

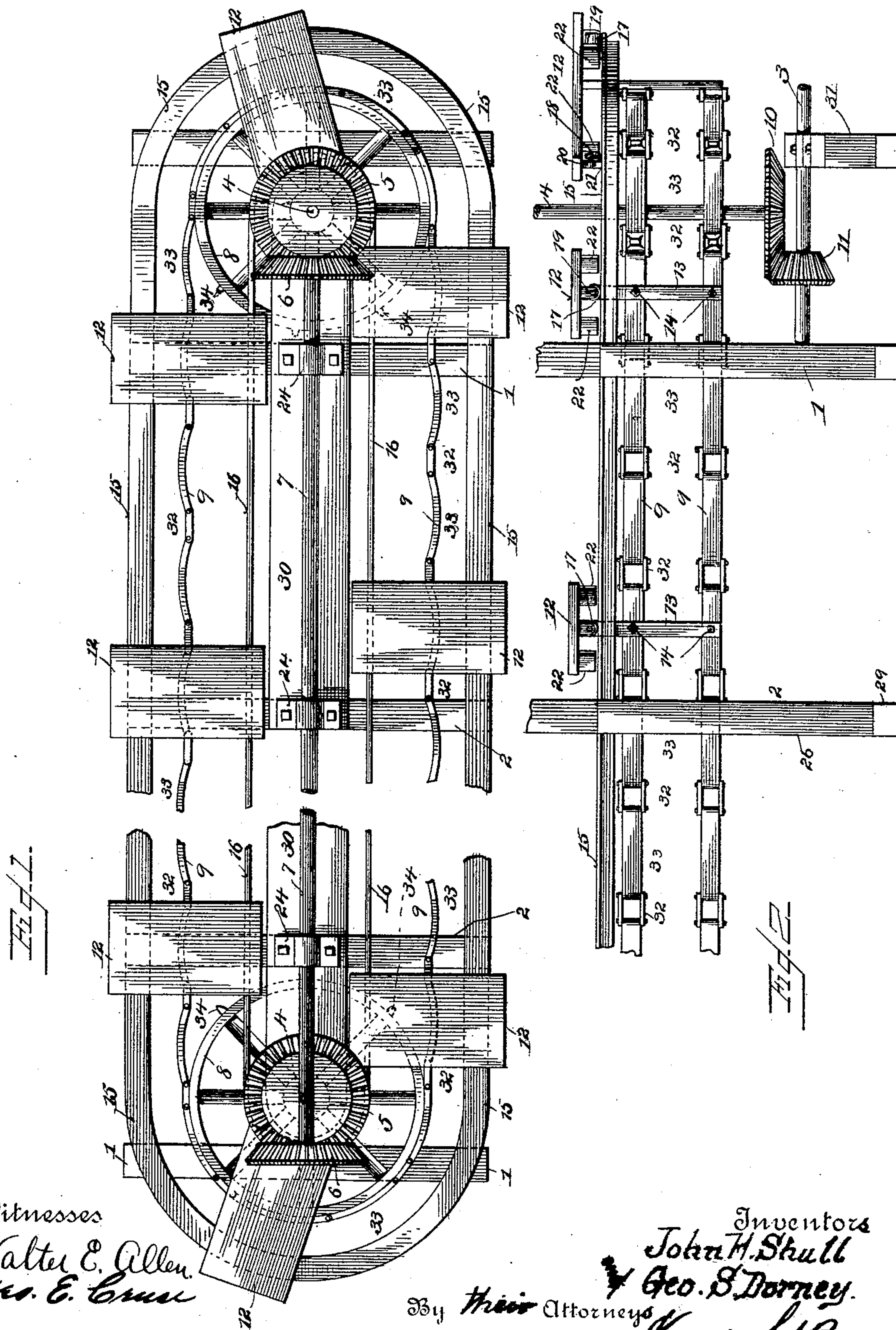
(No Model.)

