No. 781,690. PATENTED FEB. 7, 1905.

W. P. STICKNEY.

DEVICE FOR HANDLING PAPER ROLLS.

APPLICATION FILED JUNE 8, 1903.

2 SHEETS—SHEET 1.

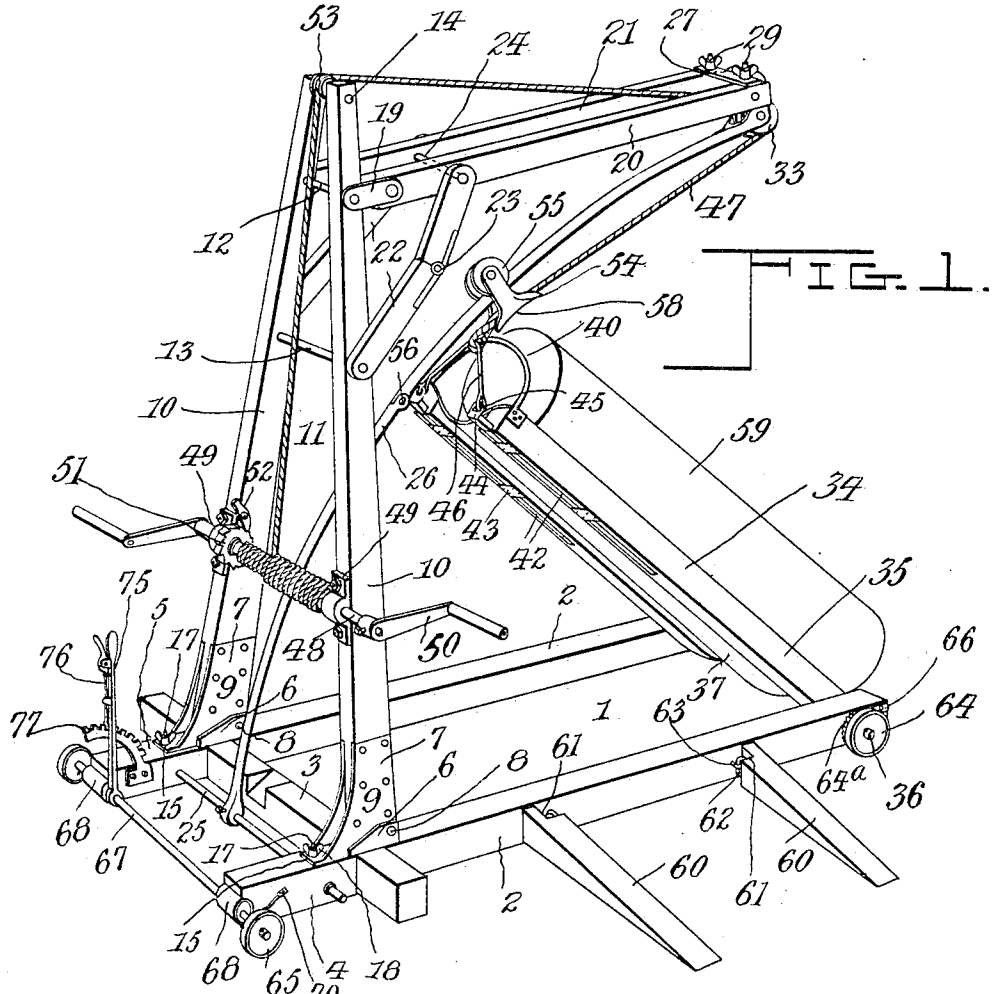


FIG. 1.

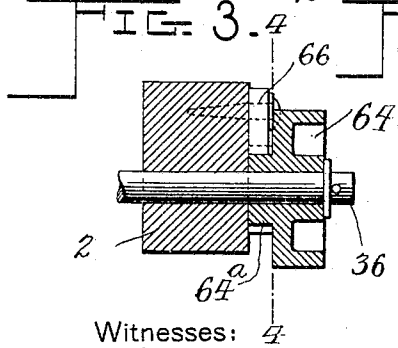


FIG. 3.

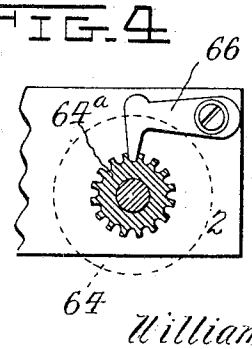


FIG. 4.

