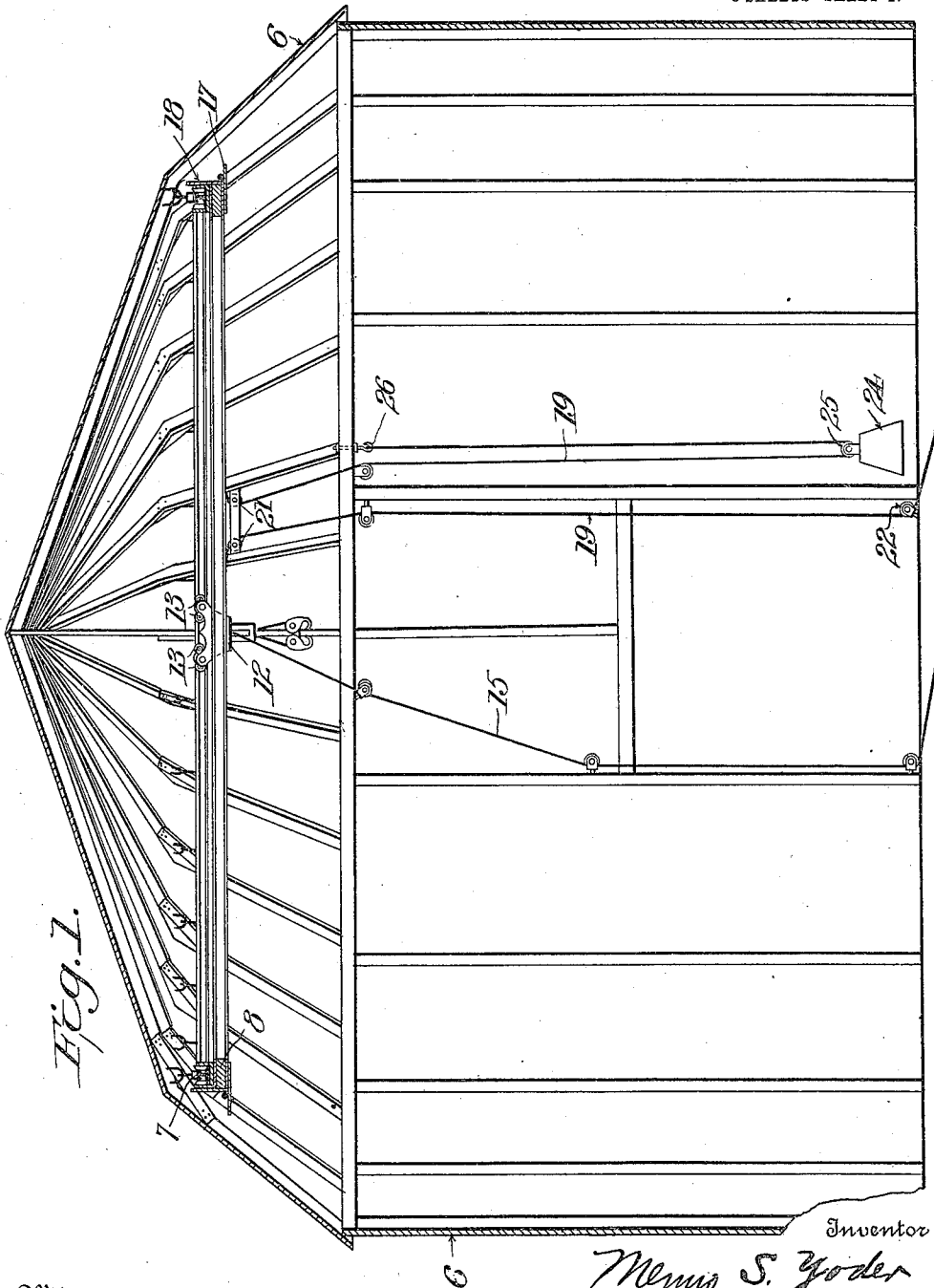


M. S. YODER.
HOISTING MECHANISM.
APPLICATION FILED JULY 16, 1909.

964,357.

Patented July 12, 1910.

