Sept. 8, 1925. 1,552,432

E. N. HESCOCK ET AL

SUPPLEMENTAL STRUCTURAL SUPPORT

Filed March 31, 1921 2 Sheets-Sheet 1

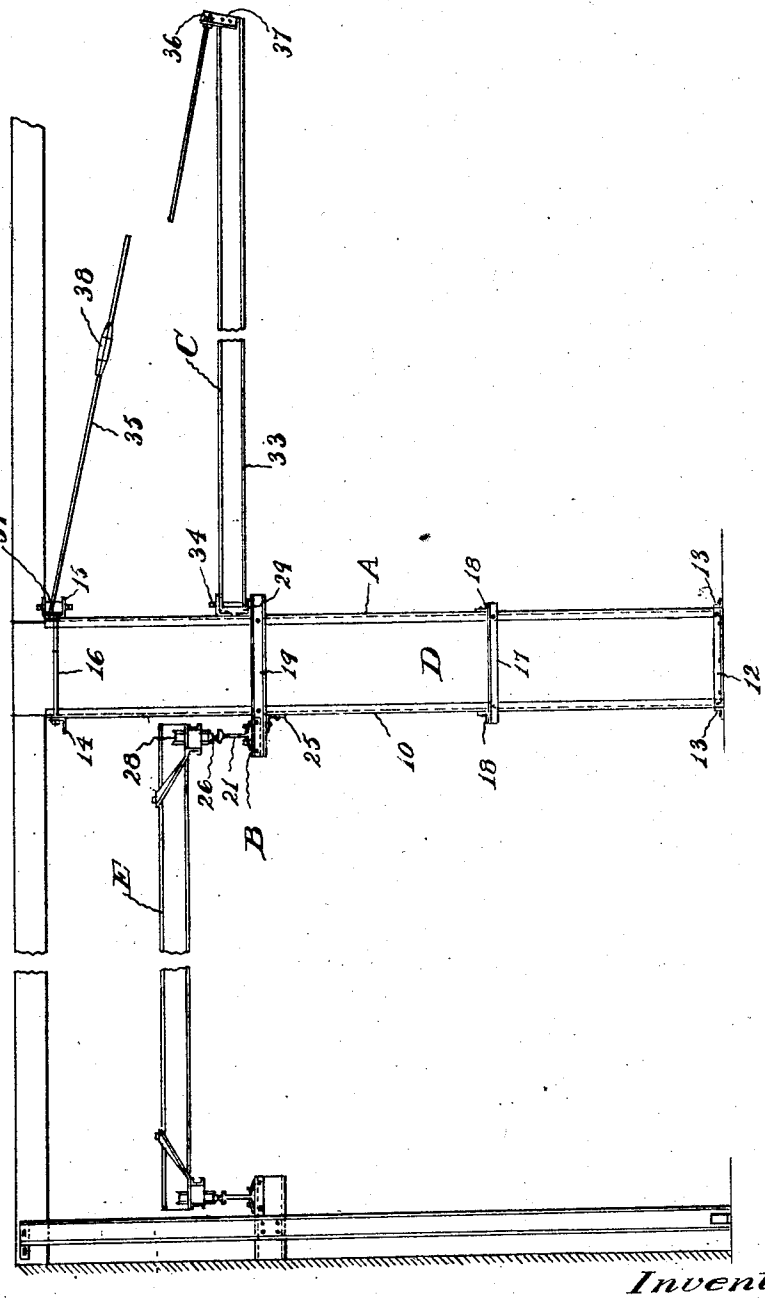


Fig. 1.

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Fig. 2.

