E. N. HESCOCK AND E. F. SMITH.

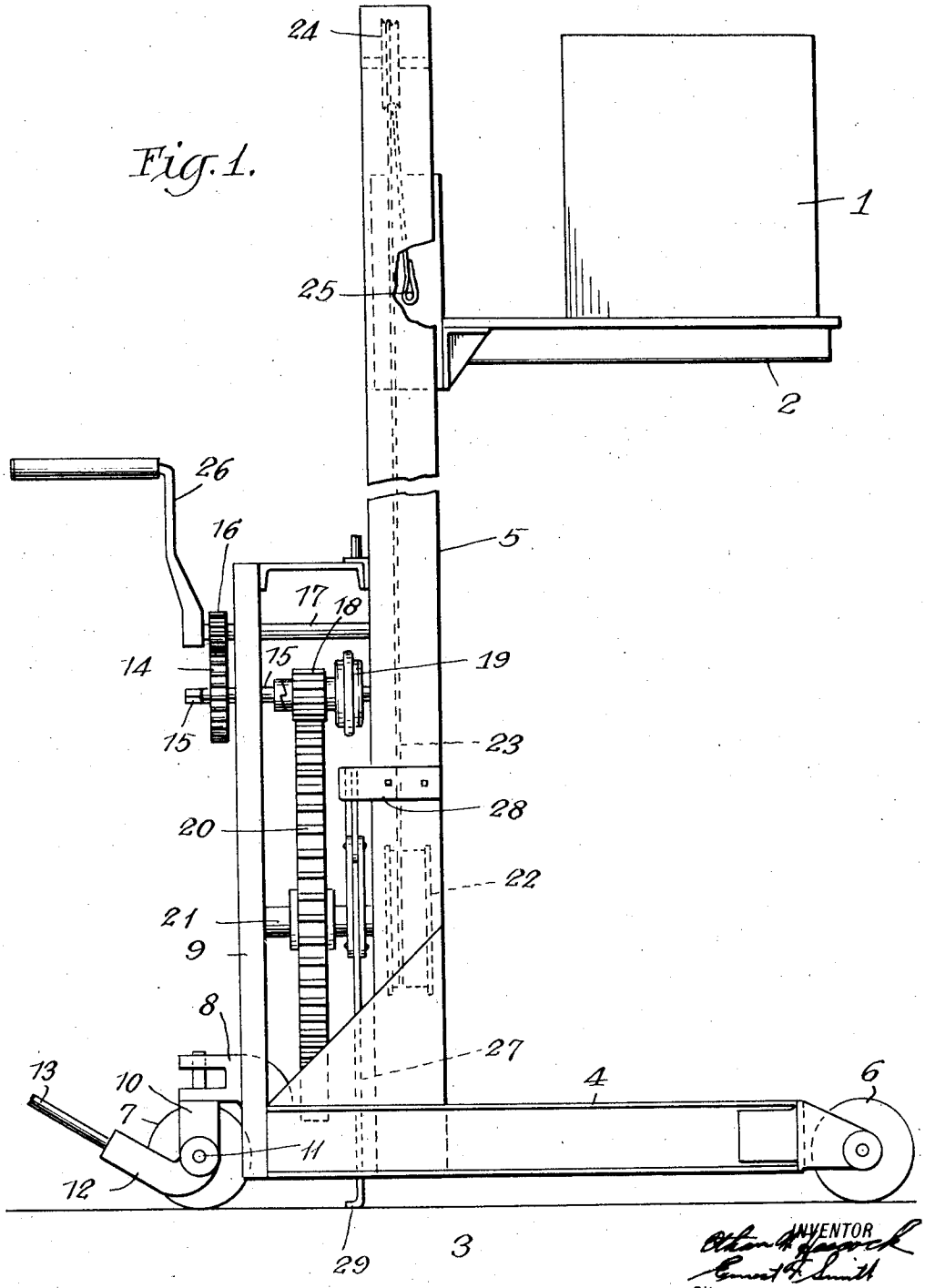
PORTABLE ELEVATOR.

