June 12, 1923. 1,458,739

C. A. WEBER

MEANS FOR MOUNTING APPARATUS ON A HOISTING BOOM

Filed Jan. 6, 1921 3 Sheets-Sheet 1

Fig-1

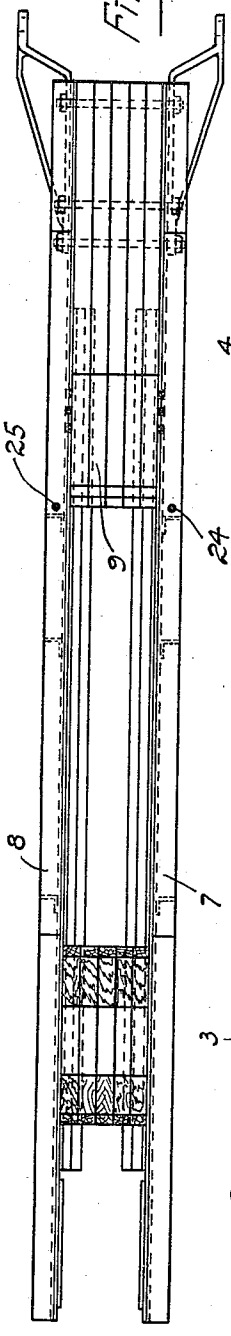


Fig-2

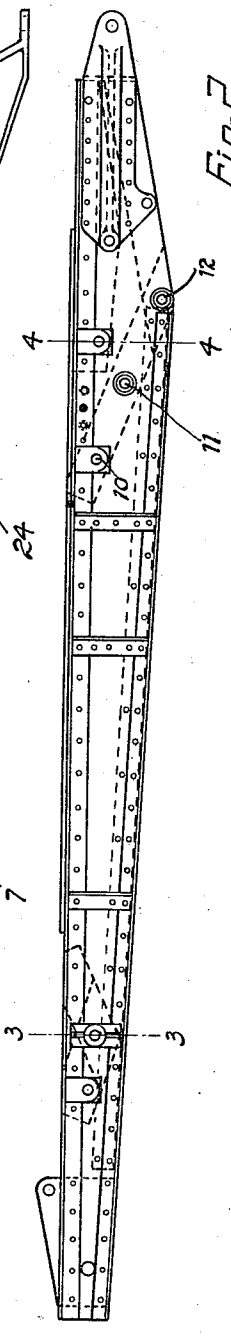


Fig-4

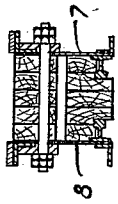
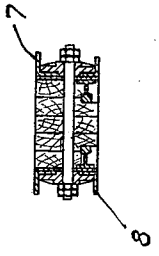