2 Sheets—Sheet 1.

J. H. SHULL & G. S. DORNEY.  
CONVEYER.

No. 480,939.

Patented Aug. 16, 1892.



Witnesses  
Walter E. Allen  
Geo. E. Cross

Inventors  
John H. Shull  
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By *their* Attorneys  
Knight Bros.

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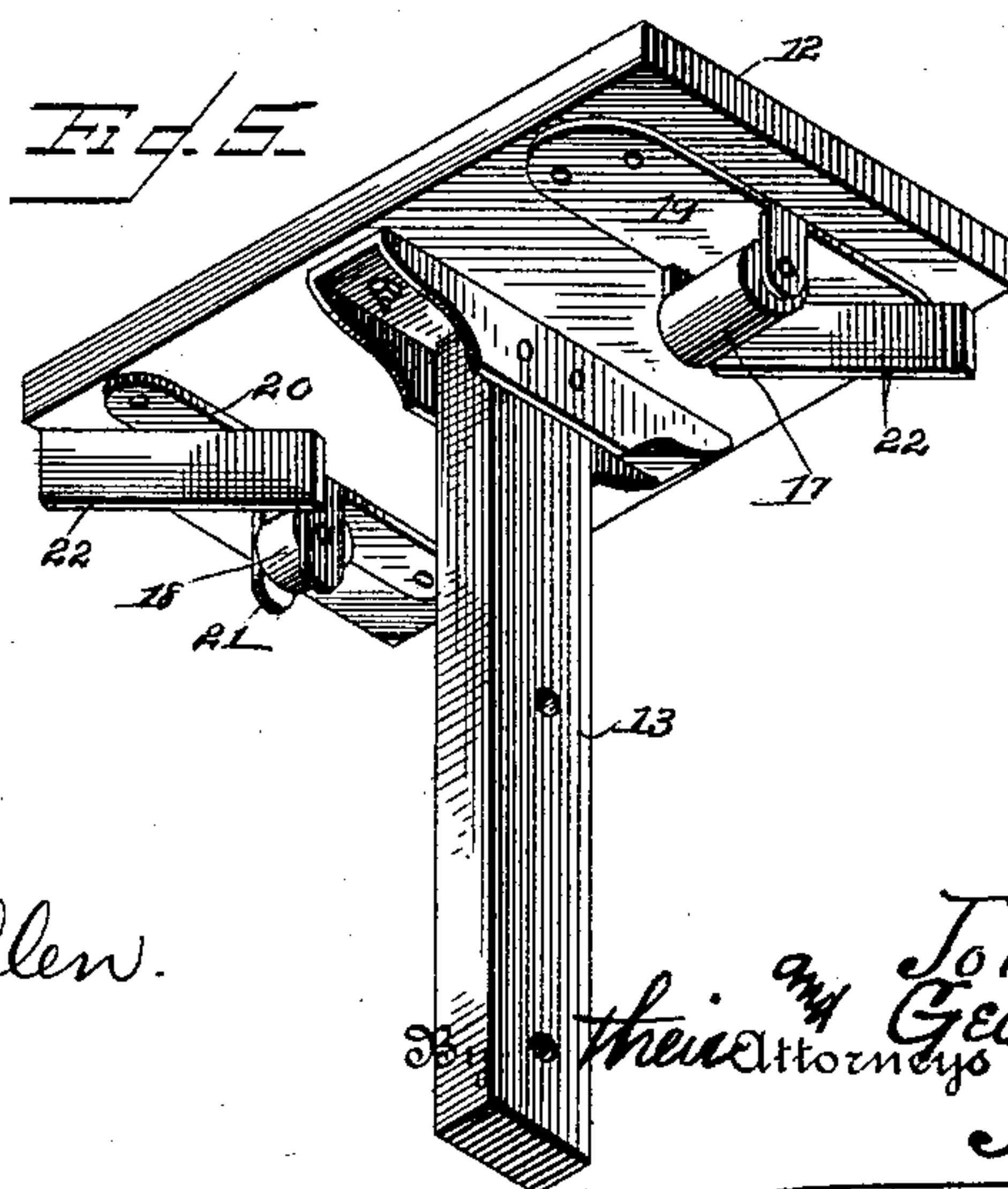
