No. 708,819. Patented Sept. 9, 1902.

G. B. MARX.

LIFTING DEVICE FOR COAL WAGONS, &c.

(Application filed Feb. 6, 1902.)

(No Model.)

Fig. 1.

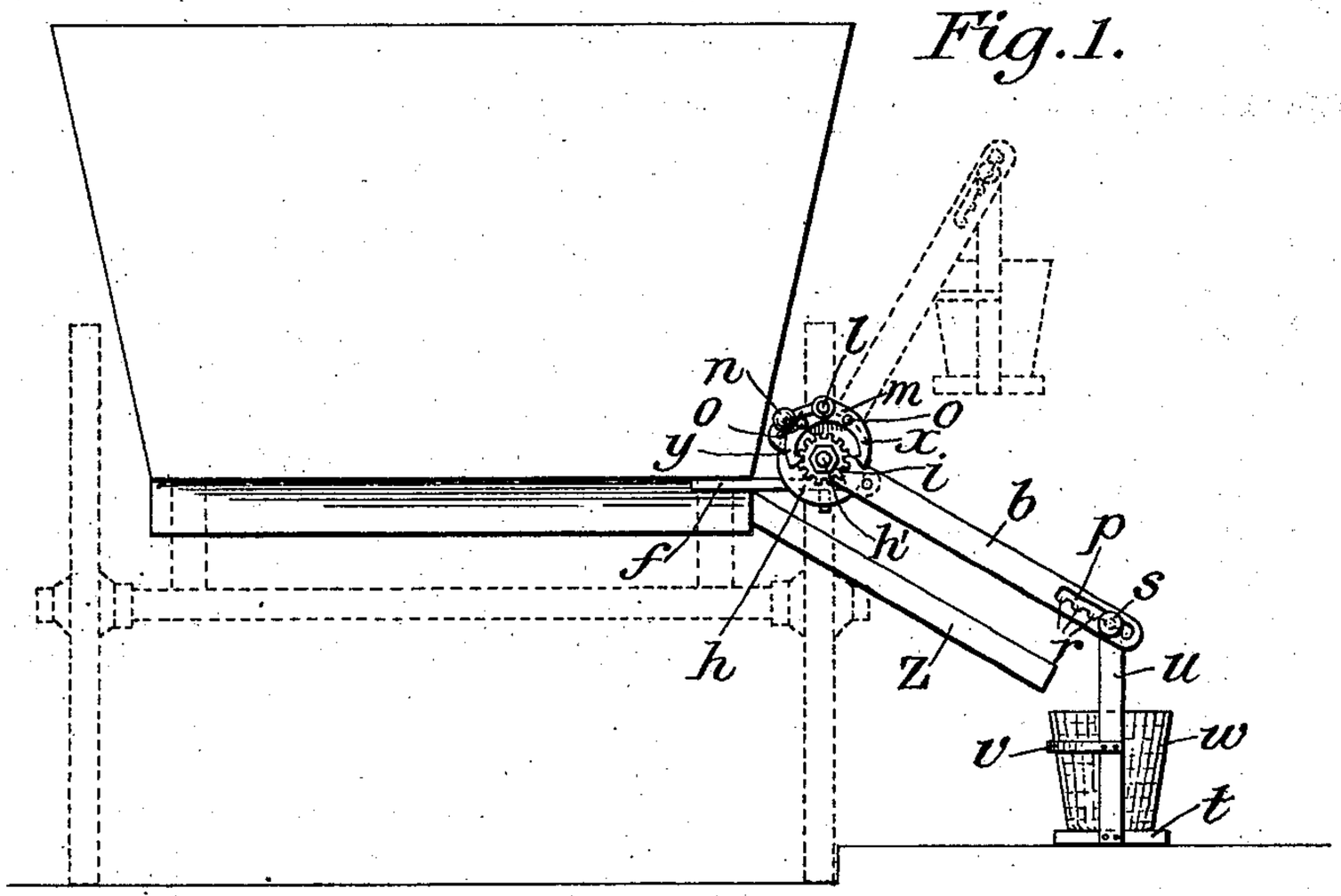


Fig. 2.

