(No Model.)

J. C. FOX.

ELEVATOR.

No. 520,043. Patented May 22, 1894.

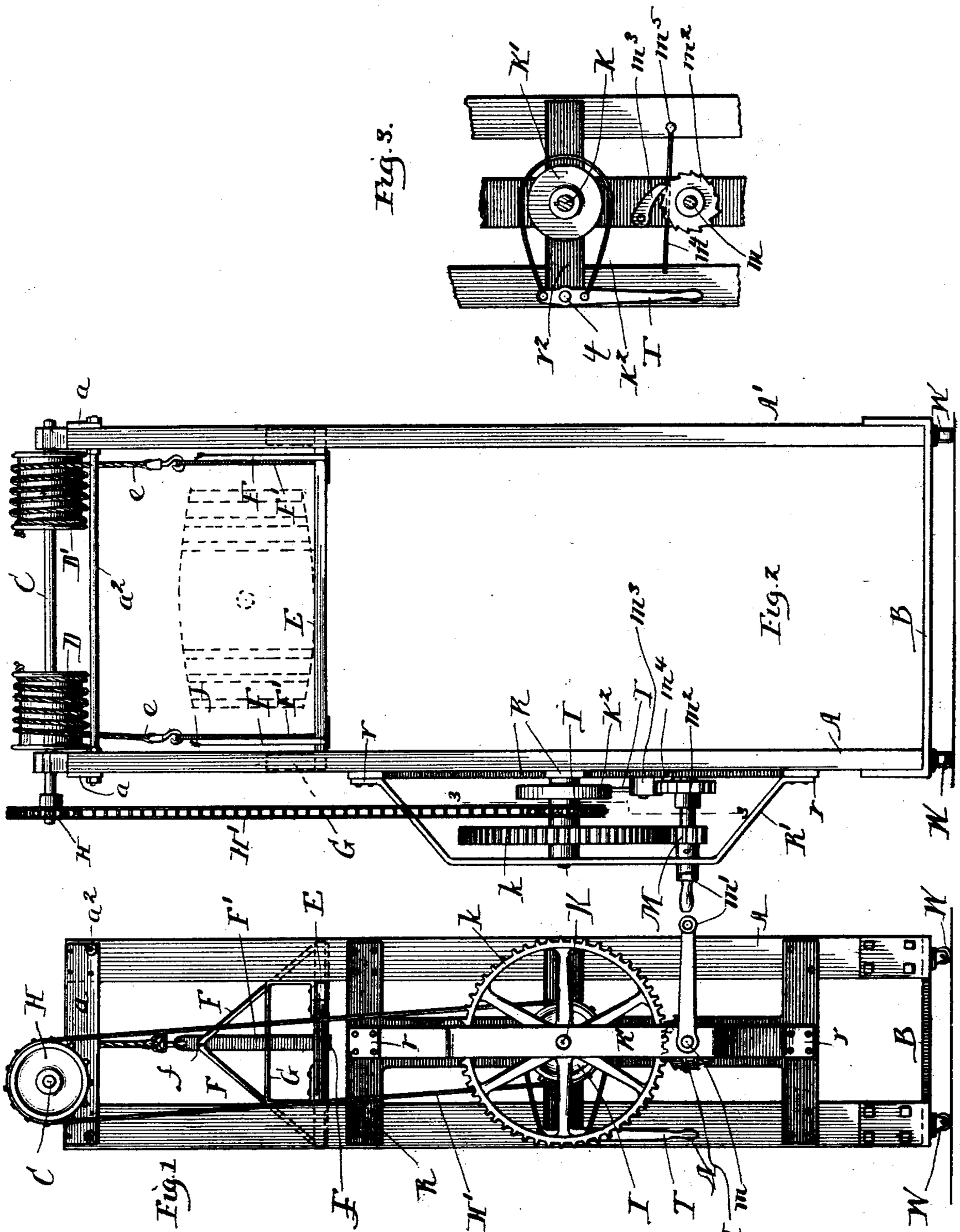

Fig. 1.

Fig. 3.

Fig. 2.

Witnesses:
Fred Gerlach
A. Adamick.

Inventor:
John C. Fox
By Peirce & Fisher
Attorneys.

THE NATIONAL LITHOGRAPHING COMPANY.
WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JOHN C. FOX, OF CHICAGO, ILLINOIS, ASSIGNOR OF TWO-THIRDS TO PERCY THOMPSON, OF KANSAS CITY, MISSOURI, AND FRANK A. WARNER, OF CHICAGO, ILLINOIS.

ELEVATOR.

SPECIFICATION forming part of Letters Patent No. 520,043, dated May 22, 1894.

Application filed November 20, 1893. Serial No. 491,386. (No model.)

To all whom it may concern:

Be it known that I, JOHN C. FOX, a citizen of the United States, residing at Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Elevators, of which I do declare the following to be a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My present invention has for its object to provide an improved construction in elevators designed more especially for elevating freight in the rooms of ware houses so that the goods to be stored can be readily raised to the desired height and the full capacity of the rooms be thus conveniently utilized.

With this object in view my invention consists in the novel construction of elevator hereinafter described, illustrated in the accompanying drawings and particularly pointed out in the claims at the end of this specification.

Figure 1 is a view in side elevation of a portable elevator embodying my improvements. Fig. 2 is a front view. Fig. 3 is a detail view on line 3—3 of Fig. 2.

In storing goods within rooms of a ware house it is customary in order to fully utilize the space, to pile the goods as near to the ceiling as possible. Thus, for example, in storing barrels, casks or the like, it is customary to arrange these in tiers one above the other, but owing to the difficulty in elevating the casks or barrels, it is rarely attempted to store them to a greater height than three rows or tiers.

