Aug. 28, 1928. 1,682,078

C. F. HANLEN

ELEVATING TRANSFER STORAGE RACK

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Fig. 2.

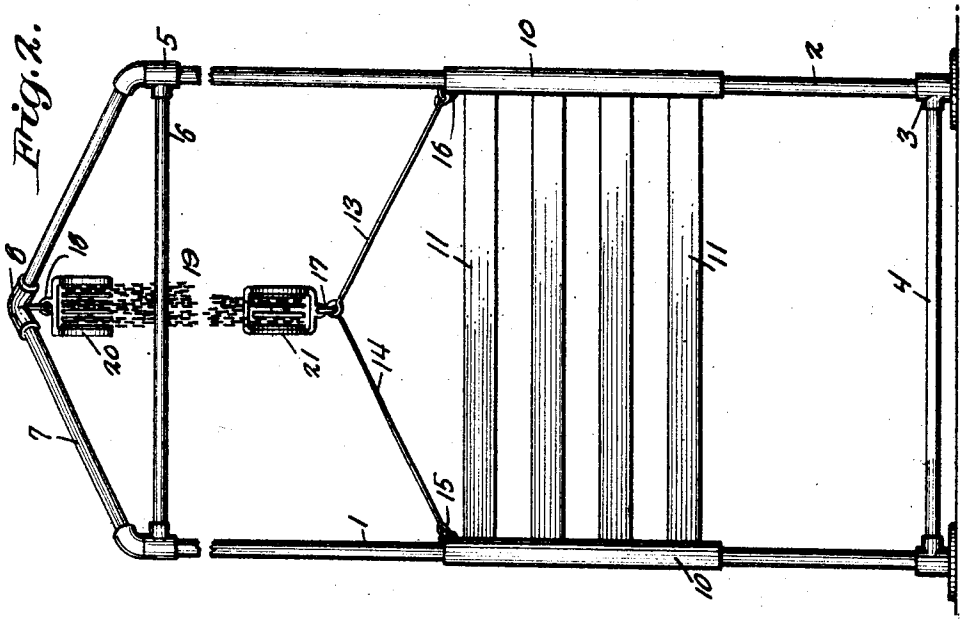
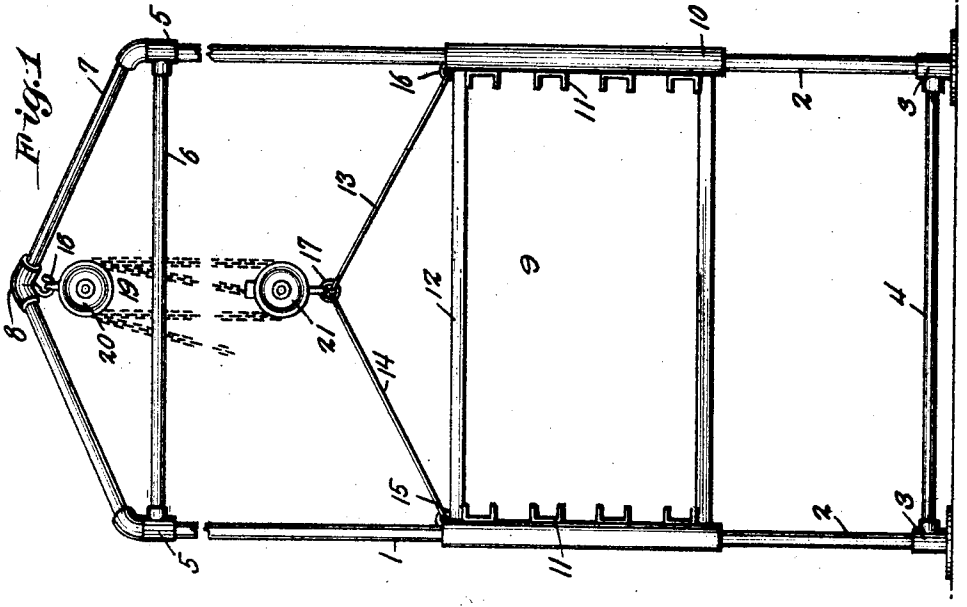


Fig. 1.



