(No Model.) 2 Sheets—Sheet 1.

J. C. CULBERTSON.

HAY ELEVATOR.

No. 473,915. Patented May 3, 1892.

FIG. 1.

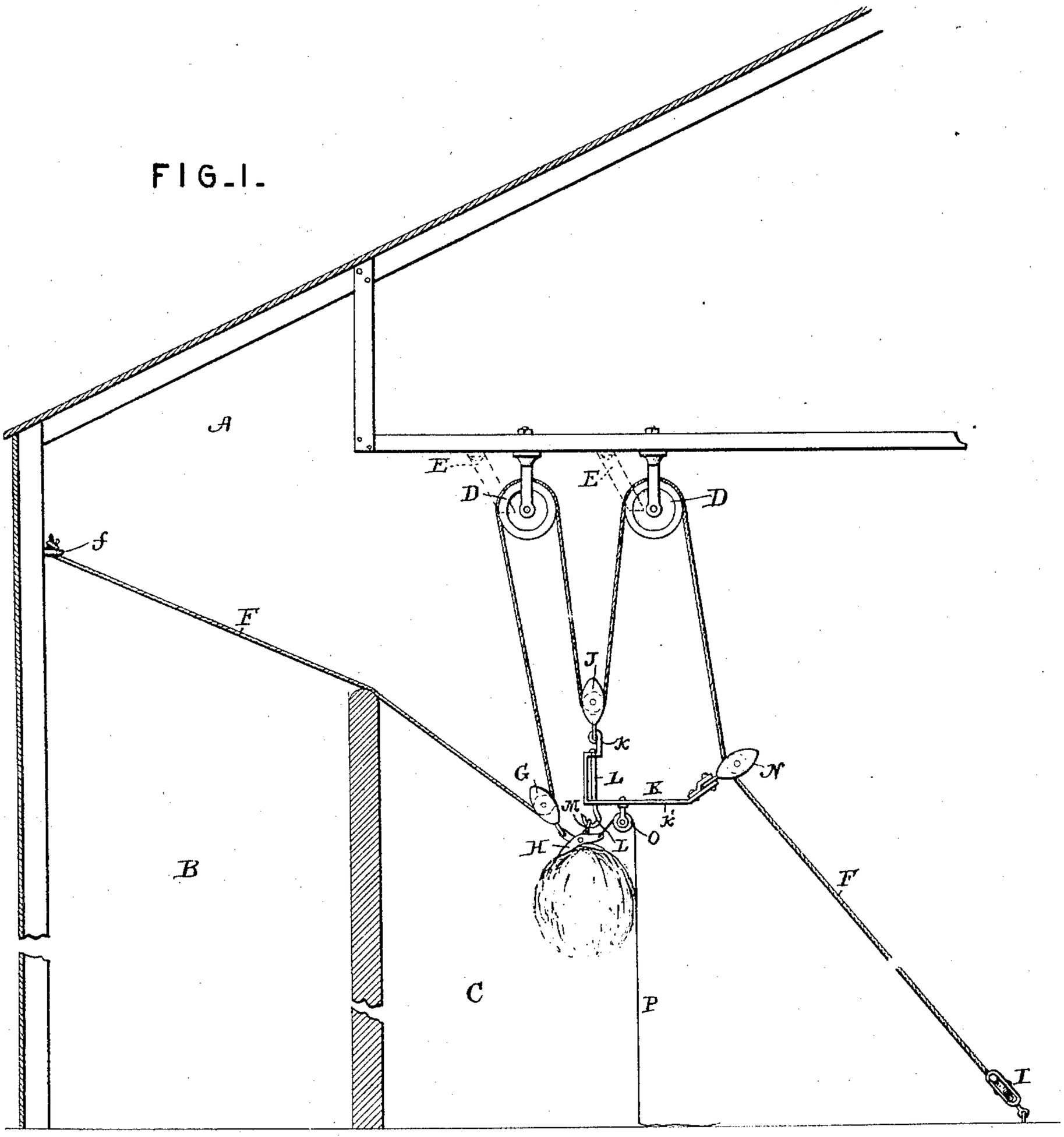
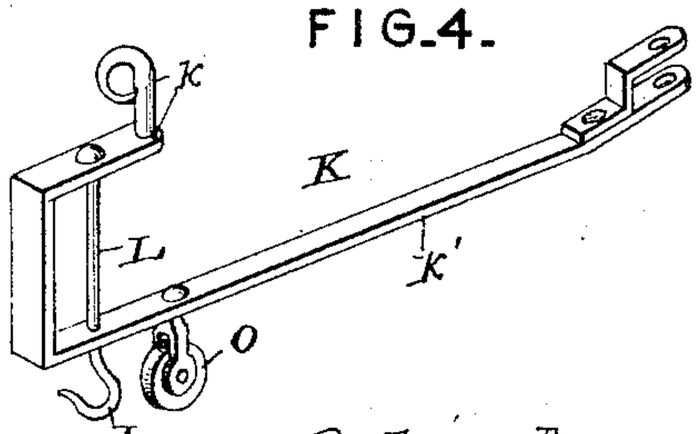


FIG. 4.



