

M. W. BOSWORTH.
GRAIN CAR UNLOADER.

No. 175,589.

Patented April 4, 1876.

Fig. 1.

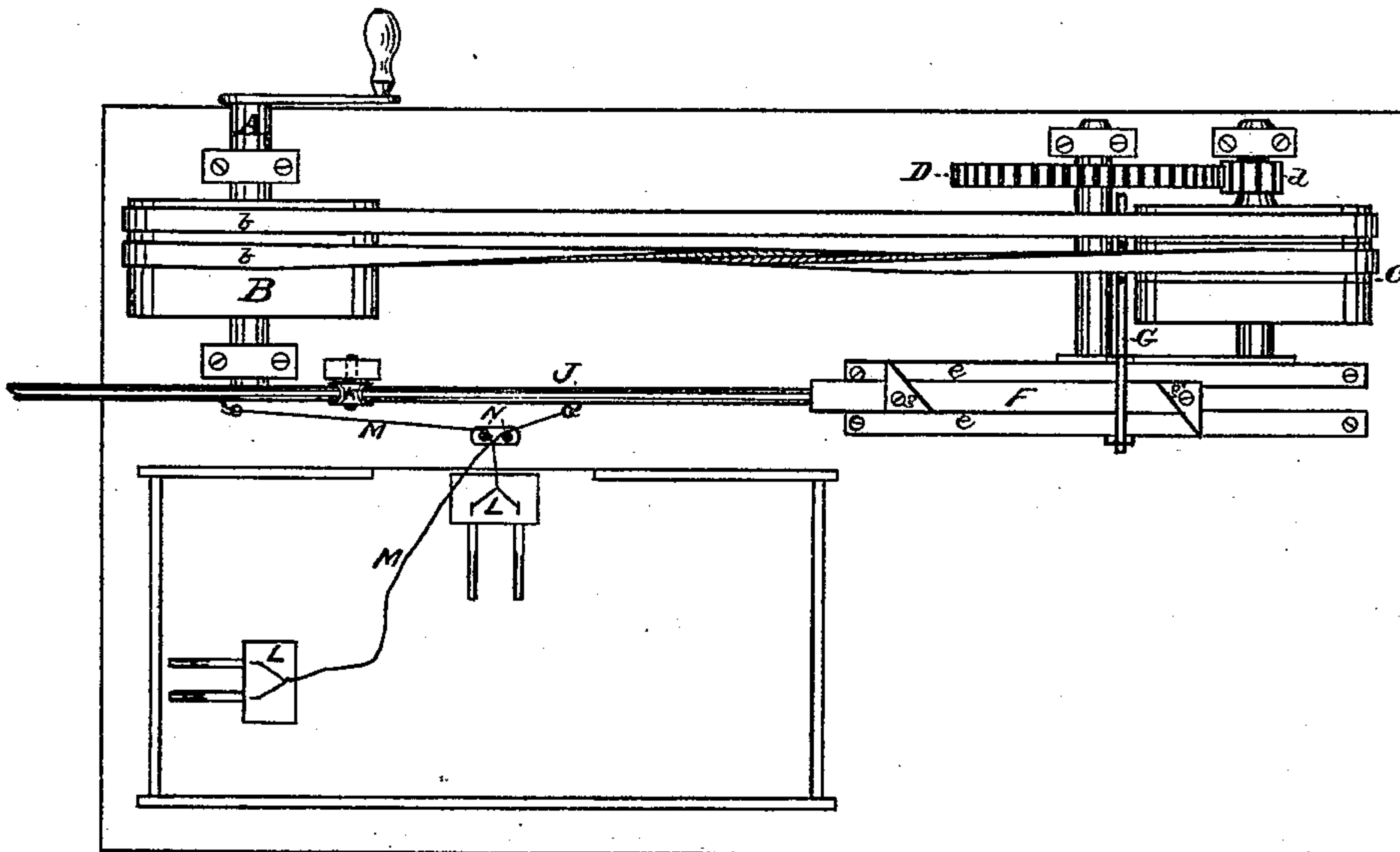


Fig. 2.

