No. 796,934.

PATENTED AUG. 8, 1905.

A. C. RYAN & R. DAAE.

FURNACE AND SOAKING PIT COVER.

APPLICATION FILED JAN. 25, 1905.

2 SHEETS—SHEET 1.

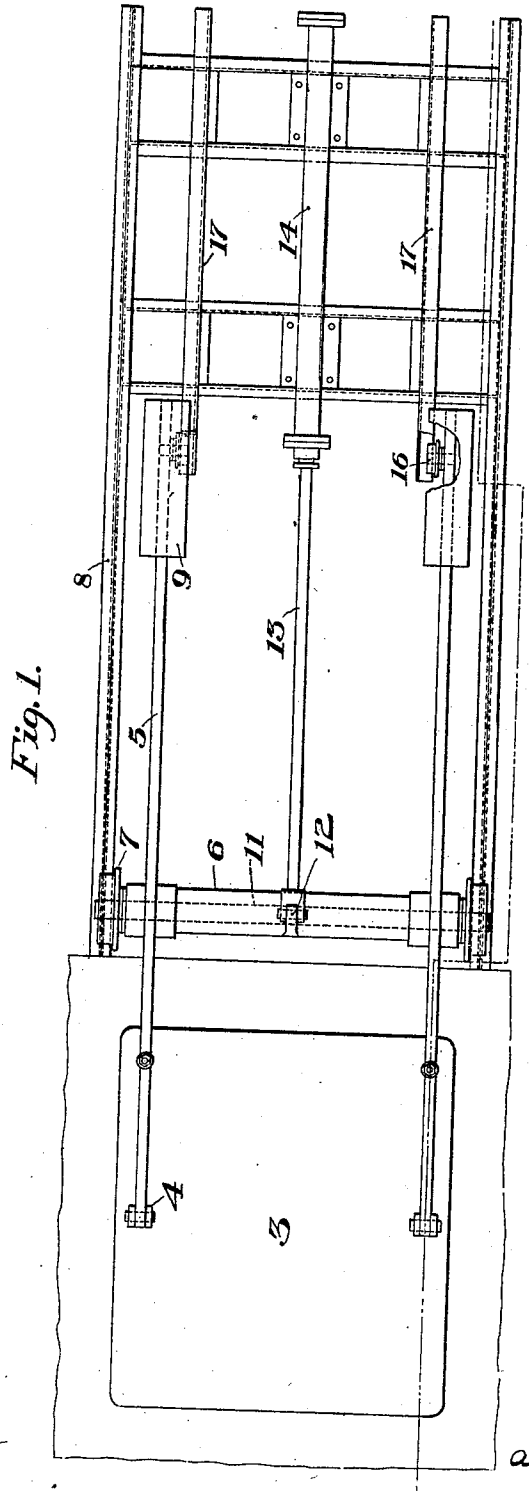



Fig. 1.

WITNESSES

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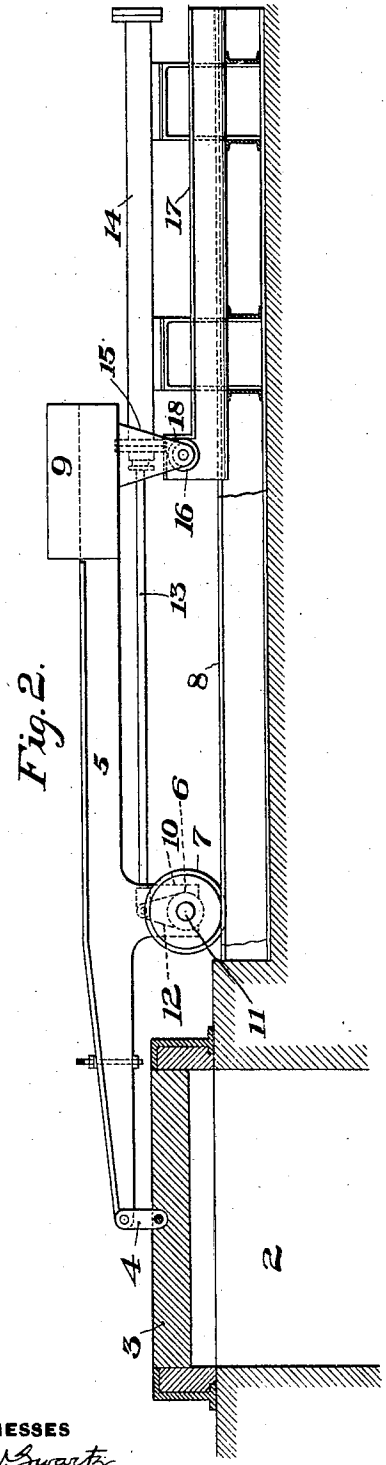



