(No Model.)

F. R. WILLSON, Jr.

ELEVATOR OR CARRIER.

No. 538,058. Patented Apr. 23, 1895.

Fig. 3

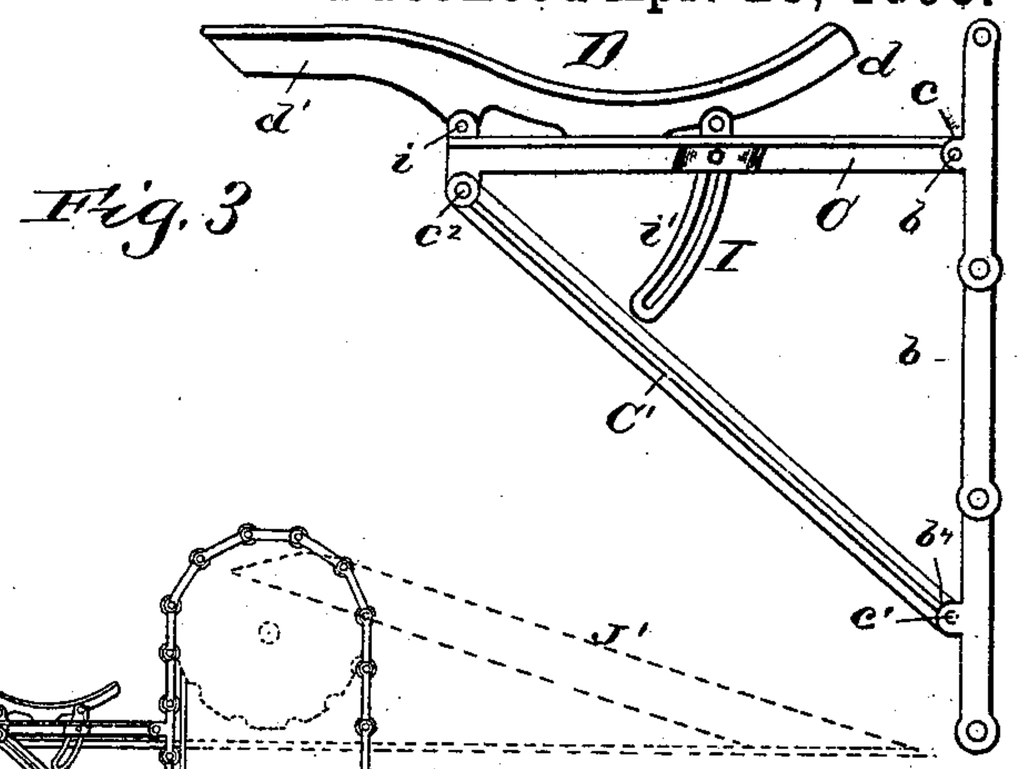

Fig. 1

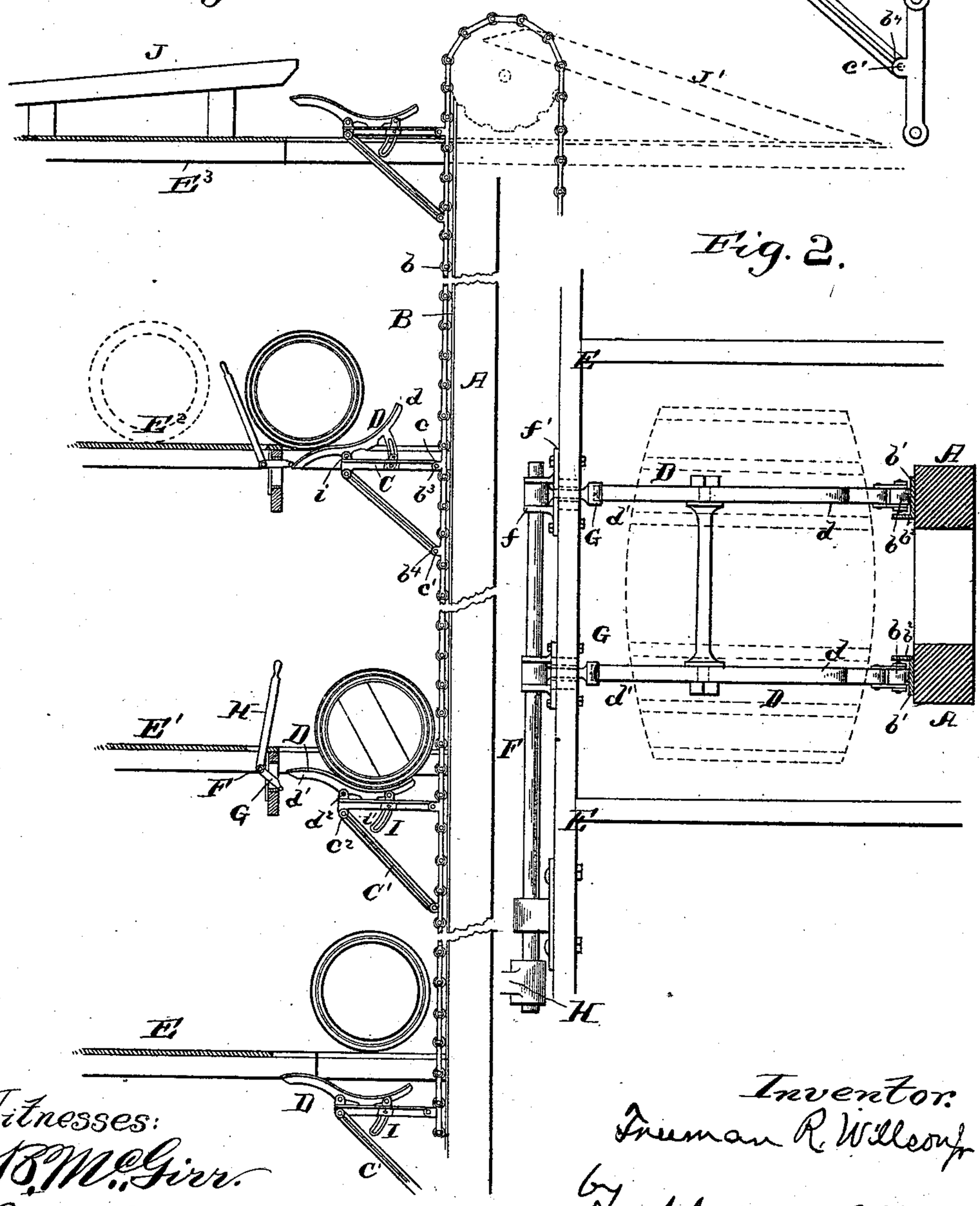

Fig. 2.

Witnesses:
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UNITED STATES PATENT OFFICE.

FREEMAN R. WILLSON, JR., OF COLUMBUS, OHIO, ASSIGNOR TO JOSEPH A. JEFFREY.

ELEVATOR OR CARRIER.

SPECIFICATION forming part of Letters Patent No. 538,058, dated April 23, 1895.

Application filed September 5, 1890. Serial No. 363,987. (No model.)

To all whom it may concern:

Be it known that I, FREEMAN R. WILLSON, Jr., a citizen of the United States, residing at Columbus, in the county of Franklin and State of Ohio, have invented certain new and useful Improvements in Elevators or Carriers, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to an improvement in carriers or elevators, it pertaining more particularly to improvements in elevators of the sort used for lifting articles of the nature of barrels, or packages more or less similar thereto.

The object is to provide an elevator whereon the barrels or packages shall be securely held in position as they are moving upward, upon which they can be readily rolled or moved into place, and from which they can be automatically removed at one or another of several places to which they are carried.

Figure 1 is a side elevation of an elevator embodying my improvements. Fig. 2 is a plan view from above one of the carrier attachments. Fig. 3 is a detail enlarged.

In the drawings a frame for the elevator is partially illustrated, A, A, being uprights, and a' cross braces. This frame and the several parts thereof can be of any sort which is suitable.

The elevator proper consists of one or more, preferably two chains B, B. These also may be of any suitable construction, though I prefer to employ one substantially such as shown having centrally open links to engage with the sprockets of the driving and guiding wheels and provided with anti-friction rollers b. The chains, or the rollers thereof bear against guide plates b' secured to the uprights A, A, and having flanges b^2 on the inner sides of the chains to keep them in proper place.

At suitable intervals the chain is provided with my improved carrier attachments. As shown, each of these comprises bars C normally substantially at right angles to the chains B and pivoted at c to webs or flanges b^3 formed on some of the links of the chain, and brace bars C′ which are normally inclined to the line of the chains B. These braces C′ are pivoted at c' to flanges b^4 similar to those at b^3 and are also pivoted at c^2 to the aforesaid bars C.