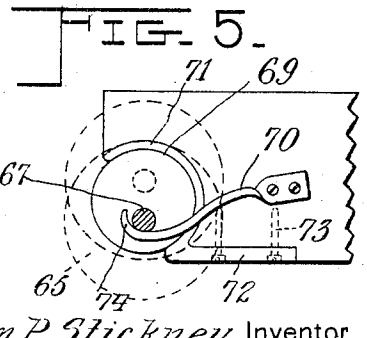


FIG. 5.

Witnesses:

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2 SHEETS—SHEET 2.

FIG. 6

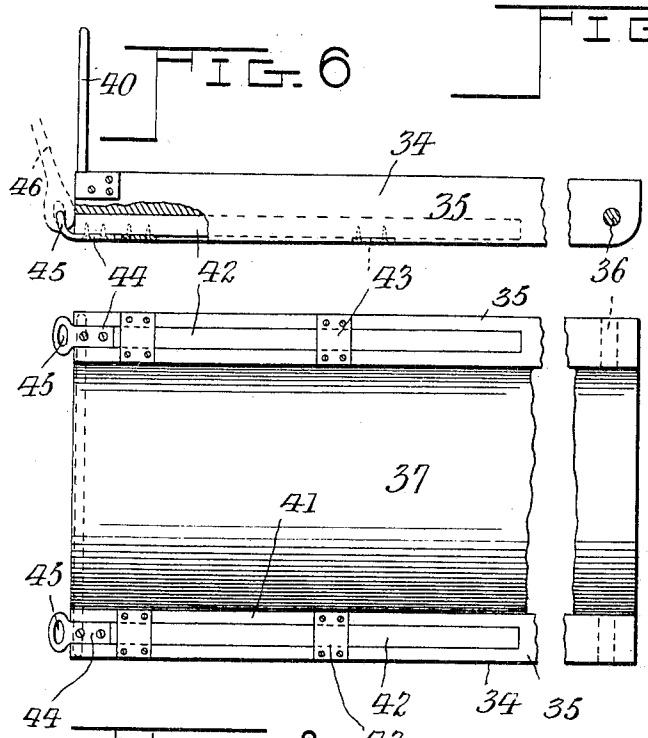


FIG. 7

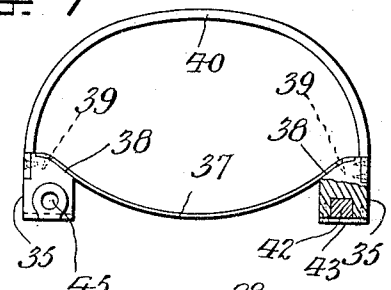


FIG. 8

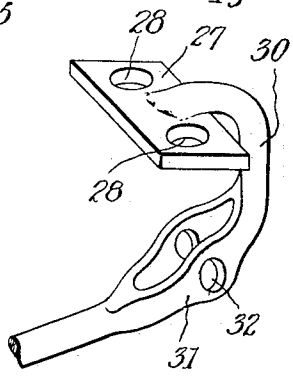


FIG. 9

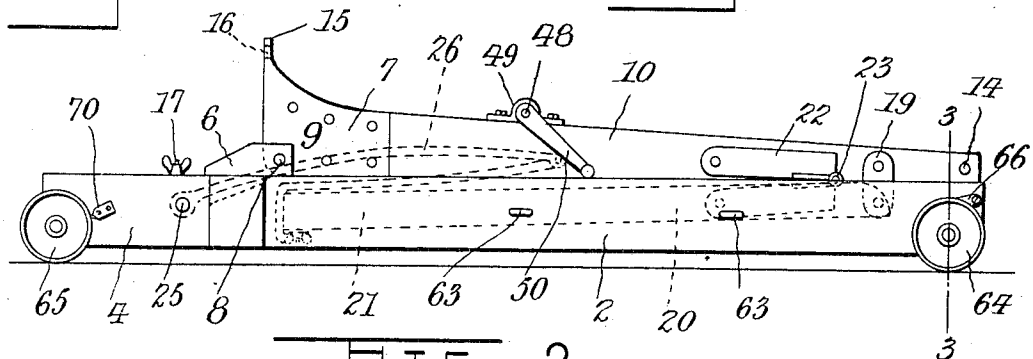


FIG. 2

Witnesses:

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No. 781,690. Patented February 7, 1905.

