No. 627,906. Patented June 27, 1899.

J. E. COWLES & C. W. ANDRIDGE.

GRAIN LOADING MACHINE.

(Application filed Dec. 1, 1898.)

(No Model.)

Fig. 1.

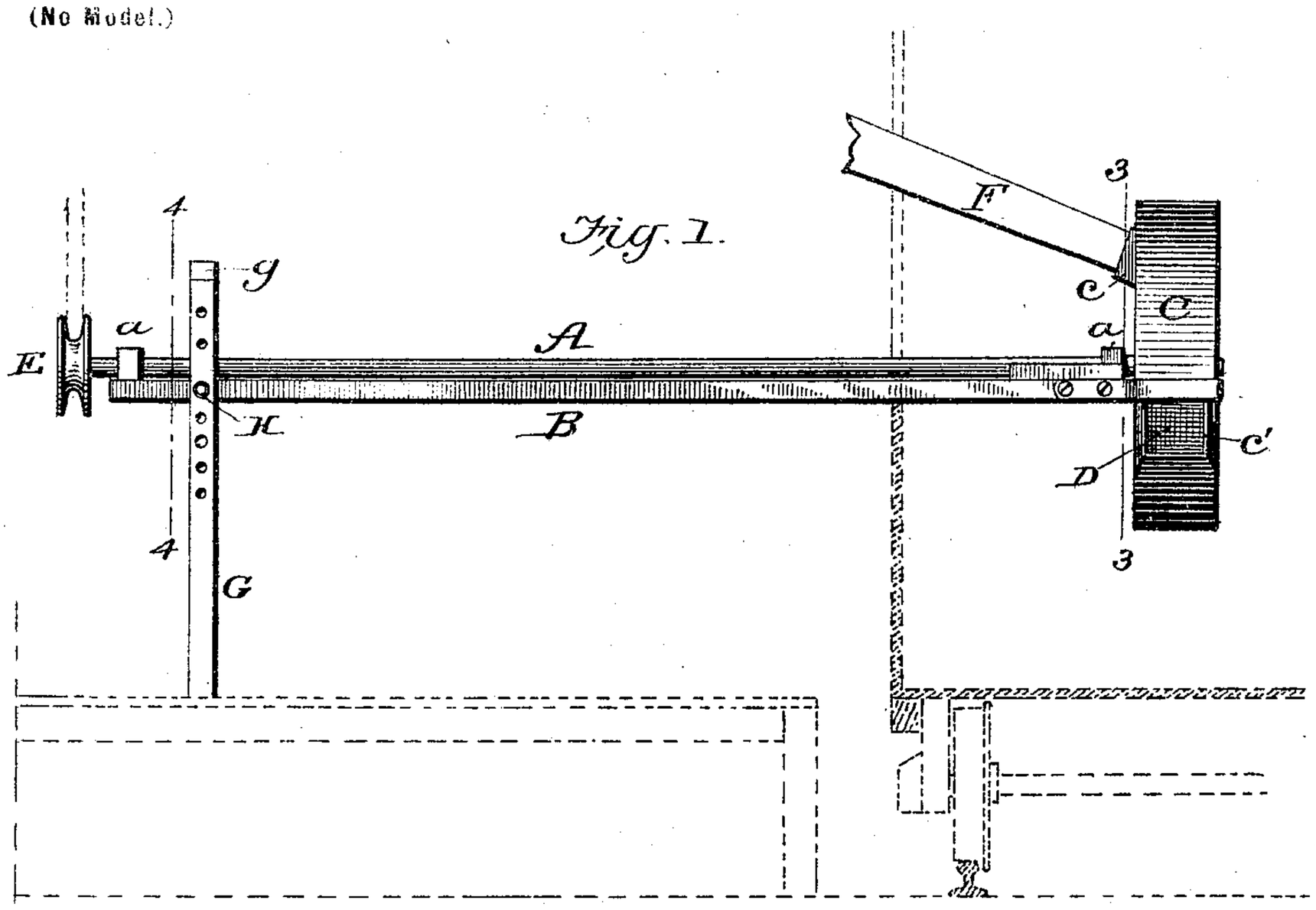

