(No Model.)

# C. A. CASE.

## ELEVATOR.

No. 478,986. Patented July 19, 1892.

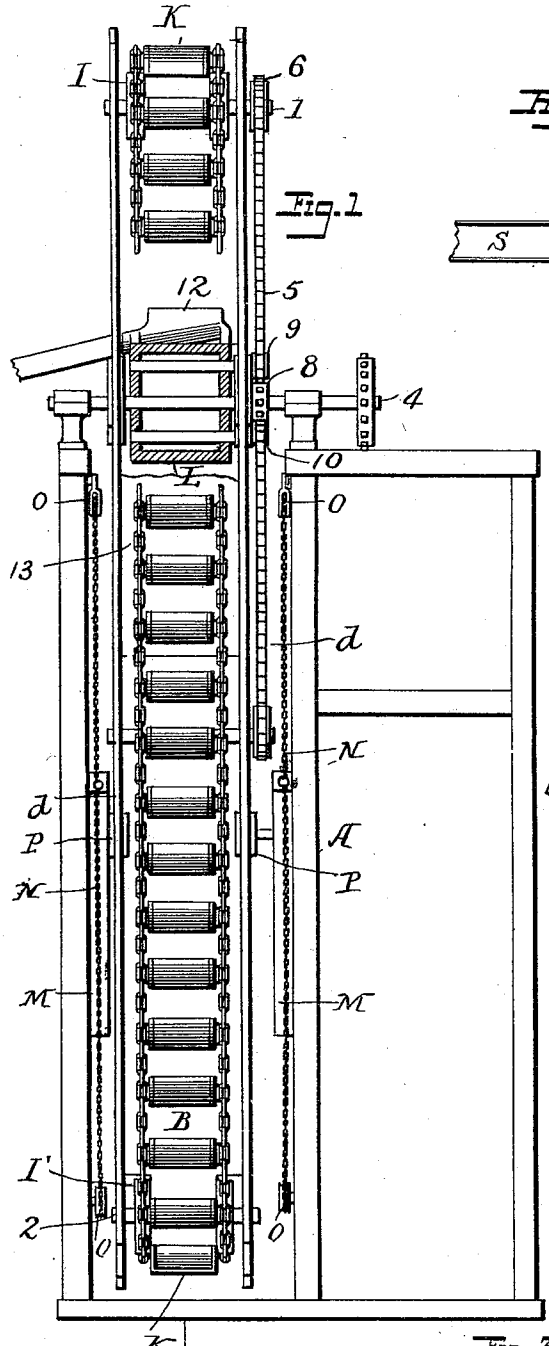


Fig. 1.

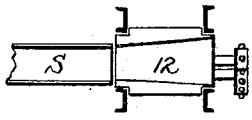


Fig. 4.




Fig. 2.

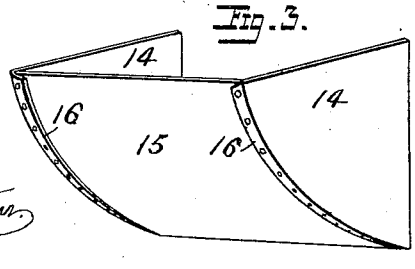


Fig. 3.

Witnesses,
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# UNITED STATES PATENT OFFICE.

CHARLES A. CASE, OF NEW YORK, N. Y.

## ELEVATOR.

SPECIFICATION forming part of Letters Patent No. 478,986, dated July 19, 1892.

Application filed August 29, 1891. Serial No. 404,136. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES A. CASE, a citizen of the United States, residing in the city, county, and State of New York, have invented certain new and useful Improvements in Elevators, of which the following is a specification.

My invention relates to that class of elevators in which an endless chain of buckets is carried by a leg capable of vertical and oscillating movements; and my invention consists in certain improvements in the construction of the parts, fully set forth hereinafter, and illustrated in the accompanying drawings, in which—

Figure 1 is a vertical elevation of an elevator, illustrating my improvements. Fig. 2 is a sectional elevation on the line 2 2, Fig. 1. Fig. 3 is a perspective view of one of the buckets on an enlarged scale, and Fig. 4 is a detail.

The apparatus is provided with the supporting-frame A and movable elevator-leg B, having at the opposite ends shafts 1 2, carrying wheels or drums I I′, round which pass the chains carrying the buckets K, and with the leg B are connected suitable hoisting-chains, these parts in their general construction and details, as hereinafter set forth, being substantially similar to those heretofore used in elevators and shown in my prior patent, No. 433,762. A guide-block L is arranged, as usual, between the side bars of leg and between the front and back portions of the chain of buckets, and I make the shaft 4, upon which the guide-block swings, the driving-shaft for the sprocket-chain 5, which passes around the sprocket-wheels 6 7 and also in contact with the sprocket-wheel 8, fixed to the shaft 4, and round guide-wheels 9 10, turning upon the shafts or spindles passing through the guide-block. The driving-shaft 4 is driven from any suitable source of power in any desired manner, and thereby imparts the desired movement to the sprocket-chain 5, the drums, and the chain of buckets, while the leg B is adjusted vertically to any desired position and is also swung around the shaft 4 as a center to any desired angle; but as this center of oscillation is coincident with the driving-shaft the swinging of the leg has no effect in either tightening or relaxing the sprocket-chain.

The guide-block is preferably in the form of a rectangular frame, through the sides of which the shaft passes, and the discharging-chute 12 rests in saddles formed on the top of the block and is curved in cross-section and inclined to one side, as illustrated in Figs. 2 and 4, and discharges into the chute S. To the front of the guide-block is secured the upper end of the backing-plate 13, which, as usual, serves to close the back sides of the buckets D, each of which, as shown, consists of two sector-shaped side pieces 14 14 and a curved front piece 15, the side pieces being formed preferably with flanges 16, that overlap the ends of the front piece 15, so that the flanges may be bolted to the edges of the front piece, as best shown in Fig. 3.

I have found that a bucket constructed as described, and illustrated in Fig. 3, is superior to those of ordinary construction in being more durable, in entering the material in such a manner as to collect it into the bucket without breaking it, and discharging it more freely, with less noise and with less fracture of the material, and consequently less dust. In order to move the leg inward or outward from its supporting-frame to reach coal in vessels, for instance, I provide a boom M, one end of which is pivoted to the frame, and to the other end is attached a chain N, which passes over suitable pulleys O to a winding-drum (not shown) or other well-known device for holding the chain or rope. Mounted on the boom is a wheel or carriage P, which is adapted to fit between the strips or side bars *d d* of the leg and to move freely therein. It will be evident that when the free end of the boom is raised or lowered the wheel or carriage P will move the leg inward or outward from the frame, as the case may be, and will hold it in position when the buckets are operated.

Without limiting myself to the precise construction and arrangement of parts shown and described, I claim—

In an elevator, the combination, with a leg provided with drums at its upper and lower ends and an endless chain of buckets extend-

ing around said drums, of a guide-block, a driving-shaft having a sprocket-wheel and extending through the guide-block, and a driving-chain extending around the wheel upon the driving-shaft, the wheel upon the shaft of the upper drum, and a wheel 7, mounted upon the leg below the driving-shaft, substantially as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES A. CASE.

Witnesses:
L. H. LOSEE,
HENRY W. MITTAY.