No. 676,930. Patented June 25, 1901.

E. F. WEES & W. H. MARTIN.

ASH REMOVER FOR BOILERS.

(No Model.) (Application filed Feb. 25, 1901.)

2 Sheets—Sheet 1.

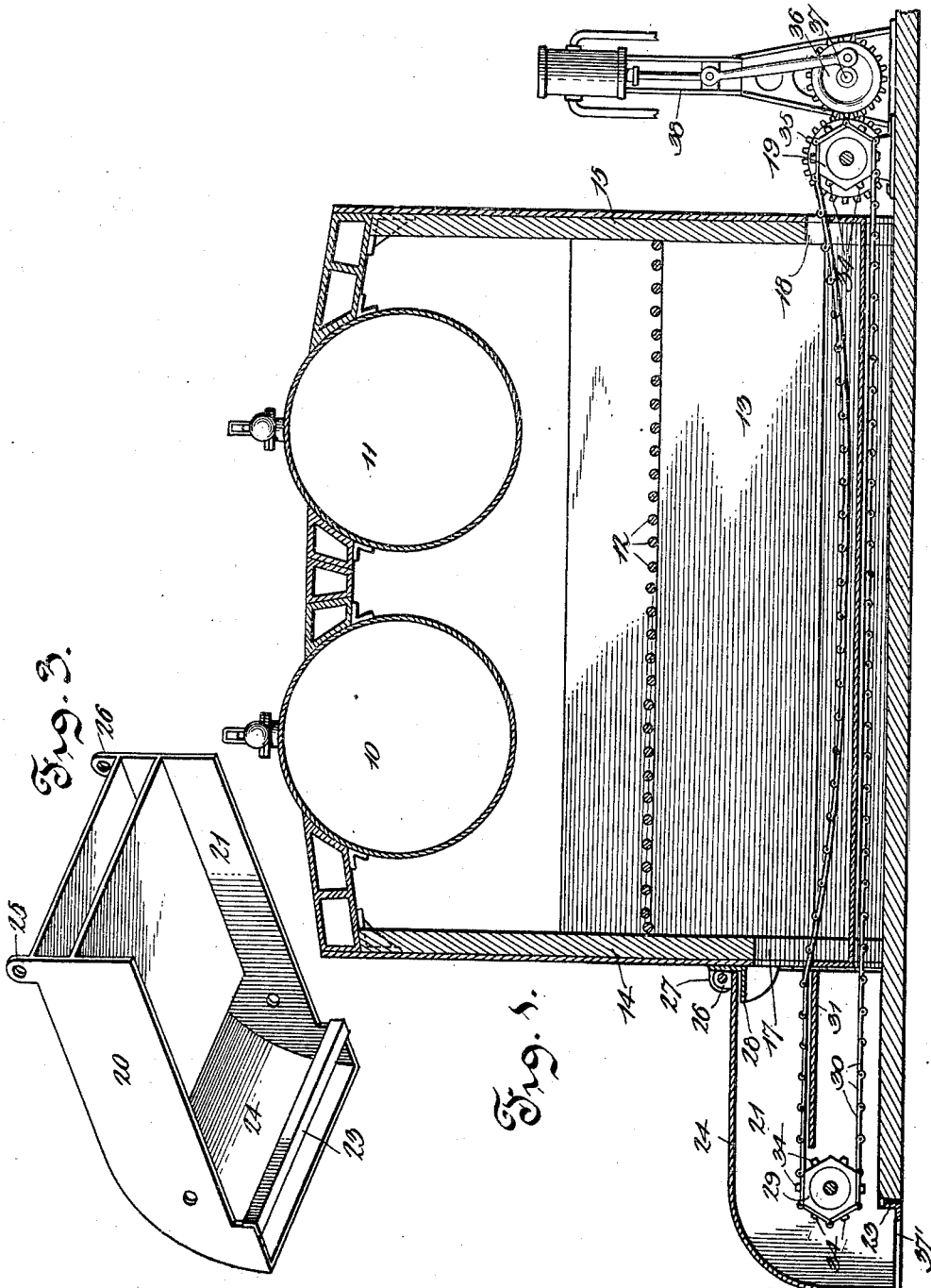

Fig. 2.

Fig. 3.

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Fig. 5.

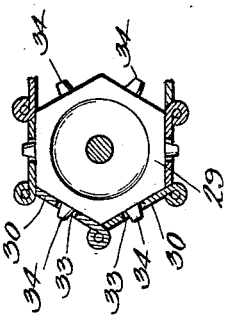


Fig. 4.

