

(No Model.)

3 Sheets—Sheet 1.

J. CAMPBELL.
HOISTING AND CONVEYING APPARATUS.

No. 604,893.

Patented May 31, 1898.

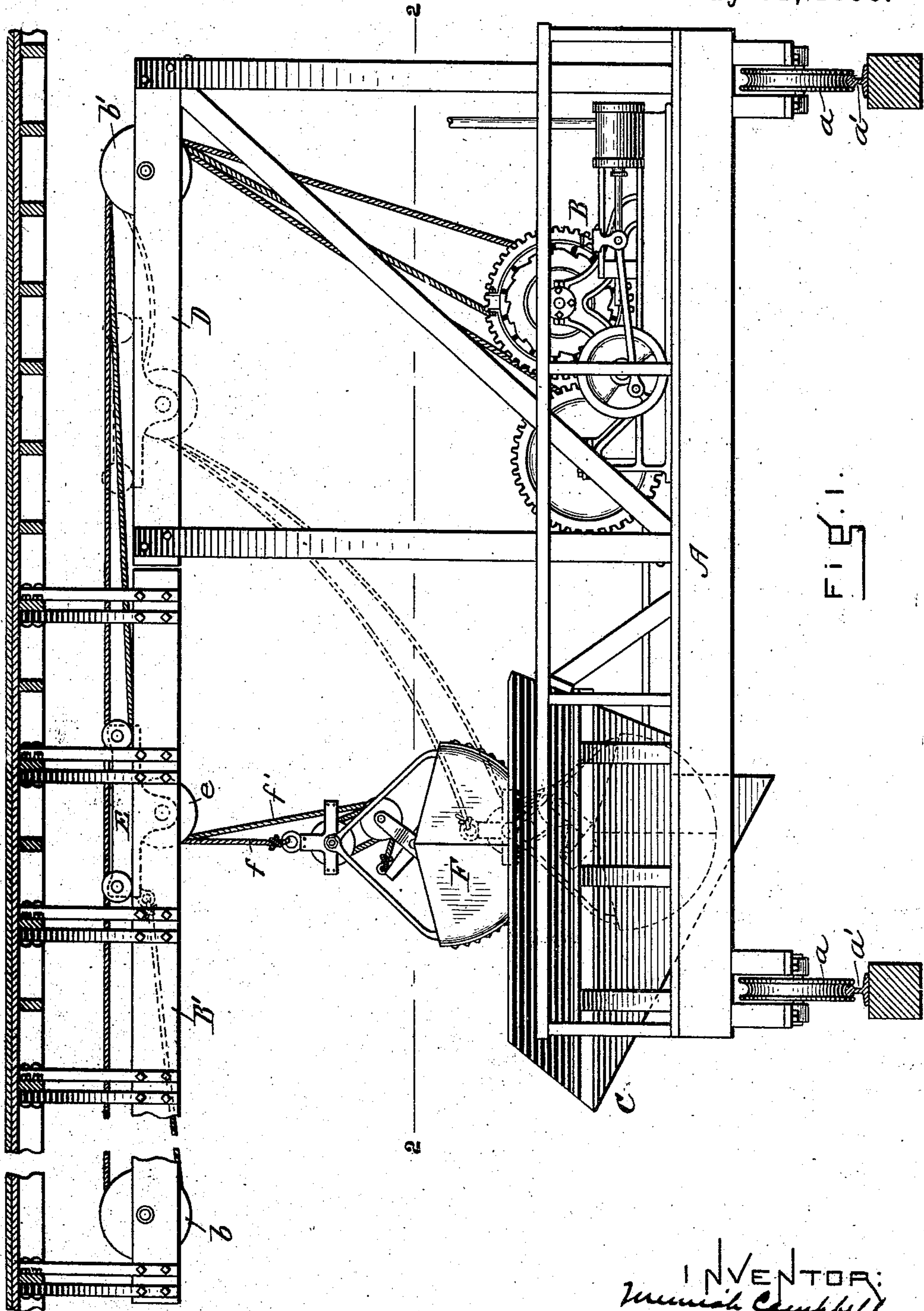


FIG. 1.