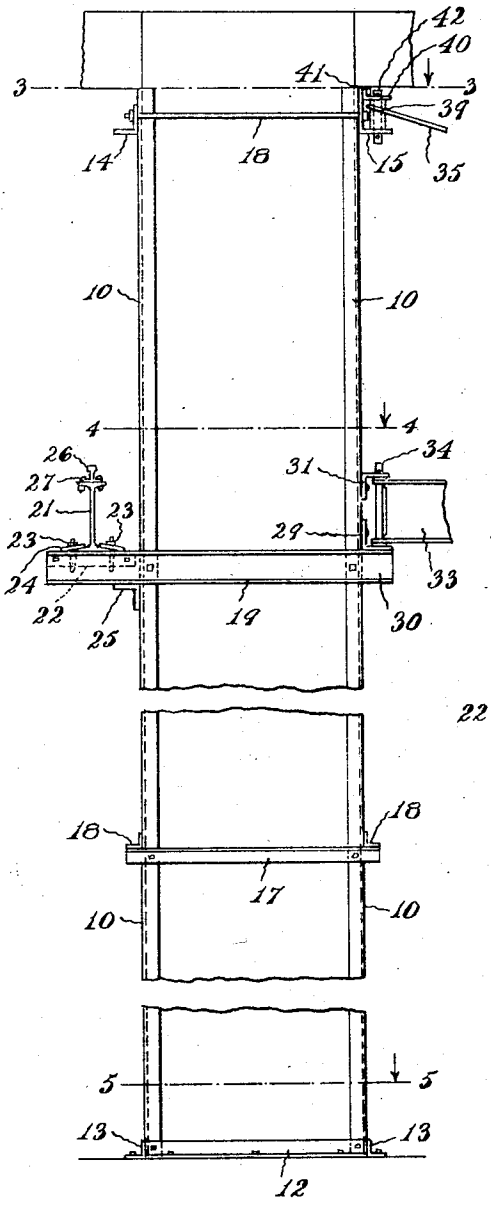


Fig. 3.

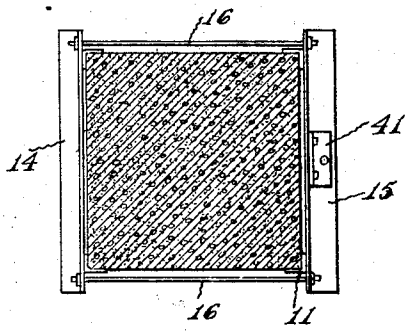


Fig. 4.

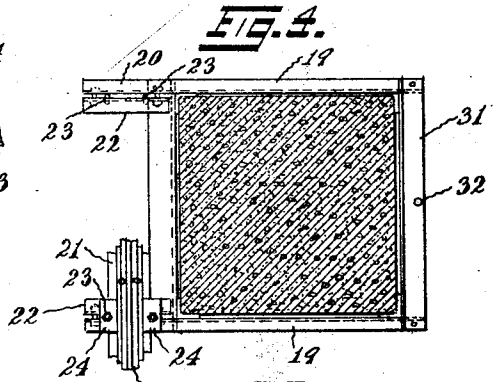
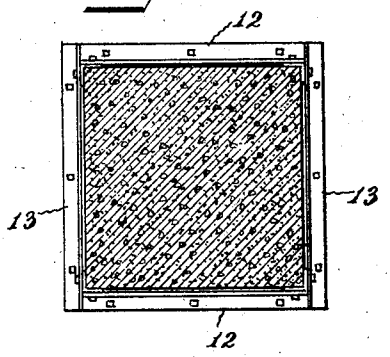


Fig. 5.



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Patented Sept. 8, 1925. 1,552,432

UNITED STATES PATENT OFFICE.

ETHAN N. HESCOCK, OF WESTFIELD, ERNEST SMITH, OF ELIZABETH, NEW JERSEY, AND JAMES M. WELSCH, OF NEW YORK, N. Y., ASSIGNORS TO NEW JERSEY FOUNDRY & MACHINE COMPANY, A CORPORATION OF NEW JERSEY.

SUPPLEMENTAL STRUCTURAL SUPPORT.

Application filed March 31, 1921. Serial No. 457,290.

