E. S. JOHNSON.

STRUCTURE FOR USE IN BUILDING EMBANKMENTS IN WATER.

APPLICATION FILED AUG. 8, 1912.

1,048,700.

Patented Dec. 31, 1912.

3 SHEETS—SHEET 1.

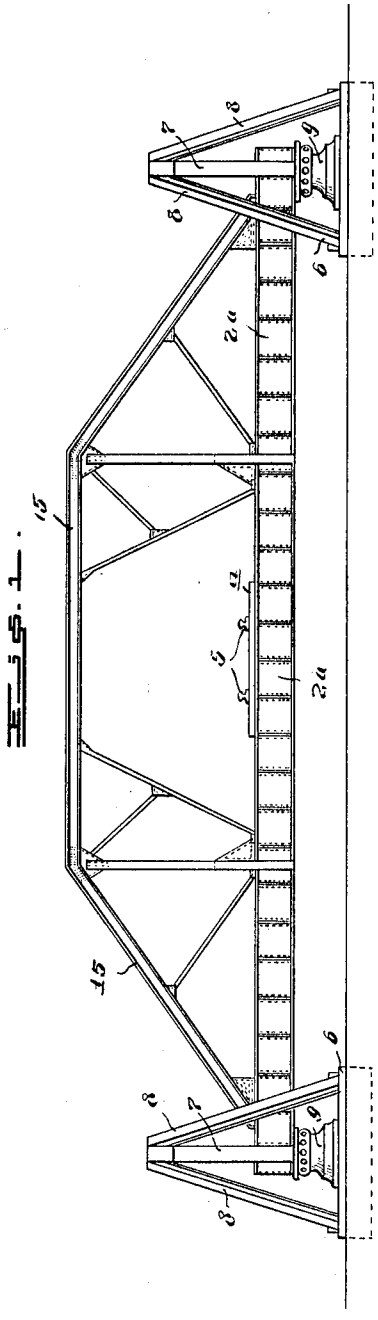

FIG. 1.

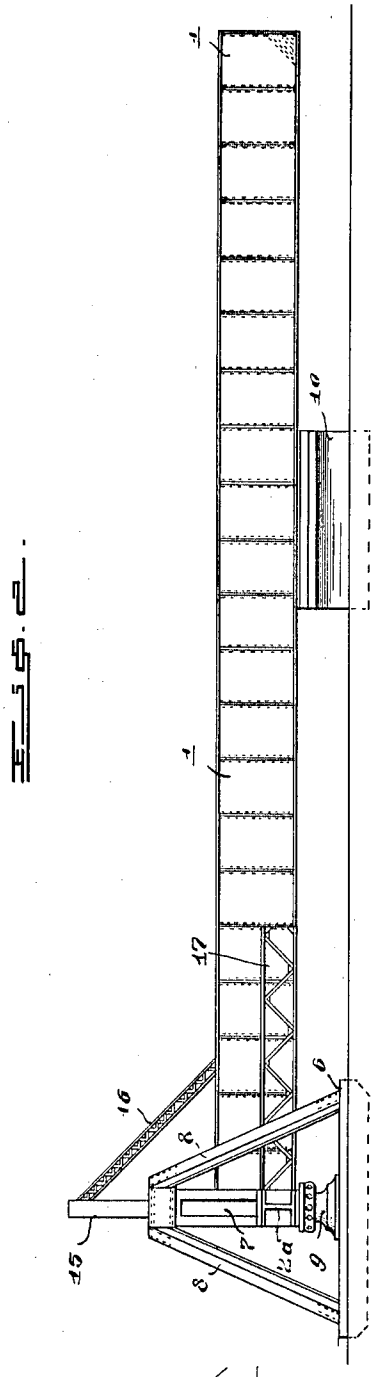

FIG. 2.

WITNESSES:

Wm. Harold Eickelmann

M. A. Milord

INVENTOR:

Edward S. Johnson

By Benj. T. Rouchon

Atty.

COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

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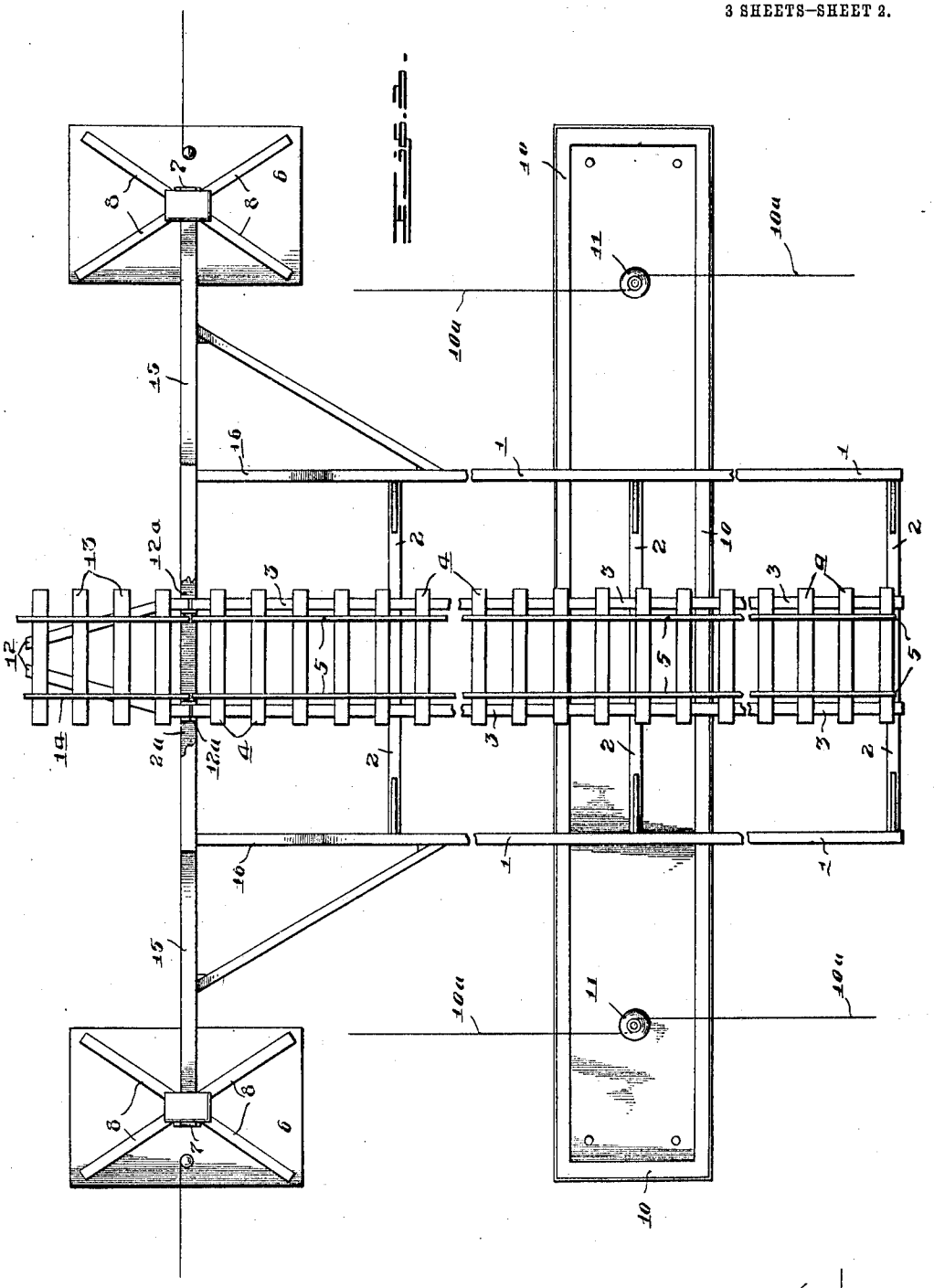

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INVENTOR:

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By Benj. F. Rowland

ATTY.

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FIG. 4.