UNITED STATES PATENT OFFICE.

WILLIAM P. STICKNEY, OF BERLIN, NEW HAMPSHIRE, ASSIGNOR OF ONE-HALF TO CLARENCE BARTLETT, OF BERLIN, NEW HAMPSHIRE.

DEVICE FOR HANDLING PAPER-ROLLS.

SPECIFICATION forming part of Letters Patent No. 781,690, dated February 7, 1905.

Application filed June 8, 1903. Serial No. 160,670.

To all whom it may concern:

Be it known that I, WILLIAM P. STICKNEY, residing at Berlin, in the county of Coos, in the State of New Hampshire, have invented certain new and useful Improvements in Devices for Handling Paper-Rolls; and I do hereby declare that the following is a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to a device for handling heavy paper-rolls and other heavy articles of similar form, and it is intended especially for use in wholesale houses, warerooms, &c.

The invention is intended especially to facilitate the moving about of the heavy rolls and placing them on end wherever desired.

In its general construction the invention comprises a movable truck which is provided with a cradle adapted to receive the roll, together with mechanism for raising the said cradle at one end in such a manner as to set a roll carried in the cradle on end. Special arrangements are made for facilitating the operation and for locking the truck against movement.

The device is constructed in a special manner which enables it to fold up into comparatively small space when not in use.

The invention consists in the construction and combination of parts, to be more fully described hereinafter and definitely set forth in the claims.

In the drawings, which fully illustrate my invention, Figure 1 is a perspective of the same. Fig. 2 is a side elevation showing the device in its folded position. Fig. 3 is a vertical section upon an enlarged scale, taken substantially on the line 3 3 of Fig. 2. Fig. 4 is a vertical section taken substantially on the line 4 4 of Fig. 3. Fig. 5 is an elevation taken near one extremity of the cradle aforesaid. Fig. 6 is substantially a side elevation of the said cradle, the same being broken away, as indicated, at certain points. Fig. 7 is substantially an end elevation of the cradle, a portion being shown in section. Fig. 8 is a bottom plan of the cradle. Fig. 9 is a perspective representing the upper extremity of a trolley-bar which is instrumental in the operation of setting the roll on end.

Throughout the drawings and specification the same numerals of reference designate like parts.

Referring more particularly to the parts, 1 represents the truck, which, as indicated in the drawings, consists of two oppositely-disposed side members or bolsters 2, which are connected by a tie-beam 3, as shown, the said tie-beam making a mortised joint with the members 2 in such a manner that the members 2 have extensions 4 and 5 projecting therebeyond. Upon the upper sides of the members 2 aforesaid at oppositely-disposed points there are provided brackets 6, having side flanges, between which knees or knuckles 7 are pivoted, respectively, at 8, as shown. As indicated, these knuckles consist of oppositely-disposed sides or cheeks 9, which receive between them certain members 10, which members 10 are connected to form a mast 11 by means of tie-rods 12 and 13. As shown, these members 10 are disposed substantially vertically above the truck, and their upper extremities converge and are united near their uppermost points by a stud 14.

The knuckles 7 aforesaid comprise sole-plates 15, which are integral with the cheeks 9 and which rest upon the upper sides of the side members. Near their outer extremities these sole-plates are provided with openings 16, as indicated in Fig. 2, through which openings pass bolts 17, mounted in the aforesaid extensions 4, the said bolts being provided with wing-nuts 18, as indicated. It should be understood that these wing-nuts afford means for maintaining the mast 11 in a substantially erect position, as shown in Fig. 1.

Near the extremities of the ties or bars 12 aforesaid there are pivoted oppositely-disposed ears or links 19, to which ears are pivotally attached the side members 20 of the boom 21. This boom is adapted to be held in the position in which it is shown in Fig. 1 by means of the jointed struts 22, which struts are provided with hinges 23 for a purpose which will appear hereinafter. The upper

extremities of the said struts 22 are pivotally mounted upon the extremity of a cross member 24, and it will be observed that the joints of the struts are bent in such a manner as to enable the joint to sustain the weight of boom, as will be readily understood, the pivot-points at the extremities of the struts not being in alinement with the pivot of the hinges 23.

