

No. 643,988.

J. W. SEAVER.
CRANE.

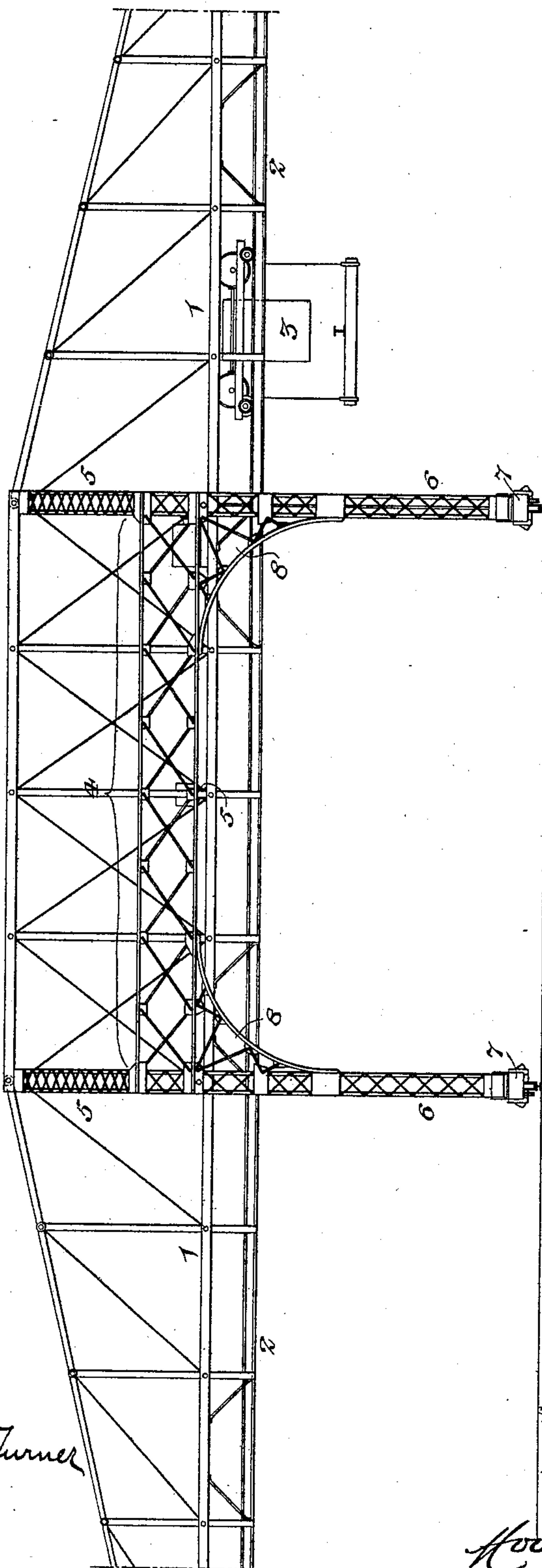
Patented Feb. 20, 1900.

(Application filed Oct. 10, 1899.)

(No Model.)

3 Sheets—Sheet 1.

Fig. 1.



