

No. 672,471.

Patented Apr. 23, 1901.

W. G. ADAMS.  
PORTABLE ELEVATOR.  
(Application filed Feb. 16, 1901.)

3 Sheets—Sheet 1.

(No Model.)

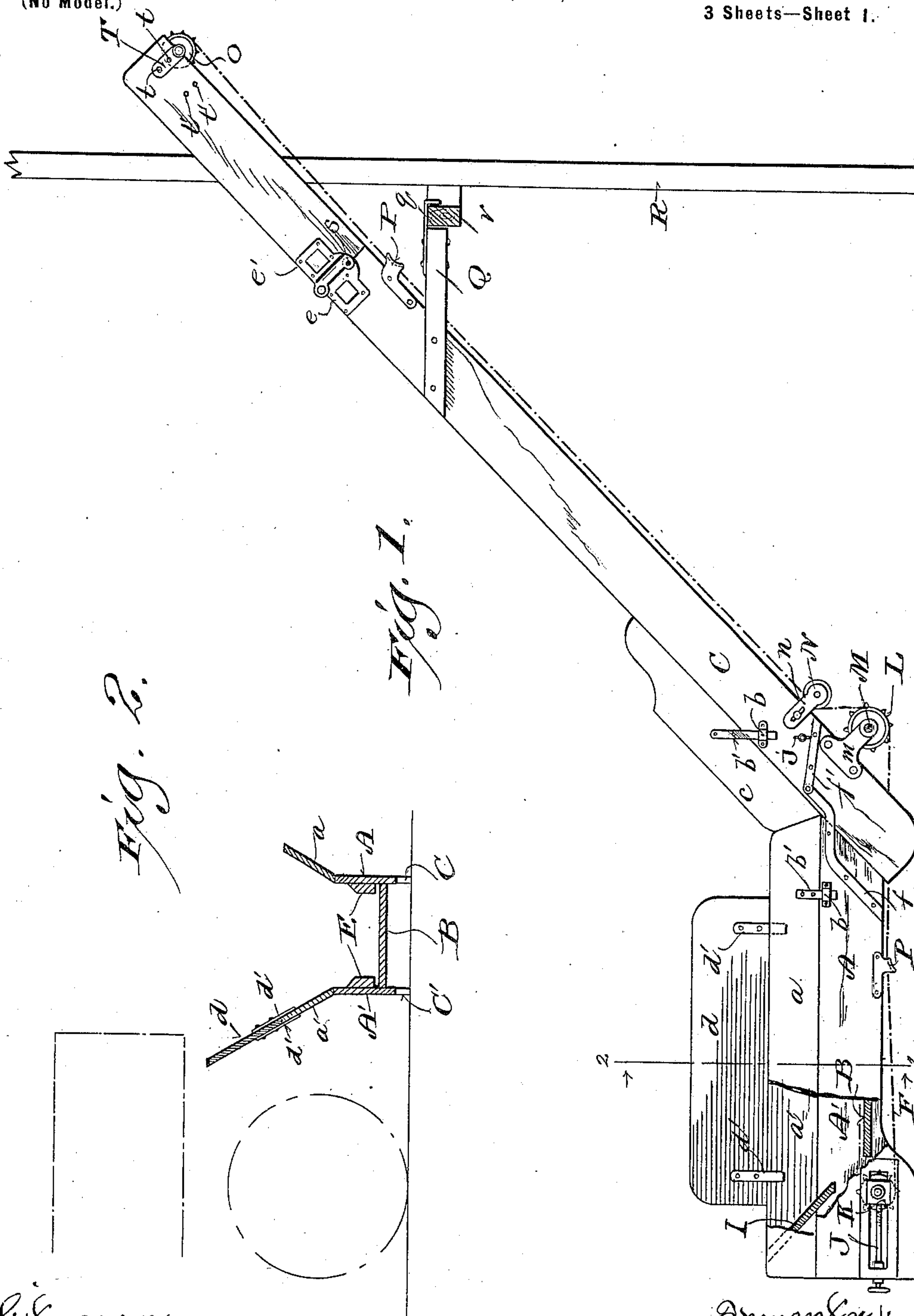


Fig. 2.