Fig. 2

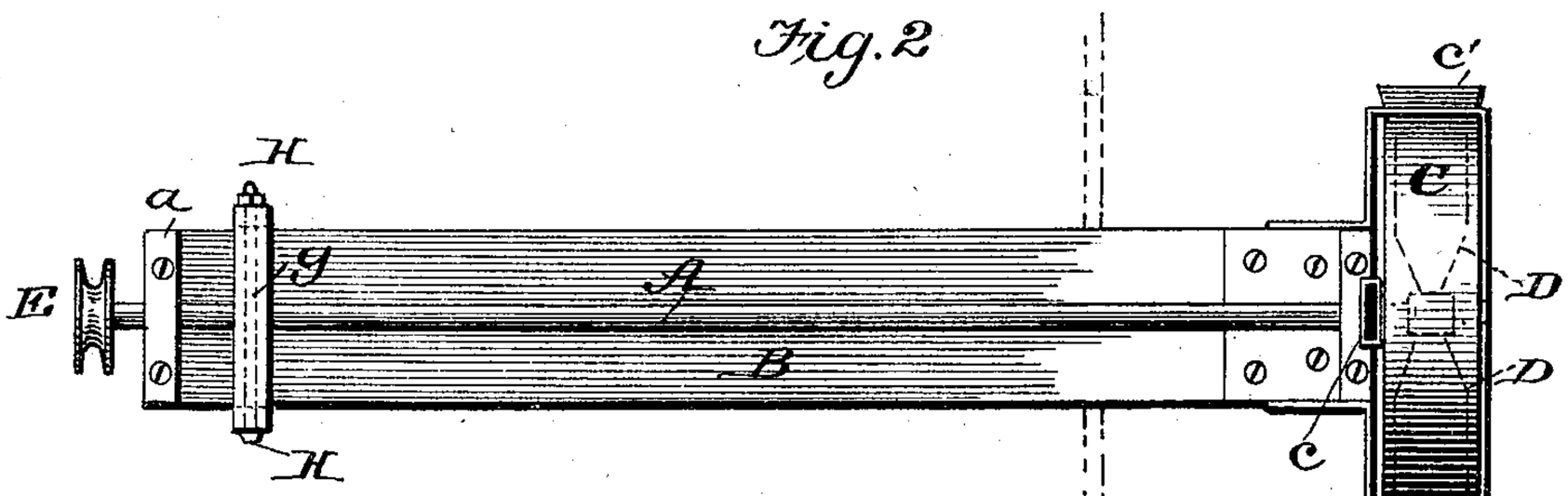

Fig. 4.

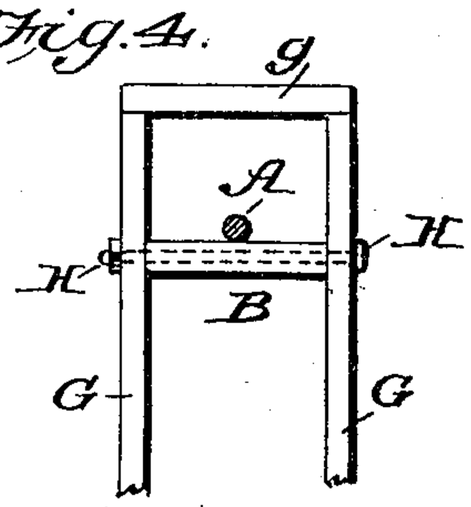

Fig. 3.

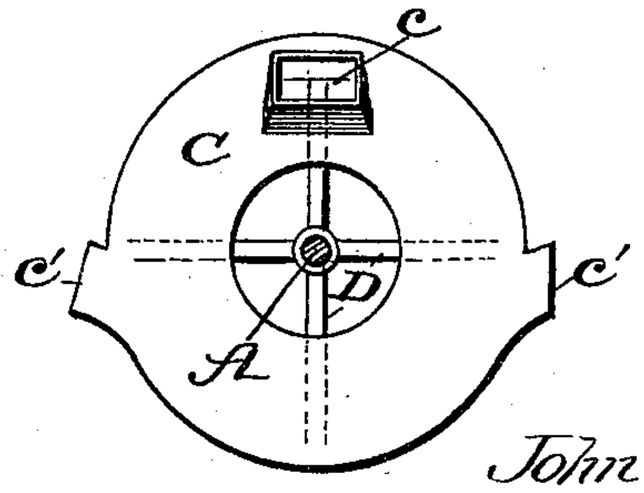

Fig. 5.