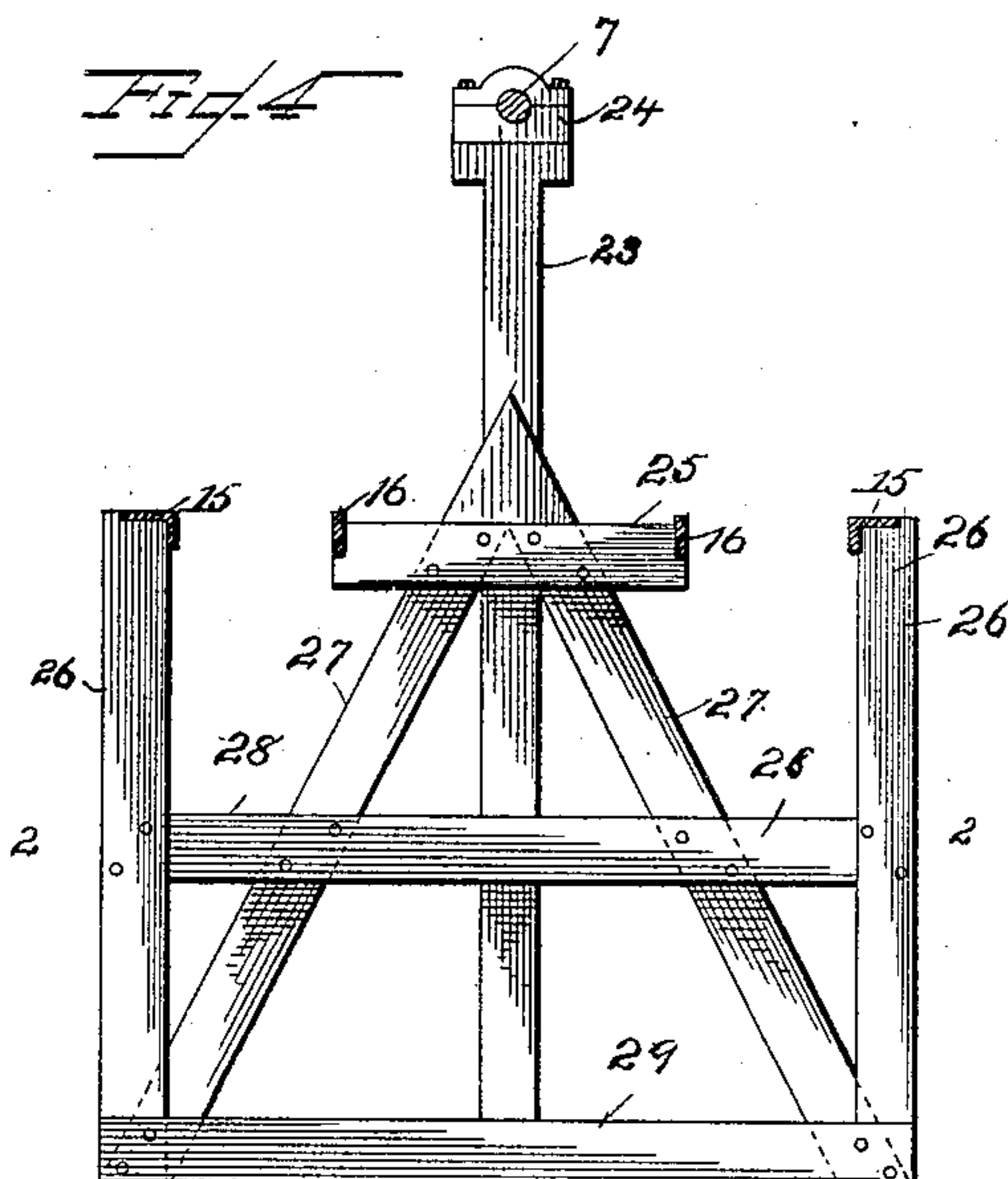
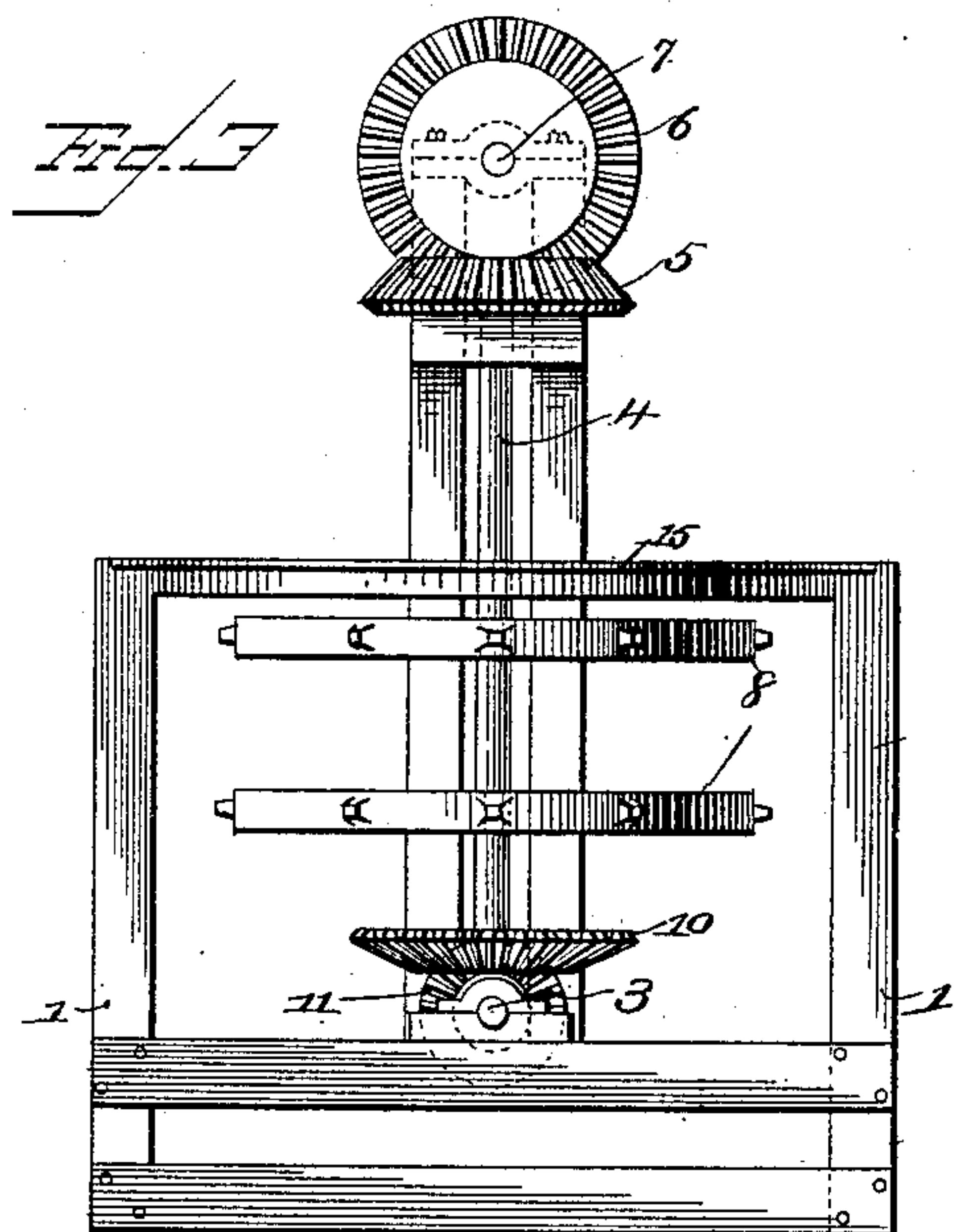
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# UNITED STATES PATENT OFFICE.

