

G. W. MORRIS.
ENGINE SETTING FOR HORIZONTAL BOILERS.
APPLICATION FILED MAY 1, 1908.

941,460.

Patented Nov. 30, 1909.
3 SHEETS—SHEET 1.

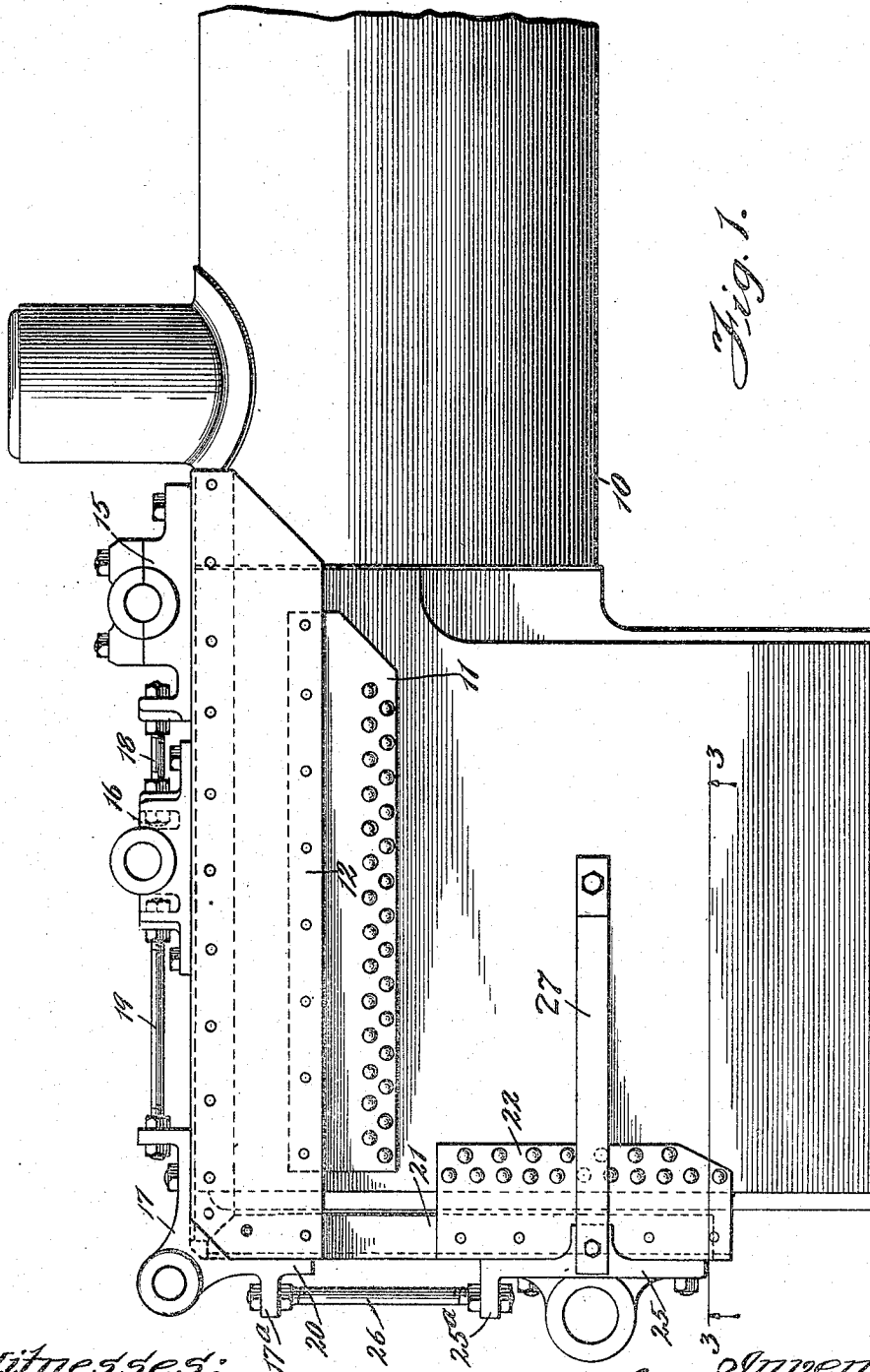


Fig. 1.

