

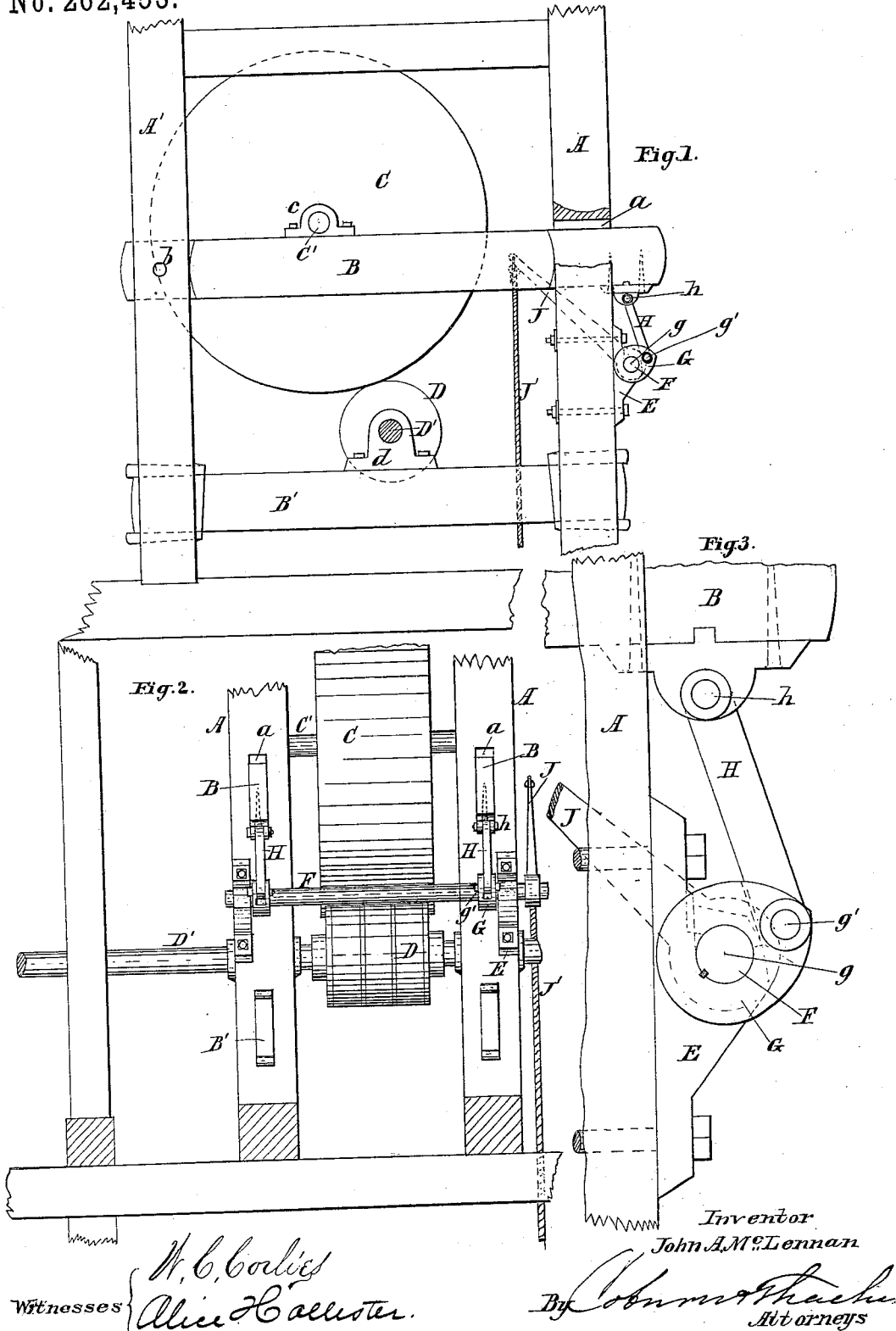
(No Model.)

J. A. McLENNAN.

STOP MECHANISM FOR GRAIN ELEVATORS.

No. 262,453.

Patented Aug. 8, 1882.



UNITED STATES PATENT OFFICE.

JOHN A. McLENNAN, OF CHICAGO, ILLINOIS.

STOP MECHANISM FOR GRAIN-ELEVATORS.

SPECIFICATION forming part of Letters Patent No. 262,453, dated August 8, 1882.

Application filed April 2, 1881. (No model.)

To all whom it may concern:

Be it known that I, JOHN A. McLENNAN, a citizen of the United States, residing in the city of Chicago, in the county of Cook, in the State of Illinois, have invented a certain new and useful Improvement in Stop Mechanism for Grain-Elevators, which is fully set forth in the following specification, reference being had to the accompanying drawings, in which—

Figure 1 is side elevation of the upper part of a grain-elevator provided with my improvements. Fig. 2 is an end elevation of the same, the extreme upper part being broken away, and one pair of upright timbers being removed, so as to give an unobstructed view. Fig. 3 is a detailed and enlarged side elevation, showing the cam and levers which constitute the principal part of my improvement, the first lever being broken away toward the end to which the power is applied.