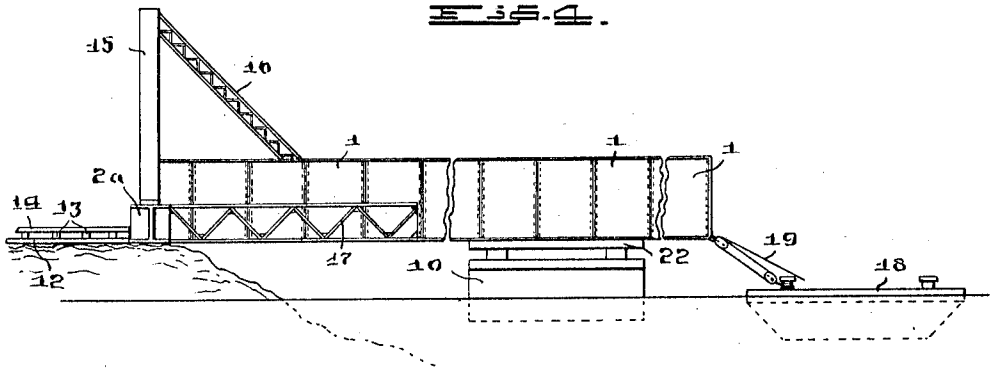


FIG. 5.

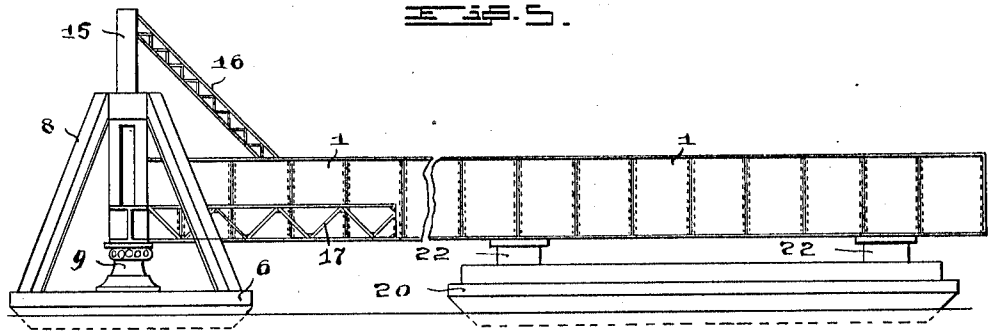
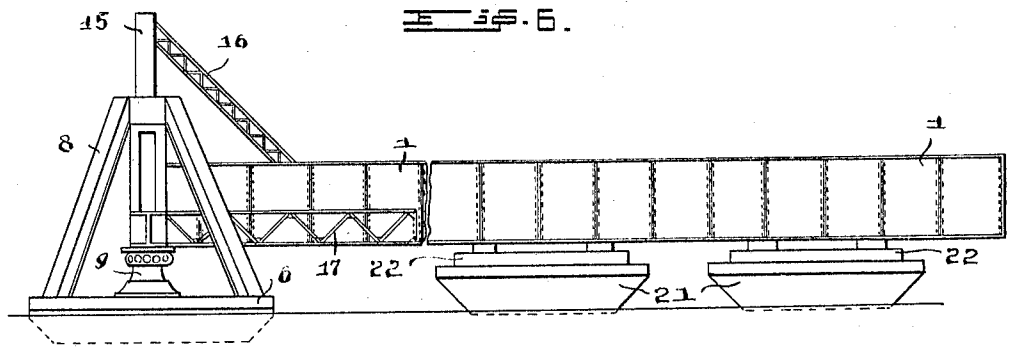


FIG. 6.



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UNITED STATES PATENT OFFICE.

EDWARD S. JOHNSON, OF DAVENPORT, IOWA.

STRUCTURE FOR USE IN BUILDING EMBANKMENTS IN WATER.

1,048,700. Specification of Letters Patent. Patented Dec. 31, 1912.

Application filed August 8, 1912. Serial No. 713,973.

To all whom it may concern:

Be it known that I, EDWARD S. JOHNSON, a citizen of the United States, and a resident of Davenport, in the county of Scott and State of Iowa, have invented a new and useful Structure for Use in Building Embankments in Water, of which the following is a specification.