Fig. 1.

Witnesses:  
Geo W. Young  
B. C. Roloff.

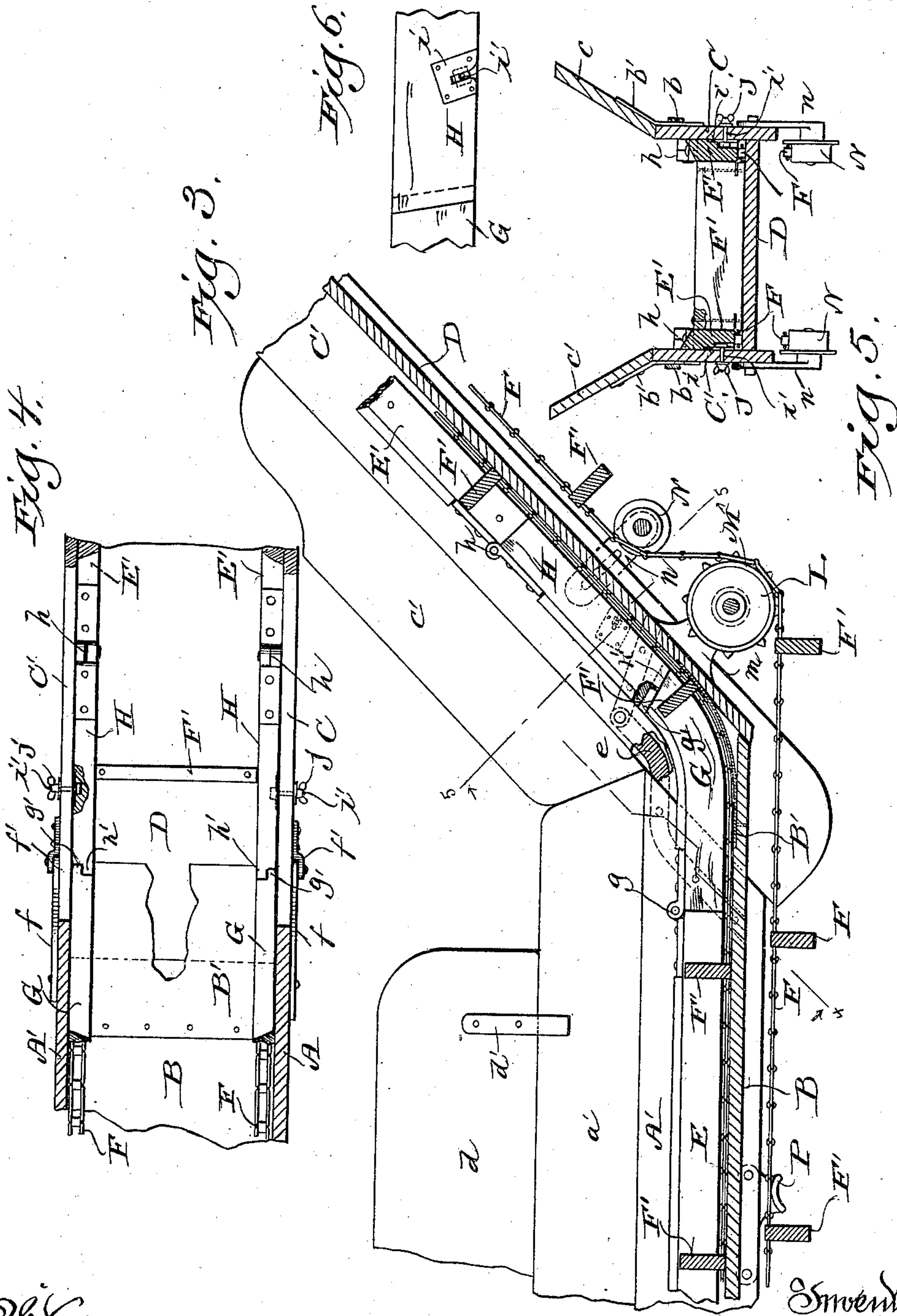
Inventor:  
Walter G. Adams  
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**W. G. ADAMS.**  
**PORTABLE ELEVATOR.**