Fig-3



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MEANS FOR MOUNTING APPARATUS ON A HOISTING BOOM

Filed Jan. 6, 1921 3 Sheets-Sheet 2

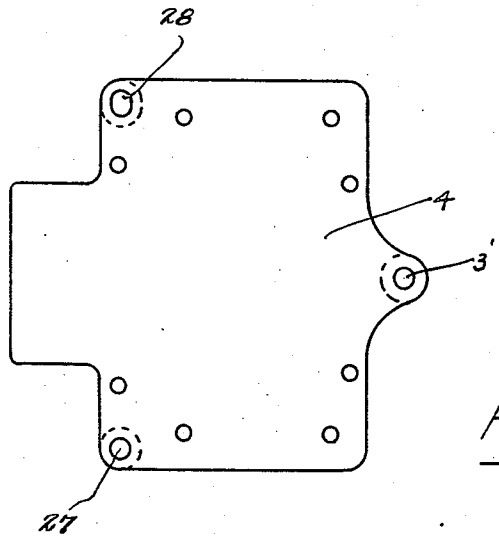

Fig-5

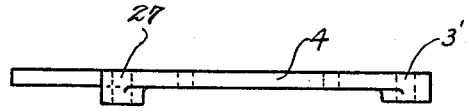

Fig-6

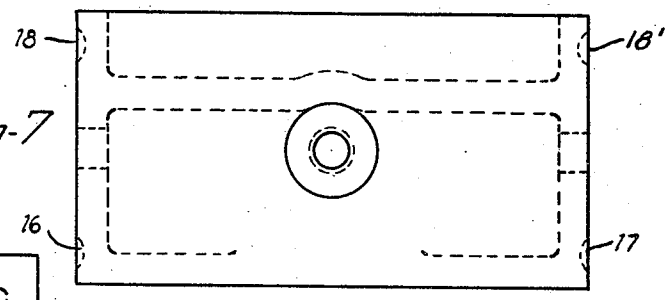

Fig-7

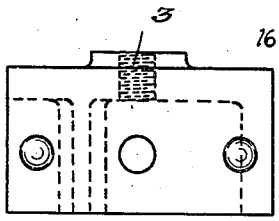

Fig-9

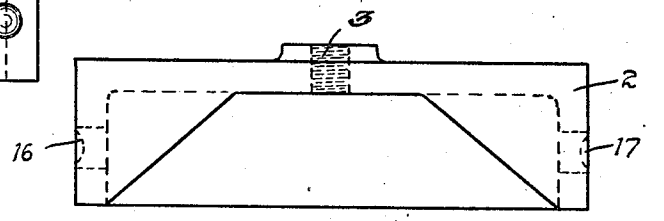

Fig-8

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June 12, 1923. 1,458,739

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MEANS FOR MOUNTING APPARATUS ON A HOISTING BOOM

Filed Jan. 6, 1921 3 Sheets-Sheet 3

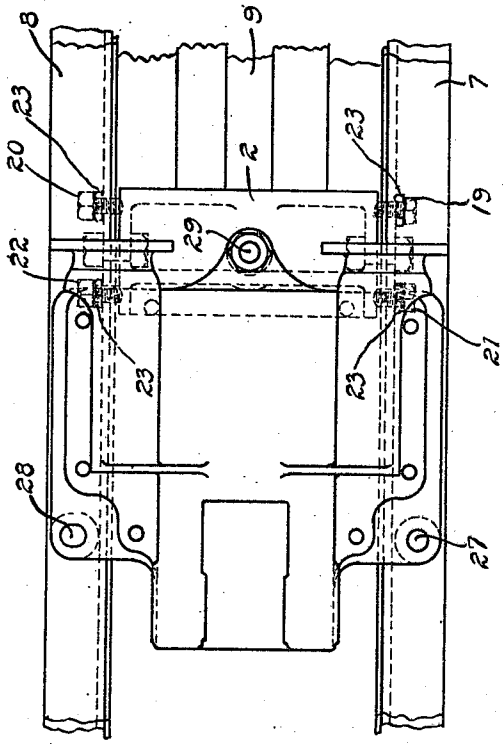

Fig-10

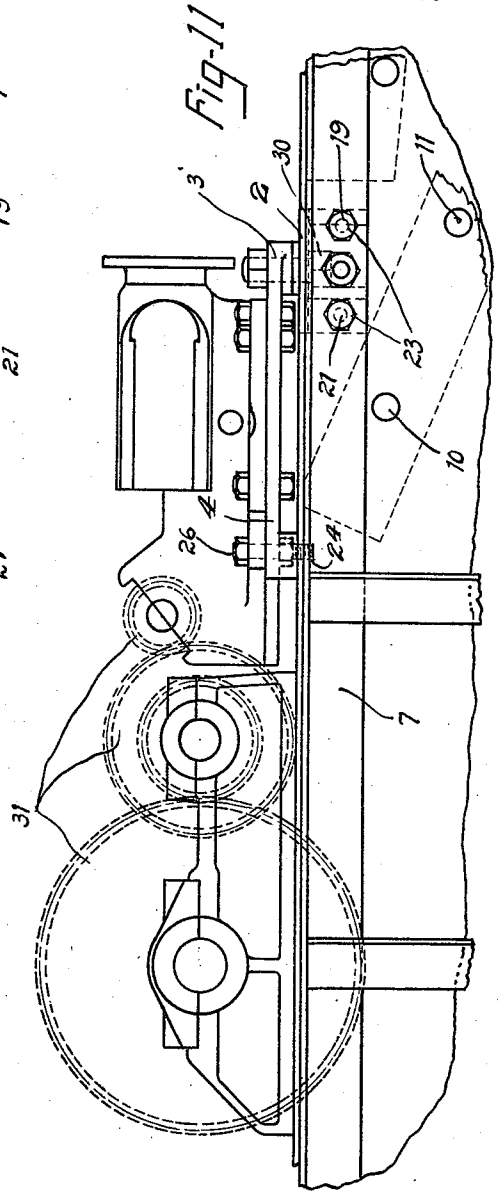

Fig-11

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Patented June 12, 1923. 1,458,739

UNITED STATES PATENT OFFICE.