3 SHEETS—SHEET 1.



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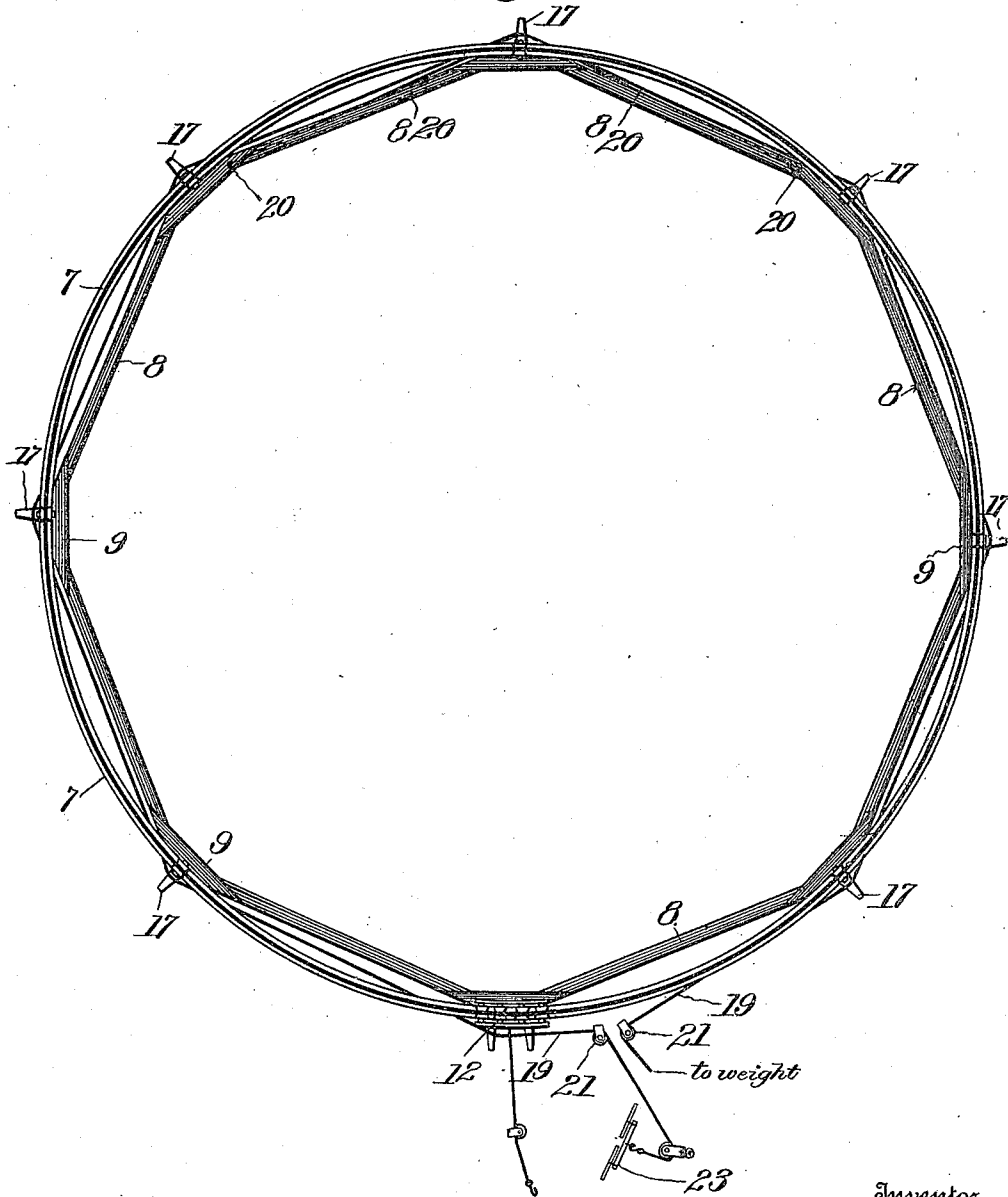
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Fig. 2.