Witnesses:

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G. V. Thomas Jr.

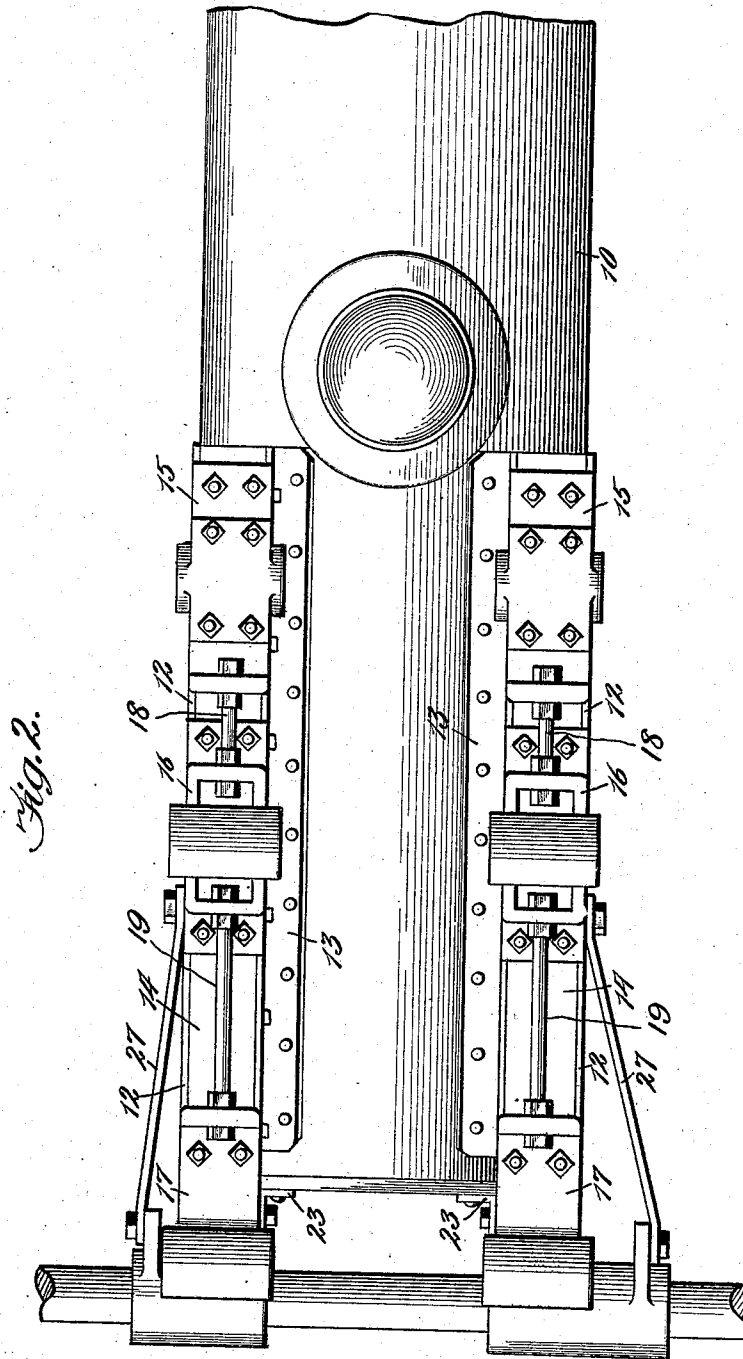