APPLICATION FILED JUNE 24, 1919.

1,344,272. **Patented June 22, 1920.**

2 SHEETS—SHEET 1.

Fig. 1.



INVENTOR

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2 SHEETS—SHEET 2.

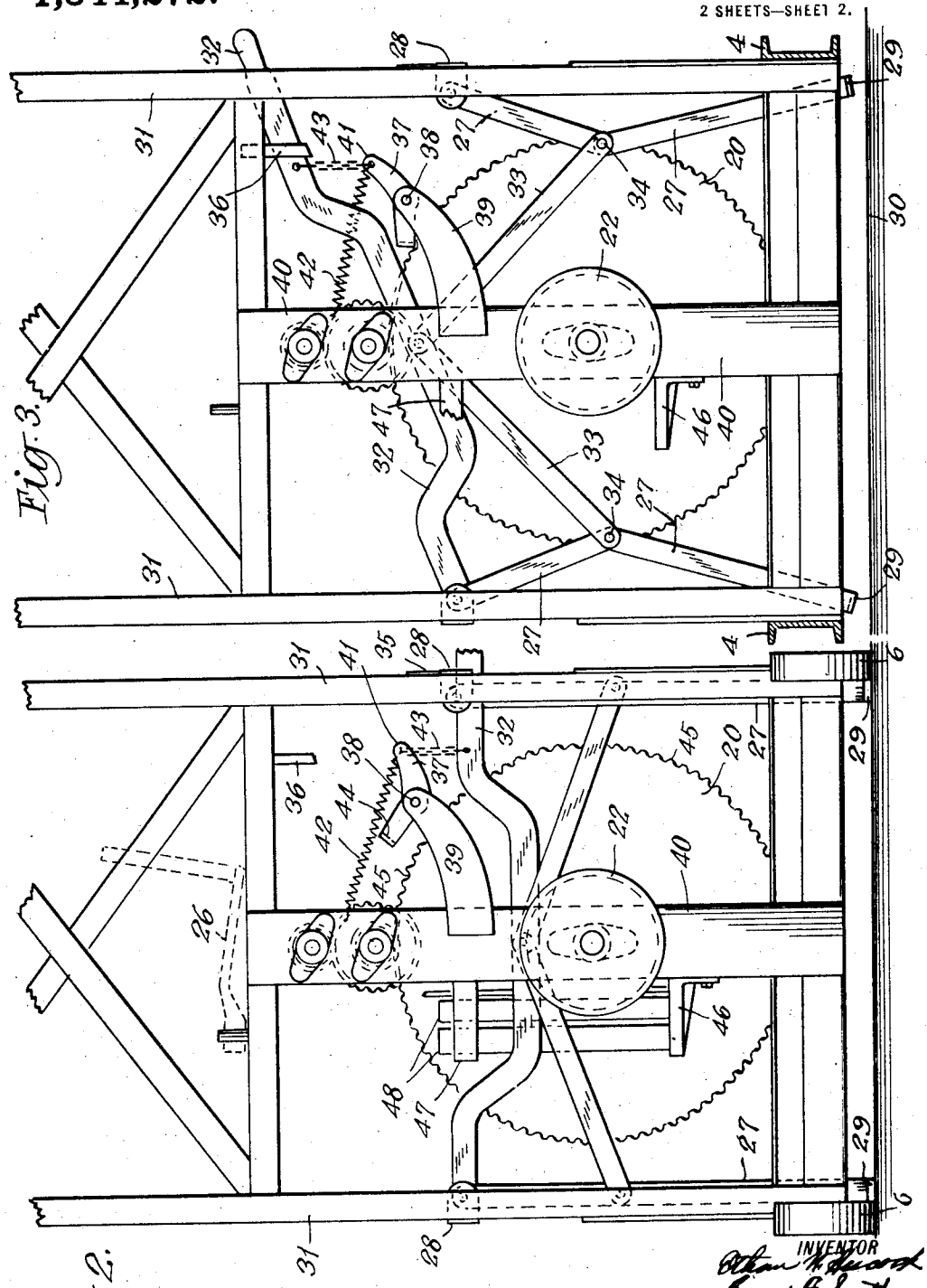


Fig. 3.