To all whom it may concern:

Be it known that we, ETHAN N. HESCOCK, a citizen of the United States, residing at Westfield, in the county of Union and State of New Jersey, ERNEST SMITH, a citizen of the United States, residing at Elizabeth, in the county of Union and State of New Jersey, and JAMES M. WELSCH, a citizen of the United States, residing at New York, in the county of Bronx and State of New York, have invented certain new and useful Improvements in Supplemental Structural Supports, of which the following is a specification.

The present invention relates to supplemental structural supports, and one object is to provide a supporting structure for a crane runway and jib cranes.

Another object is to provide a structural support for a crane runway and jib cranes, for use with columns or uprights the material of which is not adapted for securing the structural support thereto by ordinary means.

Another object is to provide a simple and cheap structural support for a crane runway, or crane rail track, and jib cranes, which structual support may be arranged around and on the exterior of columns or uprights; more particularly stone, brick or concrete columns or uprights, without drilling into or in any way preparing the columns or uprights for providing cooperative support.

Another object is to provide a structural support for a crane runway and jib cranes for use with columns or uprights, which structural support provides means for protecting the edges of columns or uprights of stone, brick or concrete, said means providing a covering for the edges of the columns or uprights and shielding them from contact with material or articles carried by the crane runway or jib cranes.

In the accompanying drawings which show one embodiment of our invention and which form part of this specification,

Figure 1, is a general view showing an end of the crane runway and a side of a jib crane operatively supported by our structural support on a column or upright.

Fig. 2, is an elevation of a column or upright used for cooperative support of our invention and showing our structural support operatively connected thereto, the figure being on larger scale than Fig. 1.

Fig. 3, is a sectional view of the column or upright and our structural support on the line 3—3 of Fig. 2, and on the same scale.

Fig. 4, is a sectional view of the column or upright and our structural support on the line 4—4 of Fig. 2, and on the same scale.

Fig. 5, is a sectional view of the column or upright and our structural support on the line 5—5 of Fig. 2, and on the same scale.

Similar letters or numerals denote similar parts throughout the several views.

Our structural support comprises in its main elements or parts the frame generally denoted by A, the crane runway generally denoted by B, the jib crane generally denoted by C, and the cooperating support column or upright D, such column or upright in the present instance being rectangular in cross-section.

The frame A comprises vertical strips 10, which are of suitable metal, each strip 10, as shown, when viewed in cross-section, being substantially rectangular, as 11, Fig. 3, but it may be of such other form as will not allow the frame A to twist or slide around horizontally on the column or upright.

The strips 10 extend vertically from the bottom to substantially the top of each column or upright of a line or series of columns or uprights, and are separably connected on the exterior of and around the column or upright by front and rear and inner side and outer side cross-pieces 12 and 13 separably fastened by bolts and nuts or screws, or other disconnecting means, to the front and rear and inner and outer side faces of the strips 10, and bolted or otherwise suitably fastened to the floor of the building; the faces of the strips towards the crane runway being termed the inner, and the faces towards the jib crane being termed the outer, for purpose of description.

The strips 10 are separately connected or secured together on the exterior of and around the column or upright adjacent to the upper floor beams of the building, by an inner cross-piece 14, and by an outer cross-piece 15, the cross-pieces 14 and 15, being angle pieces and connected by front and rear

tie rods 16. One or more means for separably connecting the front and rear and inner and outer faces of the strips 10 and strengthening the frame A, such as the cross-pieces 17 and 18, may be arranged between the top and bottom of the strips 10.

Referring to Figs. 3 and 5, it will be seen that an open sided frame of separable parts is thus provided around and on the exterior column or upright and supported thereby.

At a desired position above the floor of the building, front and rear cross-pieces, 19, are separably fastened to the front and rear faces of the strips 10 by bolts and nuts or screws, or other disconnectible means, the inner ends 20 of the cross-pieces 19 providing means for carrying the runway rail support 21, and the outer ends, later mentioned, of the cross-pieces 19 providing means for carrying the inner end of the beam of the jib crane C.