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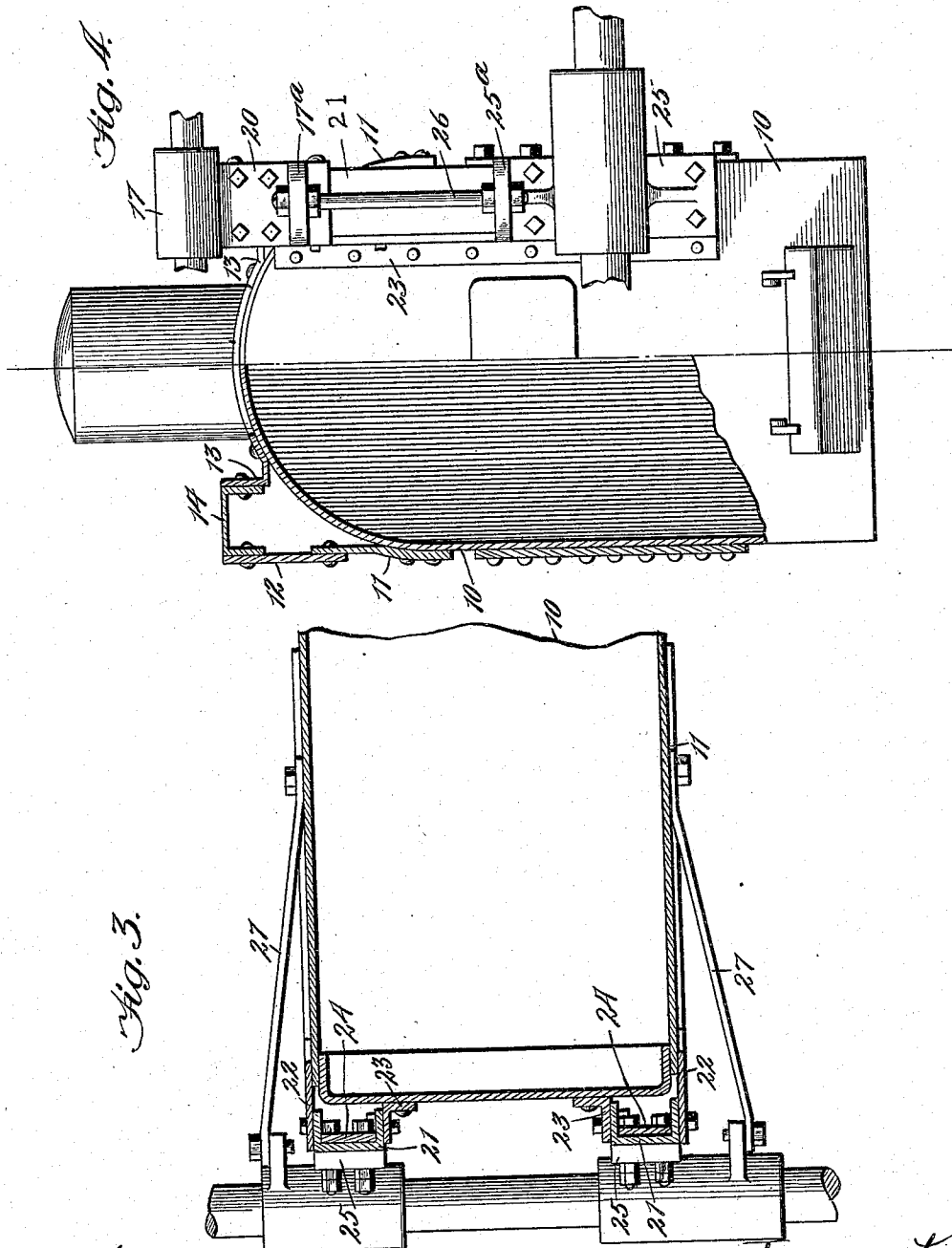
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3 SHEETS—SHEET 3.