WITNESSES
J. H. Dolan
L. A. Walsh

INVENTOR:
J. Campbell
by his attys
Clark & Raymond

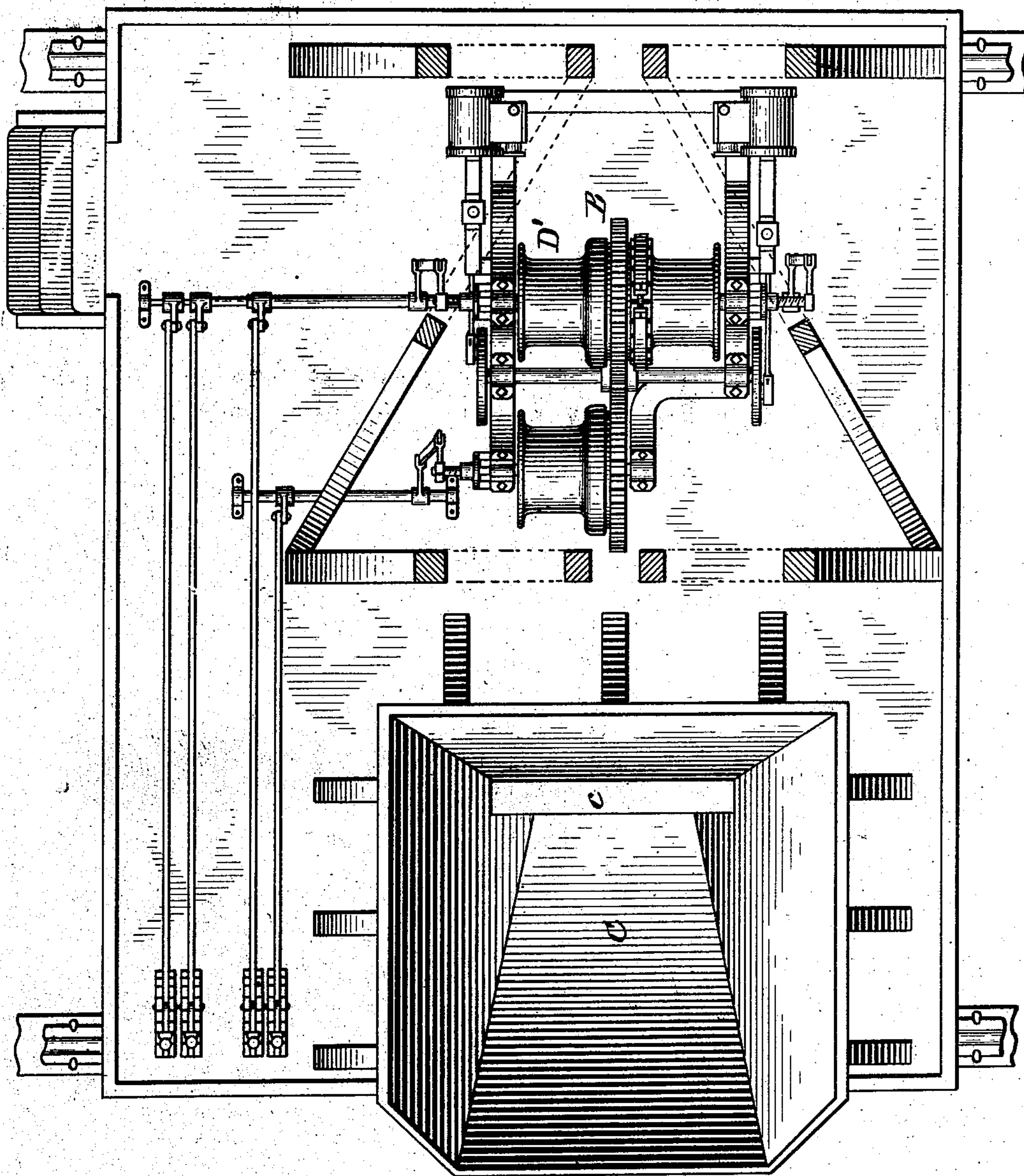
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WITNESSES:
J. W. Dolan.
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FIG. 2.