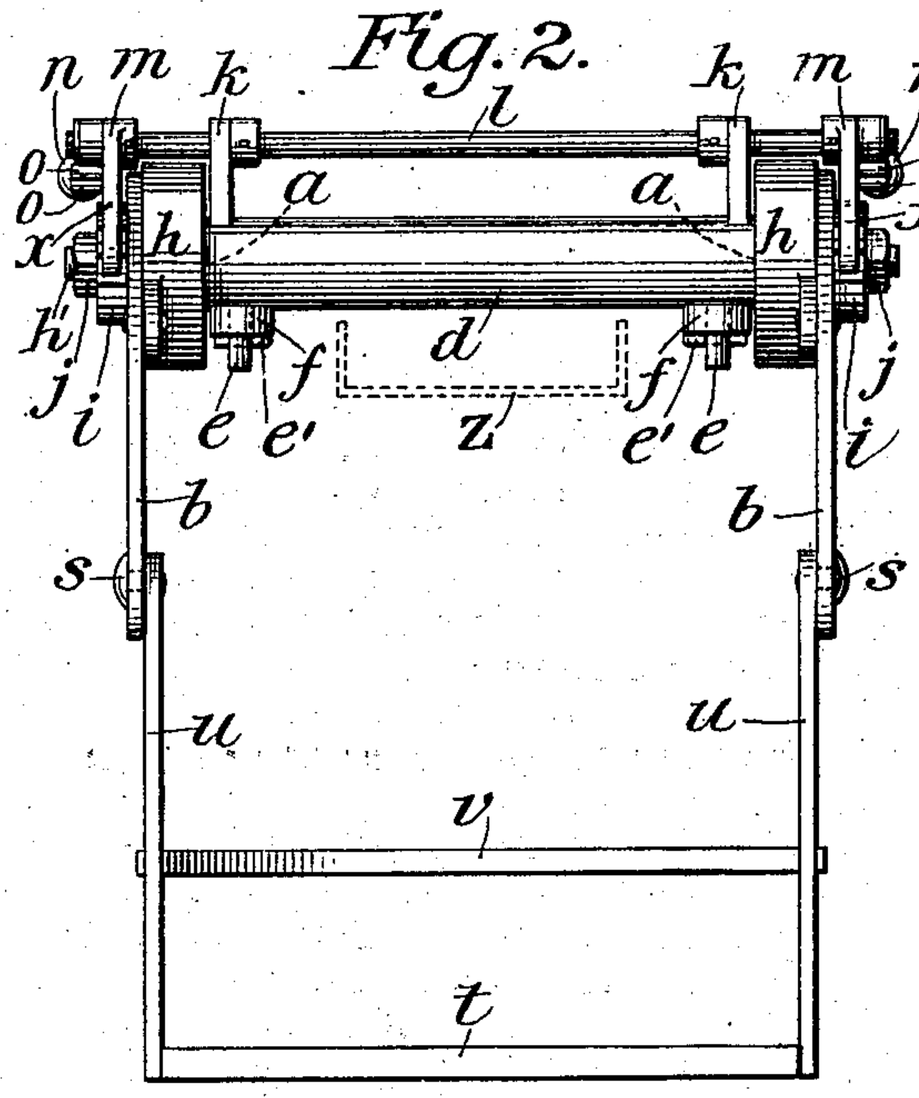


Fig. 3.

