

(No Model.)

E. S. BENNETT.

MEANS FOR SUPPORTING DREDGE OR OTHER STRUCTURES.

No. 527,741.

Patented Oct. 16, 1894.

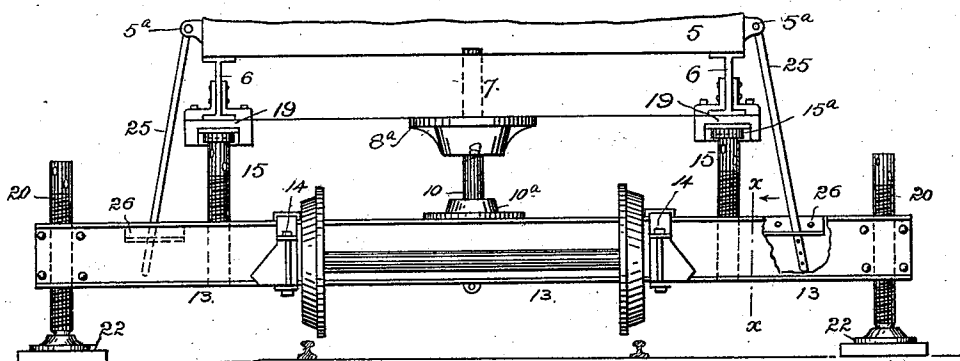


Fig. 1

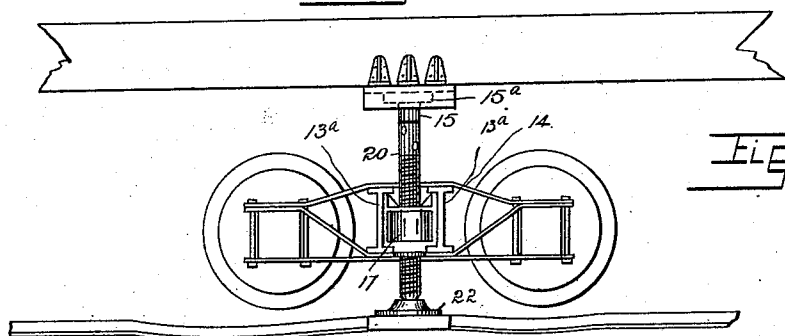


Fig. 2

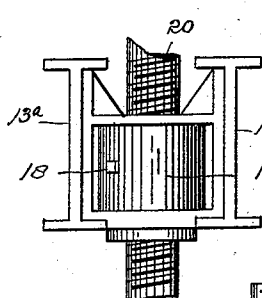


Fig. 3

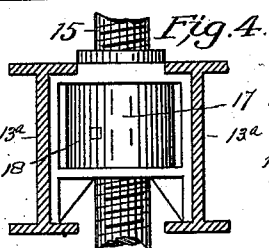


Fig. 4

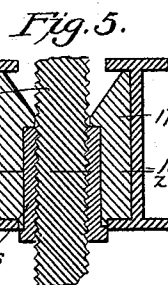


Fig. 5

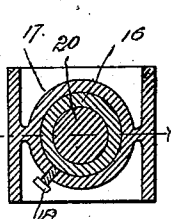


Fig. 6

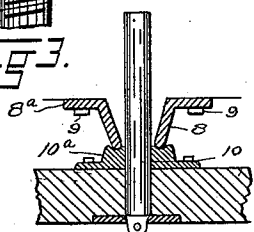


Fig. 7

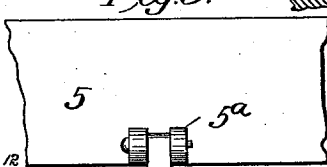


Fig. 8

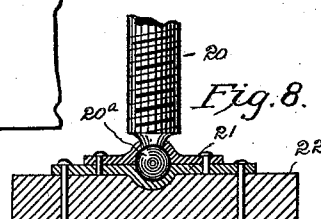
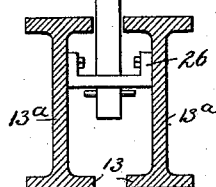


Fig. 9

WITNESSES:

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MEANS FOR SUPPORTING DREDGE OR OTHER STRUCTURES.

SPECIFICATION forming part of Letters Patent No. 527,741, dated October 16, 1894.

Application filed June 30, 1894. Serial No. 516,212. (No model.)