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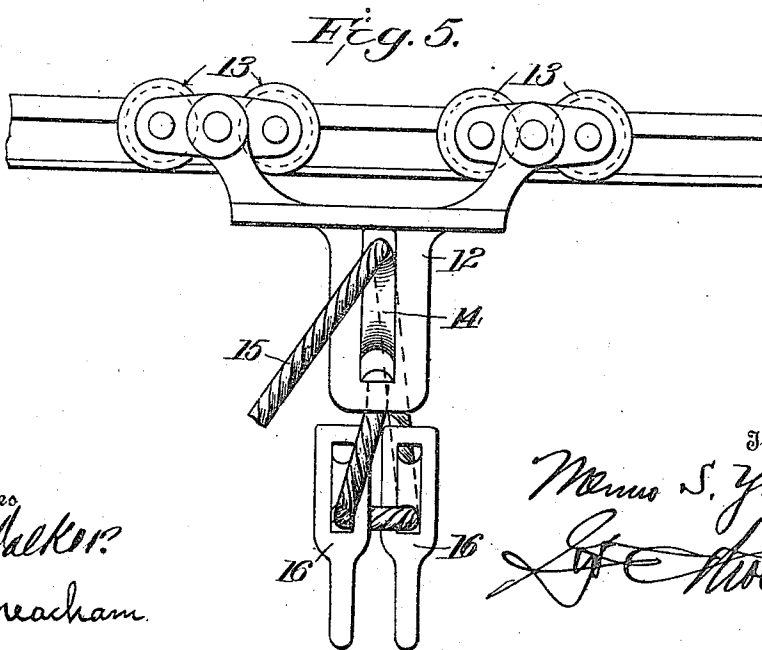
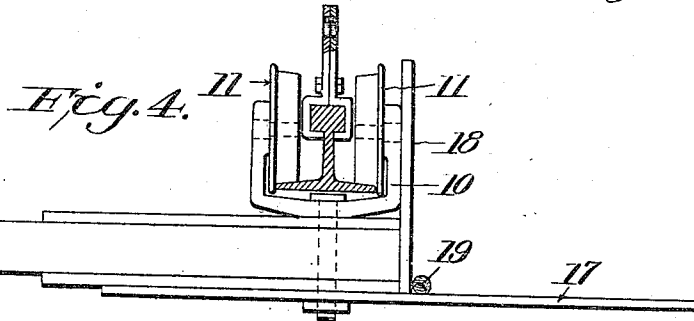
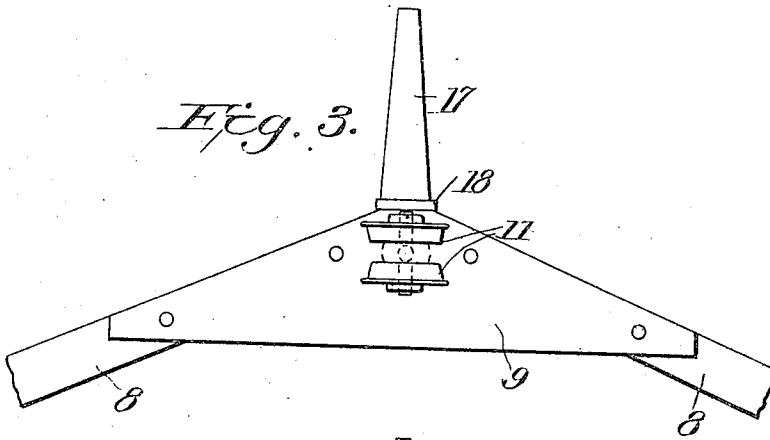
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3 SHEETS—SHEET 3.



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UNITED STATES PATENT OFFICE.

MENNO S. YODER, OF SHIPSEWANA, INDIANA.

HOISTING MECHANISM.

964,357.

Specification of Letters Patent.

Patented July 12, 1910.

Application filed July 16, 1909. Serial No. 508,003.

To all whom it may concern:

Be it known that I, MENNO S. YODER, a citizen of the United States, residing at Shipshewana, in the county of Lagrange and State of Indiana, have invented certain new and useful Improvements in Hoisting Mechanism, of which the following is a specification.

The present invention relates more particularly to hoisting mechanism of the character disclosed in a former patent granted to me on June 8, 1909, No. 923,923.

The primary object of the present invention is to provide apparatus that is very simple in its character, so that it may be built and installed at less cost, and furthermore is so arranged that it may employ any well known type of cross draft carrier for the hoisting mechanism.