Witnesses:-

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Louis H. Whitehead

Inventor:-

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Hewson & Hewson

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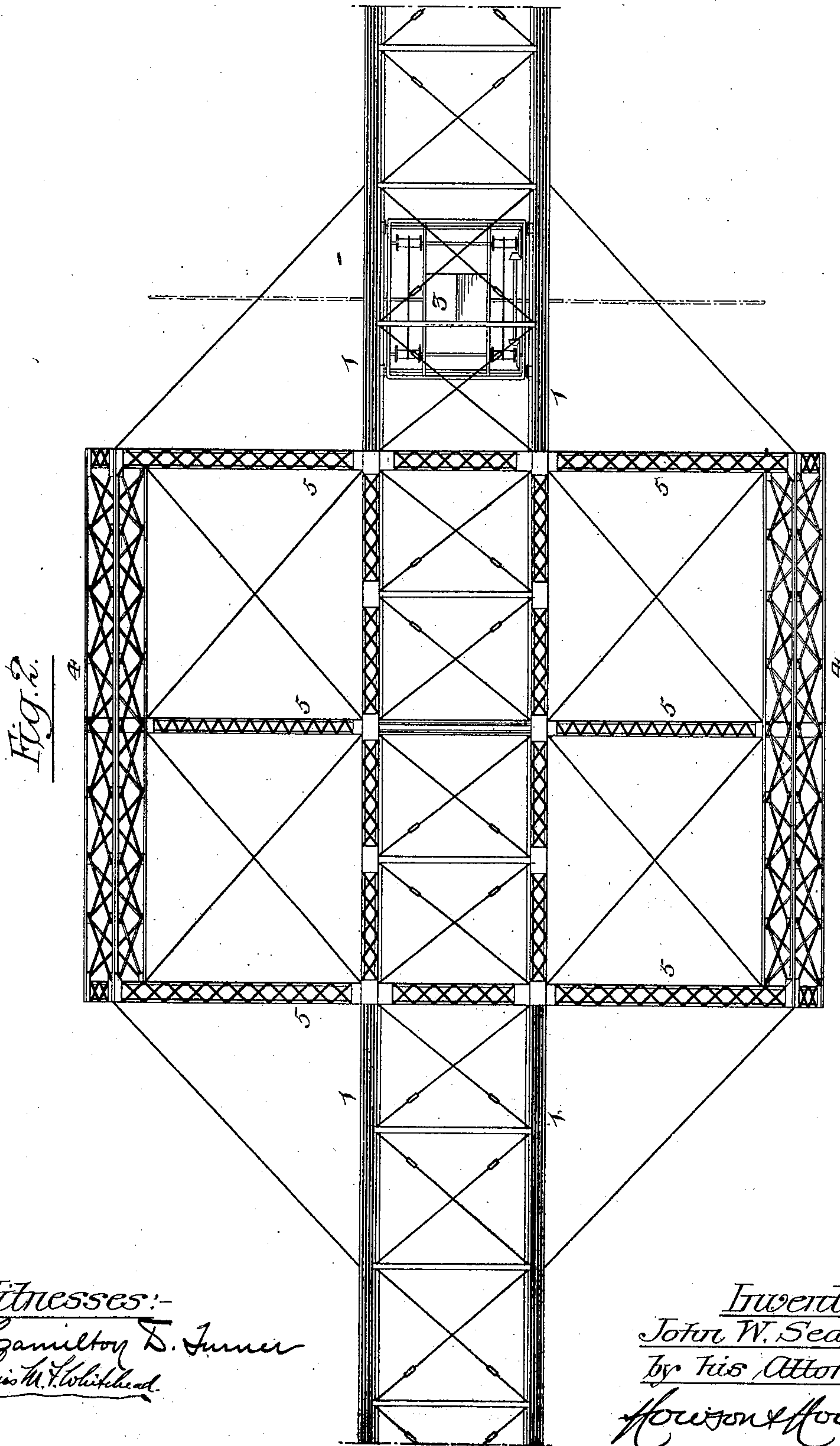
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3 Sheets—Sheet 2.