CHARLES A. WEBER, OF LORAIN, OHIO, ASSIGNOR TO THE THEW SHOVEL COMPANY, OF LORAIN, OHIO, A CORPORATION OF OHIO.

MEANS FOR MOUNTING APPARATUS ON A HOISTING BOOM.

Application filed January 6, 1921. Serial No. 435,546.

To all whom it may concern:

Be it known that I, CHARLES A. WEBER, a citizen of the United States, residing at Lorain, county of Lorain, and State of Ohio, have invented certain new and useful Improvements in Means for Mounting Apparatus on a Hoisting Boom, of which the following is a full, clear, concise, and exact description, such as will enable others skilled in the art to which my invention appertains to make and use the same.

My invention relates to hoisting boom power apparatus mounting means, and more particularly to the means whereby such power apparatus as a steam engine, may be securely mounted on a hoisting boom or equivalent hoisting apparatus in such a way that it will be maintained securely mounted thereon, though the hoisting boom be subjected to the various lifting and twisting strains which are encountered with the working of such booms when doing practical work.

It is therefore an object of my invention to provide such a mounting means to secure the above object and at the same time inexpensive to manufacture, durable in use and which can be readily installed on a hoisting boom or the like, and which may be readily removed therefrom for repairs or other purposes.

Another object of my invention is to provide such a mounting means adaptable to mount a small steam engine between parallel channel beams comprised in a boom structure and which channel beams are bolted together holding them between wood spacers which serve to reinforce the channel beams and which are capable of yielding to a certain extent, under conditions of stress which may be encountered in the use of the boom.

Other objects of my invention and the invention itself will become apparent from the description thereof and in which description reference will be had to the accompanying drawings forming a part of this specification.

Referring now to the drawings,

Figure 1 shows a plan view of a boom of the type above mentioned and upon which boom it is desired to mount a small steam engine or equivalent power apparatus.

Figure 2 shows a side elevation of the boom of Figure 1.

Figure 3 shows a sectional view of the boom of Figures 1 and 2, taken on the line 3—3 of Figure 2.

Figure 4 shows a sectional view of the boom taken on the line 4—4 of Figure 2.

Figure 5 shows a plan view of the boom engine bed plate comprised in the embodiment of my invention herein illustrated and described. Figure 6 shows a side elevation of the boom engine bed plate of Figure 5.

Figure 7 shows a plan view of a boom separator which is adapted to secure an end of the bed plate of the boom.

Figure 8 shows a side elevation of the separator of Figure 7.

Figure 9 shown an end elevation of the separator.

Figure 10 shows a plan view of an assembly of the boom separator and boom engine bed plate of the foregoing figures, the same being mounted on a boom such as the hoisting boom illustrated in Figures 1 to 4, inclusive.

Figure 11 shows a side elevation of an assembly of the separator, boom engine bed plate of the said boom, other cooperative parts, such as the engine cylinder, engine frame and gear mechanism, being also illustrated in part in this figure, to show the relative positioning of the parts.

Referring now to the figures, in all of which like parts are denoted by like reference characters, at 2, Figures 7 to 11 inclusive, I show the boom separator of my invention, the same being adapted to be mounted between the side channels 7 and 8 of the boom and above the timber separators 9 which are secured between the channels 7 and 8 by bolts 10, 11 and 12.

This boom separator I preferably construct of cast steel and preferably provide its sides with small depressions 16, 17, 18 and 18′ adapted to admit the rounded ends of bolts 19, 20, 21 and 22, which pass through the side channel bar structures 7 and 8, being screw threaded therein and which bolts are preferably provided with locking nuts 23, to lock the bolts in adjusted separator holding position. It is true that in practice, due to the stress on the different parts of the boom structure, the

alignment of the different parts, particularly the side channel structure 7 and 8, varies slightly from time to time, and the adjustable bolts 19, 20, 21 and 22 are provided to carry the separator so that allowance may be made for such changes. Also these bolts permit the ready removal of the separator plate when this is desired.

I provide upon the side channel bars 7 and 8, screw threaded openings 24 and 25 into which bolts 26 may pass, said bolts passing also through openings 27 and 28 provided on the engine bed plate 4 to secure the engine bed plate at 2 points on the channel members 7 and 8.

While I make the opening 27 of the bed plate 4 round and relatively close fitting with respect to the bolt 26 which passes through it and into the channel bar 7, I make the opening 28 elongated as illustrated in Figure 10, so that the bed plate 4 can be moved about the bolt 26 as a pivot, a short distance, depending upon the length of the slot 28. The bed plate 4 is also secured at a third point preferably equi-distant from points 27 and 28 by a bolt 29 passing through an opening 3′ in the bed plate 4. the said bolt 29 then entering a threaded opening 3 in the separator element 2, a locking nut 30 being provided on the end of the bolt to lock it in position.

