(No Model.) 2 Sheets—Sheet 1.

W. B. WOODS & L. HENRY.

CHARGING BUGGY.

No. 603,751. Patented May 10, 1898.

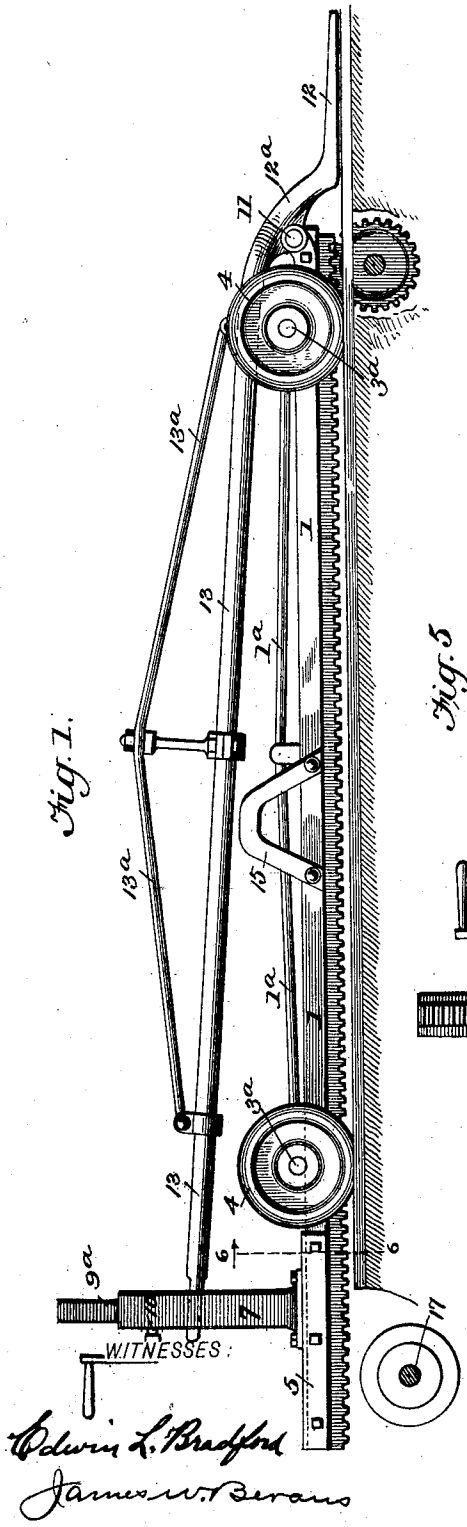


Fig. 1.

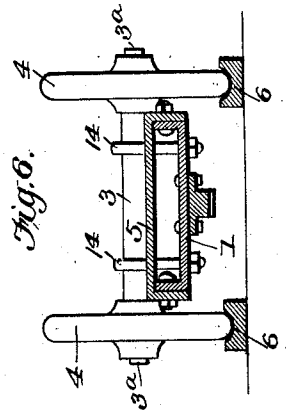


Fig. 6.

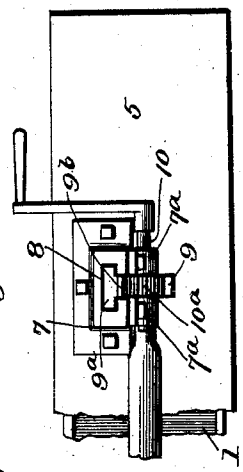


Fig. 5

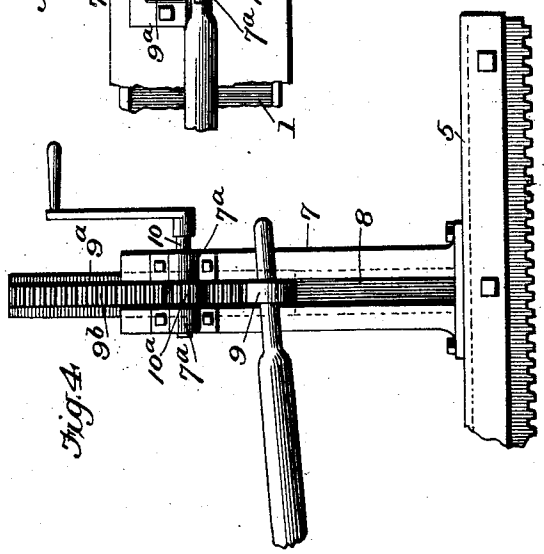


Fig. 4

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(No Model.) 2 Sheets—Sheet 2.

W. B. WOODS & L. HENRY.

CHARGING BUGGY.