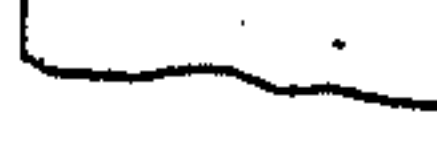
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(No Model.)

**3 Sheets—Sheet 2.**



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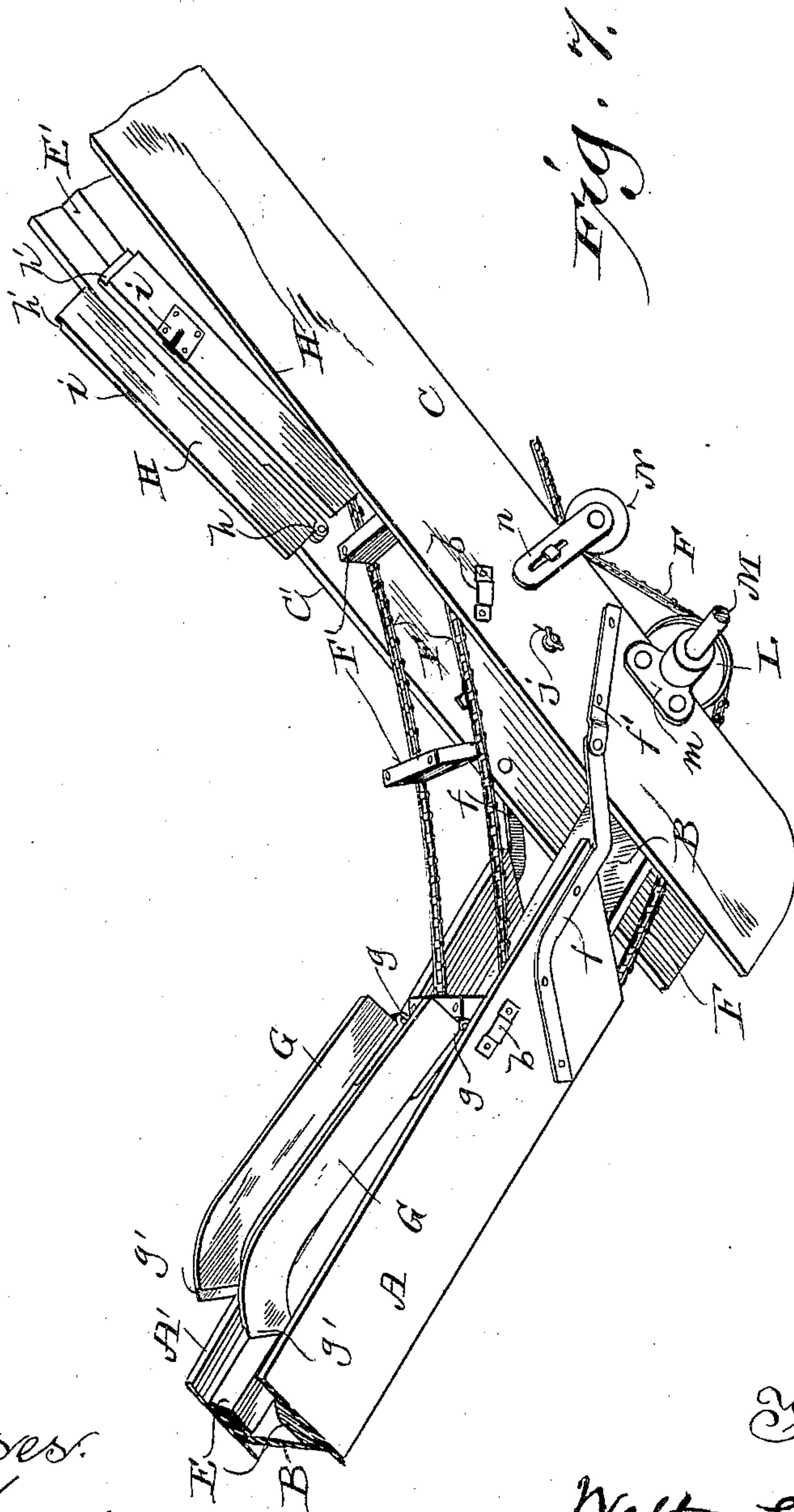
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3 Sheets—Sheet 3.