In building embankments in water where it has been possible to haul the material to the place where the embankment is to be made, it has hitherto, so far as I am aware, been the practice to build a trestle work in the location where the embankment is desired upon which the cars containing the material, broken stone usually, are run and from which they are dumped to form the embankment. Such a practice involves an expenditure for the material of which the trestle is made and the labor involved in constructing it, besides the time involved in its construction, and, as the trestle is covered by the dumpings, the material of which it is made cannot be recovered for another using. The problem of getting a suitable foundation for the trestle is sometimes not an inconsiderable one.

My present invention has for its object the provision of a structure upon which the material cars may be run and from which they may be dumped to make the fill or embankment, which structure may be moved as the embankment progresses, and which will do away with the necessity of the trestle generally employed.

I attain the above objects by the structure illustrated in the accompanying drawings, in which:—

Figure 1 is an elevation from the shore end; Fig. 2 is a side or longitudinal elevation; Fig. 3 is a fragmental plan of the structure; Fig. 4 is a longitudinal elevation of a slightly modified structure; Fig. 5 is a view similar to Fig. 4 with other modifications, and—Fig. 6 is a longitudinal elevation showing the possibility of further modifications.

Similar reference characters refer to similar parts throughout the several views.

The structure should permit of the dumping of the filling material from it until the embankment or fill extends above the water, and it should then be possible to move the structure forward so that a new part may be filled in from the end of the portion completed.

It is readily seen that the details of construction of such a structure may be considerably varied without departure from the spirit of my invention.

My invention comprises generally a track for the cars, a frame for supporting the track so that they may be freely dumped from the track, pontoons for supporting the frame disposed so as to be free from the embankment when formed, and means for connecting the track upon the shore or embankment with the track upon the structure including means for elevating or lowering the shore end of the structure.

The frame for carrying the track comprises the longitudinal side girders, 1, connected and spaced sufficiently far apart by the transverse beams, 2, so that cars may be dumped from either side of the track without fouling the side girders. Track stringers, 3, are laid upon the transverse beams, 2, upon which track stringers, ties 4, and rails 5, are laid.

The side girders, 1, being out of the way, may be given any dimension requisite for supporting the load, while the transverse beams, 2, are located with relation to the side girders so as to bring the track well up from the water so that the embankment or fill may be brought above the water without interfering with the movement of the structure when it is necessary to shift the structure forward to a new position.

The transverse beam, 2^a, at the shore end of the structure is carried sufficiently far outside of the side girders so that its ends may rest upon shore pontoons, 6, far enough apart to be clear of the sides of the completed embankment. The shore pontoons, 6, are provided with vertical columns supported by suitable braces, 8, and in said vertical columns are vertical guide ways, 7, for receiving the ends of the transverse beam so as to permit of its elevation or lowering, for which purpose jacks, 9, or their equivalent, are provided.

Well toward the outer ends of the side girders, 1, is provided the pontoon, 10. The pontoon, 10, is so positioned with relation to the structure as to carry the bulk of the weight thereof.

Winches, 11, or other suitable facilities, are provided upon the pontoon, 10, for operating cables 10^a, which may be secured by anchors or otherwise, parallel with and upon each side of the line of the embank-

ment, for moving the structure forward for further operation, to a new location, and securing it in position when located. The winches, 10^a, may be positioned upon the frame as shown in Fig. 6. There are also provided winches, 10^b, near the shore end of the frame for operating a cable, 10^c, suitably secured by anchors or otherwise transverse to the embankment for securing the shore end.

Pivotally secured by means of suitable hinges, 12^a, to the shore end of the structure in line with the track stringers, are beams, 12, upon which ties, 13, and rails, 14, are secured. When the structure is moved this pivoted end portion is dragged over the top of the embankment which has been built under the structure, and forms a connection between the end of the embankment and the structure. When train loads of filling material are run upon the structure they set it down in the water somewhat, and this vertical movement is taken care of by this pivoted end portion. The beams, 12, may be free of each other and tapered, in which case ties and rails forming a section of track are laid upon them.

