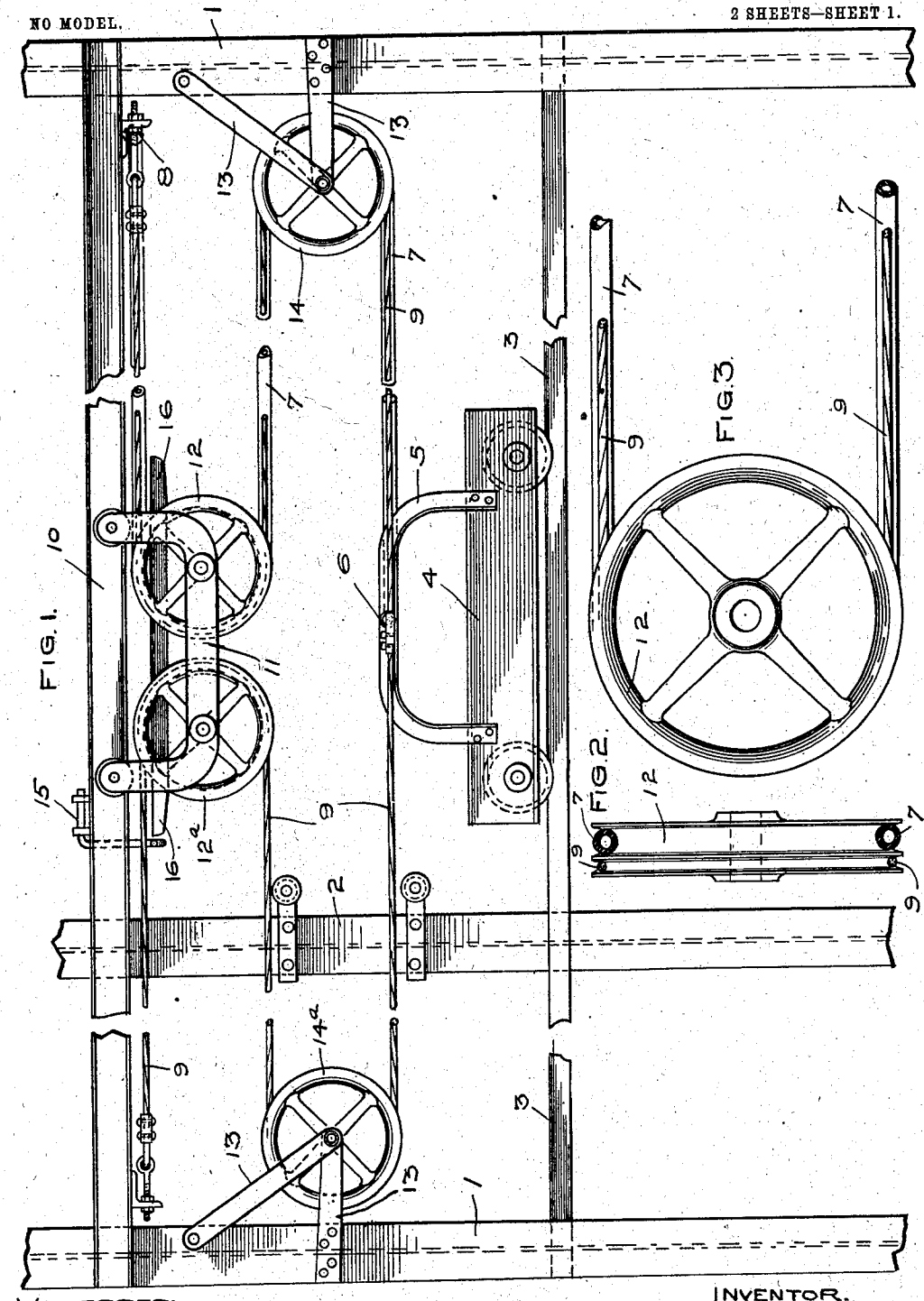
No. 728,495. PATENTED MAY 19, 1903.

H. A. OTTO.

OVERHEAD TRAVELING CRANE.

APPLICATION FILED JULY 16, 1902.

NO MODEL. 2 SHEETS—SHEET 1.



WITNESSES:

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Geo Ellsworth

INVENTOR.