The preferred embodiment of the invention is illustrated in the accompanying drawings, wherein—

Figure 1 is a vertical sectional view through a circular or polygonal barn, showing the hoisting mechanism installed therein. Fig. 2 is a plan view of said apparatus. Fig. 3 is a detail plan of one of the angles of the supporting frame. Fig. 4 is a cross sectional view through the track, showing the method of supporting the frame. Fig. 5 is a detail view showing one type of hoisting mechanism that may be employed.

Similar reference numerals designate corresponding parts in all the figures of the drawings.

The barn is designated generally by the reference numeral 6, and located in the upper or roof portion thereof, is a circular continuous track 7 that may be of any suitable type. Arranged beneath this track, is a supporting frame, which is preferably in the form of an open ring comprising angularly disposed sections or beams 8, the ends of which come together, and are secured by brace plates 9. Brackets 10, secured to the frame at the angles thereof, straddle the track 7, and have rollers 11 journaled thereon and operating on the track, as will be clear by reference to Fig. 4. Forming a part of this frame is a cross-draft carrier 12, which may be of any well known type, said carrier having rollers 13 that operate on the track, and being also provided with a pulley 14 over which the hoisting cable 15 passes, a clutch being also preferably provided for holding the load at any height desired. The

hoisting cable, has mounted thereon, suitable sling pulleys, hooks 16, or other devices for engaging the article or material to be hoisted, as will be obvious to those skilled in the art. At each of the angles of the supporting frame is arranged a set of fingers comprising an outstanding finger 17 and an upstanding finger 18, the latter being disposed just outside the bracket 10. For the purpose of rotating the frame, oppositely extending cable sections 19 are employed that rest upon the outstanding fingers 17 and bear against the fingers 18. These cables 19 have their upper and rear ends crossed, as shown in Fig. 2 and secured at separated points to the supporting frame, as shown at 20. The cables pass over suitable pulleys 21 suspended in the barn. One of these cables then preferably passes downwardly around a guide sheave 22, and is arranged to be detachably connected to the whiffletree 23 or to any other suitable means for drawing the same. A like device may be connected to the other cable section, but in the preferred form of construction, automatic means for returning the frame is employed. In the form illustrated in Fig. 1, this automatic means consists of a weight 24 having a pulley 25 that runs upon the cable section, and said section has its free end secured in the upper portion of the barn, as illustrated at 26.

Briefly described, the operation of the mechanism, shown, is as follows. Material to be elevated, is engaged with the hoisting mechanism and is raised to the desired height. Then by drawing upon the rotating cable section, the frame with the load supported thereon can be turned to carry the said load to any point desired. After the article or material has been disengaged upon relieving the cable section of the strain, the weight 24 which has been elevated by the above described operation, will react, and consequently turn the frame in an opposite direction. On the other hand, if it is desired to remove an article or some material from the barn, a reversal of the above described operation is all that is necessary. It will be obvious that this structure is exceedingly simple and that it has many advantages, not only because of its cheap construction, but inasmuch as it permits the use of a cross draft carrier on a circular track. When it is desired to unload in the other side of the barn, the weight is put on the other cable. If it is desired to unload on both

sides alternately or at any time, no weight is used and the cable is in one continuous piece passing through a sheave fastened to a stake in the ground at a proper distance from the barn. Also a two drum power hoist can be employed, using one drum for the draft cable and the other for the two sections of rotating cables which are wrapped around it in opposite directions. Means are provided to the hoist for positively reversing the motion of the latter drum of the hoist.

From the foregoing, it is thought that the construction, operation and many advantages of the herein described invention will be apparent to those skilled in the art, without further description, and it will be understood that various changes in the size, shape, proportion and minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

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

1. The combination with a circular track, of a supporting frame rotatable thereon, hoisting means mounted on the supporting frame, and means for rotating the frame comprising separate cable sections extending in opposite directions around the frame and secured to said frame, said cable sections being adapted to rotate the frame and move with the frame in the direction of rotation of the latter.

2. The combination with a circular track, of a supporting frame rotatable thereon, hoisting means mounted on the supporting frame, and means for rotating the frame comprising separate cable sections extending in opposite directions around the frame and having their ends crossed and secured respectively to the frame at separated points.