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Witnesses
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Wm. R. Smith

BY Richard B. Owen
ATTORNEYS.

Aug. 28, 1928. 1,682,078

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ELEVATING TRANSFER STORAGE RACK

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Fig. 4.

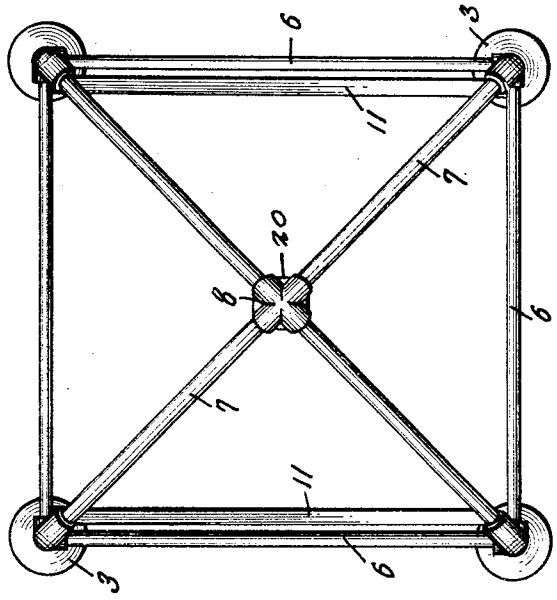
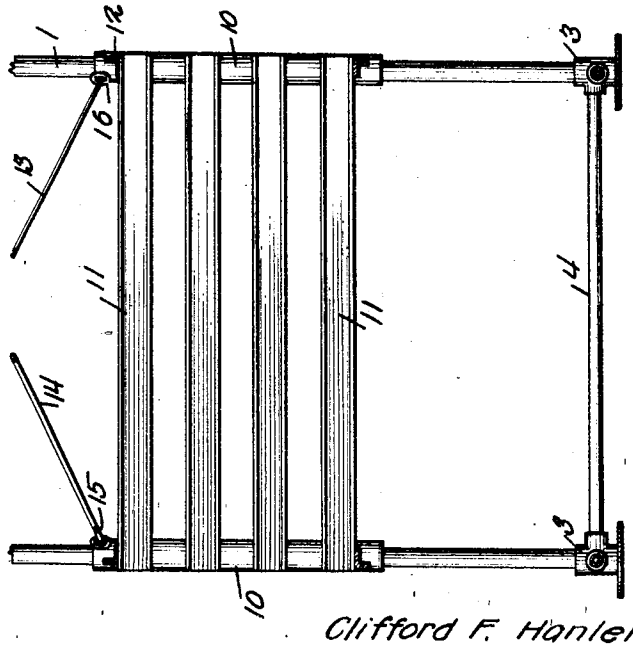


Fig. 3.



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ELEVATING TRANSFER STORAGE RACK

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Fig. 6.

