No. 756,736. PATENTED APR. 5, 1904.

F. THOMPSON.

MACHINE FOR LOADING RAILS.

APPLICATION FILED AUG. 19, 1903.

NO MODEL. 2 SHEETS—SHEET 1.

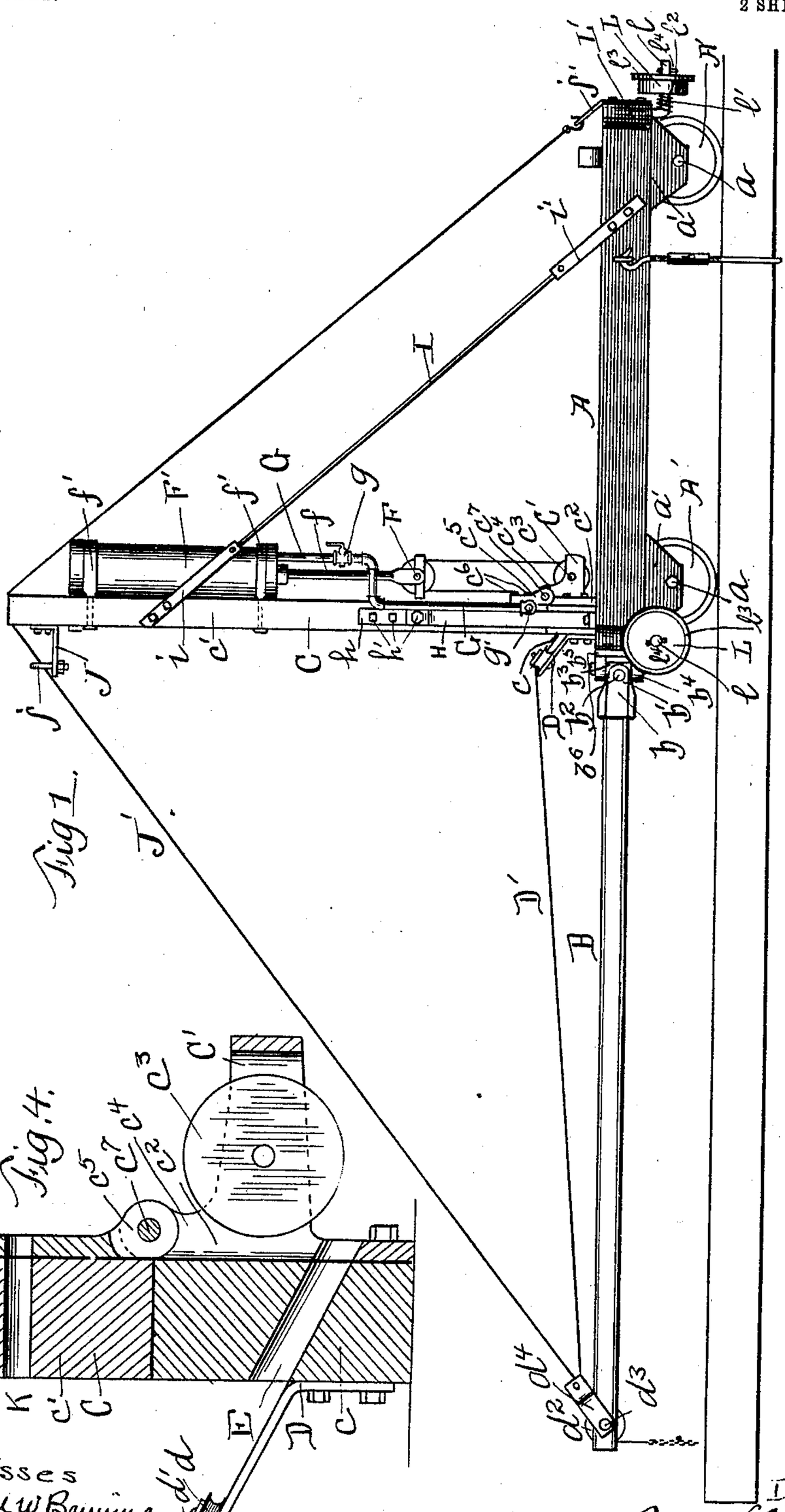

Fig. 1.