To all whom it may concern:

Be it known that I, ERASTUS S. BENNETT, a citizen of the United States of America, residing at Denver, in the county of Arapahoe and State of Colorado, have invented certain new and useful Improvements in Means for Supporting Dredge or other Structures; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in supporting means for movable plants or structures which are subjected to great lateral or side strain.

The invention is specially designed for use in connection with my improved dredging and amalgamating plant protected by Letters Patent of the United States, No. 493,226, and bearing date the 7th day of March, 1893. This plant is mounted upon car trucks, and is moved on a track from one position to another during use. The structure is employed in what is known as placer mining; and as the stratum of "pay dirt" within reach of the dredge bucket, is removed, the plant must move to another position in order that the work may be advantageously carried on. Hence, the use of car trucks and track rails. As the structure mounted upon the trucks and supported upon the track rails is very heavy, weighing from forty to fifty tons in the large plants, the rails of the track are often forced out of place, or sunk, for want of a proper foundation, under the great pressure to which they are subjected.

One feature of my present invention consists in means for raising the entire structure from the rails of the track, whereby free access may be given for raising and repairing the latter at points immediately beneath the plant.

The lateral strain on the plant results in part, from the movement of the boom carrying the heavily loaded bucket, which must be carried to the separating drum, located at the end of the plant opposite that to which the boom is attached; but this lateral strain

exists, chiefly, by reason of the fact that a long discharge conveyer is necessary in getting rid of the gangue after it leaves the separating drum. This conveyer extends at right angles to the length of the body of the machine, and, as before stated, is the prime cause of the great lateral strain, which makes my present invention a necessity in structures of this class.

Having thus outlined the general character of the invention, the class of the structures with which it is intended for use, and the objects which it is expected to accomplish, I will now proceed to set forth the mechanism in detail, which consists of the construction hereinafter described and claimed; and the same will be fully understood by reference to the accompanying drawings, in which is illustrated an embodiment thereof.

In the drawings, Figure 1 is an end elevation of the truck provided with my improvements. In this view, the dredge platform is shown in part, but the working parts of the plant mentioned in the preamble, are not illustrated since they form no part of my present invention. Fig. 2 is a side elevation of a truck provided with my improvements. Fig. 3 is an enlarged end view in detail, of the means for raising the truck-frame and its load. Fig. 4 is a section taken on the line $x-x$, Fig. 1, looking in the direction indicated by the arrow. Fig. 5 is a section taken on the line $y-y$, Fig. 6. Fig. 6 is a section taken on the line $z-z$, Fig. 5. Fig. 7 is a section taken through the socket of the king bolt. Fig. 8 is a section taken through the socket of one of the side screws. Fig. 9 is a side elevation partly in section, illustrating the tie-rod connection between the dredge platform and the transverse I-beam.

Similar reference characters indicating corresponding parts or elements in these views, let the numeral 5 designate a platform supported upon the longitudinal I-beams 6 connected by the transverse beams 7 (one only being shown). The parts 5, 6 and 7 constitute the dredge platform. To the center of the beam 7 is made fast a frustum-shaped socket 8 by means of bolts 9 passed through the flange 8^a into the beam. This socket receives the king bolt 10, to which is made fast a bearing 10^a having a circular groove to re-

ceive the engaging extremity of the socket casing. The bearing 10^a rests upon a support 12 placed between the two parts 13^a of the transverse double I-beam 13 to which the frame 14 of the truck is made fast. The king bolt is, therefore, made fast or rigidly secured to the truck frame, while said pin is loose in the dredge platform. On each side of the king bolt, and outside of the truck frame is located a heavy screw 15, the threaded portion of which engages a nut 16 held by a cast frame 17 made fast between the two parts 13^a of the double I-beam. The nut may be made fast in its cast-iron frame or holder by means of a set screw 18. Each screw 15 has a head 15^a which engages a socket 19 made fast to the I-beam support of the dredge platform. The heads 15^a of the screws fit loosely within their sockets, whereby the screws may be turned freely in the operation of leveling the dredge platform. The side pressure or disposition of the dredge platform to slide on the heads of the screws 15 is provided for by this rigidly fastened king pin.

While the king pin or bolt is shown rigidly fastened in the truck frame, and loose in the dredge platform, which is the preferred construction, it is evident that this arrangement may be reversed by making the king pin rigid in the platform and loose in the truck, without departing from the spirit of the invention.