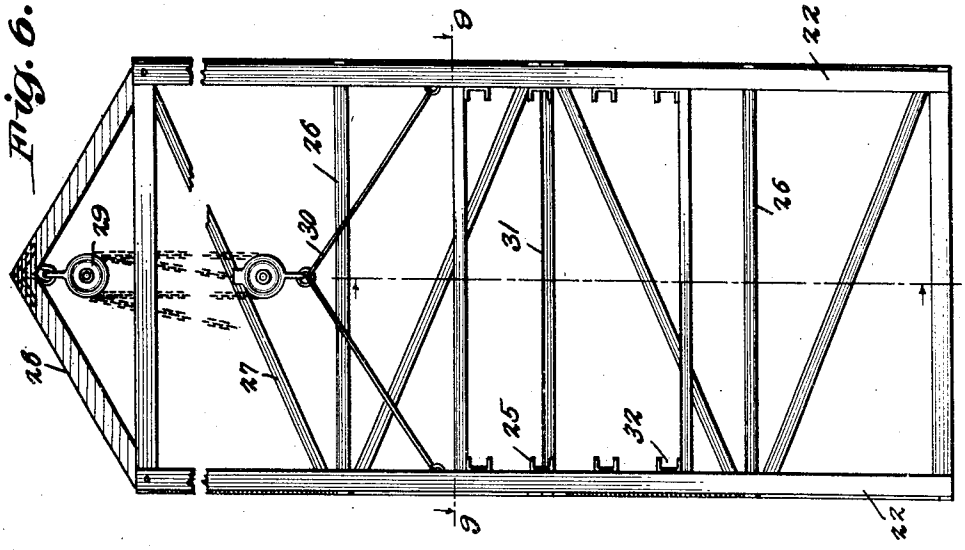
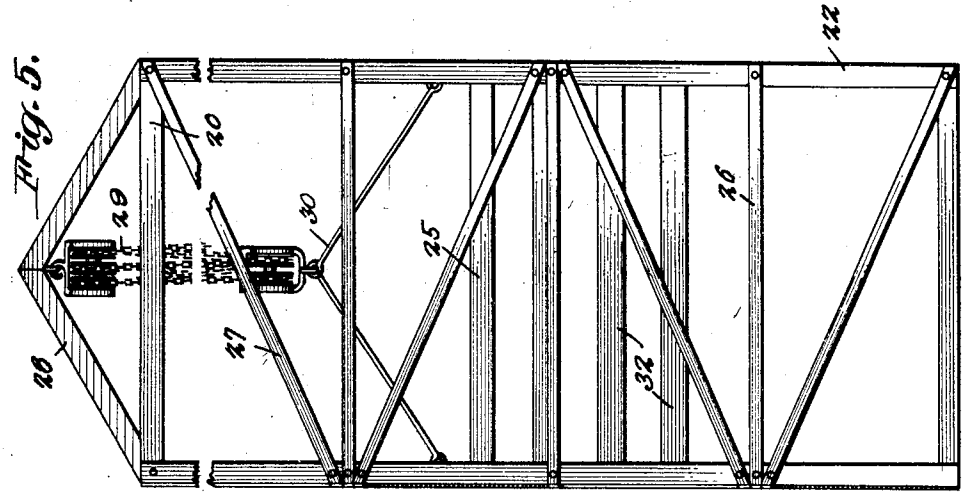


Fig. 5.



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Aug. 28, 1928. 1,682,078

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ELEVATING TRANSFER STORAGE RACK

Filed May 31, 1927 4 Sheets-Sheet 4

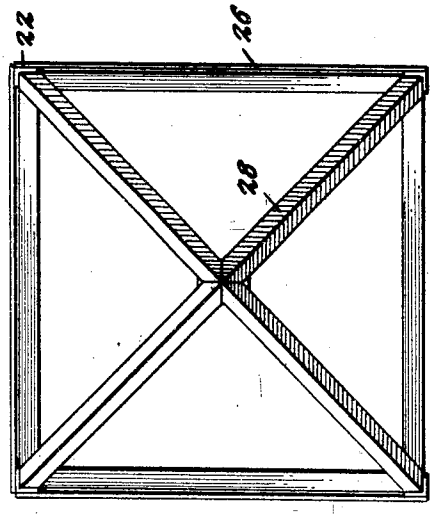


Fig. 8.

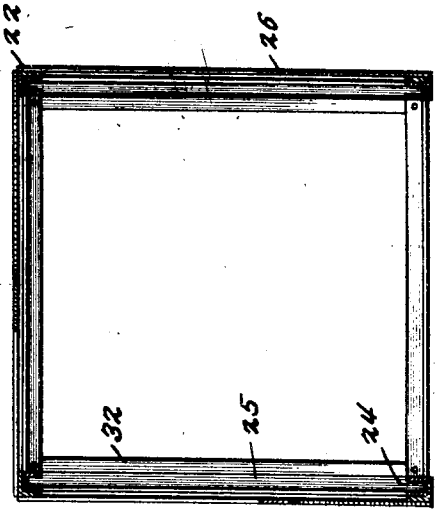


Fig. 9.