In Fig. 1, is shown a truss 15, for bracing the long transverse beam, 2^a, which rests upon the pontoons, 6, and stays, 16, and lateral stays, 17, are also provided between it and the side girders 1.

In Fig. 4, I have shown how the shore end may be rested sufficiently upon the embankment so that it may be entirely or partially supported by the embankment. In Fig. 4 I have also shown a modified manner of securing the elevation of the shore end of the frame and track carried thereby. This modification consists in providing one or more heavy pontoons 18, which set well into the water, and are secured to the outer end of the frame by suitable tackle (19). When it is desired to elevate the shore end the tackle is shortened which causes the weight of the pontoon to be borne by the outer end of the frame. This depresses the outer end of the frame and elevates the shore end. Such an arrangement is convenient when it is desired to support the shore end either wholly or partially upon the embankment.

In Fig. 5 is illustrated a modified manner of supporting the frame in which the transverse pontoon 10 is replaced with separate pontoons, 20, under each of the girders, 1, and in Fig. 6 a still further modification is illustrated in which a number of pontoons, 21, are disposed under each girder. But the several modifications shown do not involve any change in the principle or spirit of my invention. In Figs. 4, 5, and 6, blocking 22, is shown forming a support between the pontoon and the frame. The height of this may be altered to bring the entire frame and track carried thereby the desired distance above the surface of the water.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is:—

1. A structure for use in building embankments in water comprising a railroad track, transverse beams for supporting said track, said beams being extended laterally to provide open dumping spaces upon each side of said track, longitudinal girders supporting said transverse beams, pontoons for carrying said girders, and means for elevating or lowering one end of said structure.

2. A structure for use in building embankments in water comprising a railroad track, transverse beams for supporting said track, said beams being extended laterally to provide open dumping spaces upon each side of said track, longitudinal girders supporting said transverse beams, pontoons for carrying said structure, and means for elevating and lowering said structure.

3. A structure for use in building embankments in water comprising a railroad track consisting of stringers, ties disposed transversely thereto upon said stringers, and rails carried by said ties; a frame for supporting said railroad track consisting of supporting beams disposed transversely to said stringers, said beams being extended laterally to provide open dumping spaces upon each side of said track, and longitudinal girders supporting said transverse beams; pontoons for carrying said frame, means for elevating or lowering one end of said frame and the track carried thereby, and pivoted beams extending from said structure, in substantial alinement with said track.

4. A structure for use in building embankments in water comprising a railroad track consisting of stringers, ties disposed transversely thereto upon said stringers, and rails carried by said ties; a frame for supporting said railroad track consisting of supporting beams disposed transversely to said stringers, said beams being extended laterally to provide open dumping spaces upon each side of said track, and longitudinal girders supporting said transverse beams; pontoons for carrying said frame, means for elevating or lowering one end of said frame and the track carried thereby and a portion of track structure flexibly secured to said frame and alining with the track carried thereby.

5. A structure for use in building embankments in water comprising a railroad track, a frame for supporting said track consisting of transverse beams, said beams being extended laterally to provide open dumping spaces upon each side of said track and longitudinally disposed girders at the ends of said beams, a main pontoon for carrying said frame, two shore pontoons for

carrying the corners of the shore end of said frame, vertical guideways upon said shore pontoons in which the corners of said frame are movably assembled, and means for elevating or depressing the said frame in said guideways.

6. A structure for use in building embankments in water comprising a railroad track, a frame for supporting said track consisting of transverse beams, said beams being extended laterally to provide open dumping spaces upon each side of said track and longitudinally disposed girders at the ends of said beams, a main pontoon for carrying said frame, two shore pontoons for carrying the corners of the shore end of said frame, vertical guide ways upon said shore pontoons in which the corners of said frame are movably assembled, means for elevating or depressing the said frame in said guideways, and a section of track alining with the track upon said frame and flexibly secured to said frame.

In testimony whereof I have hereunto set my hand in the presence of two witnesses.

EDWARD S. JOHNSON.

Witnesses:
W. CHADWICK,
HUGO ARZBERGER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."