Cross bars may be used, if desired for joining together the bars C C′ of one chain to the corresponding parts of the other.

It will be seen that the bars C and the braces C′ are pivoted to each other, and to links which are some distance apart, which enables the carrier, and the parts connected thereto to readily pass around the sprocket wheels at the top and bottom of the flight, without straining or breaking.

Upon the supporting frame thus provided I mount a saddle which is adapted to readily receive and discharge a barrel or other package.

D D represent curved bars, each having a part d which is concave on one side and a part d' which is convex on the same side. The curve of the part d' is such that a barrel or similar article can be readily rolled or placed in or upon the concave arms d d. There is one of these curved bars D secured to each of the side parts C C′ of the main frame, by pivots at d^2. These bars D D may be also joined together by suitable cross bars or girts if necessary.

E E′ represent floors or landing stages past which the above described carrier moves. It is desirable in elevating and storing articles such as barrels and the like to sometimes deliver them on one floor, and sometimes on another.

One or more of the platforms or stages are provided with the following tripping devices: F indicates a rock shaft mounted in bearings formed by ears f carried by bracket plates f'. This shaft is provided with arms G adapted to be thrown into and out of the lines of travel of the above described bars D D. To thus throw them out or in a lever H is used which is also secured to the shaft F, it being situated out of the path of the barrels or packages.

When the lever and the trip arms G G are in their inactive positions they are situated as is represented by Fig. 1, at floor E′. At such time the carrier bars D D will move past the platform or stage without delivering the barrel or package; but if it is desired to have the package thrown off at that platform the lever H is drawn back to the position shown

at floor E^2 in said Fig. 1, which brings the trip-arms G up into the line of travel of the bars D D. The latter as they move up strike the under sides of the ends of the trip arms, and as the chain continues rising the bars D D are rocked on their pivots d^2 in such way that the inner ends d are thrown relatively upward and continue such upward movement until the barrel or package rolls off onto the platform or stage. During this movement the outer ends of the bars D have been gradually escaping from the trip arms G and as soon as the barrel or package is delivered they entirely escape therefrom. Thereupon the inner end d drops back into the position before occupied. Preferably this inner end d is longer or heavier than the outer end d' so that it shall drop immediately into its place. To limit its upward movement when discharging a package, and limit its movement away from the bar C when the carrier is moving down on the opposite side of the mechanism, I combine with the parts above described a guide I, and there can be one upon each side of the carrier if desired. This guide is of the form of an arm having a slot i curved on a line struck from the pivot at d^2 as the center; and at i' there is a projection or pin, situated in said slot i. When the bar D is rocking on its pivot, its movement will be limited by the bar I, the end wall of the slot in the latter serving to stop it at a fixed point. This point should be such that the arm d' can be allowed to escape from the trip arms D.

The top floor or landing stage may be provided with a permanent automatic unloading device of any of the sorts now commonly in use at such place for such purposes, and when employed it will serve against accident and insure that the barrel or package shall be taken off before it passes over the top of the elevator.

While I have shown and described the trip G as mounted upon a shaft, and adapted to rock into and out from the path of the carrier or saddle, or of a trip arm projecting therefrom, it will be seen that the trip G or devices equivalent thereto can be supported and actuated in other ways. For instance it could be made to slide back and forth substantially rectilineally. Again instead of the chains B B, an equivalent can be used in the form of a rope or cable. Hence I do not wish to be understood as limiting the invention to all of the details shown.

What I claim is—

1. The combination with the parallel chains, of a supporting frame carried thereby, a rocking saddle pivoted thereto and consisting of bars lying above the frame, and each having the curved or concave part to receive and directly support a barrel or other object and an outwardly-extending tripping arm, and a trip mechanism adapted to be engaged by the said arm, substantially as set forth.

2. The combination with the chains, of the supporting frame, a rocking saddle lying above and pivoted to the said frame and arranged to receive and support a barrel or other object, and the guide for the saddle, substantially as set forth.

3. The combination, with the chains, of a supporting frame carried thereby and consisting of the bars C, C, and the brace bars C′, C′, a saddle adapted to receive a barrel or other object, and consisting of the rocking bars D, D, pivoted to the bars C of the supporting frame, and having the outwardly-extending arms d', d', and the guide I consisting of a slotted arm secured to the saddle, substantially as set forth.

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

FREEMAN R. WILLSON, JR.

Witnesses:
FRED. H. CROUGHTON,
JOHN H. FRANKLIN.