Fig. 2.

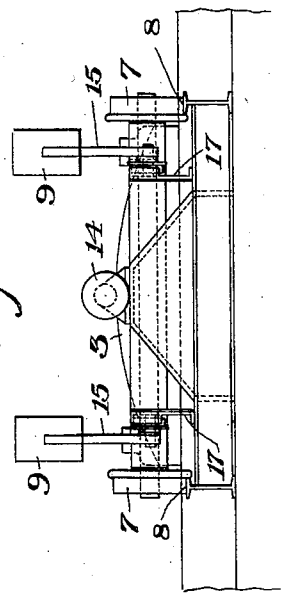



Fig. 3.

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# UNITED STATES PATENT OFFICE.

ALLEN C. RYAN AND REINHARDT DAAE, OF ENSLEY, ALABAMA.

## FURNACE AND SOAKING-PIT COVER.

No. 796,934. Specification of Letters Patent. Patented Aug. 8, 1905.

Application filed January 25, 1905. Serial No. 242,703.

*To all whom it may concern:*

Be it known that we, ALLEN C. RYAN and REINHARDT DAAE, citizens of the United States, residing at the city of Ensley, in the county of Jefferson and State of Alabama, have invented a new and useful Improvement in Furnace and Soaking-Pit Covers, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a plan view illustrating our improvement. Fig. 2 is a side elevation, partly in section, and Fig. 3 is a rear end view.

Like symbols of reference indicate like parts wherever they occur.

Our invention relates to an improvement in devices for lifting and moving covers for soaking-pit and other furnaces; and it has for its object appliances by means of which the cover or other device may be first lifted and then removed or moved to position and then lowered, according to whether the soaking-pit or the furnace is to be uncovered or covered.

We will now describe our invention, so that others skilled in the art may manufacture and use the same.

In the drawings, 2 represents the mouth of the soaking-pit, which is provided with a cover 3, of any suitable form and material, adapted to close the mouth of the pit. Pivoted to the upper face of this cover 3 is a link or links 4, preferably one at each side of the cover. These links 4 at their outer ends are pivoted to the ends of the rocking beams 5. These beams are connected with each other by a suitable cross-brace 6, forming a frame or carriage which is mounted on the truck 7, which runs on the track 8. The rear ends of the beams 5 are provided with counterweights 9, which together are somewhat less in weight than would be sufficient to counterbalance or raise the soaking-pit cover 3. The beams 5 are elevated above the truck 7, owing to the fact that the truck is journaled not directly to the beams, but to housings 10, extending from the lower portion of the beams and integral therewith. Extending between these housings is the axle 11, which is journaled in the housings. Keyed to the cross-brace 6 is an arm 12, and pivoted to the outer end of the pitman is a piston-rod 13, extending from the fluid-pressure cylinder 14, which cylinder is fixed or stationarily secured. The piston-rod is therefore connected to the frame or carriage eccentrically to its axis, so that the first motion imparted to the frame will be a tilting motion. At the rear end of the beams 5, extending downwardly therefrom, are housings 15, journaled in the lower end of which are wheels or rollers 16, adapted to bear upwardly against a track 17. The weight of the soaking-pit cover 3, being greater than the counterweights 9, keeps the wheels bearing normally against the track 17. At the forward end of the track 17 is an upwardly-extending offset or pocket, into which the wheels 16 pass when they reach the end of the track 17.