We have thus provided the bed plate 4 with a three point contact whereby it is supported between the two channel beam members 7 and 8 and connected with the separator member 2, and one of those points is provided with an elongated slot connection whereby the bolt 26 may be allowed a certain amount of movement therein and the precise positioning of another point determined by the bolt 29 which is capable of adjustment by means of the cap screws 19, 20, 21 and 22, which adjustment may be altered in order to preserve proper alignment of the engine with the associated parts.

At 31 I show a system of gears adapted to be operated by the engine to operate mechanism associated with the boom, such as a power channel crowd mechanism at the end of which, a bucket or channel may be attached and adapted to move forward to scoop up and excavate materials, such as the bed of a road or the floor or walls of a ditch or tunnel, depending upon the kind of work the apparatus is required to do.

Having thus described my invention as embodied in a particular structure which I have illustrated and described for the purpose of explaining my invention, I wish it to be understood that extensive and numerous departures may be had from the embodiment illustrated, but without departing from the spirit of the invention.

What I claim is:—

1. In combination, a hoisting boom, angle iron side members for the hoisting boom, relatively yielding spacing means between the said angle iron side members, a boom separator member adjustably mounted between the said pair of side members, a bed-plate, apparatus mounted on the said bed-plate, means to secure the said bed-plate to the said side members and to the said boom separator, said means comprising a pair of bolts securing one end of the said bed-plate to the said side members, and a third bolt substantially equidistant from the said pair of bolts to secure the other end of the said bed-plate to the said separator.

2. In combination, a hoisting boom, angle iron side members for the hoisting boom, relatively yielding spacing means between the said angle iron side members, a boom separator member adjustably mounted between the said pair of side members, a bed-plate, apparatus mounted on the said bed-plate, means to secure the said bed-plate to the said side members and to the said boom separator, said means comprising a pair of bolts securing one end of the said bed-plate to the said side members, and a third bolt substantially equidistant from the said pair of bolts to secure the other end of the said bed-plate to the said separator, said pair of bolts being adapted to pass through openings in the said side members, one of the said openings being an elongated opening.

3. In combination, a hoisting boom, side members for the said hoisting boom, a boom separator member adapted to be placed between the said side members, adjustable spacing means adapted to adjustably position the said separator with reference to the said side members, a motor, a motor-bed, said bed being secured at two points to the said side members and at a third point to the said boom separator.

4. In combination, a hoisting boom, side members for the said hoisting boom, a boom separator member adapted to be placed between the said side members, adjustable spacing means adapted to adjustably position the said separator with reference to the said side members, a motor, a motor-bed, said bed being secured at two points to the said side members and at a third point to the said boom separator, said third point being substantially equidistant from the other two points.

5. In combination, a hoisting boom, side members for the said hoisting boom, a boom separator member adapted to be placed between the said side members, adjustable spacing means adapted to adjustably position the said separator with reference to the said side members, a motor, and a motor-bed, said bed being secured at two points to the said side members and at a third point to the said boom separator, said third point being substantially equidistant from the

other two points, securing means located at the said three points, said securing means comprising bolts and co-operating openings in the said bed plate, side members and separator member.

6. In combination, a hoisting boom, side members for the said hoisting boom, a boom separator member adapted to be placed between the said side members, adjustable spacing means adapted to adjustably position the said separator with reference to the said side members, a motor, a motor-bed, said bed being secured at two points to the said side members and at a third point to the said boom separator, said third point being substantially equidistant from the other two points, securing means located at the said three points, said securing means comprising bolts and co-operating openings in the said bed-plate, side members and separator member, one of the said openings through the said bed-plate being an elongated opening, the greatest diameter of the said elongated opening being greater than the diameter of the bolt passing therethrough.

7. In combination with a hoisting boom, a pair of steel side boom members, a boom separator member adjustably mounted between the said pair of side members, a bed-plate, apparatus secured to the said bed-plate, a pair of bolts adapted to secure the bed plate to the said boom side members at one end of the bed-plate, openings in the bed-plate for the said pair of bolts, one of the said openings being elongated and a third bolt substantially equidistant from the pair of bolts adapted to secure said bed plate to the boom seperator.

In witness whereof, I have hereunto signed my name this 28 day of December, 1920.

C. A. WEBER.