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UNITED STATES PATENT OFFICE.

GEORGE W. MORRIS, OF RACINE, WISCONSIN.

ENGINE-SETTING FOR HORIZONTAL BOILERS.

941,460.

Specification of Letters Patent.

Patented Nov. 30, 1909.

Application filed May 1, 1908. Serial No. 430,385.

To all whom it may concern:

Be it known that I, GEORGE W. MORRIS, a subject of the King of Great Britain, residing at Racine, in the county of Racine and State of Wisconsin, have invented certain new and useful Improvements in Engine-Settings for Horizontal Boilers, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to improvements in engine settings for horizontal boilers and relates particularly to devices mounted upon and secured to the boiler to permit the ready and secure attachment to the boiler of the operating mechanism that is driven from the engine, and in such manner as to obviate the necessity of having the bolts that directly hold such mechanism in place from passing through the boiler.

It is a further object of my invention to provide improved means for rigidly securing to the boiler the bearings in which are mounted the main axle of the machine, and to rigidly connect such bearings with the said supporting mechanism.

These objects I accomplish by the means shown in the drawings and hereinafter specifically described.

That which I believe to be new will be set forth in the claims.

In the drawings,—Figure 1 is a side elevation of a traction-engine boiler provided with my improvements; Fig. 2 is a top or plan view of the same; Fig. 3 is a detail, partly in section, the section being taken on the line 3—3 of Fig. 1, and illustrating the construction of the means for holding the main axle bearings in rear of the boiler; and Fig. 4 is a rear view of the boiler, one half being in elevation and the other half in vertical cross-section.

Referring to the several figures of the drawings, in which corresponding parts are indicated by the same reference numerals—10 indicates a horizontal boiler of approved form for use in connection with traction-engines.

11—11 indicate two similar plates located at opposite sides of the boiler near the rear

end thereof and extending longitudinally of the boiler and riveted in place.

12—12 indicate two other plates, each one being riveted along its lower edge to one of the plates 11 and of a width to bring its upper edge somewhat above the curved upper face of the boiler, as shown. Each of these plates 12 is longer than the plate 11 to which it is attached and projects at its rear end beyond the rear end of the boiler as clearly shown in Fig. 1.

13—13 indicate two angle-irons each riveted to the upper face of the boiler at one side of the median line thereof, and parallel with each other and with the plates 12.

14—14 indicate channel-irons, each of a width to fit snugly between one of the plates 12 and the adjoining angle-iron 13, being secured to those parts by riveting, as shown. These channel-irons 14 are each arranged so that its sides or flanges are directed downward while the outer face of its web or central portion is flush with the upper edges of the plate 12 and angle-iron 13 between which it is secured, as clearly shown at the left-hand side of Fig. 4. By this construction there is thus provided at each side of and above the boiler a long smooth bed of rigid construction well adapted to receive and hold the blocks in which are formed the bearings for the various shafts of the usual mechanism through which power is transmitted from the engine proper. Three pairs of such blocks are shown, the blocks of each pair being indicated, respectively, by 15, 16 and 17. I have not deemed it necessary to illustrate in connection with my improvements any of said operative mechanism, as such mechanism may be of any well-known form or construction, and the several pairs of blocks may be spaced apart to a greater or less extent than as shown as may be required to adapt them to the driving mechanism employed.

While the several blocks are to be firmly bolted in place on their respective beds, as indicated, it is highly desirable, owing to the rough and heavy work that traction-engines are required to do, that additional means be

provided for maintaining them absolutely rigid on their beds, and for that purpose I tie together the blocks on each side of the boiler by means of tie-rods 18 and 19 which
 5 pass through suitable upturned ends or bracket-portions on said blocks. The ends of these tie-rods are screw-threaded to receive nuts, the screwing up of which, of course, secures the rods tightly in place.
 10 Each of the blocks 17 has formed with it a vertical depending arm 20, as clearly shown in Figs. 1 and 4, which fits closely against and is secured to the face of a vertical channel-iron 21 at the rear of the boiler
 15 and thereby aids in giving rigidity to the entire set of blocks that are at that side of the boiler.

The vertical channel-irons 21 referred to are at their lower portions each secured between a plate 22 riveted to the side of the boiler and projecting beyond the end thereof and an angle-iron 23 riveted to the rear end of the boiler, as best shown in Fig. 3, the sides or flanges of the channel-irons being
 25 directed toward the end of the boiler. At their upper ends they are secured between the rearwardly-projecting end of one of the plates 12 that has before been referred to and the said angle-iron 23.