INVENTOR:
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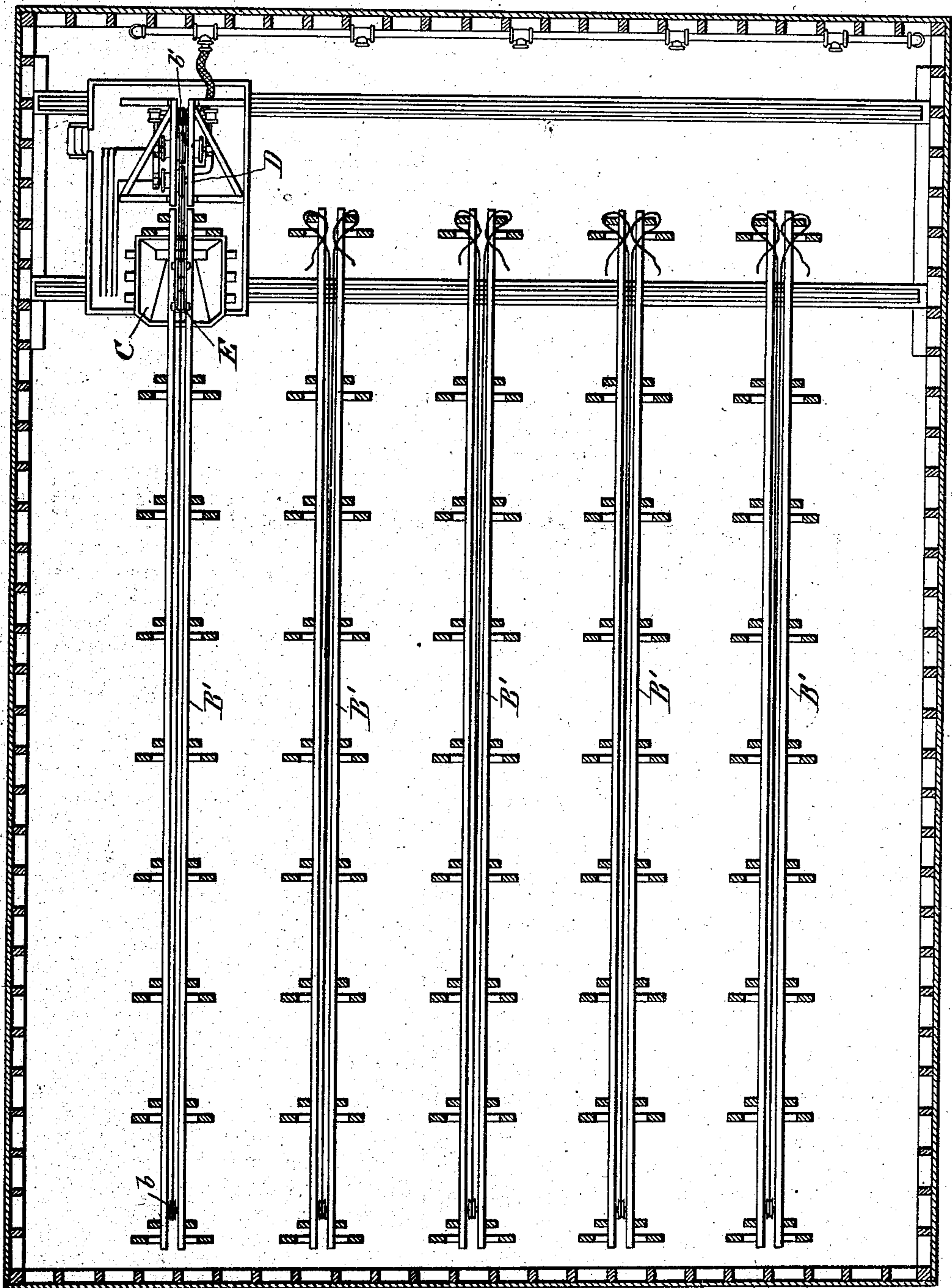
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WITNESSES
J. W. Dolan.
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FIG. 3.

INVENTOR
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UNITED STATES PATENT OFFICE.

JEREMIAH CAMPBELL, OF CHELSEA, MASSACHUSETTS.

HOISTING AND CONVEYING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 604,893, dated May 31, 1898.

Application filed December 4, 1897. Serial No. 660,824. (No model.)

To all whom it may concern:

Be it known that I, JEREMIAH CAMPBELL, a citizen of the United States, residing at Chelsea, in the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in Hoisting and Conveying Apparatus, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification, in explaining its nature.

The invention comprises a movable hoisting and conveying apparatus employing a steam-shovel, its operating devices, a transferring-trolley, and an operating-engine movable horizontally and having a short boom-section upon which the trolley is movable and which is used in connection with a series of stationary booms with which the said movable boom-section is brought into line and used in any order or sequence desired.