The rail support 21 preferably is an I beam, the lower flange of which is separably secured to the inner ends 20 of the cross-pieces 19 by base plates 22 secured to the ends 20 on the under side thereof, and by hook bolts 23 passing through clips 24 and through the lower flanges of the rail support and engaging over the edges of the base plates 22.

Outer and inner cross-pieces such as the angle pieces 25, separably secured to the inner faces of the strips 10, and bearing against the under edges of the ends 20, serve to connect transversely the strips 10 on their inner sides.

The runway rail 26 is separably secured to the upper flange of the rail support 21, by hook bolts 27 passing through the upper flange of the rail support and engaging over the under flange of the rail 26, the roller 28 of the travelling crane E engaging the rail 26.

An angle piece 29 is separably secured to the outer faces of the strips 10 and resting upon the upper edges of the outer ends 30 of the cross-pieces 19, to connect transversely the strips 10, and an angle piece 31 is separably secured to the outer faces of the strips 10 at a point above the angle piece 29 for the purpose later stated, the angle piece 31 having a hole 32 therethrough.

The inner end of the beam 33 of the jib-crane C is supported by the angle pieces 29 and 31, by means of a removable pin 34 passing through extended portions of the beam 33 and seated in a hole, not shown, in the angle-piece 29, and passing through the hole 32 in the angle piece 31, swinging or pivotal movement of the beam 33 thus being provided.

The stay or guy 35 for the crane beam 33 is separably secured at its outer end to the outer end of the crane beam by threaded nut and plate attachment, such as 36 and 37, and may be provided with a turnbuckle 38 for tensioning the stay or guy.

The inner or upper end of the stay 35 has an eye or turn formed thereof, as at 39, as will readily be understood from the drawings, which encircles or passes around a spool 40 supported between the base or horizontal portion of the cross-piece 15 and the extending portion of an angle plate 41 separably secured to the outer vertical face of the cross-piece 15, the spool 40 being held in place by a pin 42, passing through the spool and through the cross-piece 15 and angle plate 41, and removably secured therein, swinging or pivotal movement of the stay or guy 35 in correspondence with the jib crane beam 33 thus being provided.

While we have shown our invention as applied to the columns or uprights of a single line or series of columns or uprights, and show the crane runway supported at one side by our structural support secured on and around the columns or uprights, and supported on the other side on the side wall of the building in a well known manner, and meeting conditions which may be required by the nature of the building where our invention is used, it should be understood that we do not so limit our invention, but that our structural support may be secured around and on the exterior of each column or upright of twin series of oppositely related columns or uprights and in such case the crane runway and its means of support is provided by our invention between the inner sides, or sides of the columns or uprights which face each other, and jib cranes are provided on the outer side of one series, or on the outer sides of both the series, of columns or uprights.

Having thus described our invention it should be understood that there may be modifications thereof and variations therein without departing from the spirit of the invention or exceeding the scope of the appended claims.

What we claim and desire to protect by Letters Patent is;—

1. In combination, a support; a column extending upwardly therefrom; and a frame secured around and against said column and resting on said support and carrying supporting means thereon exterior to the column.

2. In combination, a support; a column extending upwardly therefrom; and a frame detachably secured around and against said column and resting on said support and carrying supporting means thereon.

3. In combination, a support; a column extending upwardly therefrom; and a frame secured around and against said column and resting on said support and carrying supporting means thereon; said frame including means exterior to the column for pre-

venting the twisting of the column on the support.

4. In combination, a support; a column of angular cross-section extending upwardly therefrom; and a frame secured around and against said column and resting on said support and carrying supporting means thereon; said frame including means engaging corners of the column exterior to the column for preventing the twisting of the frame on the column.

5. In combination, a support; a column of rectangular cross-section extending upwardly therefrom and a frame secured around and against said column and resting on said support and carrying supporting means thereon; said frame comprising angle strips fitting on the corners of the column.