Outside of the screws 15, and at the extremities of the double I-beam 13, are located the screws 20. These double I-beams may be of any length necessary to afford the proper support for the mechanism mounted on the platform 5. The screws 20 engage nuts 16 supported by the frames 17 held by the two parts of the double I-beam as heretofore explained when speaking of the screws 15. The nuts 16 and their supporting frames are precisely the same in both cases, but their positions are reversed. The lower extremity 20^a of each screw 20 is ball-shaped and engages a socket box 21 made fast to the base 22 which rests upon the ground. This base block may have any desired surface area that may be necessary for the proper performance of its function. By virtue of the construction described, the screws 20 are allowed to rotate freely within their sockets.

The screws 15 and 20 are provided with holes for the insertion of bars, employed in turning the screws. The screws 15 are employed in leveling the dredge platform. The screws 20, in connection with the projecting portions of the double I-beam, normally afford the necessary lateral support for the structure mounted upon the dredge platform, and at the same time, may be employed to raise the car trucks and the entire superstructure from the track whenever it may be necessary to repair the latter.

In Figs. 1 and 2 the truck is shown raised from the track. The shape of the track rails

as shown in Fig. 2 is intended to illustrate the condition of the track when out of repair to such an extent that it is necessary to raise the truck and its supporting mechanism, in order that the track may be repaired. The dredge platform is provided with stays or tie rods 25 which are hinged to lugs 5^a of the platform, their lower extremities passing through apertures formed in angle plates 26 supported by the double I-beam 13. The lower extremities of these stays or rods are provided with apertures for the reception of pins which engage the angle plates and render the stays or rods effective. These tie rods render the dredge platform and the transverse double I-beam practically an integral structure. The laterally projecting structure, which, for the purpose of this specification, I will assume that the dredge platform carries, as for instance, a long tailings elevator (not shown), is at the same time the power and one arm of a lever fulcrumed on the upper extremity of one of the screws 15, the dredge platform and its load forming the other arm of the lever, and also the weight. It is therefore evident that by using the tie rods, the fulcrum of the assumed lever is changed from the screw 15 to one of the screws 20, while the transverse beam may in this case, be considered the weighted arm of the lever. Hence without the tie rods, the weight on the dredge platform would be over balanced by the laterally projecting structure; while by the use of the rods, this result is impossible, since the stability of the weight or weighted lever arm is sufficiently augmented by lowering the center of gravity to the beam 13 which may be of any desired length.

Having thus described my invention, what I claim is—

1. The combination with the dredge platform and the truck, of the king pin rigid in one of said parts, and loose in the other part, the transverse beam to which the truck frame is secured, said beam extending a suitable distance on each side of the truck and provided with nuts, screws engaging the nuts of the beam, suitable bearing surfaces for the lower extremities of the screws, and tie rods connecting the dredge platform with said beam, substantially as described.

2. The combination with the truck frame and the dredge platform, of the king pin rigid in one part, and loose in the other part, the transverse double I-beam to which said frame is secured, said beam extending on each side of the frame, nuts located at the extremities of the beam and held between the two parts thereof, screws engaging the nuts, and tie rods connecting the dredge platform with said beam, substantially as described.

3. The combination with the truck frame and the dredge platform, of the transverse beam to which the truck frame is secured, said beam extending a suitable distance on each side of the truck, the rigid king bolt carried by the beam and engaging a socket made

fast underneath the platform, screws located on each side of the king bolt and engaging nuts carried by the beam, and suitable bearings for the upper extremities of the screws, substantially as described.

4. The combination with the dredge platform and truck frame, of the king pin connecting said platform and frame, said pin being rigid in one part and loose in the other part, the leveling side screws supporting said platform, the transverse beam supporting the side screws and receiving the king bolt, said beam extending a suitable distance on each side of the truck frame which is secured thereto, and the outer screws engaging the beam extremities, substantially as described.

5. The combination with the dredge platform and truck, of the transverse beam attached to the truck and extending a suitable distance on each side thereof, and the tie rods connecting the platform with said beam on

either side of the truck, substantially as described.

6. The combination with the dredge platform and truck, of the king pin rigid in one of said parts and loose in the other, and means for adjusting the dredge platform with relation to the truck substantially as described.

7. The combination with the dredge platform and truck frame, of the king pin rigid in one of said parts and loose in the other part, and the leveling side screws located on either side of the king bolt, said screws being attached to one part (the truck frame or the dredge platform) and loose in the other part, substantially as described.

In testimony whereof I affix my signature in the presence of two witnesses.

ERASTUS S. BENNETT.

Witnesses:

C. F. SCHOFIELD,
CHAS. E. DAWSON.