Henry A. Otto

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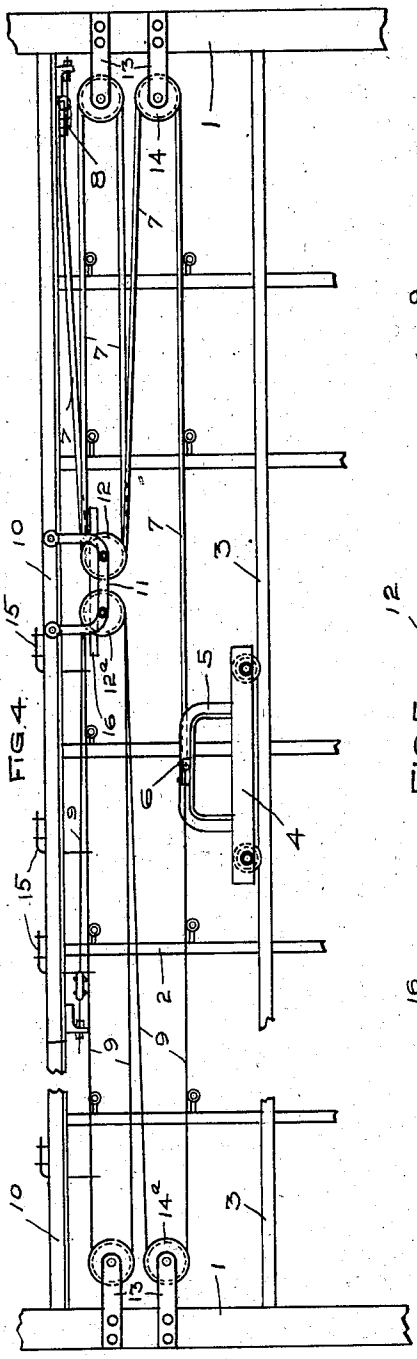


FIG. 4.

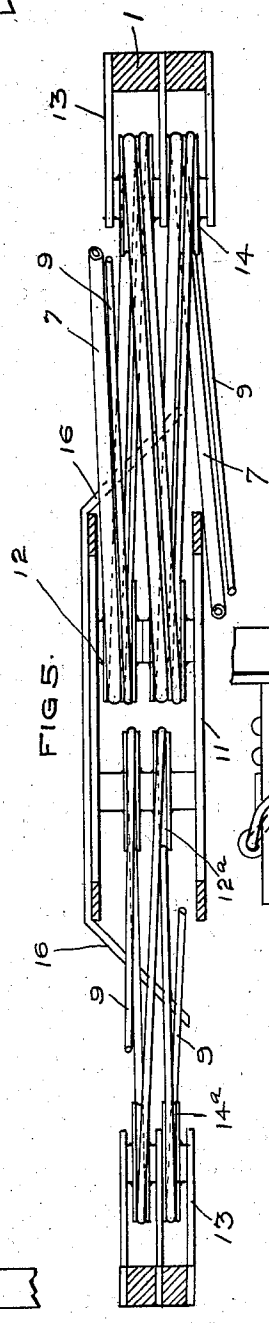


FIG. 5.

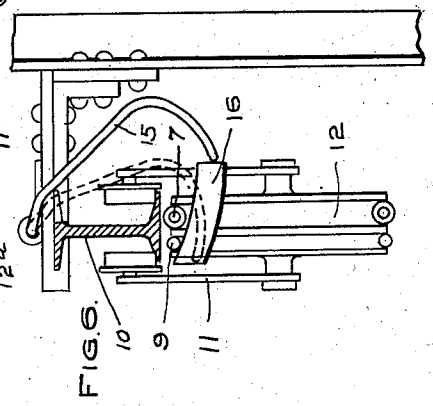


FIG. 6.

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UNITED STATES PATENT OFFICE.

HENRY A. OTTO, OF ALLEGHENY, PENNSYLVANIA.

OVERHEAD TRAVELING CRANE.

SPECIFICATION forming part of Letters Patent No. 728,495, dated May 19, 1903.

Application filed July 16, 1902. Serial No. 115,755. (No model.)

To all whom it may concern:

Be it known that I, HENRY A. OTTO, a citizen of the United States, residing at Allegheny, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Overhead Traveling Cranes, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to improvements in overhead traveling cranes, and more particularly to pneumatically and electrically operated cranes.

In pneumatically-operated cranes the motive power employed for moving the bridge, carriage, and for lifting the load is conveyed from the source of power to the respective motors by means of flexible pipes or hose. Great trouble has heretofore been experienced by reason of the loops formed in the hose caused by the movement of the crane from one position to another. The looped portions of the hose become twisted, and a breakage in the hose is liable to occur or the hose quickly worn out. In electrically-operated cranes exposed wires and contact-plates have usually been employed. These exposed parts are objectionable on account of the liability of workmen coming in contact with said parts. In my invention insulated wires are employed.

The object of my invention is to provide a new and improved means for carrying or supporting the hose of pneumatically-operated cranes and an insulated wire of an electrically-operated crane.

In the accompanying drawings, which illustrate applications of my invention in connection with a pneumatically-operated crane, Figure 1 is a broken diagrammatic view embodying my invention; Figs. 2 and 3, detail views of a sheave and power-conveying cable and wire cable. Fig. 4 is a view similar to Fig. 1, showing a different arrangement of sheaves; Fig. 5, a detail plan of trolley, showing the sheaves and cables illustrated by Fig. 4; and Fig. 6, an end view of trolley, illustrating the manner of moving the hangers 15 out of the path of travel of the trolley.