In the drawings, Figure 1 is a view largely in side elevation of my improved apparatus. Fig. 2 is a view in section upon the dotted line 2 2 of Fig. 1 and in plan of parts below said line. Fig. 3 is a view principally in plan, showing a number of stationary booms and the movable boom-section, steam-shovel, trolley-operating engine, &c.

A represents a car or truck, the wheels *a* of which are mounted upon the tracks *a'*, by which the car or truck may be moved in any desired direction or to any required location. This car or truck supports at one side a shovel and trolley-operating engine B. At the other side it supports a hopper C, having an opening *c* in its bottom. The car or truck also supports above the engine B a section D of a trolley-boom which is adapted to be used in connection with any one of any desired number of stationary booms B', the inner ends of which are arranged to be in operative relation to the movable boom-section D when brought in line therewith. The movable boom-section D is employed principally as a rest or support for the trolley E when it is being moved from one boom to another. The trolley is shown in full lines upon the stationary boom B' in Fig. 1 and in dotted lines upon the movable boom-section D.

The trolley is movable backward and forward upon any one of the stationary booms

B' by an operating-rope, which passes from one end of the trolley, about a sheave *b* at the end of the stationary boom, backward over the stationary boom and the movable boom-section, about a sheave *b'*, to a winding-spool D' of the engine, about which it is wound and from which it extends backward over a sheave, companion to the sheave *b'*, to the trolley E. The trolley carries a set *e* of two sheaves, over which the shovel-operating ropes extend to the shovel F. The shovel is a steam-shovel of the clam-shell variety, which automatically takes its load and releases it and is operated by a hoisting and lowering rope *f* and an opening and closing rope *f'*. These ropes pass over the set of trolley-sheaves *e* to sheaves *b'* at the rear end of the movable boom-section D and from thence to their respective winding-drums.

The position of the steam-shovel and its operating-ropes when in operative position upon a fixed boom is represented in full lines in Fig. 1. Its position when it is being transferred, with the trolley and boom-section D, from one stationary boom to another is represented in dotted lines in said figure, the shovel then having been lowered into the hopper. Of course if a hopper is not employed it will rest upon the car-floor, or, if necessary, will be lowered through a hole therein to any desired level.

It will not be necessary in moving the car, shovel, trolley, &c., to disconnect the shovel from its operating-ropes. It will be necessary, however, to disconnect the trolley from its operating-ropes and to move the trolley upon the movable boom-section B' to a position represented by dotted lines in Fig. 1. It is therefore desirable to supply each stationary boom-section with a trolley-actuating rope which shall be rove through the sheave *b*, at the end thereof, and which shall have its ends arranged near the rear end of the boom. Any desirable shovel and trolley and operating-engine may be employed.

The object of the invention is to provide means for employing the same automatic hoisting and conveying shovel and its operating devices upon any one of a series of booms whereby the coal or material beneath said booms may be hoisted and conveyed or transferred.

While I have shown the shovel as hoisted and lowered and opened and closed by two ropes, I would say that the number of ropes so employed for accomplishing this purpose forms no part of my present invention, and I should consider it practiced if the shovel were hoisted and lowered and opened and closed by a single rope or by more than two ropes.

Having thus fully described my invention, I claim and desire to secure by Letters Patent of the United States—

1. In a hoisting and conveying apparatus, the combination of a movable car or truck, a shovel and trolley operating engine mounted thereon, a space in which the steam-shovel may be held while it is being moved with the car or truck, and a movable boom-section adapted to hold the trolley while it is being transferred with the shovel and engine, and two or more stationary boom-sections with which said movable section is adapted to co-operate.

2. In combination, the car or truck A, a shovel and trolley operating engine carried thereby, a hopper C, a movable boom-section D adapted to receive and hold the trolley, the

sheaves mounted thereon and two or more stationary booms.

3. The combination of the truck or car A, the shovel and trolley operating engine thereon, the steam-shovel carried thereby with its operating-ropes connected therewith, the trolley carried thereby disconnected from its operating-rope and a boom-section or support for said trolley carrying sheaves for the operating-rope and which boom-section or support is adapted to be moved into line with a stationary boom-section, and said stationary boom-section.

4. The combination in a hoisting and conveying apparatus, of a movable truck or car, a trolley-support mounted therein, a trolley carried thereby, a support at one side of and below the trolley-support, a steam-shovel adapted to be carried upon said support and the shovel-operating rope extending over a sheave on said trolley to an operating-engine.

JEREMIAH CAMPBELL.

Witnesses:

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