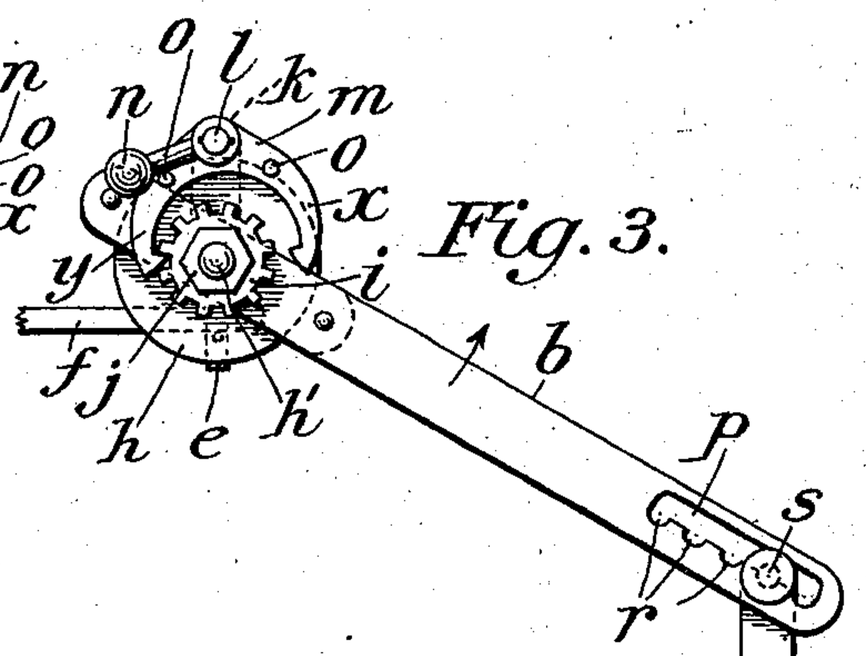
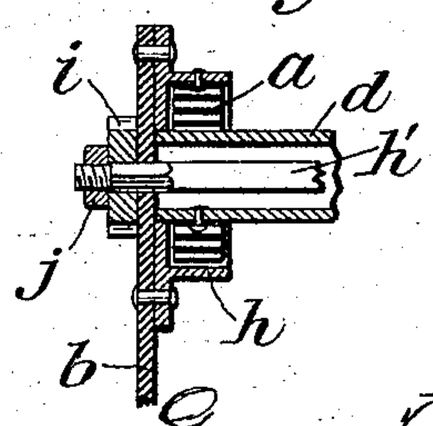


Fig. 4.



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UNITED STATES PATENT OFFICE.

GEORGE B. MARX, OF NEW YORK, N. Y.

LIFTING DEVICE FOR COAL-WAGONS, &c.

SPECIFICATION forming part of Letters Patent No. 708,819, dated September 9, 1902.

Application filed February 6, 1902. Serial No. 92,761. (No model.)

To all whom it may concern:

Be it known that I, GEORGE B. MARX, a citizen of the United States, residing in the borough of Manhattan, city of New York, State of New York, have invented certain new and useful Improvements in Lifters for Coal-Wagons, &c., of which the following is a specification, reference being had to the accompanying drawings, forming a part hereof.

Coal is now commonly delivered to retail customers in wagons provided with chutes, through which the coal is allowed to run directly to the coal-hole or into baskets, which are then lifted onto the shoulder and carried to the bin into which the coal is ultimately delivered. The lifting of a full basket of coal from the level of the ground without assistance is not only a matter of some difficulty, but it frequently results in injury to the person who lifts it through strain and otherwise.

It is the object of this invention to produce an auxiliary lifting device which can be applied readily to wagons for the delivery of coal and other substances which are frequently delivered in like manner by means of which the carrier may be assisted in raising the load from the ground to his shoulder.

The device is especially applicable to wagons from which the load is delivered through chutes, but obviously may be applied in other places where the load to be carried on the shoulder must be raised from a low level.

The device comprises a suitable spring in which energy may be stored in a convenient manner by the operator by means of a lever to which the load to be lifted is afterward connected, suitable means being also provided to retain the lever in any desired position for convenience in placing the load and in removing it.

The invention will be more fully described hereinafter with reference to the accompanying drawings, in which it is illustrated in a convenient and practical form, and in which—

Figure 1 is a rear elevation of a coal-wagon to which the lifting device is applied, the wagon-wheels being indicated by dotted lines. Fig. 2 is a view in front elevation of the lifting device shown in Fig. 1, but on a larger scale. Fig. 3 is a view of the same in side elevation. Fig. 4 is a detail sectional view of the same in parts.