JOHN H. SHULL AND GEORGE S. DORNEY, OF FINDLAY, OHIO.

## CONVEYER.

SPECIFICATION forming part of Letters Patent No. 480,939, dated August 16, 1892.

Application filed July 29, 1891. Serial No. 401,078. (No model.)

*To all whom it may concern:*

Be it known that we, JOHN H. SHULL and GEORGE S. DORNEY, citizens of the United States, residing at Findlay, in the county of Hancock and State of Ohio, have invented certain new and useful Improvements in Conveyers for Tiles, &c., of which the following is a specification.

The invention relates to endless-belt conveyers adapted for use in connection with the manufacture of tile, brick, &c.; and it has for its object to provide an improved means for the necessary transportation of tile or brick from one part of the plant to another part of the plant during the process of manufacture.

The invention consists in certain novel features in the construction of such a device, which will be particularly pointed out in the claims, being first fully described with reference to the accompanying drawings, in which—

Figure 1 is a plan of a device embodying our invention, the same being foreshortened by the removal of a portion between the ends, but which may be of any desired length. Fig. 2 is a side elevation of one end of the same. Fig. 3 is an end elevation of the end frame and driving mechanism without the chains which constitute the endless belt. Fig. 4 is a similar view of one of the intermediate frames. Fig. 5 is a perspective view of one of the pallets, its connecting-stem, the friction-rollers, and the combined scrapers and safety-stops secured thereto.

1 represents one of the two frames located at the respective ends of the conveyer, and 2 one of a number of frames which are placed at certain intervals along the route and between the end frames. One of the end frames carries the horizontal power-shaft 3, (see Figs. 2 and 3,) to which power may be applied from any convenient source. Both of the end frames are provided with vertical shafts 4, mounted in suitable bearings on said frames, and these shafts 4 carry on their upper ends bevel gear-wheels 5, which intermesh with corresponding pinions 6 on opposite ends of a long horizontal shaft 7, which extends from end to end of the machine. The shaft 7 has bearings 24 in the end frames and may also have bearings 24 in some or all of the intermediate frames, as may be necessary.

Beneath the bevel-gears 5 on each of the shafts 4 are mounted two horizontal sprocket-wheels 8 for supporting and driving the endless chains 9, which travel in a horizontal plane. The vertical shaft 4 of the drive end of the machine is further provided with a pinion 10, which engages a pinion 11 on the drive-shaft 3. From so much of the description it will appear that power applied to shaft 3 will be transmitted through one of the vertical shafts 4 to the horizontal shaft 7 and thence to the vertical shaft 4 on the opposite end of the machine, so that both vertical shafts are rotated with their sprocket-wheels and the endless belt driven from both ends of the machine simultaneously, which is a very important feature if a long conveyer is employed.

The belt is constructed of two endless chains 9. The belt carries above it a number of horizontal pallets or tables 12, which are provided with stems 13, and these stems are secured by bolts 14 to the outer sides of corresponding links of the upper and lower chains of the endless belt. The pallet is thus secured to the endless belt, and the chains of said belt are accurately and permanently spaced.

In order to insure the steady travel of the pallets 12 and to support the chains along the route, rails 15 16 are mounted on the frames and the pallets are provided with friction-rollers 17 18 for running on said rails. The outer friction-rollers are each supported on the pallets by hangers 19. The inner rail 16 has a narrow tread and the inner roller 18 is mounted in a hanger 20, which has projecting ends 21 for engagement on opposite sides of the rail 16 and prevention of displacement of the roller 18. The entire belt is stayed against serious transverse vibration. The outer rail 15 and its corresponding roller 17 are made broad, and these simply serve as a traveling support for the outer side of the pallet. The broad treads of this rail and wheel are also designed for permitting the necessary transverse movement of the belt when rounding the ends without losing the bearing.