The extensions 4 5 aforesaid support between them rotatably an arbor 25, upon which arbor at substantially its middle point there is mounted a trolley-bar 26, and the outer extremity of this bar comprises a vertical extension 30, which terminates in a plate 27, which plate is provided with openings 28, adapted to receive bolts 29, as indicated in Fig. 1, the said bolts passing substantially vertically through the extremities of the members 20 and the said plate being disposed transversely and resting upon the upper sides of the said members 20. Below the plate 27 and near the extension 30 the trolley-bar 26 is bifurcated, as indicated at 31, at which part it is provided with openings 32, which afford means for mounting a pulley or sheave 33, which sheave is for a purpose which will appear hereinafter. The purpose of this trolley-bar 26 will appear more fully hereinafter.

Between the side members 2 aforesaid there is placed a cradle 34, which cradle comprises side members 35, which are pivotally supported at their outer extremities upon stub-shafts 36, which pass through the outer extremities of the side members 2, as shown. The side members 35 are connected by a shallow dished plate or bottom 37, the said members being provided with beveled faces 38 upon their upper sides to facilitate the attachment of the same by means of screws 39 or similar devices, it being understood that these side members 35 are preferably of wood, which is the material which is used principally in constructing the device. The bottom 37 is preferably of sheet-steel or similar material. At the extremity of the cradle the side members 35 are connected by a yoke 40 to give additional stiffness to the construction. Upon their under sides and toward the extremities adjacent to the mast 11 the said side members 35 of the cradle are provided with longitudinally-disposed guideways 41, which guideways receive extension-bars 42, the same being retained in place by suitable plates 43, attached to the lower sides of the members 35, as shown. To the outer extremities of these extension-bars 42 heads 44 are attached, which have eyes 45, adapted to receive the ends of a sling or cord 46. To this sling 46 there is attached the extremity of a cable or cord 47, which cord is for the purpose of raising or lowering the cradle, it being understood that the cradle normally occupies a depressed position between the side members 2. For the purpose of operating this cord an axle 48 is provided, which is disposed transversely of the device and is rotatably mounted in bearings or brackets 49, carried by the members 10, in the manner shown. The said axle 48 is provided with oppositely-disposed cranks 50 for the purpose of rotating same and carries also rigidly a ratchet-wheel 51, with which coöperates a pawl 52. Upon this axle 48 one extremity of the aforesaid cable 47 is wound, as shown, the said cable in going to the axle passing about a sheave or pulley 53, carried by the adjacent stud 14.

Upon the aforesaid trolley-bar 26 there is mounted a trolley or bracket 54, which includes a trolley-wheel 55, which runs upon the upper side of the trolley-bar 26, as shown. This trolley-bar, it will be observed, is formed upon a curve in a vertical plane, the convex side of the said curve being uppermost. At substantially its middle point this trolley-bar is formed with a hinged joint by means of a transversely-disposed pin 56, this construction being adopted for a purpose which will appear hereinafter. It will be observed that the cord 47 aforesaid passes between the ears of the trolley-bracket 54, and it should be stated that the portion of this bracket upon which the cord 47 rests is preferably curved, as shown at 58.

It should be understood that the cradle 34 is normally in a depressed position, lying substantially horizontally between the side members 2 of the truck. When in this depressed position, the paper-roll 59 is placed in the cradle, the operation of placing the roll in this manner being facilitated by skids 60, which, as shown, consist of wedge-shaped pieces, adapted to be removably attached to one of the side members 2. These skids are preferably formed with vertical recesses 61 at their extremities adjacent to the truck, as shown in Fig. 1, in which recesses there are provided pintles 62, which are received by staples 63, projecting outwardly from the outer side of the side member, as shown. When the roll 59 has been placed upon the cradle, the cranks 50 may be operated so as to elevate one end of the cradle, and as this operation takes place the trolley-bracket 54 moves upwardly along the trolley-bar, as indicated. This operation will be continued till the roll 59 is finally set upon its end.

