cargoes from vessels, and at railway stations, for receiving loads of coal and other material directly from the cars, and render the contents of the receptacle in condition for an easy deliverance therefrom.

The object of my invention is to provide facilities for handling coal, grain, and other similar commodities, and for transferring the same to means for transportation at a slight cost and in an expeditious manner, and I attain this object by the means illustrated in the accompanying drawings which are herein referred to and form part of this specification.

In said drawings, Figure 1 is a front elevation of my bin; Fig. 2 is a horizontal section of the same at the line X X; Fig. 3 is a central vertical section at the line Y Y; Fig. 4 is a detached and enlarged perspective view of the discharge chute; and Fig. 5 is an enlarged detail view of the fastenings for the removable sections of lining.

As represented in the drawings, A designates the metallic framing of my bin which is preferably made in a cylindrical form with its central axis in a vertical position; said framing is preferably formed of the uprights, 1, hoops, 2, and rafters, 3, all of which are preferably formed of T-iron and secured together so that the hoops 2 will be spaced at practically equal distances, said hoops being arranged horizontally and parallel to each other; intermediately between the uprights 1 a series of metallic ribbons, 4, are secured in vertical positions to the hoops 2 at regular intervals so as to break the spaces between the uprights 1 into openings of uniform size or practically so. The rafters 3 are secured to the upper ends of the uprights 1 by means of the plates, 5, and to the latter a series of tie-bars, 6, are secured to give stability to the structure. A roof, B, is attached to the rafters 3, to form a covering for the bin; said roof is preferably made coniform and is made sufficiently large in diameter to form eaves that will project beyond the body of the bin sufficiently to prevent drippings from the roof from entering a space, 7, which is left between the upper hoop 2 and the roof B. Between the ribbons 4, and between said ribbons and uprights 1, a lining, 8, is secured against the inner face of the hoops 2; said lining is preferably made of wooden planks which are secured by means of clamp-bolts, 9, or other suitable means for securing said planks in place. At certain places portions of said lining are made detachable to form intake-openings, 10, and delivery openings, 11, to facilitate the filling and removal of the commodities into and out of the interior of the bin. At one or more sides of the exterior of the structure, vertical guides, 12, should be secured in positions that will correspond to each intake-opening 10, and on said guides an adjustable platform or scaffold, C, is fitted to slide in a vertical direction, so as to be adjusted at a proper elevation to afford a suitable standing place for the operative who attends to the filling in of the coal or other commodities into the bin. A suitable "block and fall," 13, is provided for raising and lowering said scaffold, one of said blocks being attached to one of the rafters 3, or other convenient stationary point at the top of the structure, and the other block being connected to the scaffold C. Brackets, 14, are secured to said scaffold and are provided with openings, 15, which are fitted to slide freely on the guides 12 to effect the adjustment of the scaffold at the required height.

D designates an adjustable charging-chute which is arranged in the interior of the bin for the purpose of conveying the coal or other commodity to a central position in said bin, so as to form a conical pile which will cause an equal distribution in every lateral direction. To the inner end of said chute a "block and fall," 16, is connected so as to afford the means of adjusting said chute to a required height and to vary the angle of inclination of the chute to suit circumstances.

The lower block of the pair is connected to a yoke, 17, which, spanning said chute, is pivoted to the sides of the chute, so as to leave a clear space through the latter, the upper block is connected to an adjacent rafter 3, and the hauling-part, 18, of the fall is carried over a pulley-block, 19, suspended to a rafter, so as to render said hauling-part accessible to an operative on the scaffold C. To the outer end of the chute D a second "block and fall," 20, is arranged to be connected to an eye, 21, when the outer end of said chute is to be shifted to a different elevation, the upper block is connected to the same rafter that the upper block of the fall 16 is connected. Hooks, 22, are fastened to the outer end of the chute D to engage over the upper edge of a hoop 2 which at the time forms the lower side of an intake-opening 10; said hooks engaging with the hoop in such manner that the outer end of the chute D will thereby be retained in its place during the time the chute remains in a stationary position and while the angle of its inclination is being changed as occasion may require.

E designates a detachable delivery-chute which, when the sections of lining 8 are removed to open the delivery-openings 11, can be fixed in position at the lower side of said opening to guide the coal or other commodity to the place at which it is to be discharged; said chute is provided with hooks, 23, which are fitted to engage with a hoop 2 at the lower side of the delivery-opening, and it is also provided with braces, 24, at its lower end; said braces being adapted to bear upon an adjacent lower hoop so as to support the lower end of said chute in position while in use for delivering the commodity stored in the bin. When coal is to be delivered from the bin, I preferably use a delivery-chute having screen, 25, to allow the coal-dust to fall therethrough, and, in order to conduct the coal-dust away from the point where the coal is deposited, an inclined plate, 26, is secured to the upper part of the braces 24, so as to be joined to the lower side of the outer end of said chute, and, by terminating before reaching the lower end of the braces 24, forming a discharge-opening, 27, for the coal-dust; the inclination of the plate 26 directs the coal-dust toward the discharge opening 27, and the latter causes the coal-dust to be delivered in close proximity to the base of the bin.

My invention is operated in the following manner: When the bin is empty, or comparatively so, the sections of lining 8 between the guides 12, should be partially removed so as to allow the chute D to be lowered to the lowest available height that will obtain the required inclination for said chute; by so doing much unnecessary hoisting can be avoided; then, as fast as occasion requires, the chute D should be raised a sufficient distance to allow a continuance of the depositing of the coal or other commodity within the bin, but, before resuming the filling of the bin, the sections of lining 8 which have been removed must be restored to, and fastened in, their places, and this operation can be continued until the bin is filled to its greatest capacity. In removing the contents of the bin, a series of the delivery-openings 11 on the same level, but nearest the top of the pile of coal contained in the bin, can be opened simultaneously (so as to effect a rapid discharge of the contents of the bin,) and a delivery-chute E can be applied to each of said openings in the manner previously herein described.

The linings 8 need not necessarily be made of wooden planks, for it is obvious that sheet-metal can be substituted for the purpose with equally good effect, therefore I do not confine myself to any particular material for said lining.

What I claim as my invention and desire to secure by Letters Patent is—

1. A storage bin or receptacle made in a cylindrical form by means of a metallic frame composed of uprights, hoops, and rafters of T-bars secured together as herein described; said frame being provided with a roof and a lining; said lining having removable sections and arranged to leave an open-space between it and said roof, as and for the purpose herein specified.

2. A storage bin provided with guides on its exterior, and removable sections of lining between said guides, in combination with an adjustable platform fitted to move on said guides, as and for the purpose herein specified.

3. A storage bin provided with vertical guides on its exterior, removable sections of linings between said guides, and an adjustable platform fitted to move on said guides, in combination with an adjustable chute, D, arranged to extend from an opening in the side of said bin toward an interior portion of the latter, as and for the purpose herein specified.

4. A storage bin having delivery-openings 11 formed in its sides and removable sections or doors fitted to close said openings, in combination with a detachable delivery-chute E fitted to fasten at the lower side of said delivery opening, as and for the purpose herein specified.

THOMAS E. MURRAY.

Witnesses:
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S. B. BREWER.