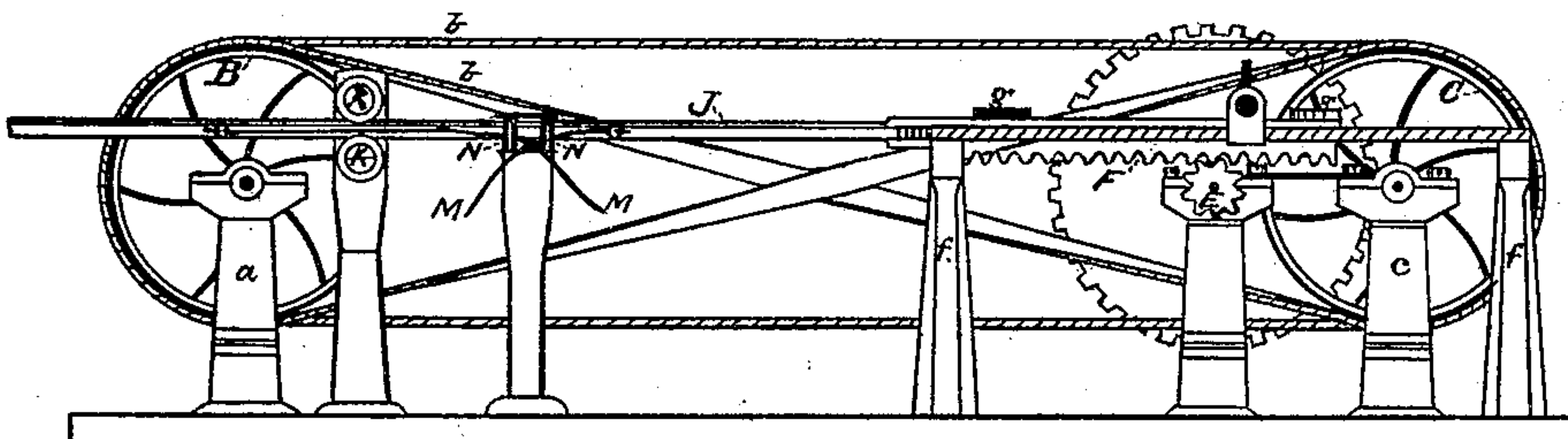
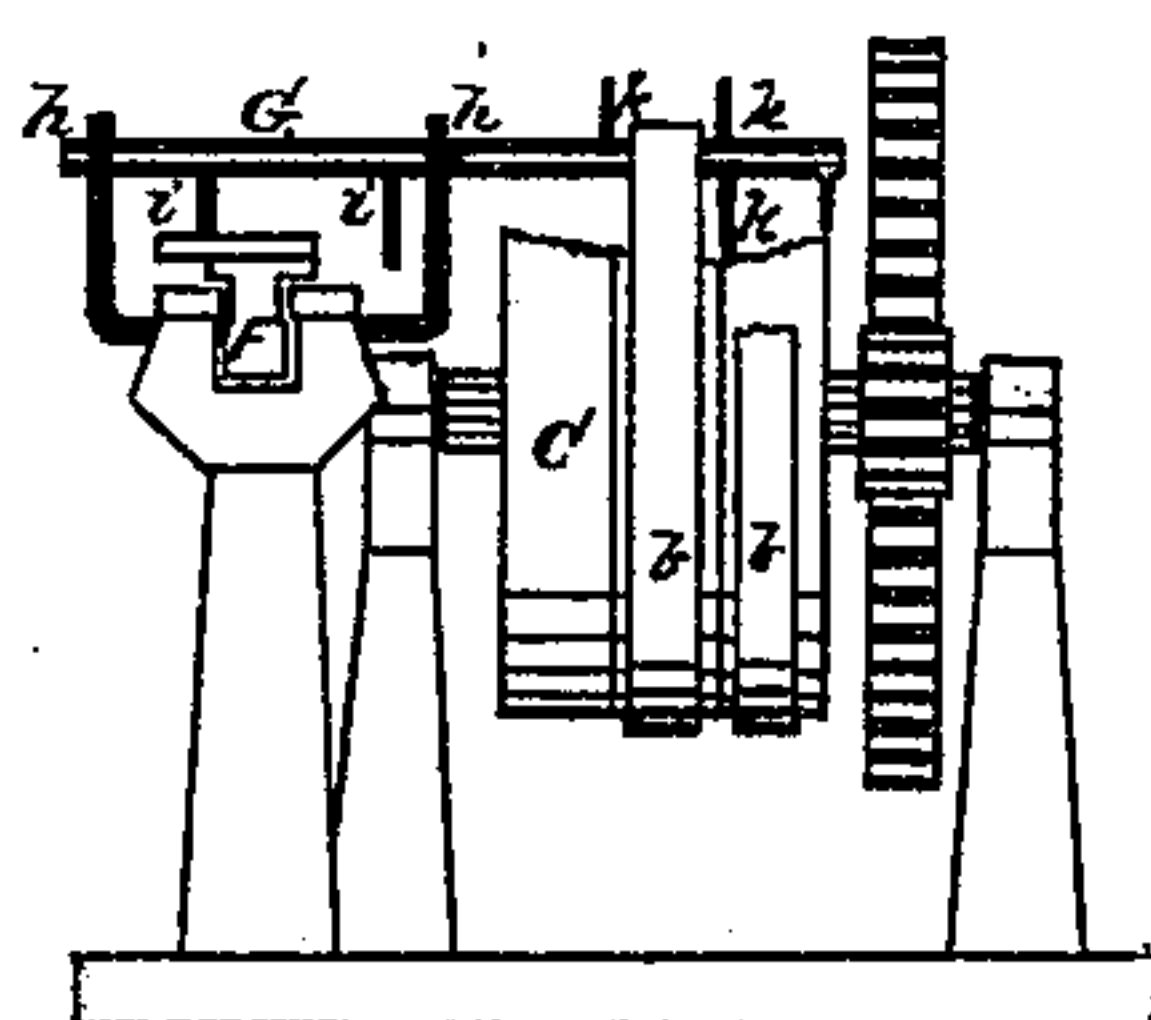