The truck 1 is mounted upon wheels 64 and 65, the former of which are carried upon the aforesaid stub-shafts 36, where they project beyond the side members 2 of the truck, as indicated in Fig. 1. There are two of these wheels 64 disposed, respectively, opposite each other, as will be readily understood. These wheels are provided with integral hubs 64^a, which constitute ratchet-wheels with which the pawls 66 coöperate, respectively, in such a manner as to lock the wheels against rotation, as will be readily understood. The wheels 65 are carried upon an axle 67, which is disposed transversely of the truck,

as shown. This axle is mounted eccentrically in cylindrical sleeves 68, which sleeves are held in curved recesses 69 by means of springs 70 in the manner shown most clearly in Fig. 5. These recesses 69 are substantially semicircular in form, as indicated, and are lined with a strap or liner 71, and these straps have shanks or bodies 72, which are attached to the under sides of the extensions 4 5 by means of fastening devices 73. The springs 70 are preferably of substantially the form shown in Fig. 5 and have upwardly-curved tips 74, as indicated, which pass around under the axle 67 in the manner indicated. From this arrangement it should appear that the axle 67 could be quickly removed, together with the sleeves 68. Adjacent to one of the side members 2 the said axle 67 carries rigidly a lever 75, which lever carries locking mechanism 76, which coöperates with a quadrant 77. From this arrangement it should be understood that by shifting the lever 75 through substantially ninety degrees the sleeves 68 could be rotated in such a manner as to raise or lower the wheels 65. When in their lowest position, the lower edges of these wheels lie below the under faces of the side members 2; but when in their elevated position they lie above the same, so that this portion of the truck may be lowered to rest upon the floor.

The construction described admits of the entire device being folded up into a position such as that indicated in Fig. 2. In order to fold the device up in this manner, the thumb-nuts 18 aforesaid would be removed from their bolts, so as to permit the mast 11 to be moved forwardly, the same rotating upon the pivots 8. The hinged joint 23 is then moved toward the links 19 in order to permit the boom 20 to be swung downwardly. The hinged joint 56 is broken upwardly in the same manner as the hinge 23, so that the trolley-bar 26 offers no obstacle to the folding of the parts, which stow themselves in the manner shown in Fig. 2, the beam 20 being received in the cradle.

In the operation of the device the roll 59 will be loaded upon the cradle by means of the skids 60 in the manner already described. Previous to loading the roll upon the cradle in this manner the wheels 64 may be locked, if desired, by means of the pawls 66, and the end of the truck adjacent to the mast may be lowered upon the floor by means of the lever 75. After the roll had been loaded the wheels 64 and 65 would be returned to their normal operative positions, whereupon the truck would be wheeled to any desired point to unload the roll 59, at which point the cranks 50 would be operated to elevate the cradle, as indicated in Fig. 1, in such a manner as to set the roll on end. It should be stated that as the operation of elevating the roll progresses the extension-bars 42 draw out or move inwardly, so as to accommodate themselves to the position of the cradle with reference to the trolley-bar 26.

While I have shown in the accompanying drawings the preferred form of my invention, it will be understood that I do not limit myself to the precise form shown, for many of the details may be changed in form or position without affecting the operativeness or utility of my invention, and I therefore reserve the right to make all such modifications as are included within the scope of the following claims or of mechanical equivalents to the structures set forth.

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

1. In a device of the class described, in combination, a truck, a cradle, disposed centrally and longitudinally of the truck adapting the same to be compactly folded together, one extremity whereof is supported upon said truck, a boom projecting longitudinally of said truck above said cradle, a hoisting apparatus in connection with said boom for raising the free end of said cradle.

2. In a device of the class described, in combination, a truck, a cradle, one extremity whereof is pivotally mounted upon said truck, a mast, a boom carried thereby and projecting from said mast substantially in the direction of the pivot-point of said cradle, and hoisting apparatus in connection with said boom adapted to raise the free end of said cradle.

3. In a device of the class described, in combination, a truck, a mast carried thereby, a cradle, one extremity whereof is pivoted to said truck, a boom projecting from said mast and lying substantially above said cradle, a member extending substantially from the extremity of said boom to a point adjacent to said mast, and hoisting-tackle in connection with said member, and said boom, for raising the free end of said cradle.

4. In a device of the class described, in combination, a truck, a cradle, one extremity whereof is pivotally mounted upon said truck, a mast carried by said truck, a boom carried by said mast, and projecting substantially above said cradle, hoisting-tackle adapted to raise the free extremity of said cradle, a member attached to said boom and extending toward said mast, and a movable member carried thereby in connection with said tackle.

5. In a device of the class described, in combination, a truck, a cradle, one extremity whereof is pivoted to said truck, a mast carried by said truck, a boom carried by said mast, an inclined member attached to said boom at the extremity thereof and having an extremity attached to said truck, a trolley adapted to run upon said inclined member, and hoisting-tackle in connection with said trolley and adapted to raise the free end of said cradle.