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JOHN E. COWLES AND CHARLES W. ANDRIDGE, OF STORM LAKE, IOWA.

GRAIN-LOADING MACHINE.

SPECIFICATION forming part of Letters Patent No. 627,906, dated June 27, 1899.

Application filed December 1, 1898. Serial No. 698,028. (No model.)

To all whom it may concern:

Be it known that we, JOHN E. COWLES and CHARLES W. ANDRIDGE, citizens of the United States, residing at Storm Lake, in the county of Buena Vista and State of Iowa, have invented a new and useful Grain-Loading Machine, of which the following is a specification.

Our invention is an apparatus adapted to be connected with a grain-elevator and to be arranged partly within and partly without a car which is required to be loaded with grain and to be operated in such manner as to discharge into either end of the car the grain descending through the elevator-spout.

The construction, combination, and operation of the apparatus are as hereinafter described, reference being had to the accompanying drawings, in which—

Figure 1 is a side view of the apparatus as arranged for practical use. Fig. 2 is a plan view of the same. Fig. 3 is a vertical section on the line 3 3 of Fig. 1. Fig. 4 is a section on the line 4 4 of Fig. 1. Fig. 5 is an enlarged cross-section of one of the blades of the fan employed for forcing grain into the car.

A indicates a rotatable shaft which is held in suitable bearings *a* upon a broad horizontal bar B, to one end of which a fan-casing C is attached at a right angle thereto. A fan D is arranged within said casing and keyed upon the shaft A. The opposite and outer end of said shaft carries a pulley E, upon which runs a belt from the elevator. (Not shown.) The said pulley may be flat or grooved to accommodate either a flat belt or rope, as may be preferred. The fan-casing C has an inlet-opening *c* at the middle of its upper portion on the inner side, and a flange projects therefrom, as shown in Fig. 1, to form a socket adapted to receive the discharge end of a grain-spout F, which in practice extends to the elevator and is there suitably attached to the eye of the same. The said casing C has also two lateral discharge-openings *c'*, as shown best in Fig. 3.

The radial blades of the fan B have a concavo-concave form or shape in cross-section, as shown in Fig. 5, for the purpose of adapting them to more readily take up and act upon the grain within the casing C and to prevent so far as practicable undue crowding and friction of the grain with the sides of the casing while being discharged therefrom. The casing C and its inclosed fan are in practice held or supported within the car by the bar B, which rests upon the car-door, as shown by dotted lines, Fig. 1. The outer end of said bar B is held rigidly secured between two uprights G, which are held equidistant by means of a cap-piece *g*. A screw-bolt H passes through the said uprights and the bar B, as shown in Figs. 1 and 4. To provide for vertical adjustment of the outer end of bar B, we provide the uprights G with a series of holes adapted to receive the bolt H, as shown in Fig. 1. Such adjustment of the bar B may be required to take up slack in the belt running on pulley E or for the purpose of accommodating the apparatus to the height of the car-door or other support employed for the opposite end of the said bar.

It is apparent that when the apparatus is in due position, as shown in Fig. 1, and grain is allowed to discharge into the fan-casing C the rotation of the shaft A and its attached fan D will force the grain out through one of the lateral openings *c'* of said casing and that the same will thereby be delivered into the end portion of the car. The direction of rotation of the shaft and fan determines which end of the car shall receive the grain.

The apparatus is exceedingly light, simple in construction, easily operated, and efficient for its purpose.

What we claim is—

1. The combination, with upright guides, of the apparatus before described, comprising a fan-casing, a fan, a rotary shaft having a pulley on its outer end, and a rigid bar adapted to be held and adjusted between the guides, substantially as shown and described.

2. The combination, with upright guides having a series of transverse holes and a screw-bolt adapted to pass through the same, of the loading apparatus proper comprising a rigid bar adapted to fit and be adjusted between the guides, a shaft arranged in bearings longitudinally of said bar, a fan and pulley keyed

on said shaft, and a fan-casing attached to the aforesaid bar, substantially as shown and described.

3. In an apparatus for loading grain into cars, the combination, with a rotary shaft, a rigid supporting-bar and a fan-casing having inlet and discharge openings, of a fan proper, having radial blades of concavo-concave form in cross-section, substantially as and for the purpose specified.

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