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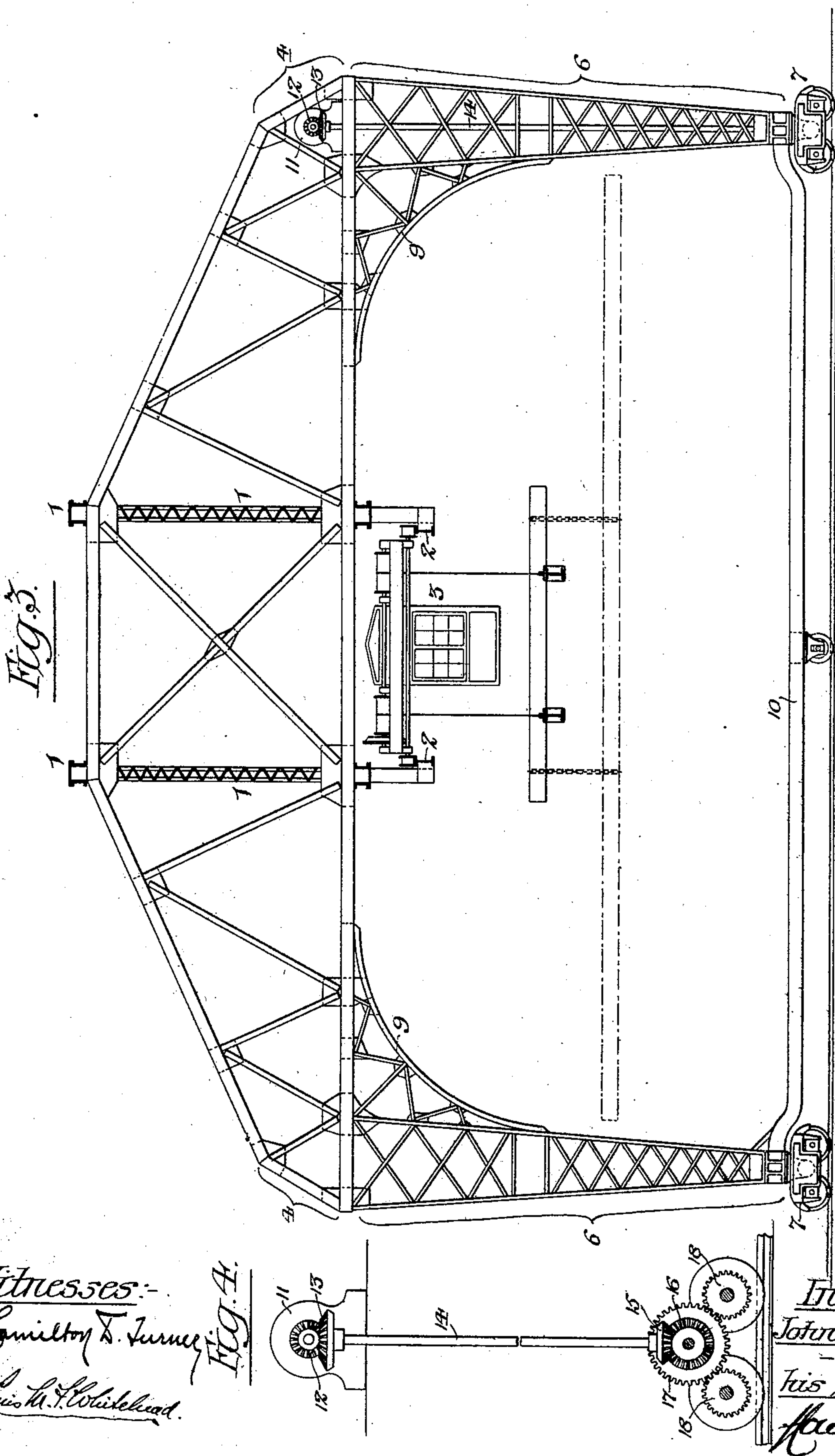
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(No Model.)

3 Sheets—Sheet 3.



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UNITED STATES PATENT OFFICE.

JOHN W. SEAVER, OF CLEVELAND, OHIO, ASSIGNOR TO THE WELLMAN-SEAVER ENGINEERING COMPANY, OF SAME PLACE.

CRANE.

SPECIFICATION forming part of Letters Patent No. 643,988, dated February 20, 1900.

Application filed October 10, 1899. Serial No. 733,199. (No model.)

To all whom it may concern:

Be it known that I, JOHN W. SEAVER, a citizen of the United States, and a resident of Cleveland, Ohio, have invented certain Improvements in Cranes, of which the following is a specification.

The object of my invention is to so construct a gauntree-crane as to provide a very wide opening between the legs and yet permit of the rigid bracing of all parts of the structure and of the convenient disposal thereupon of the driving mechanism for the crane. These objects I attain in the manner hereinafter set forth, reference being had to the accompanying drawings, in which—

Figure 1 is a side view of sufficient of a gauntree or traveling crane to illustrate my invention. Fig. 2 is a top or plan view of the same. Fig. 3 is an end view on a larger scale, and Fig. 4 is a view showing the elements of the driving mechanism of the crane.

In the construction of a gauntree-crane legs are employed in order to elevate the crane-girders to the desired height, and heretofore it has been usual to place these legs directly under the main girders, flaring them outward slightly from top to bottom, or when it was desired to have a larger opening between the legs it has been proposed to arch them; but it has been almost impossible to properly brace a crane of this construction because of the great difficulty experienced in employing suitable knee-braces between the legs and girders. Furthermore, the use of the arched legs has rendered necessary the use of complicated, inconvenient, and expensive driving mechanism for transmitting power from a point adjacent to the crane-girder down along the curved leg to the supporting-truck at the bottom of the same.

In carrying out my invention I combine with the main girders of the crane auxiliary flanking girders disposed at any desired distance laterally beyond the main girders, these auxiliary flanking girders being connected to the main girders by suitable transverse girders and being mounted upon the supporting-legs, which are rigidly braced to the auxiliary girders and to the transverse girders by means of appropriate braces.