Fig. 2.

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ETHAN N. HESCOCK, OF WESTFIELD, NEW JERSEY, AND ERNEST F. SMITH, OF WOODHAVEN, NEW YORK, ASSIGNORS TO NEW JERSEY FOUNDRY AND MACHINE COMPANY, A CORPORATION OF NEW JERSEY.

PORTABLE ELEVATOR.

1,344,272. Specification of Letters Patent. Patented June 22, 1920.

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To all whom it may concern:

Be it known that we, ETHAN N. HESCOCK, a citizen of the United States, and a resident of Westfield, in the county of Union and State of New Jersey, and ERNEST F. SMITH, a citizen of the United States, and a resident of Woodhaven, in the county of Queens and State of New York, have jointly invented a new and useful Improvement in Portable Elevators, of which the following is a specification.

Our invention relates to portable elevators which are used to stack bags, bales, boxes, barrels, rolls, bundles, textiles, leather tobacco, or any material. Such portable elevators are moved from place to place on the floor of the wharf, warehouse, factory or other building where it is desirable to stack the material.

For the purpose of more readily describing our invention we have shown it in connection with the accompanying drawings, in which the same reference numerals refer to similar parts in the several figures.

Figure 1 is a side elevation of our portable elevator showing the platform elevated.

Fig. 2 is a fragmentary end elevation showing our stabilizing device in its operative position and the hoist mechanism released;

Fig. 3 is an end elevation similar to Fig. 2 with the traction wheels omitted and showing the stabilizing device in its inoperative position, and the locking member locking the hoist mechanism.

To more readily turn and maneuver such portable elevators it is the common practice to support them on three traction wheels of which one is swiveled. The arrangement usually employed is to have two wheels mounted to support one end of the portable elevator, the other end of the elevator, being supported by the swivel wheel, which is usually mounted in alinement with the longitudinal axis of the elevator.

While this arrangement of supporting wheels has many advantages permitting easy manipulation of the portable elevator upon the floor of the warehouse or other location wherever it is used it has the disadvantage of making the elevator unstable. When the platform of the elevator is raised, as shown for example in Fig. 1, a careless operator is apt to make the platform wabble or move at an angle to the longitudinal axis of the elevator.

A slight transverse movement of the elevator frame near the supporting wheels, will be accentuated on the elevator platform when in its raised position. A careless operator might cause the load 1 to fall from the platform 2, or the operator himself might slip or fall from the unstable platform.

By our invention we insure that the platform 2 will always be stable even though the elevator has but three traction wheels, as shown in the drawing,

Further, to insure against accidents, we arrange our invention so that the platform 2 cannot be elevated without first moving into operative position the additional safety or stabilizing means.

We have shown our invention in connection with the portable elevator 3 having the frame 4, vertical support or guide 5, traction wheels 6—6 and swivel wheel 7. This latter traction wheel is mounted on the opposite end of the elevator from the traction wheels 6—6 and is carried by the yoke 8 fast to the frame 9. The wheel itself is mounted in the member 10 which is swiveled in the yoke 8. On the axle 11 is also mounted the fork 12 to which is connected the handle 13 by which the elevator is pulled around to different positions where it may be desired to stack the bags, boxes, barrels, or other articles. This traction wheel 7 being mounted on the opposite side of the frame from the traction wheels 6—6 and in substantially the longitudinal axis of the frame, renders the platform 2 unstable, particularly when it is elevated as previously pointed out.