The same letters denote the same parts in all the figures.

My invention relates to elevators for the transfer of grain between the store-house and the car or vessel and for analogous purposes; and it consists in an improved device for arresting the operation of the elevator by means of a combination of levers with a rocking arm, such as I will proceed to describe fully, the object being to provide a stop mechanism more efficacious, less expensive, and less liable to get out of order than those now in use.

In the drawings, A and A' denote respectively the front and rear pairs of upright timbers supporting the pulley C, which raises and lowers the buckets. This pulley has its immediate bearings in the boxes *c*, in which its shaft C' turns. These boxes rest on the horizontal beams B, which are pivotally supported at *b* in the rear upright timbers and rest in slots *a* in the front uprights, which slots are vertically somewhat larger than the horizontal beams, so as to admit of lifting the forward ends of the latter a little way. The friction-wheel D, which communicates motion to the carrying-pulley in the usual way, is supported, like it, by means of its shaft D', turning in the boxes *d*, which rest on the fixed horizontal beams B'. When for any reason it becomes necessary to stop the motion of the carrying-pulley it is done by raising the forward ends of the horizontal beams B, so as to lift it out of contact with the

friction-wheel D, the slots *a* being deep enough to admit of this.

All the parts thus far described are in familiar use; and I do not claim any of them as my invention, which consists solely in the improved mechanism for lifting the horizontal beam B.

To the front edges of the front upright timbers, A, are affixed brackets E, which afford bearings for a rotating shaft, F. In front of each upright timber, and on the inner side of the corresponding bracket, rocking arm G is rigidly affixed to the shaft. This arm projects in the opposite direction from the upright timber A, and near its outer end, at *g'*, is pivoted the lower end of a connecting-bar, H, whose upper end is pivoted on the lower side of the corresponding horizontal beam, B, at a point, *h*, perpendicularly above the point *g* in the axis of the shaft F, and therefore nearer to the upright timber than the lower end, except when the outer end of the rocking arm is also perpendicularly above the axis of F. The length of the rocking arm is such as to allow the outer end of the latter to fall nearly into a horizontal line with the center *g*, the timber B then resting in the bottom of the slot *a* and the carrying-pulley being in contact with the friction-wheel D, so that the motion of the machinery will be communicated to the carrying-pulley. Any turning of the shaft F in such a direction as to elevate the outer end of the rocking arm must obviously increase the vertical distance between the upper and lower ends of the bar H, and thus necessitate the lifting of the corresponding end of the bar B, the length of the rocking arm being sufficient to insure the lifting of the carrying-pulley clear of any contact with the friction-wheel, and thus to disconnect the former entirely from the driving machinery. Such a turning of the shaft F is effected at pleasure by means of the lever J, which is set on one end of the shaft by means of an eye at one of its ends, and is rigidly affixed thereto, the place of attachment being on the outer side of the nearest upright timber A, as shown in Fig. 2, allowing room for a lever of any desirable length to be turned without obstruction. A cord, J', attached to the farther end of the lever, extends downward to the floor, where the operator is stationed. By pulling on the cord the shaft F is turned, and with it the

rocking arm G, instantly thrusting the upper end of the bar H upward, and thus lifting the horizontal beam B, which supports the carrying-pulley C.

5 At present the lifting of the beam B is ordinarily effected by means of a lever of the second kind, pivoted on the front of the beam A above B and connected with the latter by a strap, so that the lifting of the outer end of
10 the lever lifts the horizontal beam. Of course the cord by which this end of the lever is brought under the control of an operator on a lower floor must first pass upward and over a pulley, and the length of the lever is neces-
15 sarily limited by its position in front of the elevator. In practice a crank is usually applied to the rod, around which the lower end of the cord or chain is wound; and it is found that with a rod seven-eighths of an inch in
20 thickness and a crank-lever fourteen inches long it requires a man's full strength to move the lever. On the other hand, with the appa-

ratus which I have described, a direct pull on the cord with one hand readily lifts the carrying-pulley out of contact with the friction-
25 wheel, the power requisite being hardly more than one per cent. of that which must be applied to the outer end of the upper lever of the device now in use. Moreover, the improved
30 device which I have described can be constructed and put in place for about fifteen per cent. of the cost of the other, and when in place is not nearly so liable to get out of order.

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

35 In a grain-elevator, the combination of the pivoted horizontal beam B with the doubly pivoted bar H, rocking arm G, shaft F, and lever J, substantially as and for the purpose described.

JOHN A. McLENNAN.

Witnesses:

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GEO. R. CUTLER,