The crane shown in the drawings has two

main girders 1, which are connected by means of suitable cross-braces and carry depending runways 2 for the support of the trolley 3. Flanking the central portion of the crane and located laterally beyond the same at the distance required by the desired separation of the supporting-legs are auxiliary girders 4, which may be of any desired form and construction, the girders shown in the present instance being of triangular form. These auxiliary flanking girders are connected to the main girders of the crane by transverse girders 5, of which as many may be used as the length of the auxiliary girders and the character of work for which the crane is designed may suggest. In the present instance I have shown three of these transverse connections—namely, a deep girder or truss at each end of the auxiliary girders and a light girder midway between the ends. The auxiliary girders 4 are supported upon legs 6 of any desired height, these legs being provided at their lower ends with wheeled trucks 7, adapted to suitable rails, upon which the crane may be caused to travel. There may be as many supporting-legs for each of the auxiliary girders as desired, only two of such supporting-legs for each girder being shown in the present instance, one at each end. The supporting-legs are rigidly braced to the girders 4 by means of longitudinal knee-braces 8, as shown in Fig. 1, and to the connecting girders or trusses at the ends of the auxiliary girders by means of transverse knee-braces 9, as shown in Fig. 3. Each pair of legs may also be connected together at the lower ends by means of a transverse tie-bar 10, as shown in Fig. 3, in order to impart additional stiffness to the structure; but such tie-bars will not ordinarily be required. The auxiliary girders 4 also provide a convenient means for carrying the motive power whereby the crane is moved along its supporting-rails and permit the use of simple and direct gearing for transmitting such motive power to the wheels of the supporting-trucks. The motive power which I prefer to employ is an electric motor—such, for instance, as is represented at 11 in Figs. 3 and 4—the armature-shaft of this motor having a bevel-wheel 12, which meshes with a similar wheel 13 at

the upper end of an upright shaft 14, adapted to suitable bearings in one of the legs 6, the lower end of said upright shaft having a bevel-wheel 15, which drives a similar wheel 16, secured to or forming part of a spur-wheel 17, meshing with pinions 18 on the axles of the truck. A single straight shaft thus serves as the means of conveying power from the motor to the truck. Any desired form of gearing may be employed for connecting the upper end of this shaft to the armature-shaft of the motor and for connecting its lower end to the axles of the truck or to one of them, the bevel and spur gears being preferred as simple and efficient means for the purpose.

Each of the supporting-trucks of the crane may have its wheels thus driven, if desired, although it will usually be sufficient to impart power to the trucks of but one of the auxiliary girders.

Having thus described my invention, I claim and desire to secure by Letters Patent—

1. The combination of a crane with auxiliary flanking girders, separated laterally therefrom and connected thereto by transverse girders, and a supporting structure for each of said auxiliary girders, substantially as specified.

2. The combination of a crane with auxiliary flanking girders separated laterally therefrom, and transverse girders connecting said auxiliary girders to the crane, supporting structures for said auxiliary girders, and knee-braces whereby said supporting structures are connected to the elevated structure, substantially as specified.

3. The combination of a crane with auxiliary flanking girders separated laterally therefrom, transverse girders connecting said auxiliary girders to the crane, supporting structures for the auxiliary girders, and means for

tying the supporting structures together transversely at or near the bottom, substantially as specified.

4. The combination of a crane with auxiliary flanking girders laterally separated therefrom, transverse girders connecting said auxiliary girders to the crane, supporting structures for said girders mounted upon wheeled trucks and driving mechanism for the crane mounted upon one of the auxiliary girders, substantially as specified.

5. The combination of a crane with auxiliary flanking girders laterally separated therefrom, transverse girders whereby said flanking girders are connected to the crane, supporting structures for said flanking girders mounted upon wheeled trucks, motive-power apparatus carried by one of said flanking girders, a vertical shaft adapted to bearings in one of said supporting structures, gearing whereby the upper end of said shaft is connected to the motive-power apparatus on the girder, and other gearing whereby its lower end is caused to drive a wheel or wheels of the truck upon which said supporting structure is mounted, substantially as specified.

6. The combination of a crane consisting of two main longitudinal girders, with cross-braces and trolley-support, auxiliary flanking girders laterally separated from said main girders, transverse girders connecting said main and auxiliary girders and supporting structures upon which the auxiliary girders are mounted, substantially as specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOHN W. SEAVER.

Witnesses:

C. W. COMSTOCK,
S. R. SAGUE.