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# UNITED STATES PATENT OFFICE.

WALTER G. ADAMS, OF RACINE, WISCONSIN.

## PORTABLE ELEVATOR.

SPECIFICATION forming part of Letters Patent No. 672,471, dated April 23, 1901.

Application filed February 16, 1901. Serial No. 47,629. (No model.)

*To all whom it may concern:*

Be it known that I, WALTER G. ADAMS, a citizen of the United States, and a resident of Racine, in the county of Racine and State of Wisconsin, have invented certain new and useful Improvements in Portable Elevators; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention has especial reference to that class of elevators which are employed to transfer material from a wagon to a suitable storehouse, freight-car, or other receptacle; and it consists in certain peculiarities of construction and combination of parts, as will be fully set forth hereinafter in connection with the accompanying drawings and subsequently claimed.

In the said drawings, Figure 1 represents one of my improved portable elevators in position for use, the same being shown in side elevation and partly broken away to better illustrate certain details of construction. Fig. 2 is a transverse sectional view on the line 2 2 of Fig. 1. Fig. 3 is a vertical longitudinal sectional view. Figs. 4 and 5 are detail sectional views on the lines 4 4 and 5 5, respectively, of Fig. 3. Fig. 6 is a detail view. Fig. 7 is a perspective view of my device in a partly-folded position.

Referring to the drawings, A A' represent the side boards, and B the base-board, of the receiver of said elevator, the boards A A' having outwardly-flaring extensions or wings a a'.

C C' represent the side boards of the inclined part of the elevator, and D the base-board of that portion, the boards C C' having outwardly-flaring extensions or wings c c' at the lower end, adjacent to the just-named wings a a' of the receiver, the said wings a a' c c' being removable and secured to the said side boards by loops b on the side boards, and angular straps b', secured to said wings and having lower projecting ends for engagement with said loops. In addition the wing a' of the receiver has a removable extension d, held in place by means of straps d' d', secured thereto and projecting downward, so as to straddle and embrace the said wing a', on the upper edge of which the said extension d rests.

E E represent parallel stationary cleats secured to the side boards A A' of the receiver

a short distance above the base-board B to afford space for the passage of the elevator endless sprocket-chains F F between said base-board and cleats.

The side boards C C' of the inclined part of the elevator are each divided transversely adjacent to their upper end and there united by hinges, as shown at e e' in Fig. 1, so that the extreme end of the elevator may be partly folded at this point, as hereinafter described, the said side boards C C' being provided with stationary cleats E' E', secured above the base-board D, similar to the cleats E E above the base-board B of the receiver and for a like purpose, it being understood, of course, that the upper ends of said cleats E' E' are divided on the line of division of the side boards C C' just referred to. The described endless chains F F are connected together by flights F' F', which move between the described cleats, closely thereto.