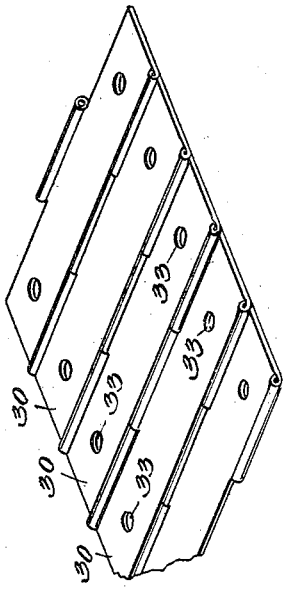
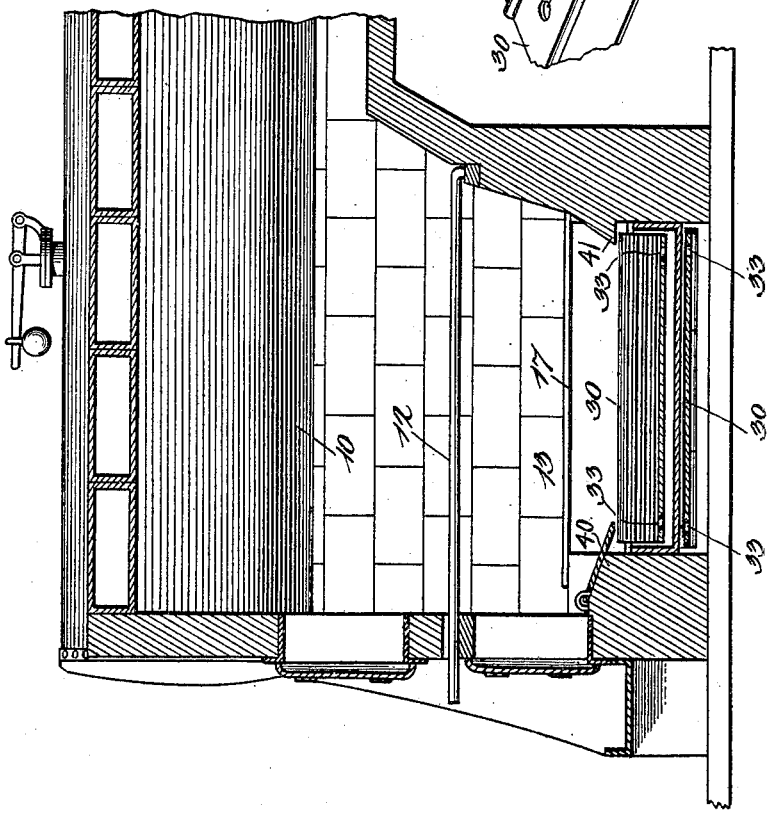


Fig. 2.



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UNITED STATES PATENT OFFICE.

ELIJAH FLEET WEES, OF POINT PLEASANT, WEST VIRGINIA, AND WILLIAM HARRY MARTIN, OF GALLIPOLIS, OHIO.

ASH-REMOVER FOR BOILERS.

SPECIFICATION forming part of Letters Patent No. 676,930, dated June 25, 1901.

Application filed February 25, 1901. Serial No. 48,850. (No model.)

To all whom it may concern:

Be it known that we, ELIJAH FLEET WEES, residing at Point Pleasant, in the county of Mason and State of West Virginia, and WILLIAM HARRY MARTIN, residing at Gallipolis, in the county of Gallia and State of Ohio, citizens of the United States, have invented a new and useful Ash-Remover for Boilers, of which the following is a specification.

This invention relates to ash-removers for boilers; and it has for one object to provide a construction particularly adapted for marine boilers, although it is well adapted for stationary boilers, and wherein the ashes will be conveyed laterally of the ash-pit and carried through the side of the ash-pit and deposited through a suitable chute, another object of the invention being to provide a simple and efficient construction with which the ashes may be quickly removed continuously or intermittently and wherein the chute may be moved into and out of its discharging position as occasion may require.

Additional objects and advantages of the construction will be evident from the following description.

In the drawings forming a portion of this specification, and in which like numerals of reference indicate similar parts in the several views, Figure 1 is a transverse section through a battery of two boilers and their furnace and ash-pit and showing the arrangement of the conveyer and discharge-chute. Fig. 2 is a section taken vertically between the two boilers. Fig. 3 is a detail perspective view showing the under side of the chute. Fig. 4 is a detail perspective view showing a portion of the carrying-belt. Fig. 5 is a section through one of the carrying-rolls and showing its engagement with the conveyer or carrying belt.

Referring now to the drawings, the present structure shows a battery of two boilers 10 and 11, mounted above a furnace having the grate-bars 12, and below which bars is the ash-pit 13, into which the ashes from the furnace fall in the usual manner. In the side walls 14 and 15 of the ash-pit are formed openings 17 and 18, and adjacent to the opening 18 and exteriorly of the ash-pit is a hexagonal drum 19 for a purpose to be presently explained.

