

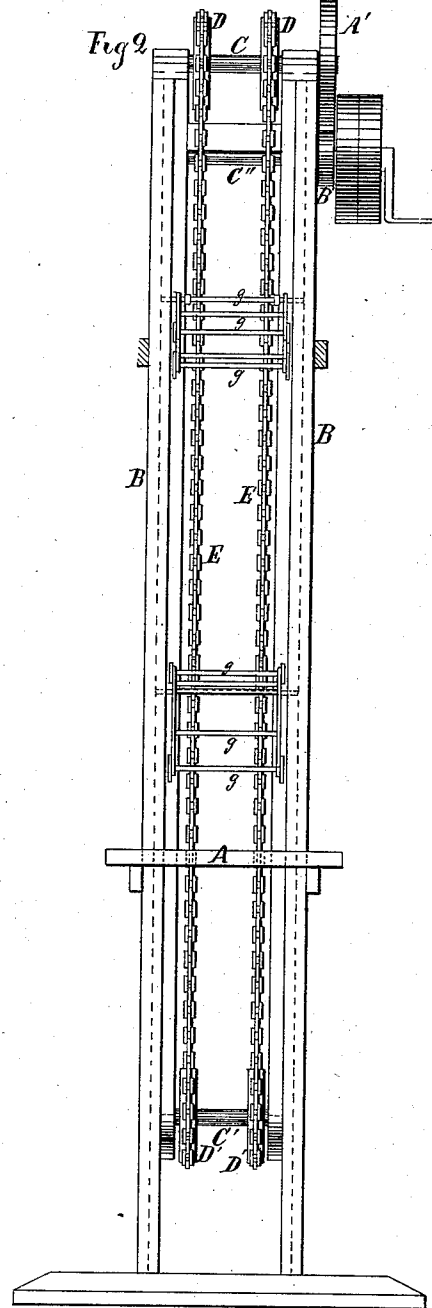
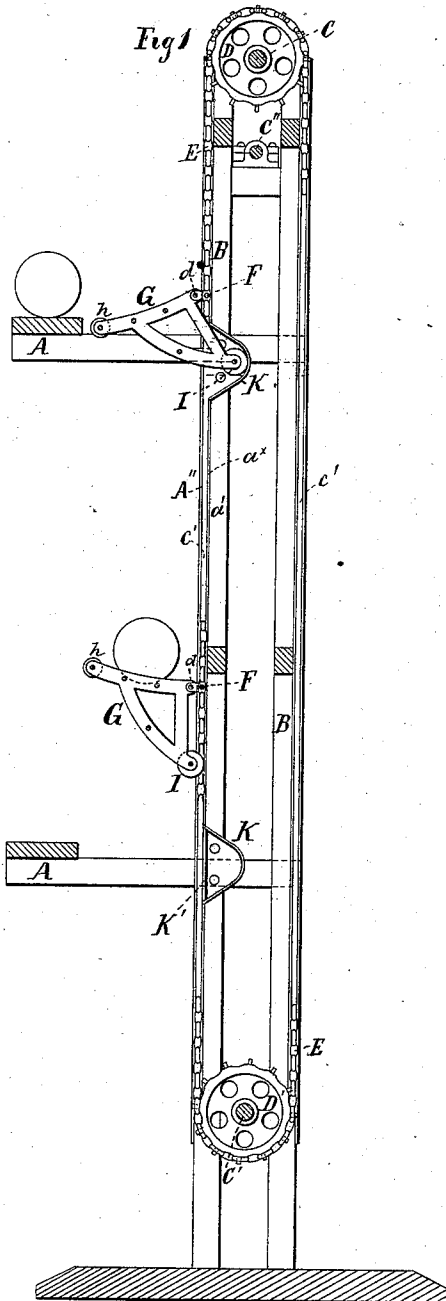
(No Model.)

2 Sheets—Sheet 1.

G. RUDELL.
PLATFORM ELEVATOR.

No. 278,050.

Patented May 22, 1883.



Witnesses

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John D. Dume

Inventor
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per James A. Whitney
Attorney

(No Model.)