The receiver and inclined portions of the elevator are connected together by pairs of strap-hinges f f', whereby when not in use or when in the path of the wagon to be unloaded the receiver may be folded over upon the inclined portion, as indicated in Fig. 7; but when the elevator is in position for use, as in Fig. 1, it becomes necessary to hold the chains properly in place in order to elevate the material fed into the receiver. To this end the adjacent ends of the described cleats E E and E' E' terminate some little distance short of the corresponding ends of the side boards A A' and C C', and curved cleats G G (of a length sufficient to bridge over the junction of the receiver and inclined portions of the elevator) are hinged, as shown at g g, to the stationary cleats E E, and straight cleats H H are hinged, as shown at h h, to the stationary cleats E' E', whereby the hinged cleats may be thrown back, as shown in Fig. 7, preparatory to folding the elevator, or brought down so as to rest upon the chains F F at the junction, as best shown in Figs. 3 and 4, when the elevator is to be used. The meeting ends of the two pairs of hinged cleats are formed on a bevel cut so that the cleats H H are the locking-cleats, and the said meeting ends are further shouldered or rabbeted, as shown at g' g' and h' h', and to secure these cleats in position tightly against the side boards the lock-



ing-cleats H H are slotted and provided with guard-plates *i* to receive the heads of bolts *i'*, which bolts project through the side boards C C', the projecting screw-threaded ends of said bolts receiving thumb-nuts *j*, whereby the described tightening to place of said cleats is accomplished.

The base-board B of the receiver projects forward beyond the adjacent ends of the side boards A A', as shown in Fig. 7, and B' represents a curved metal sheet secured to such projecting end of the board B, so as to cover the junction of the receiver and inclined portions of the elevator and rest on the base-board D, each board B and D being reduced in thickness at these points, so that a smooth continuous curved surface may be provided over the line of said junction for the chains F F and their flights F' F' to travel over, as shown in Figs. 3 and 4, the forward ends of the side boards A A' being beveled or undercut, as shown, so as to rest squarely against the upper edges of the side boards C C' and the meeting edges of the extensions or wings *a c* and *a' c'* being also correspondingly beveled to insure close union when the device is in the open position shown in Figs. 1 and 3.

The rear end of the receiver is provided with an inclined hopper-board I, and the rear ends of the side boards A A' are extended downward and provided with slots and sliding blocks carrying the journal of the rear sprocket-wheels K, rods J being connected to said blocks to form tightening devices for the chains F, passing around said wheels. Said sprocket-chains pass from the sprocket-wheels K beneath the described cleats E, G, H, and E' to the upper end of the inclined portion of the elevator and then around sprocket-wheels O, journaled at said upper or forward end, thence back beneath the elevator over idlers N and under sprocket-wheels L, adjacent to the lower or rear end of said inclined portion, and thence beneath the receiver back to said sprocket-wheels K. The sprocket-wheels L are fast on a shaft M, supported in hangers *m*, depending from points adjacent to the rear ends of the side boards C C', the said shaft M being the power-shaft, to which any suitable power is applied for the described movement of the connected pair of endless chains F F. The idlers N are supported by hangers *n*, which are adjustably secured to the side boards C C', so as to serve as chain-tighteners, and the said chains are further supported at intervals by hangers P P, secured to the side boards of the elevator, with intumed lips for the chains to ride over.

Transverse cleats Q are secured to the side boards of the inclined portion, projecting horizontally therefrom when the device is in operative position, said cleats being provided with angle-iron extensions *q*, (or traveler rollers, if preferred,) adapted to engage with a rail or bar *r* below the opening or doorway in the storehouse or other structure R, into which the material from the elevator is to be conveyed, the