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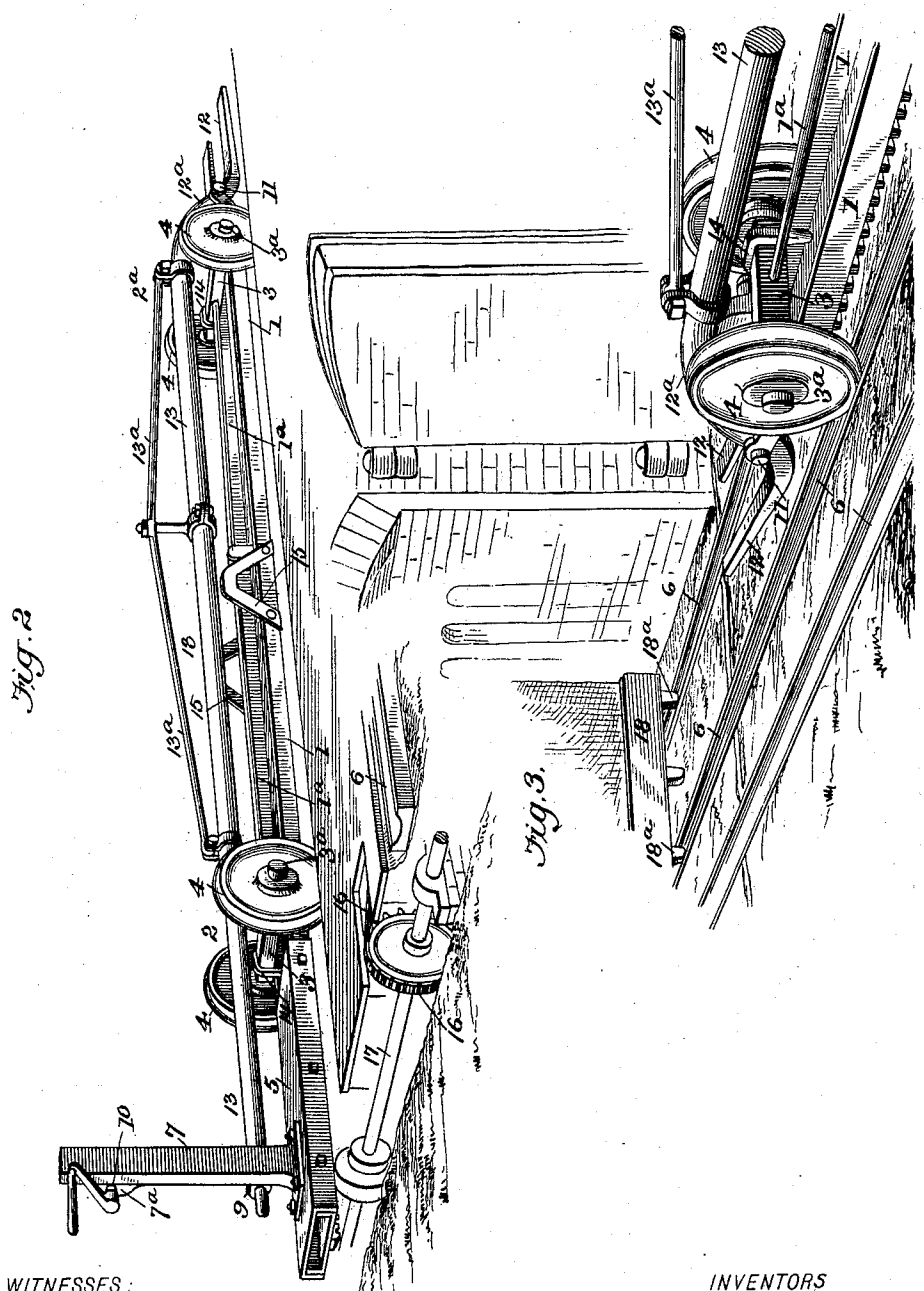


Fig. 2

Fig. 3.

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UNITED STATES PATENT OFFICE.

WILLIAM B. WOODS AND LYMAN HENRY, OF BRIDGEPORT, OHIO.

CHARGING-BUGGY.

SPECIFICATION forming part of Letters Patent No. 603,751, dated May 10, 1898.

Application filed September 2, 1897. Serial No. 650,418. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM B. WOODS and LYMAN HENRY, residing at Bridgeport, in the county of Belmont and State of Ohio, have invented a new and Improved Charging-Buggy, of which the following is a specification.

This invention relates to improvements in means for charging or uncharging annealing-boxes for tin-plate; and it primarily has for its object to provide a buggy or carrier which can be quickly moved into the furnace to deposit the boxes and also enter the furnace and pick up the boxes for uncharging.

Another object of this invention is to provide a charging-buggy, guideways therefor, and a simple means for operating the same to lift or set the boxes within the furnace, so arranged in relation to the furnaces that the same can be easily manipulated and positively and effectively serve for its intended purposes.

With other objects in view, which will hereinafter appear, the invention consists in the peculiar combination and novel arrangement of parts, such as will be first described and then be specifically pointed out in the appended claims, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view showing our invention applied for use, the same being shown with its handle and horn portions set to slide under the box. Fig. 2 is a similar view showing the handle-bar and horns set to their carrying position. Fig. 3 is a perspective view of the front end of the buggy and a portion of the furnace, illustrating the manner in which the furnace is charged. Fig. 4 is a face view, and Fig. 5 an end view, of the handle-adjusting means. Fig. 6 is a transverse section taken practically on the line 6 6 on Fig. 1.