Fig. 4.

Witnesses
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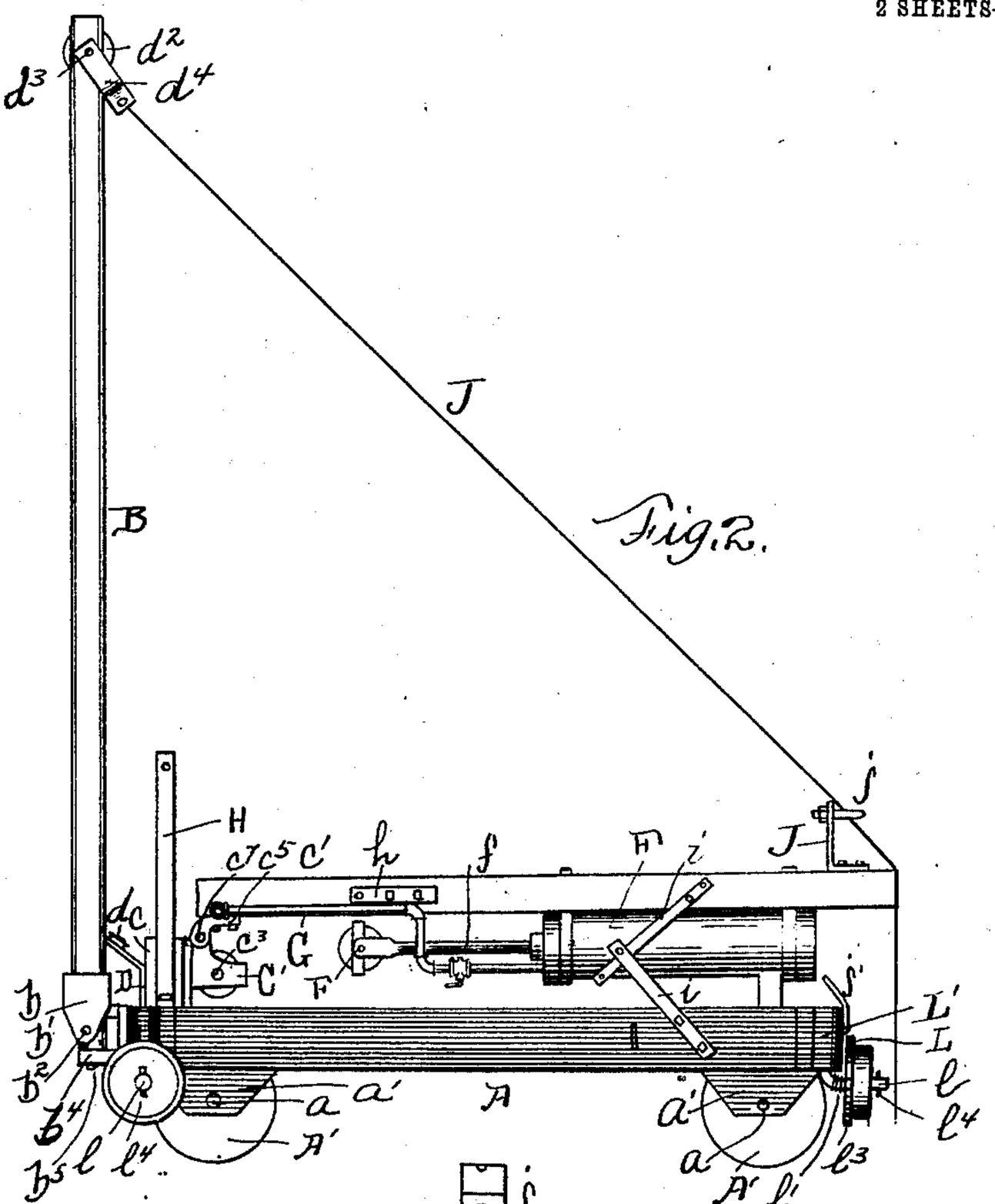

Fig. 2.