The elevator is provided with hoisting mechanism of any approved construction, either power or hand operated. For purposes of example we have shown a hoist mechanism including a gear 14, mounted on the axle 15, a pinion 16 mounted on the axle 17, a pinion 18 carried by the axle 15 and a brake 19 mounted upon said axle 15. The pinion 18 meshes with the drum gear 20 mounted on the axle 21, which axle also carries the winding drum 22, to which is secured the rope or other flexible member 23 which passes around the pulley 24 and is connected at 25 with the platform 2. It is obvious that by operating the drum gear 20

the platform will be raised or lowered as the case may be. With light loads the removable crank 26 is taken from the position shown in Fig. 1 and connected directly with the axle 15; for heavier loads it is mounted upon the axle 17 in the position illustrated. When it is not desired to operate the hoist mechanism the crank may be removed and laid on the frame as shown in Fig. 2. This particular form of hoisting mechanism is no part of our invention but is simply illustrated that our invention may be more clearly understood.

On different sides of the vertical support or guide 5 we mount toggle levers 27—27 by means of brackets 28—28, the lower ends of two of the toggle levers 27—27 pass through the frame 4 and act as feet 29—29 which can be thrown down to contact with the floor or other support 30 which, with the traction wheels 6—6, will give a firm support at four corners of the elevator and become a stabilizing device to insure that the platform 2 will not wabble and avoid all danger of the load 1 falling even when the platform 2 is raised to its extreme elevated position. When these toggle levers 27—27 are straightened and thrown into their operative position they are vertical and lie parallel with the standards 31—31 forming the vertical support or guide 5 and are, in effect, an extension of said standards when in their operative positions.

I preferably operate these toggle levers by a lever 32 pivoted on one of the brackets 28 and connected by the links 33—33, at the pivots 34—34, to the toggle levers.

It will be seen that when the lever 32 is in its raised position as shown in Fig. 3, the toggle levers 27—27 are brought into their inoperative position which will withdraw the feet 29—29 from the floor 30.

In this position the elevator can be readily moved around to different locations on the floor of the factory or other building by means of the fixed traction wheels 6—6 and the swivel traction wheel 7. When the elevator has reached its new position the lever 32 can be withdrawn from the bracket 36 and lowered so that it will engage beneath a stop or latch 35. This will again cause the feet 29—29 to engage the floor on either side of the swivel traction wheel 7.

In addition to the operation just described we preferably provide locking means to engage with whatever hoist mechanism may be used so that the hoist mechanism cannot be operated to elevate or operate the platform 2 until the stabilizing device is brought into its operative position. This will insure that when the platform is operated there will be at least four points of support at substantially the four corners of the elevator. This locking feature will also prevent careless operation of the elevator and will absolutely require the workman to bring the stabilizing device into operation before he can raise the platform 2.

I have shown, by way of example, a locking pawl 37, pivoted at 38 on a bracket 39 carried by the standard 40. The end 41 of the pawl is connected by means of a spring 42 with the standard 40. The end 41 is also connected by means of a chain 43 with the lever 32. In the position of the parts shown in Fig. 2, the lever 32 is shown in a depressed position wherein the chain 43 has rocked the pawl 37 against the action of the spring 42 and released the end 44 from contact with the teeth 45 of the drum gear 20. In this position of the parts the stabilizing device is in operation and the locking pawl 37 is released from the hoist mechanism so that the platform 2 may be raised and lowered by the hoist mechanism.

When it is desired to shift the elevator to a new location the lever 32 is moved into the position shown in Fig. 3 which removes the stabilizer from contact with the floor or other support, so that the elevator can be readily moved on its traction wheels 6—6 and 7. In this position of the parts the spring 42 throws the end 44 of the locking pawl 37 into engagement with the teeth 45 of the drum gear 20 so that it is impossible to operate the hoist mechanism until this locking member is brought into inoperative position; this can only be done when the stabilizing device is thrown into its own operative position. It will therefore be seen that the stabilizing device and the locking member work together, but alternatively.

We also as a matter of convenience mount brackets 46 and 47 upon the standard 40 for the tool holder 48.

Having thus described this invention in connection with the illustrative embodiments thereof to the details of which we do not desire to be limited, what is claimed as new and what is desired to secure by Letters Patent is set forth in the appended claims.