By my present invention I provide a portable elevator that can be readily transmitted to any desirable part of the ware house and will enable the barrels, casks or like articles to be conveniently raised so as to permit them to be stored to any desired height.

A and A′ designate the vertical side bars of the improved elevator, these bars being connected at their bottoms to a base-plate B, preferably as shown in Figs. 1 and 2 of the drawings and at their tops the bars A are united together by cross bars *a* and the bars A′ are connected by similar cross-bars. Between the bars A and A′ extend the tie-rods a^2 whereby the upper ends of the bars are securely held at proper distances apart. Upon the cross-bars *a* at the top of the main frame is journaled a winding shaft C that carries the drums D and D′ upon which are wound the ropes or cables *e* that sustain the platform E. The lower ends of the ropes or cables *e* are connected to the platform by means of the A-rods F and the vertical rods F′. The rods F are centrally attached to the platform, the rods F being connected to the rods F′ as at *f* (Fig. 1).

My object in providing the drums D and D′ above each end of the platform E is to insure a uniform lifting of the platform, thereby guarding against the irregularity of movement which would occur if the platform were lifted from a central drum and by a single rope or cable.

By employing the bars F extending to opposite sides of the platform a more secure or uniform connection between the platform or ropes and cables is effected.

The corners of the platform E are cut away as shown, to admit the bars A and A′, the central portion of each end of the platform E projecting outwardly between these bars and serving to guide the platform. Preferably also the ends of the platform E are provided with the upright guides G in order to better insure the platform against tilting in case the load is unevenly distributed thereon or while it is being removed therefrom; and it is obvious that when the load is upon either side of the center of the platform the upright guides G, bearing as they do against the edges of the vertical bars A and A′ will prevent any tilting movement of the platform.

Upon one end of the drum shaft C is mounted a sprocket wheel H over which passes a sprocket chain H′ that leads to a similar sprocket wheel I upon a shaft K. The shaft K has fixed thereto a gear wheel *k* that meshes with a pinion M upon a crank shaft *m*, this shaft *m* carrying at its end a crank *m′* whereby motion may be imparted to the shaft. The shaft K and the shaft *m* are journaled in a supplemental frame attached to the outside

of the main elevator frame, this supplemental frame consisting preferably of the I-shaped back plate R and the arched front plate R′, the ends of this front plate being bolted to the back plate as shown at *r*.

The frame-work of the elevator is preferably of wood while the supplemental frame that carries the shafts K and *m* is preferably of metal in order to give greater rigidity and strength thereto. Upon the shaft K and fixed thereto is mounted a friction wheel K′ over which passes a friction strap K^2, the ends of this strap being attached to the hand lever T that is pivoted as shown at *t* to one of the extensions r^2 of the bar or plate R. The drum or strap serves as a brake to permit the easy descent of the loaded platform and it is obvious that by means of the hand lever T the operator can set the brake so as to readily control the descent of the platform. The shaft *m* has fixed thereto a ratchet wheel m^2 with which engages a pawl m^3, the purpose of this pawl and ratchet being to guard against the downward movement of the platform and hold it at any desired elevation. Beneath the pawl m^3 and at one side thereof extends a throw-off rod or lever m^4 that is pivoted as at m^5 and by means of this throw-off rod or lever the pawl m^3 can be raised from engagement with the ratchet wheel m^2 in order to permit the descent of the platform.

From the foregoing description it will be seen that when it is desired to raise the platform and its load the operator will simply turn the crank *m*′ thereby winding the ropes or cables *e* upon the drums D and D′, and at such time the pawl m^3 being in engagement with the ratchet wheel m^2, will guard the platform against downward movement and will securely hold it at any desired elevation. If, now, it is required to lower the platform, the operator, by lifting the rod m^4 can throw the pawl m^3 from engagement of the ratchet wheel m^2 and with his other hand can operate the lever T so as to cause the friction clutch to insure an easy descent of the platform and its load.

The elevator will be mounted upon suitable wheels or casters W whereby it may be conveniently removed from point to point of the ware house floor to enable the casks, barrels or others articles to be stacked at such points.

An advantage incident to providing the winding shaft with separate drums is that when the platform is raised to its highest point the lifting ropes are most widely separated thereby permitting the barrel or other package to be readily removed from the platform.

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

1. An elevator comprising an upright frame having at each side two vertical bars constituting the corner posts of the frame, a platform arranged to travel within said upright frame, each end of said platform projecting between the vertical bars adjacent thereto, the vertical guide bars G attached to the ends of said platform and extending across the space between the adjacent side bars, and arranged to move between the inner edges of said side bars, the A-rods F having their lower ends rigidly attached to the front and rear of said platform adjacent its ends, the vertical rods F′ centrally attached to the ends of said platform, and to said rods F, suitable ropes or cables leading from said rods F′, a shaft C mounted in the top of the frame, the winding drums D, D′, carried thereby to which the ropes or cables are connected, and gear mechanism for effecting the movement of said drums, substantially as described.

2. A portable elevator comprising a suitable framework, a platform movable therein, suitable winding drums for raising and lowering said platform, gear mechanism located adjacent the lower part of said frame and connected with said winding drums, and a supplemental frame for sustaining said gear mechanism, said supplemental frame consisting of the I-shaped back plate R and the arched front plate R′ bolted to said back plate R, the ends of said back plate being attached to the framework, substantially as described.

JOHN C. FOX.

Witnesses:
GEO. P. FISHER, Jr.,
F. A. WARREN.