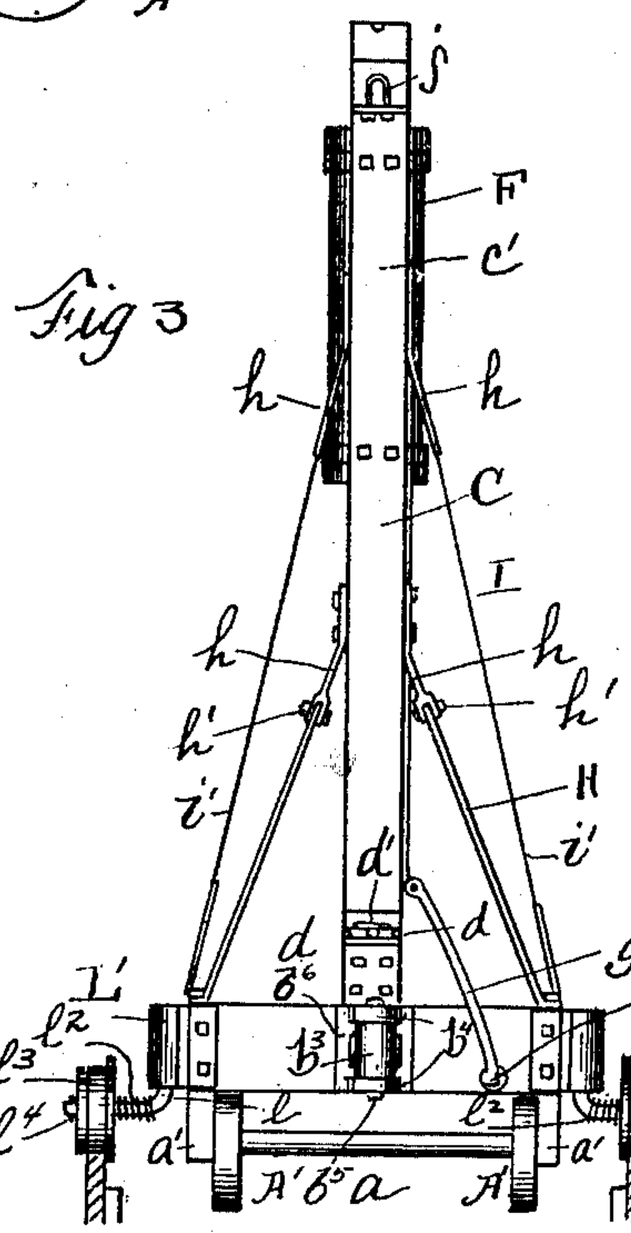

Fig 3

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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

No. 756,736. Patented April 5, 1904.

UNITED STATES PATENT OFFICE.

FRANK THOMPSON, OF CHICAGO, ILLINOIS, ASSIGNOR TO UNITED SUPPLY & MANUFACTURING COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

MACHINE FOR LOADING RAILS.

SPECIFICATION forming part of Letters Patent No. 756,736, dated April 5, 1904.

Application filed August 19, 1903. Serial No. 170,017. (No model.)

To all whom it may concern:

Be it known that I, FRANK THOMPSON, a citizen of the United States, residing in Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Machines for Loading Rails, of which the following is a specification.

This invention is primarily intended for use on coal, stock, or flat cars employed in construction-work on railroads and is adapted to be moved from car to car along the train, loading or unloading rails from the next adjoining car, although the machine is adapted for use in other capacities in which a movable derrick is employed.

The invention consists in the method of arranging the parts to rapidly and easily perform a maximum amount of work with the least possible inconvenience and delay in moving the machine from car to car; and the invention consists in the means by which the machine is operated and also in the arrangement of parts by which the upright portions of the machine are adapted to be lowered for passage beneath overhead structures.

The invention further consists in the features of construction and combination of parts hereinafter described and claimed.