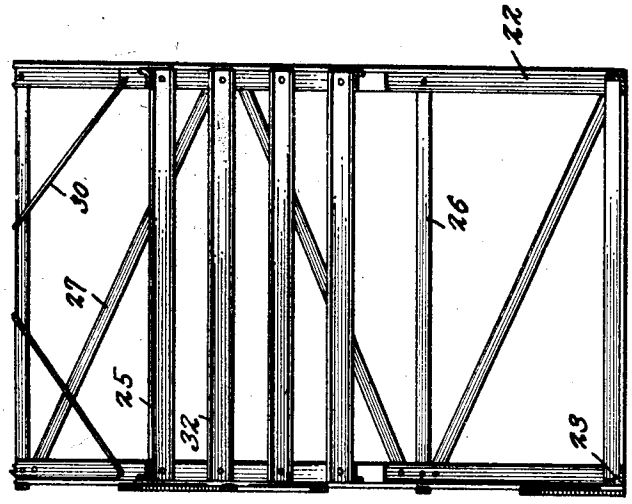


Fig. 7.

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Patented Aug. 28, 1928. 1,682,078

UNITED STATES PATENT OFFICE.

CLIFFORD F. HANLEN, OF PHOENIX, ARIZONA.

ELEVATING-TRANSFER-STORAGE RACK.

Application filed May 31, 1927. Serial No. 195,530.

This invention relates to an elevating structure and more particularly to an elevating transfer storage rack, particularly adapted for use in composing rooms for newspapers or printing shops, and has for its primary object a construction whereby a number of article supporting trays may be arranged in stack formation in a manner to facilitate the positioning of the trays.

An object of the invention is the construction of an elevating structure incorporating a series of superimposed sets of supports, capable of selective movement into proper positions to receive thereon trays or other articles to be elevated.

Another object of the invention is the combination of a substantial construction of frame supporting a novel construction of carriage for adjustable movements to selectively or successively position at the proper level a pair of supports for receiving thereon a tray or other article to be supported in the elevation thereof.

A feature of the invention is the novel manner of constructing the carriage and frame and associating the same so that the carriage may be accurately adjusted in a vertical or downwardly direction with a minimum amount of friction thereby requiring a minimum consumption of energy.

Besides the above, my invention is distinguished in the substantial manner in which the various parts are interconnected so as to materially reinforce the apparatus in all directions to be able to fully resist all strains to which a device of this character is subject when in use.

With these and other objects in view the invention will be better understood from the following detailed description taken in connection with the accompanying drawings, wherein:

Figure 1 is a front elevation of one construction of my invention,

Figure 2 is a side elevation,

Figure 3 is a vertical sectional view,

Figure 4 is a top plan view,

Figure 5 is a side elevation of another form of my invention,

Figure 6 is a front elevation,

Figure 7 is a fragmentary vertical sectional view,

Figure 8 is a top plan view, and

Figure 9 is a horizontal sectional view.

Again referring to the drawings, illustrating two of the many constructions of my invention, and more particularly to Figures 1 to 4 inclusive, the numeral 1 designates a frame structure of any required height to accommodate the proper travel of the elevator or carriage to be described and consists of the corner bars 2, four in number, and having their lower ends mounted in the base plates 3, that in turn are connected to the lower cross bars 4. The upper ends of the corner bars have mounted thereon unions or connecting elements 5 that receive the upper cross bars 6. Arch bars 7 have their outer ends detachably secured to the corner bars and their inner ends arranged in group formation so as to be effectively secured together by a connector 8, which connector is centrally positioned with relation to the frame structure.

My improved carriage 9 in this particular construction of my invention consists of corner tubes or tubular slides 10, which encircle and are slidably mounted on the corner bars 2. It will be appreciated that this relative arrangement of the slides 10 and corner bars 2 enable the former to be adjusted vertically with a minimum amount of friction, but at the same time, capable of taking care of all lateral strains to which the carriage is subject in the movements thereof. The slides 10 are connected together in pairs by the horizontally disposed vertically spaced supports 11 shown in this particular as formed from channel iron rigidly secured to the slides and arranged in pairs of different elevations relative to the carriage so that the elevator or carriage may be adjusted to selectively bring a pair of supports at the proper level to receive thereon a tray or other device to be supported. To complete the carriage construction, I provide a plurality of side bars extending at right angle direction relative to the supports and secured to the slides 10. Thus it will be appreciated that the bars 12 effectively cooperating with the supports 11 reinforce the carriage in the required directions against the strains created in the operation of the carriage. A hanger 13 is provided for making the proper connection with a suitable lifting device and this hanger in this particular construction of my invention consists of a plurality of rods 14 having their ends formed into hooks 15 for engagement with the eye bolts 16 secured to the slides and to a single ring 17 centrally arranged so as to be in vertical alinement with the hook 18 carried by the connector 8.