6. In a device of the class described, in combination, a truck, a cradle, one extremity whereof is attached to said truck, a mast pivotally mounted upon said truck, adjacent to the free end of said cradle, hoisting-tackle adapted to raise said cradle, and removable means for locking said mast in a substantially erect position.

7. In a device of the class described, in combination, a truck, a mast pivotally mounted thereupon, removable means for securing said mast in a substantially erect position, a boom pivotally connected with said mast and adapted to fold thereupon, and a jointed member connecting the extremity of said boom with said truck, said jointed member being adapted to fold upon the joint thereof and hoisting-tackle carried by said boom.

8. In a device of the class described, in combination, a truck, a cradle carried thereby, a mast carried by said truck and adapted to fold thereupon, a boom carried by said mast and adapted to fold upon said mast, and hoisting-tackle adapted to raise one end of said cradle.

9. In a device of the class described, in combination, a truck, a cradle, one extremity whereof is pivotally mounted upon said truck, a mast mounted upon said truck adjacent to the free end of said cradle, said mast being adapted to fold upon said truck, a boom carried by said mast and adapted to fold upon said mast, a member having a joint and attaching to the extremity of said boom, means for supporting said member at another point, said member being adapted to fold upon said joint, and hoisting-tackle in connection with said boom, and adapted to raise the free end of said cradle.

10. In a device of the class described, in combination, a truck, a cradle, one extremity whereof is pivotally mounted upon said truck, a mast supported upon said truck adjacent to the free extremity of said cradle, said mast being adapted to fold upon said truck, a boom carried by said mast and adapted to fold thereupon, and hoisting-tackle adapted to raise the free end of said cradle.

11. In a device of the class described, in combination, a truck, a cradle, one extremity whereof is attached to said truck, hoisting apparatus carried by said truck, and adapted to raise the free end of said cradle, and an extensible member in connection with said cradle, and said extensible member being adapted to extend itself substantially radially from the point of attachment of said cradle.

12. In a device of the class described, in combination, a truck, a mast pivoted thereto, removable means for securing said mast to said truck at a point removed from the pivot-point thereof, an ear pivotally carried by said mast, a boom pivotally carried by said ear, a member having a hinged joint and having one extremity attached substantially at the extremity of said boom, means for pivotally supporting the other extremity of said member upon said truck, and hoisting-tackle in connection with said boom, said boom being adapted to be folded to recline upon said truck.

13. In a device of the class described, in combination, a truck, a cradle, one extremity whereof is pivotally attached to said truck, removable skids, means for attaching the skids at the side of said truck, a boom supported by said truck, and hoisting-tackle in connection with said boom adapted to raise the free end of said cradle.

14. In a device of the class described, in combination, a truck, wheels upon which said truck is mounted, a cradle, one extremity whereof is pivotally mounted upon said truck, means for raising the free end of said cradle, and means for throwing said wheels into inoperative relation.

15. In a device of the class described, in combination, a truck, a cradle, one extremity whereof is pivotally mounted upon said truck, means for raising the free end of said cradle, wheels adapted to support said truck, eccentric sleeves upon which said wheels are mounted, and a lever adapted to rotate said sleeves to depress said truck to the floor.

16. In a device of the class described, in combination, a truck comprising a pair of oppositely-disposed side members, said side members having recesses, sleeves rotatably mounted in said recesses, an axle carried eccentrically by said sleeves, wheels carried by said axle, and a lever adapted to rotate said sleeves.

17. In a device of the class described, in combination, a truck comprising a pair of oppositely-disposed side members, said side members having recesses, sleeves rotatably mounted in said recesses, an axle eccentrically carried by said sleeves, springs constraining said axle to maintain said sleeves in said recesses, and a lever adapted to rotate said sleeves.

18. In a device of the class described, in combination, a truck, a cradle, one extremity whereof is attached to said truck, said cradle comprising oppositely-disposed members, extension-bars guided in said members, and hoisting-tackle supported upon said truck, and comprising a cord attached to said extension members.

In witness whereof I have hereunto set my hand in the presence of two witnesses.

WILLIAM P. STICKNEY.

Witnesses:
EDMUND SULLIVAN,
MATTHEW J. RYAN.