30 24 indicates a flat strip of iron fitting in each vertical channel-iron 21 and adding increased stiffness to the same.

25—25 indicate a pair of blocks, each being secured by bolts or otherwise against the
 35 outer face of the web or central portion of one of the vertical channel-irons 21, each block having formed with it a sleeve constituting one of the bearings for the main or rear axle of the machine. Each block 25 is
 40 secured to the block 17 directly above it by a tie-rod 26, the ends of which are screw-threaded to receive tightening nuts, said ends projecting through lugs 17^a and 25^a formed on the blocks 17 and 25, respectively.
 45 27—27 indicate braces extending diagonally from the sides of the boiler to the main axle bearings.

From the foregoing description it will be seen that I provide a very strong and simple supporting means for the operative
 50 mechanism driven from the engine, and that by reason of such construction I avoid the necessity of riveting or otherwise securing such parts directly to the boiler-shell, which
 55 is a matter of very considerable advantage from a practical standpoint, as it enables such operative parts to be applied to and removed from the boiler without liability of in any way damaging the boiler. Furthermore, the life of the boiler is prolonged and the making of repairs very largely avoided, for by my improvements there is provided
 60 what is in effect a solid unyielding steel frame to which is attached, as before ex-

plained, the engine-frame and cylinder, the 65 crank-shaft and other usual shafts, as well as the rear axle of the machine, and by this construction the strain of hauling plows or other heavy loads is distributed over practically the entire boiler, instead of being, as
 70 has generally been the case, confined to a single pair of brackets supporting the boiler on the rear axle and bolted directly to the boiler-shell by means of tap bolts entering the water space and depending for their
 75 "hold" upon the boiler only upon the few threads that can be secured in a plate one-quarter or five-sixteenths of an inch thick.

That which I claim as my invention, and desire to secure by Letters Patent, is,— 80

1. The combination with a horizontal boiler, of a supporting-bed secured thereon at opposite sides of and over said boiler, and a plurality of bearing blocks secured to each bed, the bearing blocks on each bed being
 85 connected together, and one of said bearing blocks having a downwardly-extending arm that lies opposite the end of the boiler.

2. The combination with a horizontal boiler, of a supporting-bed secured thereon
 90 at opposite sides of and over said boiler, a plurality of bearing blocks secured to each bed, said bearing blocks being provided with brackets, tie-rods passing through said brackets, and tightening nuts on said tie-
 95 rods.

3. The combination with a horizontal boiler, of a supporting-bed comprising a plate at each side of and secured to the boiler, two angle-irons secured to the top of
 100 the boiler at opposite sides of the longitudinal center of the boiler, and a channel-iron secured between each plate and angle-iron.

4. The combination with a horizontal boiler, of a supporting bed comprising a
 105 plate at each side of and secured to the boiler, two angle-irons secured to the top of the boiler at opposite sides of the longitudinal center of the boiler, and a horizontally-disposed strip connecting each plate and
 110 angle-iron.

5. The combination with a traction-engine boiler, of a supporting-bed secured thereon at opposite sides of and over said boiler, vertically-arranged irons secured to and in
 115 rear of said boiler, blocks resting upon said bed and each having a downward extension that bears against one of said vertically-arranged irons, a block secured to each of said vertically-arranged irons and having
 120 formed therewith an axle bearing, and means for connecting each of said last-named blocks with one of said first-named blocks.

6. The combination with a traction-engine boiler, of a supporting-bed comprising a
 125 channel-iron secured at each side of and over said boiler, a pair of vertically-arranged channel-irons secured to said boiler and in

rear thereof, means for connecting said supporting-bed channel-irons with said vertically-arranged channel-irons, a pair of blocks resting upon said bed and each having a
5 downward extension that bears against one of said vertically-arranged channel-irons, a block secured to each of said vertically-arranged channel-irons, and having formed

therewith an axle bearing, and means for connecting each of said last-named blocks 10 with one of said first-named blocks.

GEORGE W. MORRIS.

Witnesses:

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