3. The combination with a circular track, of a supporting frame rotatable thereon and having spaced outstanding fingers, hoisting means carried by the frame, and means for rotating the frame in opposite directions comprising cable sections extending in opposite directions around the frame and secured to said frame, said sections resting upon the fingers.

4. The combination with a circular track, of a supporting frame rotatable thereon and having spaced sets of outstanding and upstanding fingers, hoisting means carried by the frame, and means for rotating the frame comprising cable sections extending in opposite directions around the frame and secured thereto, said sections resting on the outstanding fingers and bearing against the upstanding fingers.

5. The combination with a circular overhead track, of a frame located therebeneath and comprising angularly disposed bars secured together, supporting wheels connect-

ed to the bars at their junctions and operating on the track, outstanding and upstanding fingers disposed outside the wheels, and cable sections for rotating the frame extending in opposite directions around said frame, said cable sections resting on the outstanding fingers and bearing against the upstanding fingers.

6. The combination with a circular overhead track, of a ring frame rotatably suspended therefrom, hoisting mechanism carried by the frame, opposite cable sections extending around the frame, means connected to one cable section for rotating the frame in one direction, and automatic means connected to the other section for returning the frame.

7. The combination with a circular overhead track, of a ring frame rotatably suspended therefrom, hoisting mechanism carried by the frame, opposite cable sections extending around the frame, means connected to one cable section for rotating the frame in one direction, and a weight connected to the other section for automatically returning the frame.

8. The combination with a circular overhead track, of an open ring frame suspended therefrom, hoisting means carried by the frame, and mechanism separate from said hoisting mechanism for rotating the ring frame in opposite directions.

9. The combination with a circular overhead track, of an open ring frame suspended therefrom and rotatable thereon, said frame comprising angularly disposed sections secured together, and rollers located at the junction of the sections and operating on the track, outstanding and upstanding fingers carried by the frame, oppositely extending cables bearing upon the fingers and having their ends crossed and secured to the frame at separated points, means connected to one cable for drawing the same, a weight suspended by the other cable to return the frame after it has been operated by the first mentioned cable, and hoisting mechanism mounted on the frame and operating independently of the turning means.

10. The combination with a circular track, of a supporting frame rotatable thereon and having spaced outstanding fingers, hoisting means carried by the frame, and means for rotating the frame in opposite directions comprising cable sections extending in opposite directions around the frame, said cable sections resting upon the fingers.

11. The combination with a circular track, of a supporting frame rotatable thereon and having spaced outstanding fingers, hoisting means carried by the frame, and a cable section resting upon the fingers for rotating the frame.

12. The combination with a circular track, of a supporting frame rotatable thereon and

having spaced sets of outstanding and up-
standing fingers, hoisting means carried by
the frame, means for rotating the frame in-
cluding cable sections secured thereto and
5 resting on the outstanding fingers and bear-
ing against the upstanding fingers.

13. The combination with a circular track,
of a supporting frame rotatable thereon and
having spaced sets of outstanding and up-
standing fingers, hoisting means carried by
10 the frame, and means for rotating the frame
including a cable section resting upon the
outstanding fingers and bearing against the
upstanding fingers.

14. The combination with a circular over-
head track, of a frame located therebeneath,
supporting wheels connected to the frame
and operating on the track, fingers disposed
outside of the wheels, and cable sections for
20 rotating the frame, said cable sections rest-
ing on the outstanding fingers and bearing
against the upstanding fingers.

15. The combination with a circular over-

head track, of a frame located beneath the
track, supporting wheels connected to the 25
frame and operating on the track, fingers
secured to the frame, and a cable section
resting on the outstanding fingers and
adapted to rotate the frame.

16. The combination with a structure, of 30
a circular track mounted within the struc-
ture, a supporting frame rotatable on the
track, hoisting means mounted on the sup-
porting frame, means for rotating the frame
comprising cable sections extending in oppo- 35
site directions around the frame and secured
to said frame, and two pulleys secured to
said structure and supported comparatively
close together adjacent said rotating frame
and over which said cable sections operate. 40

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

MENNO S. YODER.

Witnesses:

DAVID A. PLATZ,
JONATHAN FARVER.