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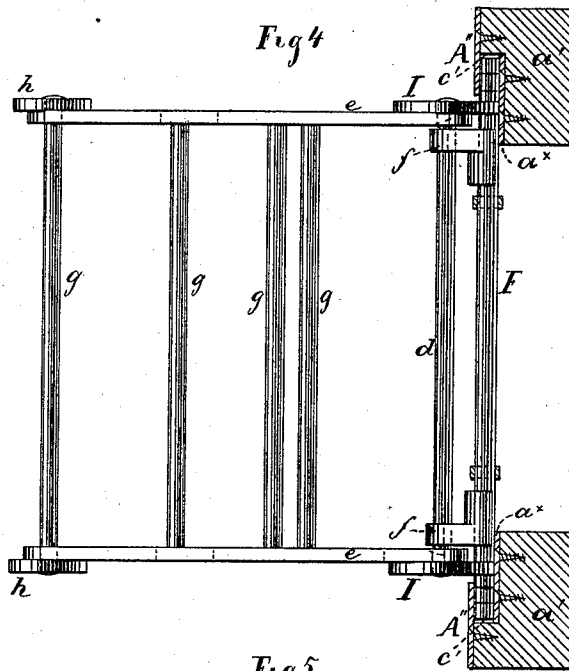
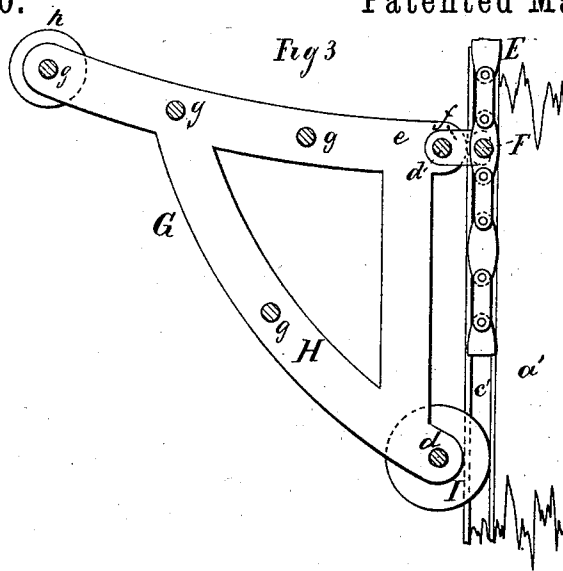
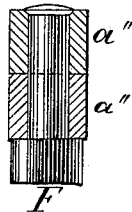


Fig 5



Witnesses

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UNITED STATES PATENT OFFICE.

GEORGE RUDDELL, OF NEW YORK, N. Y.

PLATFORM-ELEVATOR.

SPECIFICATION forming part of Letters Patent No. 278,050, dated May 22, 1883.

Application filed April 9, 1883. (No model.)

To all whom it may concern:

Be it known that I, GEORGE RUDDELL, of the city, county, and State of New York, have invented certain Improvements in Platform-Elevators, of which the following is a specification.

This invention relates to that class of hoisting apparatus commonly employed for transferring freight, merchandise, &c., from one to another of the floors of warehouses; and its object is to provide an apparatus of the class specified in which the friction of the parts shall be reduced to the lowest possible degree and expense, and which shall materially reduce the labor of handling the freight or other articles during the hoisting and delivery of the same from one floor to another.

The invention comprises certain novel combinations of parts, whereby these objects are accomplished.

Figure 1 is a vertical transverse sectional view of an apparatus constructed according to my said invention. Fig. 2 is a front view of the same. Figs. 3, 4, and 5 are detailed views on a larger scale, showing certain parts of the same.

A, A, &c., indicate the several floors of a warehouse, and B the vertical frame which supports the working parts of the apparatus, and in connection with which is provided the vertical hoistway through which said apparatus works. At the top of this frame B is a shaft, C, on which are sprocket-wheels D. At the lower end of said frame is a corresponding shaft, C', provided with like sprocket-wheels, D'. Vertical endless chains E are placed upon these sprocket-wheels, D D', extending from one to the other. One of the shafts—as, for example, the upper shaft, C—may be connected by suitable gears, A' B', with a counter-shaft, C'', which is provided with fast and loose pulleys, by means of which, from a suitable belt, motion may be given to the sprocket-wheels of the shaft, and consequently to the endless chains. The front posts, a', of the frame B have bolted upon their front faces broad flat vertical rails a'', and have at their outer edges longitudinal shoulders, to which are bolted strong plates A'', which thus provide at their inner edges deep grooves or

guides c'. Affixed horizontally at intervals upon the chains E, and extending from one to the other, are bars F, which are round or cylindrical, and the ends of which rest against the tracks of the front posts, a', with their extremities provided with small anti-friction rollers a'' and projected into the guides c'. The contour of the bars F presents but a slight surface in contact with the tracks a'', and this contour, being very smooth and presenting no sharp corners, greatly diminishes the friction which would otherwise occur from the rubbing of the bars in contact with the tracks a'' in the operation of the apparatus.