As this description proceeds it will be obvious that in some cases a single lifting-lever and its associated parts might be employed; but for convenience in use with chute-delivery coal-wagons, &c., two such lifting-levers forming a frame are preferably employed. As represented in the drawings, a tubular bracket *d* is arranged to be supported upon the wagon-body by bracket-arms *f*, which are secured to such body, the tubular bracket *d* having studs *e*, which enter holes in the ends of the bracket-arms *f* and are secured therein by removable pins *e'*, the bracket, with its attached parts, being thus readily removable from the wagon, if desired. Loosely mounted on each end of the tubular bracket *d* are housings *h*, to which as hubs levers *b* are attached. Within the housings are stout coiled springs *a*, the inner ends of which are secured to the bracket *d* and the outer ends to their respective housings *h*. The levers *b* are each provided with slots *p* and recesses *r* to engage a carrier-frame, which latter consists, preferably, of a platform *t*, uprights *u*, and a strap *v*, this construction providing a simple and convenient seat for a basket *w*. The uprights *u* are provided on their upper ends with studs *s* to engage any of the recesses *r*, and said studs may have enlarged ends or heads to prevent their disengagement with the slots *p*. In this way the frame is easily adjusted in the desired position on the levers, and as the latter are moved upward the frame, with its load, is always carried in a vertical position.

Mounted on the ends of a rod *h'*, which is located within the bracket *d* and serves as a tie-rod to hold the housings and levers on the bracket, are ratchet-wheels *i*, which move with the levers and housings, being held tightly against the same by nuts *j*, threaded on the ends of the rod *h'*, the rod within the threaded portions being squared to fit similar holes in the levers and ratchet-wheels. In operative relation with each ratchet-wheel is a double-acting pawl *m*, by which the levers may be locked from movement in either direction while being free to move in the other. The pawls are rigidly secured to a rod *l*,

loosely mounted in standards *k* on the bracket *d*. Weights *n*, loosely mounted on the ends of the rod *l*, may be thrown to either side of the pawls to determine which side of the same shall engage the ratchet-wheels, pins *o* being provided on the pawls as rests for said weights.

The operation of the lifter is as follows: The levers and carrier-frame being in the position shown in dotted lines in Fig. 1, the weights *n* are shifted from side *x* of the pawls to side *y* of the same. The levers are then moved down by the operator to the position shown in full lines, and a basket is placed in the carrier-frame and filled by means of the chute *z*. When it is desired to raise the basket, the position of the pawls is reversed by shifting the weights, and a part or the whole of the weight of the load is overcome or counterbalanced by the pull of the spring, enabling the operator to place the basket upon his shoulders easily and conveniently.

I claim as my invention—

1. The combination with a coal-delivery or other wagon, of a lifter secured to said wagon and comprising a spring, a lever connected to the spring, and means on the lever to engage a load, substantially as described.

2. The combination with a coal-delivery or other wagon, of a lifter secured to said wagon and comprising a fixed bracket or support, a coiled spring one end of which is secured to said bracket, a lever to which the other end of the spring is secured, and means on the lever to engage a load, substantially as described.

3. In a lifter, the combination with a lever adapted to engage the load, and a spring in operative connection with said lever, of a ratchet-wheel secured to said lever at its fulcrum and a double-acting pawl in operative relation with said ratchet-wheel, substantially as described.

4. The combination with a coal-delivery or other wagon, of a lifter secured to said wagon and comprising a fixed bracket or support, a coiled spring one end of which is secured to said bracket, a lever to which the other end of the spring is secured, a ratchet-wheel secured to said lever at its fulcrum and a double-acting pawl in operative relation with said ratchet-wheel, substantially as described.

5. The combination with a coal-delivery or other wagon, of a lifter detachably secured to said wagon and consisting of a fixed bracket or support, a coiled spring at each end of said bracket the inner end of each of said springs being secured to the same, housings for said springs loosely mounted on said brackets and to which the outer ends of said springs are attached, levers rigidly secured to said housings, means on the levers to engage a load, a ratchet-wheel secured to each of said levers at the fulcrum thereof, and a double-acting pawl in operative relation with each of said ratchet-wheels.

This specification signed and witnessed this 3d day of February, A. D. 1902.

GEORGE B. MARX.

In presence of—

ANTHONY N. JESBERA,
LUCIUS E. VARNEY.