What we claim is:—

1. In a portable elevator, the combination of a movable elevator, wheels to support said elevator on the floor, hoist mechanism, toggle levers having one of their ends adapted to removably engage the floor to stabilize said elevator, and means to operate the toggle levers.

2. In portable elevators, the combination of a movable elevator, means to support said elevator on the floor, hoist mechanism, and toggle levers mounted on the vertical support having one of their ends adapted to engage with the floor to stabilize said elevator.

3. In portable elevators, the combination of a movable elevator, means to support said elevator on the floor, hoist mechanism, and two sets of toggle levers one lever of

each set being adapted to removably engage the floor to stabilize said elevator.

4. In portable elevators, the combination of a movable elevator, means to support said elevator on the floor, hoist mechanism, and two sets of toggle levers to stabilize said elevator and means to operate the two sets of toggle levers simultaneously.

5. In a portable elevator, the combination of a movable elevator, means to support said elevator on the floor, hoist mechanism including a gear wheel, means to stabilize said elevator, and means coöperating with the gear wheel and the stabilizing means to permit them to work alternately.

6. In a portable elevator, the combination of a movable elevator, means to support said elevator on the floor, hoist mechanism including a gear wheel, means to stabilize said elevator, a locking member coöperating with the gear wheel, and means coöperating with said locking member and with the stabilizing means to operate them together to alternate their operative positions.

7. In a portable elevator the combination of a movable elevator, means to support said elevator on the floor, hoist mechanism, toggle levers to stabilize said elevator, a locking member to lock the hoist mechanism, and means to operate the locking member and the toggle levers so that the toggle levers will have to be thrown into their operative position before the hoist mechanism will be released from the locking member.

8. In a portable elevator the combination of a movable elevator, means to support said elevator on the floor, hoist mechanism, toggle levers to stabilize said elevator, a locking member to lock the hoist mechanism, and a lever connected to the toggle levers and to the locking member to throw them into their respective operative positions alternately.

9. In a portable elevator the combination of a movable elevator, means to support said elevator on the floor, hoist mechanism, a locking member coöperating with the hoist mechanism, a stablizing device including members which in their operative position are substantially vertical, and means connecting the locking member and stabilizing device to insure that they work alternatively.

10. In portable elevators, the combination of a movable elevator, wheels to support said elevator on the floor, hoist mechanism, toggle levers mounted to operate in a vertical direction and having one of their ends adapted to move at right angles to the floor to stabilize said elevator, and means to operate the toggle levers in a vertical direction.

11. In portable elevators, the combination of a movable elevator having a vertical support, wheels to support said elevator on the floor, hoist mechanism, toggle levers mounted on the vertical support to operate in a vertical direction and having one of their ends adapted to move at right angles to the floor to stabilize said elevator, and means to operate the toggle levers in a vertical direction to lie parallel to the vertical support.

12. In portable elevators, the combination of a movable elevator, wheels to support said elevator on the floor, hoist mechanism, two sets of toggle levers mounted to operate in a vertical direction one lever of each set being adapted to removably engage the floor to stabilize said elevator, and means to operate said toggle levers.

13. In portable elevators, the combination of a movable elevator, wheels to support said elevator on the floor, hoist mechanism, two sets of toggle levers mounted to operate in a vertical direction one lever of each set being adapted to removably engage the floor to stabilize said elevator, and means to operate the two sets of toggle levers simultaneously.

14. In portable elevators, the combination of a movable elevator, wheels to support said elevator on the floor, hoist mechanism, means to lock the hoist mechanism, toggle levers mounted to operate in a vertical direction and having one of their ends adapted to move at right angles to the floor to stabilize said elevator, and means to operate the toggle levers in a vertical direction, said means also coöperating with the means to lock the hoist mechanism to automatically release the hoist mechanism when the toggle levers are operated in a vertical direction.

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Witnesses:
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MATHILDA KOEHLER.