G G, &c., are the platforms, each of which has its rear or inner end strongly hinged or pivoted to the adjacent bar F. This is most efficiently done by means of a strong bar, d, which extends from one side piece, e, of the platform to the other, and which is passed through lugs f on the said adjacent bar F. Each platform has at each side a downwardly-projecting bracket, H, which has at its lower and rear end an anti-friction wheel or roller, I, which runs in contact with the track a'' of the front face of the adjacent post a'. The platforms themselves may be composed of the side pieces, e, aforesaid, connected by cross-bars g, and each platform has at its outer or forward end rollers h, the purpose of which is to facilitate the removal of freight, barrels, &c., from the platform at the several floors A.

Each of the front rails, a'', of the posts a' of the frame B is provided opposite each floor at which freight, &c., is to be discharged from a platform with what may be termed a "fixed cam," K, so arranged with reference to the face or front of said post as to permit the bracket H to swing backward when the same is brought opposite said cam during the upward movement of the platform. This causes the platform to tilt as it rises, so that temporarily its forward end remains substantially coincident with the level of the floor while the rear portion of said platform is still rising, thereby causing the platform to automatically discharge its load upon the floor. As the upward movement of the platform continues, the cams K, acting upon the brackets of the platform, swing the same forward, thereby causing the

anti-friction rollers I to come again upon the track a^x of the posts a' , and consequently bringing the platform to its normal or substantially horizontal position. In this manner the upward movement of the front of the chains, due to the rotation in the requisite directions of the sprocket-wheels, brings the platforms in succession opposite each of the floors, and at each pair of the adjacent fixed cams K automatically actuates the platform to deposit its load. When it is desired that the platforms shall pass any floor without being thus actuated, short temporary rails K' are inserted in the front of each cam to present a flat surface continuous with the tracks a^x , so that in such case the wheels or anti-friction rollers I run past the cams without permitting the platforms to be operated thereby.

It will be observed that inasmuch as the cams may be made with any desired curvature the tilting of the platforms is in each case initiated gradually and without jar. Further, the wheels or rollers on the brackets practically do away with the friction which would occur if the ends of the brackets were allowed to drag in direct contact upon the rails a^x .

When desired the cams and their adjuncts may be duplicated at the opposite side of the frame, so that the platforms, in passing downward at such opposite side, may be used for lowering freight and automatically discharging the same.

What I claim as my invention is—

1. The combination of the fixed cams, vertical tracks a^x , sprocket-wheels D D', endless chains E, and platform or platforms G, having pivotal connection with the endless chains E, and having brackets H bearing against the

vertical tracks, all substantially as and for the purpose herein set forth.

2. The combination of the sprocket-wheels, endless chains E, platform or platforms G, having pivotal connection with said chains E, the brackets H, anti-friction wheels or rollers I, vertical tracks a^x , and cams K, all substantially as and for the purpose herein set forth.

3. The combination of the vertical tracks a^x , endless chains E, sprocket-wheels, cylindrical bars F, attached to said chains, having anti-friction rollers a'' , and having their end sprocket-wheels a' , platform G, rod F, pivoting said platform to said chains E, brackets H, and anti-friction rollers I, attached to said platform, all substantially as and for the purpose herein set forth.

4. The temporary rails, in combination with the cams K, tracks a^x , platform G, brackets H, endless chains E, and sprocket-wheels D D', all substantially as and for the purpose herein set forth.

5. The platform composed of the side pieces, e, brackets H, and bars g, in combination with the tracks a^x , endless chains E, cams K, and sprocket-wheels D D', the said platform having pivotal connection with said chains, all substantially as and for the purpose herein set forth.

6. The combination of the anti-friction rollers a' with the platform G, having brackets H, the tracks a^x , endless chains, sprocket-wheels D D', and cams K, all substantially as and for the purpose herein set forth.

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