Fig. 3.



WITNESSES
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UNITED STATES PATENT OFFICE.

MASON W. BOSWORTH, OF BINGHAMTON, NEW YORK.

IMPROVEMENT IN GRAIN-CAR UNLOADERS.

Specification forming part of Letters Patent No. **175,589**, dated April 4, 1876; application filed February 19, 1876.

To all whom it may concern:

Be it known that I, MASON W. BOSWORTH, of Binghamton, in the county of Broome and State of New York, have invented new and useful Improvements in Grain-Car Unloaders, which improvements are fully set forth in the following specification, reference being had to the accompanying drawings.

My invention relates to improvements in a device for which I received a Patent dated November 8, 1873, No. 145,780; and consists in substituting for the endless chain and its connections a rack and pinion, operated by pulleys and belts, and an intermediate toothed wheel and pinion, for actuating the reciprocating rod J.

The object of the invention is to obviate the expense and inconvenience of the manufacture of the endless chain, and the consequent wear of the machinery.

Figure 1 in the accompanying drawing is a plan of the improved devices embodying my invention. Fig. 2 is a side elevation with the car removed. Fig. 3 is an end view of the same.

A is the driving-shaft, which may be driven by any convenient power, to which is attached the pulley B, which revolves on standards *a*, and carries two belts, *b*. C is the connecting-pulley at the other end of the device, and has two loose pulleys, one on each side. The shaft of these pulleys works on standards *c*, and has attached to the end a pinion, *d*, which connects with the gear-wheel D, which is also hung on standards. On the end of the shaft of this wheel is attached the rack-pinion E. F is the rack, to which is attached the rod J, which passes between, and is supported in a horizontal position by pulleys K, pivoted in a suitable manner to posts or other supports. The rack F works between ways *ee*, which are mounted on standards *f*. On the top of the rack F are attached two cams, *g*, at a distance apart equal to about half the length of the

car, and the rod J should be equal in length to the united lengths of the cars to be unloaded at a time. G is the belt-shifting rod, for changing the motion of the pulleys. This rod works in bearings *h*, which extend a sufficient distance above the rack F to allow of the passage of the cams *g*, which, by the reciprocating motion of the rack, brings their inclined faces in contact with the projecting pins *i* in the shifting-rod G, and moves it lengthwise across the face of the pulley C, which, alternately shifts the belts *b* from the tight to the loose pulleys, and vice versa. L are the scrapers, by which the grain is removed from the cars, two of which are used for each car. These scrapers are operated by ropes M, which pass out and through the door of the car, and between guide-rollers N, which are pivoted to suitable supports near the door of the car, and attached to the rod J at equal distances apart with the cams *g* on the rack F, so that when the rod J is moving in one direction, one of the scrapers L will be drawn toward the door of the car, to be emptied into the pit or bin for the elevator, and at the same time the drag-rope of the scraper will be slackened, so that the said scraper may be drawn back and filled.

As many sets of drag-ropes M may be attached to the rod J as there are cars to be unloaded at a time, so that the whole train may be unloaded in the time required for unloading a single car, and with a single apparatus.

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

The combination of the belt-shifting-rod G, projecting pins *i* and *k*, belt-shifters or cams *g*, and belts *b*, substantially as herein shown and described, for the purpose set forth.

MASON W. BOSWORTH.

Witnesses:

L. B. SMITH,
H. W. GREEN.