To the outer face of the opposite wall 14 of the ash-pit is hinged a chute comprising side pieces 20 and 21, having their forward ends curved at the upper portions, and which side plates are continued downwardly at their forward ends and have a cross-bar 23 attached to the rear faces thereof to brace the plates; this downwardly-projecting portion forming a discharge-spout. The top of the chute is formed by a plate 24, which is disposed upon and is bent to conform to the upper and end edges of the side plates. The side plates of the chute have upwardly-projecting ears 25 and 26, which are pivoted to ears 27 upon the wall of the ash-pit, and projecting outwardly from the wall of the pit, above the opening 16 and just below the upper plate of the chute, is a guard-plate 28, which prevents ash from access to the interspace between the end of the top plate and the wall of the pit and which would likely prevent efficient pivotal movement of the chute. In the forward portion of the chute and projecting slightly beyond the discharge-spout thereof is mounted a second hexagonal drum 29, the axis of which is parallel with that of the first drum, and disposed upon these two drums is an endless belt or chain comprising metal plates 30, having their adjacent edges hinged together, and each plate is of a width substantially equal to a face of one of the rollers, so that they may successively lie on the faces of the rollers as the latter are operated to feed the belt, it being understood that the belt is passed through the openings 16 and 17 and transversely through the ash-pit and is to be moved in a direction to discharge into the spout of the chute.

To prevent sagging of the upper side of the belt in the chute, a plate 31 is disposed transversely therein between the drum and the rear end of the chute, and when the chute is raised to its inoperative position this plate holds the lower side of the belt from contact with the upper side, so that locking of the two sides is prevented. Perforations 33 are formed in the plates of the belt adjacent to the ends thereof, and these perforations receive pins 34 upon the faces of the drums to insure movement of the belt by rotation of a drum.

The drum 19 is the belt-driving drum and

is provided with a gear 35, with which engages a gear 36 on the shaft 37 of a steam-engine 38, which may be fed from the boilers 10 and 11. As this engine operates it rotates the drum 19 and the belt is fed with its upper side in the direction of the chute, so that the ashes that drop onto the belt are conveyed laterally and deposited into the spout. In the present instance the spout is shown positioned to discharge through an opening 37', which may be an opening in the deck of the stoke-hole of a vessel or may open into a pit, if the boilers be stationary.

The walls of the ash-pit are provided with slanting shoulders 40 and 41, of which the shoulder 41 projects over and close to the upper side of the conveyer-belt, while upon the shoulder 40 is pivoted a plate which projects over and close to the belt, so that the ash that may not drop directly upon the belt may readily slide thereonto. By pivoting the plate it may be raised to permit of application and removal of the parts therebelow.

It will be noted that while the upper side of the belt runs through the ash-pit the lower side thereof runs through a passage beneath the bottom of the ash-pit and the deck of the vessel or other support for the furnace and that the upper side of the belt is permitted to sag. The object of the arrangement is to permit of the upper side of the belt that receives and conveys the ashes to move through the water that lies at all times in the bottom of the pit, and so extinguish the cinders.

While in the present instance but two boilers are shown, it will be understood that the apparatus may be used in connection with a battery of any number of boilers.

What is claimed is—

1. The combination with a furnace having an ash-pit having openings in its side walls and adapted to hold water in the bottom portion thereof below said openings, of supporting-drums disposed exteriorly of the pit, and a conveyer-belt engaged with the drums and passed through the openings of the walls of the pit and transversely through the pit to receive and convey ashes through a side of the pit, the lower side of the belt being returned below the pit and the upper side of the belt being unsupported between the sides of the pit to permit it to sag into the water in the pit.

2. The combination with a furnace having an ash-pit provided with openings in its side walls, of a chute hinged adjacent to an opening, a supporting-drum mounted in the chute, a supporting-drum disposed exteriorly of the pit and adjacent to the opposite opening, and a conveyer-belt passed through the openings and transversely through the pit and engaged with the drums.

3. The combination with a furnace having an ash-pit provided with openings in its side walls of a chute hinged adjacent to an opening for movement into and out of operative relation to said opening to receive therefrom, a drum mounted in the chute, a second drum mounted adjacent to the opposite opening and exterior to the pit, a belt engaged with the drums, a plate disposed transversely of the chute and adjacent to the under face of the top side of the belt, and means engaged with one of the drums for feeding the belt.

4. The combination with a boiler having an ash-pit provided with openings in its opposite sides and adapted to hold water in the bottom portion thereof below said openings, a conveyer-belt passed through the openings and transversely through the pit, supporting-drums for the belt, a shoulder in the pit projecting over an edge of the belt to deflect ashes thereto, and a hinged plate disposed to project over the opposite edge of the belt to deflect ashes thereto, the belt being unsupported between the sides of the pit to permit it to sag into the water in the pit and being returned below the pit.

In testimony that we claim the foregoing as our own we have hereto affixed our signatures in the presence of two witnesses.

ELIJAH FLEET WEES.
WILLIAM HARRY MARTIN.

Witnesses:
O. S. WOOD,
J. H. HYSEY.