In the drawings illustrating the invention, Figure 1 is a side elevation of the entire device in operative position upon the top of a flat-car; Fig. 2, a side elevation showing the supporting post or upright lowered and the boom raised; Fig. 3, a front view with the boom removed, and Fig. 4 an enlarged sectional detail of the hinge and one of the pulley-wheels on the upright.

The apparatus is arranged upon a flat-car A of suitable size, mounted upon wheels A′, carried by journals *a*, mounted within journal-supports *a′*, which enables the apparatus to be readily moved along the top of a flat-car from which the operation of loading or unloading the next adjoining car takes place.

At one end of the flat-car A is mounted a boom B of a length to give a large radius of action, and said boom is provided at its inner end with a pivotal socket *b*, provided with ears *b′*, through which transversely passes a pivot-pin b^2, pivoting the boom to a pivotal sleeve b^3, which latter is rotatably mounted between forwardly-projecting ears b^4 by means of a pivot-pin b^5, the ears being located on a flat plate b^6, suitably secured to the front end of the car. This arrangement allows of an easy vertical and lateral movement of the boom, which movement is necessary to secure a large radius of action in the loading operation.

Near the front end of the car to which the boom is attached is arranged an upright post or support C, which latter consists of a short fixed section *c* and a long movable section *c′*. To the rear face of the fixed section is attached a plate c^2, provided with a rearwardly-extending frame C′, between the walls of which is rotatably mounted a pulley-wheel or sheave c^3. (Best shown in Fig. 4.) The frame is provided with upwardly-extending ears c^4, which are arranged to coöperate with ears c^5, bolted or otherwise secured to the movable section of the upright by means of bolts c^6 or otherwise, and through the ears a pivot-pin c^7 passes, pivoting the ears of the two sections together and forming a hinge which enables the movable section of the upright to be rearwardly lowered for the purpose of allowing the entire apparatus to be moved beneath an overhead obstruction, thereby greatly adding to its efficiency and increasing its field of operation. To the front side of the fixed section *c* is secured an angular plate D, extending forward at an angle oblique to the fixed section, and on the top face of the angular plate are mounted two guide-wheels or sheaves *d*, held in operating relation by means of a strap or plate *d′*, which guide-wheels serve to allow of the easy passage of a rope or cable D′ therethrough, which rope or cable extends outwardly to the end of the boom and there passes over a pulley-wheel or sheave d^2, pivotally mounted by means of a pivot-pin d^3, which latter passes through a yoke d^4, which straddles the end of the boom and permits the

rope or cable D′ to pass therethrough. As shown in Fig. 4, a hole or passage E extends through the fixed section of the upright and the plate secured to the rear face thereof in line with the angular plate on the front face of the upright, which passage allows the cable to be carried around the pulley-wheel or sheave c^3, whence it extends upwardly around a movable sheave F, which latter is carried by a piston-rod f, operated within a pressure-cylinder F′, which latter is strapped, by means of straps f', to the rear face of the movable section of the upright and is movable therewith. Pressure is supplied to the cylinder through a pipe G, controlled by means of a valve g, suitably located in the pipe, which pipe passes down along the side of the movable section of the upright and terminates in an elbow g', to which a pipe for supplying pressure to the cylinder is attached. As shown, the pressure employed is compressed air, which is supplied to the pipe G through a rubber hose g^2, which terminates in a coupling g^3, which latter is adapted to be coupled to the pipe supplying compressed air to the air-brakes of the train, which arrangement allows the flat-car supporting the operative mechanism to be moved from car to car along the train and to be successively coupled to the air-brake pipes on the respective cars without the necessity for employing a long pressure-supply pipe, which arrangement adds greatly to the economy and rapidity of the operation and adapts the apparatus for use in places where it might otherwise be impossible to secure a suitable supply of pressure. Other powers may, however, be employed—such as steam, hand, or electric—without changing the nature of the invention. The upright when in raised position is supported by means of fixed braces H, which latter are secured to arms h, fixedly attached to the sides of the movable upright by means of bolts h', which latter may be readily removed when it is desirable to lower the upright. The upright is further supported by means of rods or cables I, rearwardly extending from the upright to the body of the flat-car, and said rods or cables are connected with strap-irons i and i', located on the upright and on the sides of the car, respectively. The forward and rear supports serve to hold the upright in rigid position when raised, but allow it to be readily lowered when necessary. Near the top of the upright is located a forwardly-extending plate J, bolted to the front of the upright, on the upper face of which plate is located a guide-loop j, through which passes a lift-cable J′, which latter is fixably attached to the yoke on the end boom and extends upwardly over the top of the upright when in raised position and is secured at the rear end of the car to a strap j'. This arrangement limits the downward movement of the boom, and when it is desirable to lower the upright and cylinder attached thereto the lift-cable may be fitly attached at the top of the upright, in which case the boom will serve to largely counterbalance the weight of the upright while the same is being lowered down onto the car, thereby enabling one man to lower the upright without difficulty, after which the boom may be lowered and removed, if so desired, for the purpose of transporting the apparatus from place to place. The cable D′ after passing through the movable sheave or pulley-wheel passes downwardly and runs through a passage K in the movable section of the upright, after which the end of the cable may be secured by any suitable means to the car or elsewhere.