Referring to the drawings, 1 represents end columns constituting a part of the framework of a building in which the traveling crane is located, and 2 a central column of the usual construction. A track 3, on which the bridge 4 travels, is supported in the usual manner. In order to avoid confusion, I have deemed it best to omit the carriage, motors, &c., located on the bridge and to show the power-conveying cable leading to the bridge. I desire it to be understood, however, that my invention is applicable for use in connection with the power-conveying cable employed for moving the carriage on the bridge. Attached to and extending upwardly from the bridge is a support 5. Support 5 carries a rope-clamping and hose-connecting device 6. In the form of my invention as illustrated air under pressure is employed for the motive power and is introduced to the flexible power-conveying cable or hose 7 above the bridge at one end of the building, the end of the hose being attached to a hanger 8. A second cable, preferably a wire rope 9, extends the entire length of the building, one end being fastened to the hanger 8 and its other end to a similar hanger 9, located at the other end of the building. This cable is also fastened by the clamping device 6 to the support 5 and is caused to travel by the movement of the bridge.

Located above the bridge-track is another track 10 for the trolley 11. In the form of Fig. 1 trolley 11 is provided with a combined power-conveying and second cable sheave 12 and a second cable-sheave 12^a, while in the form of Fig. 4 two sheaves 12, as well as two sheaves 12^a, are employed. The number of trolley-sheaves used depends on the distance it is desired to have the trolley travel, as will be referred to hereinafter. Between the two tracks 3 and 10 and supported by suitable brackets 13 are in the form of Fig. 1 two sheaves 14 14^a, while in the form of Fig. 4 I employ four sheaves. Suspended from the track 10 are a number of hangers or movable supports 15, which aid in supporting the rope and the hose. These supports 15, as well as the manner they operate, are particularly shown by Fig. 6. As will be noted by reference to this figure the supports 15 are thrown out of the path of travel of the trolley 11 by the outwardly-extending projections or guards 16, situated at both ends of the trolley-frame. In place of having the

track 10 located, as shown by the drawings, above and in line with the bridge-track 3 this track may be otherwise located. The purpose of having track 10 separated from and independent of the crane-track is to permit the trolley thereon to have a free and uninterrupted travel with respect to the crane and to permit the crane to be moved close to the sides of the building. As illustrated by Fig. 1, the trolley 11 is arranged to travel in an opposite direction just one-half the distance the bridge travels and at one-half the speed. In Fig. 4, where the number of sheaves employed is greater than in Fig. 1, the trolley travels in the opposite direction from the bridge one-quarter the distance the bridge travels. If found desirable or necessary, a very slight travel of the trolley could be arranged for by multiplying the number of sheaves employed.

What I claim is—

1. The combination, with an overhead traveling crane mounted on a track, a flexible power-conveying cable for supplying a motive fluid to the crane, having one of its ends stationary and the other attached to the crane, a second track separated from and independent of the crane-track, a trolley having a sheave thereon mounted on the second track, the power-conveying cable arranged to run on a trolley-sheave, a second cable having its ends immovable and connected with the crane, said second cable also arranged to run on a sheave on said trolley, substantially as and for the purpose described.

2. The combination, with an overhead traveling crane mounted on a track, a flexible power-conveying cable for supplying a motive fluid to the crane, having one of its ends stationary and the other attached to the crane, a second track separated from and independent of the crane-track, a trolley having sheaves thereon mounted on the second track, the power-conveying cable arranged to run on one of the trolley-sheaves, a second cable having its ends immovable and connected with the crane, said second cable arranged to run on two different sheaves on the trolley, substantially as and for the purpose described.

3. In an overhead traveling crane, the combination, with a track, of a bridge on said track, a flexible power-conveying cable leading from a source of motive power to the bridge or motor for supplying a motive fluid thereto, means for carrying or supporting the power-conveying cable whereby the formation of loops in said cable is prevented, comprising, a second track, a trolley or carriage provided with a sheave, said trolley mounted on the second track and the power-conveying cable arranged to run on said sheave.

4. In an overhead traveling crane, the combination, with a track, of a bridge on said track, a flexible power-conveying cable leading from the source of motive power to the bridge for supplying a motive fluid to a motor on the bridge, and means for carrying or supporting the said cable in such a manner as to prevent looping of the cable, comprising a second track, a trolley on said second track, provided with sheaves, a second cable connected with the bridge and passing over said sheaves, and the power-conveying cable arranged to run on a trolley-sheave.

5. In an overhead traveling crane, the combination, with a track, a bridge on said track, a flexible power-conveying cable attached to the bridge, a second cable fastened to the bridge, a track above the bridge-track, a trolley on the upper track provided with sheaves, said power-conveying cable and the second cable both passing over one of the sheaves, and the second cable passing over another trolley-sheave.

6. In an overhead traveling crane, the combination, with a track, a bridge on said track, a flexible power-conveying cable leading to the bridge for supplying a motive fluid thereto, a second cable attached to the bridge, a second track, a trolley provided with sheaves mounted on the second track, sheaves intermediate the bridge-track and the second track, said power-conveying and second cables adapted to run on said sheaves.

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

HENRY A. OTTO.

Witnesses:
MARGARET HUGHES,
CHARLES REHLIN.