6. In combination, a support; a column extending upwardly therefrom and having corners; and a metallic frame secured around and against said column and resting on said support and carrying supporting means thereon; said frame including means for protecting said corners.

7. In combination, a column; and a frame secured around and against said column and resting on said support and carrying supporting means thereon; said frame being free to expand independently of the column.

8. In combination, a floor; a column extending upwardly from the floor; and a frame secured around and against said column and resting on said floor and carrying supporting means thereon.

9. In combination, a floor; a column extendig upwardly therefrom; and a frame secured around and against said column and bolted to said floor exterior to said column and carrying supporting means thereon.

10. In combination, a support; a column extending upwardly therefrom; a frame secured around and against said column and resting on said support; means encircling the frame at the upper part thereof; a crane beam pivoted to the frame below the encircling means; and a guy connecting said beam and encircling means.

11. In combination, a column; a frame secured around and against said column and resting on said support and carrying supporting means thereon; substantially horizontal spaced pieces secured on one side of said frame; a cross piece disposed above said spaced pieces; tie rods connecting said cross pieces; a crane beam pivoted between said spaced pieces; and a guy secured to said beam and pivoted to the cross piece above the spaced pieces.

12. In combination, a support; a column extending upwardly therefrom; a frame secured around and against said column and resting on said support; spaced pieces on said frame; a supporting piece on the opposite side of the frame; cross pieces disposed above said supporting and spaced pieces; tie rods connecting said cross pieces; a crane beam pivoted between said spaced pieces; and a guy secured to said beam and pivoted to the cross piece above the spaced pieces.

13. In combination, a column; a frame secured around and against said column and including corner strips; substantially horizontal spaced pieces secured on one side of said frame; a piece disposed above said angle pieces and comprising a horizontal web and a vertical web, the latter being secured to and connecting adjacent corner strips; a crane beam having its inner end pivoted between said spaced pieces; an angle plate secured to the vertical web of the cross piece above said spaced pieces; and a guy secured to the outer end of said beam and having its inner end pivoted to and between said plate and the cross-piece supporting it.

14. In combination, a support; a column extending upwardly therefrom; a frame secured around and against said column and resting on said support; and cross pieces secured to said frame and projecting at both ends of the cross piece for carrying structure.

15. In combination, a column; a frame secured around and against said column; a substantially horizontal piece secured on one side of said frame; a supporting piece at the opposite side of the frame; bracket pieces disposed on opposite sides of the frame and resting on the supporting piece and under the lower spaced piece and projecting beyond said supporting piece for supporting a structure; and a structure in part carried on said horizontal piece.

16. In combination, a rectangular column; a frame secured around and against said column and including angular corner strips; a horizontal angle piece having one web secured to and connecting adjacent vertical strips, the horizontal web being lowest; a horizontal supporting piece at the opposite side of the column from the spaced angle pieces and connecting adjacent strips; supporting cross pieces disposed on opposite sides of the column and connected to adjacent strips and engaging under said horizontal web and resting on and projecting beyond said supporting piece, to form brackets for supporting a structure; and supporting means in part carried by said angle piece.

17. In combination, a support; a column extending upwardly therefrom; a transverse beam carried on said column; and a frame secured around and against said column and resting on said support and helping to support said beam.

18. In combination, a support; a column extending upwardly therefrom; a transverse member on said column carrying supporting

means; and a frame secured around and against said column and resting on said support and extending to said member.

19. In combination, a support; a column of rectangular cross-section extending upwardly therefrom; a frame secured around and against said column and resting on said support and carrying supporting means thereon, said frame including strips at the corners of the column; and intermediate horizontal connecting means disposed between said means and support and comprising horizontal connecting pieces connecting all of the adjacent vertical strips.

20. In combination, a support; a column extending upwardly therefrom; a frame secured around and against said column exterior thereto and resting on said support; cross pieces secured to said frame and projecting at one end; and a runway carried on said end.

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