In order that the invention may be used on closed-end coal-cars or others having sides, auxiliary wheels L are provided, one on each corner of the car or truck, said wheels being journaled on journals l, which latter are L-shaped and have their upturned ends pivotally mounted in journal-boxes L′, one on each corner of the truck, allowing the lower ends l' of the journals to project out at right angles to the car when in use and to be turned back around the corner of the car and out of the way when not in use. Springs l^2 on the journals serve to force the wheels outwardly and allow for differences in the width of the cars upon which the truck is used, and at the same time hold the flanges l^3 on the wheels L against the inner faces of the sides of the car, as shown in Fig. 3, and pins l^4 prevent the wheels from being forced from their journals. This arrangement allows the truck to be hung, as it were, between the sides of a car and moved along without touching the bottom of the car.

In use the flat-car supporting the operative mechanism is moved onto one of the cars composing a train and begins to unload the rails upon the next adjoining car, which operation may be accomplished as the construction-train is slowly moving along the track, and after the car first operated upon is unloaded the apparatus of this invention may be moved onto said car, from which the unloading operation may be performed on the next adjoining car, and so on throughout the entire length of the train. The arrangement is one which allows the boom to be adjustably supported at a suitable elevation above the car and to be moved from side to side through a wide radius. The cable D′, passing over the pulley-wheel at the end of the boom, may be secured to the rails to be unloaded and easily and quickly operated by means of the piston-rod and movable pulley-wheel carried thereby.

It will be seen that the invention is one which enables a great saving in time, labor, and expense over the methods of unloading rails now employed and that the mechanical arrangement of the various parts composing

the invention is one which allows of the ready adjustment and adaptation of the parts to varying conditions of use.

What I regard as new, and desire to secure by Letters Patent, is—

1. In a rail-loading mechanism, the combination of a movable support, a boom pivotally mounted, an upright consisting of a fixed section and a movable section, a plate on the rear face of the fixed section, a sheave or pulley-wheel rotatably secured to said plate, a hinge-joint connecting the movable section of the upright with the plate, a hoisting-engine carried by said upright, and a pressure-supply pipe for the hoisting-engine, substantially as described.

2. In a rail-loading mechanism, the combination of a movable support, a boom pivotally mounted, an upright consisting of a fixed section and a movable section, a plate on the rear face of the fixed section, a sheave or pulley-wheel rotatably secured to said plate, a hinge-joint connecting the movable section of the upright with said plate, a hoisting-engine in coöperative relation to said upright, and a pressure-supply pipe for the hoisting-engine, substantially as described.

3. In a rail-loading mechanism, the combination of a flat-car or truck movable from car to car of a train, a boom pivotally mounted, an upright consisting of a fixed section and a movable section, a hinge-joint connecting the two sections of the upright, supports for the movable section of the upright adapted to hold the same in fixed upright position and adapted to be unfastened from the upright to allow the same to be lowered, a hoisting-engine adapted to coöperate with the upright and boom, and a pressure-supply pipe for the hoisting-engine adapted to be connected successively with the train-pipes of the cars, substantially as described.