22 represents the combined track-clearers and safety-stops located on the pallets. They are designed for the purpose of clearing the rails of any obstacle, such as clay, which may drop upon the track, and being placed on di-



agonally-opposite corners and made to extend just above the horizontal plane of the rollers they operate as stops to prevent the tipping of the pallets beyond a certain limit, either  
5 in a longitudinal or transverse direction.

For the accommodation of the tracks and longitudinal shaft upon the intermediate frames each intermediate frame is provided with the central standard 23, having the shaft-  
10 bearing 24 at top, and the cross-bar 25 for the inner track and the side posts 26 for the outer track. The intermediate frames may be constructed rigidly, but inexpensively, by the use of diagonal braces 27, the spacing-bars  
15 28, and bases 29.

30 represent boards placed between the end frames and the adjacent frames for bracing the bearings of shaft 7 and insuring engagement of pinions 5 and 6.

20 While we have thus minutely described the construction of the frames, it is obvious that any suitable support might be used with advantage. If desired, an additional support 31 may be employed for the shaft 3.

25 The chain is composed of a combination of links 32 and strap 33, the former being adapted to receive the pins 34 on the sprocket-wheels and the latter being adapted to conform to the periphery of the wheel between  
30 the pins, as well as to afford available space for the attachment of the stems of the pallets.

In using the device the tile or bricks are placed on the pallets at one end and removed therefrom at the other end by hand, as they  
35 are in a semi-plastic state. If the operator at the delivery end fails to remove one or more, they simply pass around and are removed the next time.

40 While the device is shown running in a single straight line, it is obvious that it may be extended and adapted to round curves by the employment of an increased number of end frames and sprocket-wheels.

Having thus described our invention, the  
45 following is what we claim as new therein and desire to secure by Letters Patent:

1. The combination of supporting-frames, the vertical shafts, a pair of horizontal sprocket-wheels on each of the shafts, a conveyer-  
50 belt consisting of two endless chains connecting the sprocket-wheels, a horizontal shaft

and gear-wheels connecting the vertical shafts, driving mechanism connected with one of the shafts, the tracks located above the conveyer-belt, and the pallets having stems secured to  
55 the chains of the conveyer-belt and provided with hangers having rollers running on the tracks, substantially as described.

2. The combination of supporting-frames, the vertical shafts, a pair of horizontal sprocket-wheels on each of the shafts, a conveyer-belt consisting of two endless chains, connecting the sprocket-wheels, a horizontal shaft and gear-wheels connecting the vertical shafts, driving mechanism connected with one of the  
60 shafts, the outer broad track, the inner narrow track, and the pallets having stems secured to the chains of the conveyer-belt and provided with outer hangers having rollers formed with broad treads, and inner hangers  
70 projecting downward for engaging the narrow track, having rollers formed with narrow treads, substantially as described.

3. The combination of supporting-frames, the vertical shafts, a pair of horizontal sprocket-wheels on each of the shafts, a conveyer-belt consisting of two endless chains, connecting the sprocket-wheels, a horizontal shaft and gear-wheels connecting the vertical shafts, driving mechanism connected with one of the  
75 shafts, the outer and inner tracks, and the pallets having stems secured to the chains of the conveyer-belt and provided with hangers having rollers running on the tracks and with scrapers located at diagonally-opposite corners  
80 of the pallets, substantially as described.

4. The combination, with the belt of a conveyer, of a pallet having a pendent stem secured to the belt, a hanger having a broad roller, a hanger having a narrow roller and  
90 having its ends extending beneath the roller, and the scrapers located at diagonally-opposite corners of the pallets, substantially as described.

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