Any suitable type of lift device may be interposed between the hooks 18 and ring 17 for giving the required movement to the carriage I have found it of a decided advantage to utilize a block and tackle 19, the upper block 20 of which is connected to the hook 18 and the lower block 21 connected to the ring 17 and as these blocks are in a direct vertical alinement, it will be appreciated that easy operation of the block and tackle is assured.

In the construction of my invention as described manipulation of the block and tackle raises the carriage for positioning the supports selectively or successively into the proper position to be at the proper level to receive thereon a tray or other articles from a truck or other transfer vehicle and this is accomplished with very little effort due to the use of a block and tackle lifting device and the novel sliding connections between the carriage and the supporting frame. The construction of hanger illustrated enables the block and tackle to assume the proper vertical position at all times and further accommodates slight adjustment of the carriage to properly adjust itself in its travel along the corner bars of the frame.

In the construction of my invention as just described manipulation of the block and tackle for raising and lowering the carriage positions the supports selectively or successively into the proper position to be at the proper level to receive thereon a tray or other article from a truck or other type of transfer vehicle and this is accomplished with very little effort due to the use of a block and tackle lifting device and the novel sliding connections between the carriage and the supporting frame. The construction of hanger illustrated enables the block and tackle to assume its proper vertical position at all times and further accommodates slight adjustments of the carriage to properly adjust itself in its travel along the corner bars of the same.

In Figures 5 to 9 inclusive, I have illustrated a construction exactly the same as that just described with the exception that angle bars are utilized in the construction of the frame and the carriage supported in abutting relation therewith. The corner bars 22 which are of angle iron construction are so positioned that the inner sides 23 thereof are presented inwardly toward the center of the frame so as to snugly receive for sliding movement the corner bars 24 of the carriage 25. These corner bars 22 are rigidly secured together by the cross bars 26 and the struts 27. The arch bars 28 secured to the top of the frame provide the support for the block and tackle 29 that is in turn connected to the hanger 30 of the carriage 25. The corner bars 24 of the carriage are rigidly secured together by the cross bars 31 and the supports 32 of the same construction as shown in Figures 1 to 4 inclusive.

The construction and operation of my improved apparatus enables the same to be put to various uses, but I have found it of decided advantage to use the apparatus in composing rooms of newspapers and printing shops for saving time and labor and facilitating the transfer of trays from the make up trucks to the make up stone. This desired result is accomplished by the utilization of a plurality of sets of supports arranged in superimposed relation for successive or selective movement into the proper position to be on the level with the tray or other article to be transferred thereto. It can be readily appreciated that with an apparatus so constructed, designed and illustrated a single operator can very easily manipulate the block and tackle lifting device for raising selectively the supports to the proper level for receiving the transferred trays and during the transferring operation the block and tackle can be arranged in a locked position so that a single operator can both adjust the elevator and make the necessary transfers.

It is, of course, to be understood that the frame structure may be constructed in many ways and the elevator may be constructed in various manners and associated with the frame in various relations and further various types of lifting devices may be utilized for raising and lowering the carriage relative to the frame structure and therefore, I do not desire to be limited in any manner except as set forth in the following claims.

What I claim as new is:

1. In combination, a frame structure including vertical corner bars, cross bars connecting the corner bars together and arch bars extending over the frame and connected together centrally of the frame, a carriage slidably supported by the corner bars and a lifting device secured to the carriage and to said arch bars at their central connections.

2. In combination, a frame structure including corner bars of L formation, a carriage including corner bars of L formation in sliding contact with the first mentioned corner bars, a plurality of supports carried by the carriage and a block and tackle connection between the carriage and the upper portion of the frame.

In testimony whereof I affix my signature.

CLIFFORD F. HANLEN.