The operation is a follows: When it is desired to remove the cover of the soaking-pit, fluid-pressure is allowed to enter the forward end of the cylinder 14, which causes the piston-rod 13 to draw on the pitman 12, and as the pitman is keyed to the cross-brace 6 the effect of the pull is to first tilt the rocking beams 5 on the axle, which lowers the rear end of the beams, and consequently also lowers the wheels 16 in pocket 18, bringing them down to the level of the track 17. This tilting lifts the soaking-pit cover 3 out of and above the mouth of the soaking-pit. By continuing the movement of the piston-rod 13 the truck 7 and the beams 5 carried thereby are caused to travel along the track 8, thus removing the soaking-pit cover away from the mouth of the pit. To replace the cover in the mouth of the pit, the operation is reversed, the piston-rod moving forward and the wheels 16 traveling along the track 17 and the truck 7 moving on the rails 8. The soaking-pit cover, which is held in its elevated position, is carried over the mouth of the soaking-pit, and as the wheels 16 reach the end of the track 17 they enter the pocket 18, allowing the cover to sink into the mouth of the pit through the force of gravity.

Our invention may be applied to other covers than those for soaking-pits and to other devices where a lifting or lowering movement is required at the beginning or end of a horizontal movement of translation.

Although we have shown and described our improvement as embodied in certain mechanical appliances which are well-adapted to the purposes for which they are intended, we do not desire to limit ourselves to the same.

The advantages of our invention will be appreciated by those skilled in the art. As the first movement of the cover is in a vertical direction until it has fully cleared the

mouth of the pit, all running or scraping which would wear away or injure the mouth of the pit or the cover is avoided, and at the same time it obviates the use of cranes or other cumbrous appliances.

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

1. The combination of a cover for furnaces and soaking-pits with a beam or frame counterbalanced at the end remote from the cover, and devices for first tilting the beam or frame and then translating the same; substantially as described.

2. The combination of a cover for furnaces or soaking-pits with a tiltable beam or frame, and a motor connected with the beam or frame eccentrically of its pivot, whereby movement of the motor will first tilt the beam or frame and then impart a translatory movement thereto; substantially as described.

3. The combination of a cover for furnaces or soaking-pits with a beam or frame the outer end of which is pivotally connected with the cover, a counterweight at the other end of the beam or frame, and devices for tilting the beam or frame and then imparting a translatory movement thereto, whereby the cover is first lifted from the mouth of the pit and then removed from the same; substantially as described.

4. The combination of a cover for furnaces or soaking-pits with a beam or frame mounted on a truck, a pitman connected with the beam or frame eccentrically to the axle of the truck, and a motor connected with the pitman, and adapted to first impart a tilting movement to the beam or frame and then a translatory movement; substantially as described.

5. The combination of a cover for furnaces or soaking-pits with a beam or frame mounted on a truck, a pitman connected with the beam or frame eccentrically to the axle of the truck, a motor adapted to impart a tilting movement to the frame and then a translatory movement, a guideway having a pocket or offset, and a guide extending from the rear end of the beam, and adapted to travel in the guideway; substantially as described.

6. The combination of a cover for furnaces or soaking-pits with a pivotally-mounted beam or frame connected to the cover, and a motor connected therewith and adapted to impart to the beam or frame an initial tilting motion to raise the cover from its seat prior to any translatory motion thereof, and then a translatory motion; substantially as described.

7. The combination of a cover for furnaces or soaking-pits with a pivotally-mounted beam or frame connected to the cover, and a motor connected therewith and adapted to impart to the beam or frame an initial tilting motion to raise the cover from its seat prior to any translatory motion thereof, and then a translatory motion, and a guideway for the beam or frame; substantially as described.

8. The combination of a cover for furnaces or soaking-pits with a pivotally-mounted beam or frame connected by a loose connection to the cover, and a motor connected therewith and adapted to impart to the beam or frame an initial tilting motion to raise the cover from its seat prior to any translatory motion thereof, and then a translatory motion; substantially as described.

In testimony whereof we have hereunto set our hands.

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Witnesses:
E. E. McCormack,
Sam Matson.