J. H. Johnson.

Elevator Leg.

No. 86,927. Patented Feb. 16, 1869.

Fig: 1

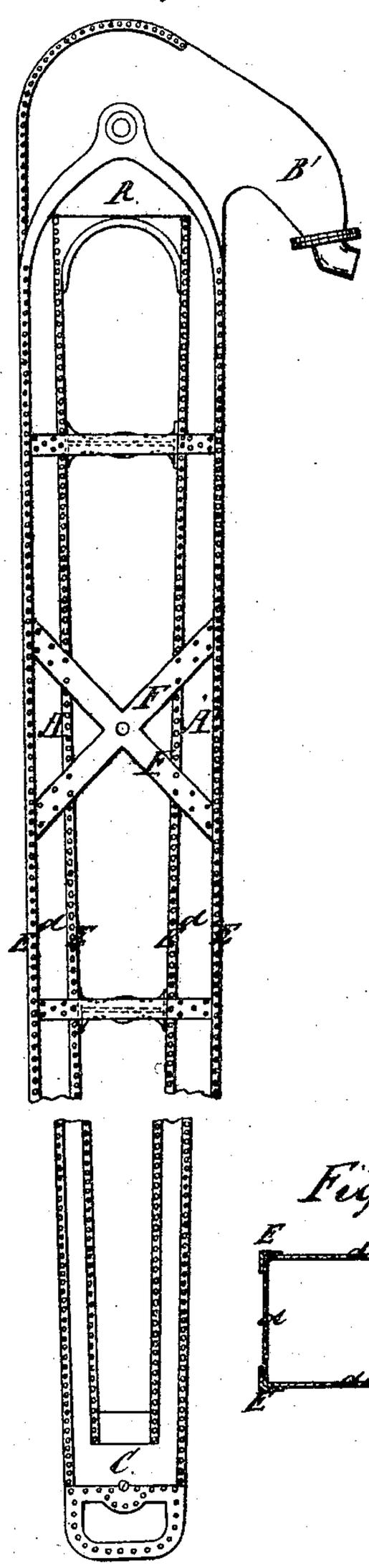

Fig: 2

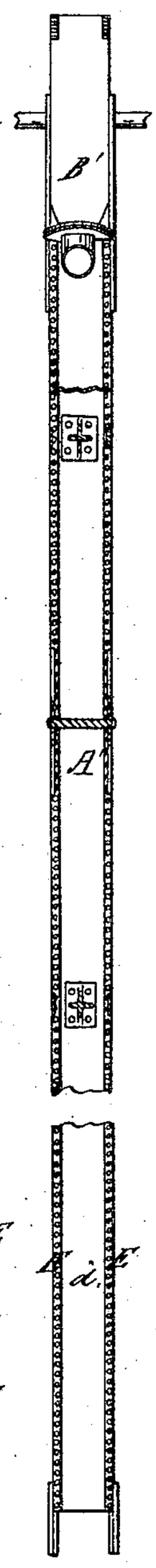

Fig: 3.

Witnesses

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GEORGE H. JOHNSON, OF BUFFALO, NEW YORK, ASSIGNOR TO HIMSELF AND GEORGE W. TIFFT, SONS, AND COMPANY, OF SAME PLACE.

Letters Patent No. 86,927, *dated February* 16, 1869.

IMPROVED ELEVATOR-LEG.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, GEORGE H. JOHNSON, of the city of Buffalo, county of Erie, and State of New York, have invented an Improved Wrought-Iron Elevator-Leg; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making part of this specification.

My improvement relates to what are technically known as ship-legs, that is, those employed directly in removing grain from the hold of a vessel, as distinguished from those employed within the store-houses, for the purpose of distributing grain to the bins, or discharging it therefrom.

Ship-legs are hung, at their upper end, in a sliding frame, so that the lower end, or foot thereof, may be swung outward, over the hatch of a vessel, and lowered through the same into the hold.

The hatches are frequently so small as to barely admit the passage of the leg, and it is therefore subjected to severe strains and injury in its insertion and removal.

The movement of the vessel, from agitation of the water in which it floats, is another fruitful source of injury to the leg.

In view of the foregoing, the nature of my invention consists in the arrangement of angle-bars longitudinally upon the external corners of an iron elevator-leg, not only to secure together the thin plates of which the bucket-tubes are formed, but also to protect them from injury in inserting or withdrawing the leg from the hold of a vessel.

In the accompanying drawings—

Figure I is a side elevation of an elevator-leg of my improved construction;

Figure II is a front elevation thereof; and

Figure III is a cross-section of one of the bucket-tubes.

Like letters refer to like parts in each of the figures.

A is the front, and A′, the rear bucket-tube of an elevator-leg.

B is the head-box, serving to connect the upper ends of the tubes A and A′ together, and to receive the head pulley, over which the belt carrying the buckets runs. An extension thereof, shown at B′, forms the spout, through which the buckets discharge the grain.

C is the foot-box, serving to connect the lower ends of the bucket-tubes together, and also to receive the foot-pulley, by which the lower turn of the bucket-belt is effected, and the proper tension thereof maintained. This box has the common openings at the bottom and sides, to admit the grain to the buckets.

The bucket-tubes are formed of thin sheet-metal plates, *d d*, and are rectangular in cross-section, said plates being secured together by being riveted to angle-iron bars, E E, applied longitudinally to the external corners of the tubes, the rivets having countersunk heads, both inside and out.

The angle-bars have their internal angle a right angle, so that they may fit properly to the right-angle corners of the tubes.

This construction leaves the interior surface of the tubes smooth, and free for the unobstructed passage of the buckets, and is a very important feature, inasmuch as the great length of the bucket-belt, especially when it becomes a little slack, causes it to sway, and throw the buckets against the interior surface of the leg, so that any unevenness or projection could not but destroy or injure the buckets.

But the arrangement of the angle-bars is even more important, as securing the bucket-tubes against external injury, when the leg is inserted into or being withdrawn from the hold of a vessel. Projecting, as they do, above the surface of the tubes, they prevent the thin plates, of which the tubes are formed, from coming in contact with the sides of the hatchway, and receive all the wear and tear due to frictional contact therewith.

The back and front tubes are connected together by diagonal braces, F, riveted to the side plates of the tubes.

The braces have the same thickness as the angle-irons, and the angle-irons upon the inside corners of the back and front tubes are cut away to receive the braces, so that the braces may not project beyond the angle-irons, and interfere with the free movement of the leg in passing up or down through a hatchway.

Having thus described my invention,

What I claim, and desire to secure by Letters Patent, is—

The arrangement of the angle-bars E E longitudinally upon the external corners of the bucket-tubes of an elevator-leg, to unite and protect the plates thereof, as described.

GEO. H. JOHNSON.

Witnesses:

W. H. FORBUSH,

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