4. In a rail-loading mechanism, the combination of a flat-car or truck movable from car to car of a train, a boom pivotally mounted to the front end of the flat-car or truck by means of a double pivotal joint, an upright or support consisting of a fixed section and a movable section, a plate on the rear face of the fixed section, a sheave or pulley-wheel rotatably secured to said plate, a hole or passage through the fixed section in line with the pulley-wheel, a sheave or pulley on the front side of the fixed section in line with the opening or passage, a pulley-wheel on the end of the boom, a hoisting-engine carried by the upright, a piston for the hoisting-engine, a pulley-wheel carried by the piston, and a cable adapted to pass around the pulley carried by the piston and through the sheaves on the fixed section of the upright and over the pulley-wheel on the end of the boom, substantially as described.

5. In a rail-loading mechanism, the combination of a flat-car or truck movable from car to car of a train, a boom pivotally mounted, an upright consisting of a fixed section and a movable section, a plate on the rear face of the fixed section, a sheave or pulley-wheel rotatably secured to said plate, a hinge-joint connecting the movable section of the upright with said plate, a hoisting-engine carried by said upright and a pressure-supply pipe for the hoisting-engine adapted to be connected successively with the train-pipes of the cars, substantially as described.

6. In a rail-loading mechanism, the combination of a flat-car or truck movable from car to car of a train, a boom pivotally mounted, an upright consisting of a fixed section and a movable section, a plate on the rear face of the fixed section, a sheave or pulley-wheel rotatably secured to said plate, a hinge-joint connecting the movable section of the upright with said plate, a hoisting-engine carried by said upright, a pressure supply-pipe for the hoisting-engine adapted to be connected successively with the train-pipes of the cars, and braces adapted to be secured to the upright and unfastened therefrom when the latter is lowered, substantially as described.

7. In a rail-loading mechanism, the combination of a flat-car or truck movable from car to car of a train, a boom pivotally mounted to the front end of the flat-car or truck by means of a double pivotal joint, an upright or support consisting of a fixed section and a movable section, a plate on the rear face of the fixed section, a sheave or pulley-wheel rotatably secured to said plate, a hole or passage through the fixed section in line with the pulley-wheel, a sheave or pulley on the front side of the fixed section in line with the opening or passage, a pulley-wheel on the end of the boom, a hoisting-engine carried by the upright, a piston for the hoisting-engine, a pulley-wheel carried by the piston, a cable adapted to pass around the pulley carried by the piston and through the sheaves on the fixed section of the upright and over the pulley-wheel on the end of the boom, and a cable from the end of the boom to the top of the upright for connecting the boom and upright together and allowing the boom to counterbalance the upright when the same is lowered, substantially as described.

8. In a rail-loading mechanism, the combination of a flat-car or truck movable from car to car of a train, a derrick on the truck, wheels upon which the truck is mounted, and auxiliary wheels mounted on the sides of the car or truck and adapted to travel along the top of the sides of a car and suspend the truck between the sides, substantially as described.

9. In a rail-loading mechanism, the combination of a flat-car or truck movable from car to car of a train, a derrick on the truck, wheels upon which the truck is mounted, auxiliary wheels journaled on pivotally-mounted laterally-projecting journals, and journal-boxes

allowing the journals to be swung therein to turn back the auxiliary wheels from their laterally-projected relation to lie in line with the car when not in use, substantially as described.

10. In a rail-loading mechanism, the combination of a flat-car or truck movable from car to car of a train, a derrick on the truck, wheels upon which the truck is mounted, auxiliary wheels journaled on pivotally-mounted laterally-projecting journals, springs on the journals for forcing the auxiliary wheels outwardly thereon, and journal-boxes allowing the journals to be swung therein to turn back the auxiliary wheels from their laterally-projected relation to lie in line with the car when not in use, substantially as described.

FRANK THOMPSON.

Witnesses:
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WALKER BANNING.