upper end of said elevator projecting inside of said opening, as indicated in Fig. 1, and when it is desired to move the elevator along to another opening in said structure it will not be necessary to disconnect the receiver and inclined portion, but by simply withdrawing the pins *s*, which unite the two hinge members *e e'*, the upper end of said inclined portion can be partly folded back, so as to be withdrawn from the opening and the whole elevator pushed laterally along (being guided on the rail or bar *r*, already named) until it is opposite the next opening, when said upper end of the elevator is straightened out again, so as to project within the new opening and to be in line with the balance of the inclined portion and the pins *s* replaced to lock the described hinge members. To aid in this movement of the elevator, it will be understood that the receiver may have suitable wheels attached thereto or be mounted upon a truck; but this is immaterial, and hence I have not deemed it necessary to illustrate the same in the drawings. Further, in order to facilitate the described bending back of the upper end of the inclined portion of the elevator the journal of the upper sprocket-wheels O may be suspended, as shown, from hangers T, held to the side boards C by removable bolts or pins *t t*, and said side boards are further formed with additional perforations *t' t'* back of the line of attachment of the hangers T, (shown in Fig. 1,) so that the said hangers may be shifted to the line of said perforations *t' t'*, and there temporarily secured by said bolts or pins *t t*, whereby the chains F will be slackened sufficiently to permit the described bending back of the upper end of the said inclined portion of the elevator, or in place of this any preferred means for slackening the said chains may be employed.

If it is desired to lengthen the inclined portion of the elevator, additional sections thereof may be added thereto between the lower and upper portions shown in Fig. 1, it being only necessary to equip such parts with separable hinges, like the hinges *e e* shown, secured in like manner to the side boards of said additional sections.

One great advantage of the described folding construction of my elevator lies in the fact that instead of having to drive the wagon to be emptied around the receiver and back up my receiver can be raised in the manner described, and illustrated especially in Fig. 7, and permit the wagon to drive past same to the position indicated by the dotted lines in Fig. 2, and then the receiver can be again lowered and be in readiness to receive the load from the wagon.

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

1. In a portable elevator, the combination of the receiver and inclined portions, united by hinges to permit folding; sprocket-wheels connected to said portions; endless sprocket-



chains connected by flights and traveling on said wheels; and movable cleats hinged to one of said portions and extending over the junction of the two portions, said cleats forming chain-guides when in operative position, and adapted to be thrown back when the elevator is to be folded.

2. In a portable elevator, the combination of the receiver and inclined portions, united by hinges to permit folding, and the receiver having a curved extension to its base-board to form a smooth continuous floor over the junction of the two portions; a power-shaft supported from the lower end of the inclined portion and having sprocket-wheels fast thereon; sprocket-wheels at the outer ends of the said two portions; stationary cleats secured to the inner surfaces of the side boards of the said two portions, above the base-boards thereof, to form chain-guides; endless sprocket-chains traveling on said sprocket-wheels, beneath said cleats, and united by flights moving between the cleats; curved cleats hinged to the stationary cleats of the receiver portion, and extending over the junction of the two portions; and other cleats, hinged to the stationary cleats of the inclined portion, and adapted to engage with and lock the said curved cleats, when the elevator is in operative position, and all the movable cleats being adapted to be thrown back when the elevator is to be folded.

3. In a portable elevator, the combination,

with the side boards thereof, of stationary and movable cleats, forming chain-guides; endless sprocket-chains traveling beneath said cleats, and united by flights moving between said cleats, the movable cleats being hinged to the stationary cleats, and slotted and provided with guard-plates; bolts passing through the said side boards, and having their heads received in said slots; and thumb-nuts on the outer projecting ends of said bolts for tightening the hinged cleats to place against the said side boards.

4. In a portable elevator, the combination with the receiver portion, of an inclined portion, hinged thereto, and endless chains connected by flights, traveling the entire length of both portions, the upper end of the inclined portion being transversely divided, and united by hinge members, and locking-pins, whereby said upper end may be folded back and withdrawn from any doorway or opening within which it is projected, and the entire elevator moved laterally to the next doorway or opening, without disconnecting the two portions of the elevator.

In testimony that I claim the foregoing I have hereunto set my hand, at Milwaukee, in the county of Milwaukee and State of Wisconsin, in the presence of two witnesses.

WALTER G. ADAMS.

Witnesses:

H. G. UNDERWOOD,  
B. C. ROLOFF.