Referring now to the drawings, in which like numerals indicate like parts in all the figures, 1 indicates a frame which in practice is of a length substantially that of the depth of the furnace into which the boxes are to be run. This frame is supported on a pair of trucks 2 2^a, one at the forward end of the frame and the other near the rearward end of the frame, such trucks each consisting of a heavy square cross-bar 3 3, the ends of which terminate in stub-shafts 3^a 3^a, on which the carrier-wheels 4 4 are mounted. The wheels 4 preferably have rounded tread or peripheral faces, whereby they will readily travel in the concaved trackways 6, which extend longitudinally outward from the furnace and run back into the furnace the full length thereof.

The object in providing grooved tracks is to hold the buggy to run true and avoid unnecessary lateral movement.

The rear end of the buggy-frame terminates in a platform 5, on the rear end of which is mounted a standard 7, the construction of which is best shown in Figs. 4 and 5, by reference to which it will be seen the same has a vertical guideway 8, in which is held to slide a box 9, having a shank 9^a fitting the guideway and its front or rack portion 9^b facing the slot 8^a of such guideway. The upper end of the standard has a bearing 7^a, in which is journaled a crank-shaft 10, having a cog-gear 10^a, held in mesh with the rack 9^b of the shank 9, as clearly shown.

11 indicates a transverse shaft journaled in the frame 1 at a point in advance of the front truck, on which is pivotally hung the hook-frame, which is adapted to be moved under the boxes and support the same during the operation of charging and uncharging. This frame consists of two or more forwardly-extending horns or arms 12 12, (through which the shaft 11 passes,) which merge at their rear in a C-shaped portion 12^a, which curves upward and extends over the shaft of the front truck and terminates in a handle-bar 13, which extends back the full length of the machine and has its rear end held in the sliding box 9, whereby it will be raised and lowered as the box is adjusted up or down.

To strengthen the handle-bar, the same has truss-rods 13^a, a truss-bar 1^a being also secured centrally of the main frame from one truck-bar to the other. The main frame is hung on the cross-bars by means of the pendent clip-irons 14 14, and such main frame has about midway its length yokes 15 15 to facilitate the lifting thereof by a suitable derrick or crane.

Any suitable means may be provided for driving the buggy into or out of the furnace—such as, for example, a continuous chain 16, connected to the buggy and run over a chain-

wheel at the front end and a similar wheel at the rear end mounted on a drive-shaft 17, driven in any desired manner.

Instead of using an endless chain operating below the buggy such buggy may be drawn back and forth by means of a small engine placed at the side between two furnaces.

The manner in which the invention operates is as follows: When it is desired to charge the furnace, the horns are set at their elevated position by moving the handle down. The box is then placed on the horns, power started, and the buggy run in to the desired point. The handle is then raised, which lowers the horns and allows the box 18, which has short legs 18^a, to rest on the floor of the furnace. The uncharging is done the same way. The handle is raised to lower the horns, which are run under the box. The handle is again lowered, boxes raised and run out, a suitable crane in practice being so disposed as to take the boxes from the buggy.

By referring now more particularly to Fig. 3 it will be seen the truck-wheels and the truckways are the same width as the distance between the legs 18^a of the boxes, the purpose of which is to cause the boxes to set with their legs on the trackway when in the furnace and project into the concaved trackway during the travel of the box. By this arrangement the boxes will be positively held from lateral movement on the horns and also remain in the position in which they are set in the furnace by the buggy, and thereby facilitate the uncharging operation.

Having thus described our invention, what we desire to secure by Letters Patent is—

1. A charging-buggy for annealing-furnaces, consisting of a traveling truck-frame, a box-support hinged to the main frame at a point in advance of the front truck said support having a rearwardly-extending handle, and mechanism held on the truck-frame for elevating and lowering the handle as specified.

2. A charging-buggy comprising a main frame having trucks at the front and rear end, a box-support hinged to the main frame at a point in advance of the front truck, said support consisting of forwardly-extending horns, and a rearwardly-extending portion projected over the main frame and terminating in a handle, and devices for raising and lowering the handle all being arranged substantially as shown and described.

3. A charging-buggy for annealing-furnaces, consisting of a frame substantially of a length equal to the depth of the furnace, having supporting-trucks, said frame having horns projected forwardly beyond the front truck, hinged to the main frame, said horns merging into a handle-bar extended over the main frame to the rear end thereof, and elevating and lowering devices mounted on the rear end of such frame connected with the end of the handle-bar, and means for moving the buggy in and out of the furnace as shown and for the purposes set forth.

4. In a machine for the purposes described, the combination with the main or truck frame, the hinged horns and the handle-bar, of the standard at the rear end, a support for the rear end of the handle held to slide on such standard, and hand-operated gear mechanism for raising and lowering such support all being arranged substantially as shown and for the purposes described.

W. B. WOODS,
LYMAN HENRY.

Witnesses.
H. L. COOKE,
S. B. ULLAM.