Witnesses

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(No Model.) 2 Sheets—Sheet 2.

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HAY ELEVATOR.

No. 473,915. Patented May 3, 1892.

FIG. 2.

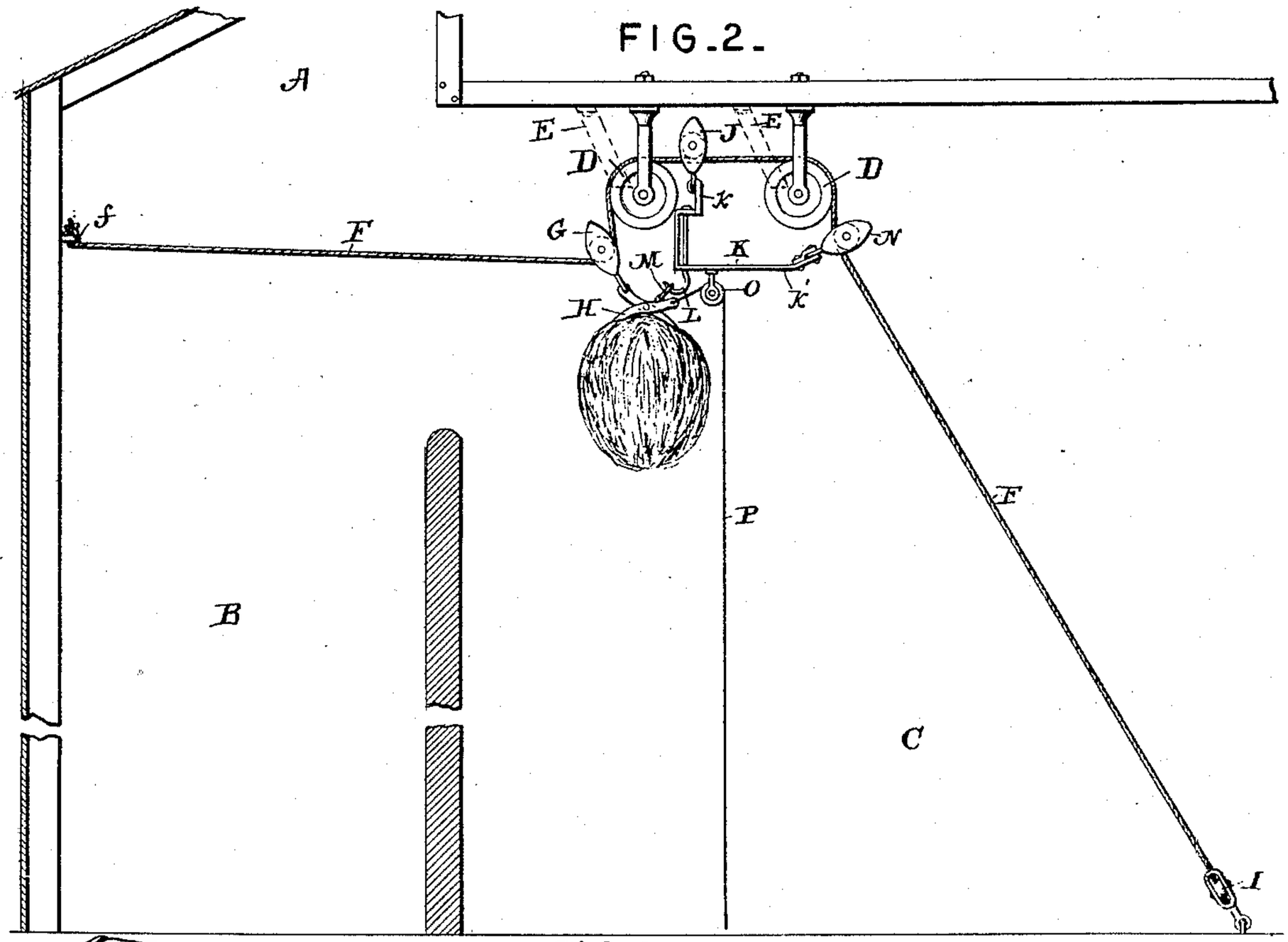
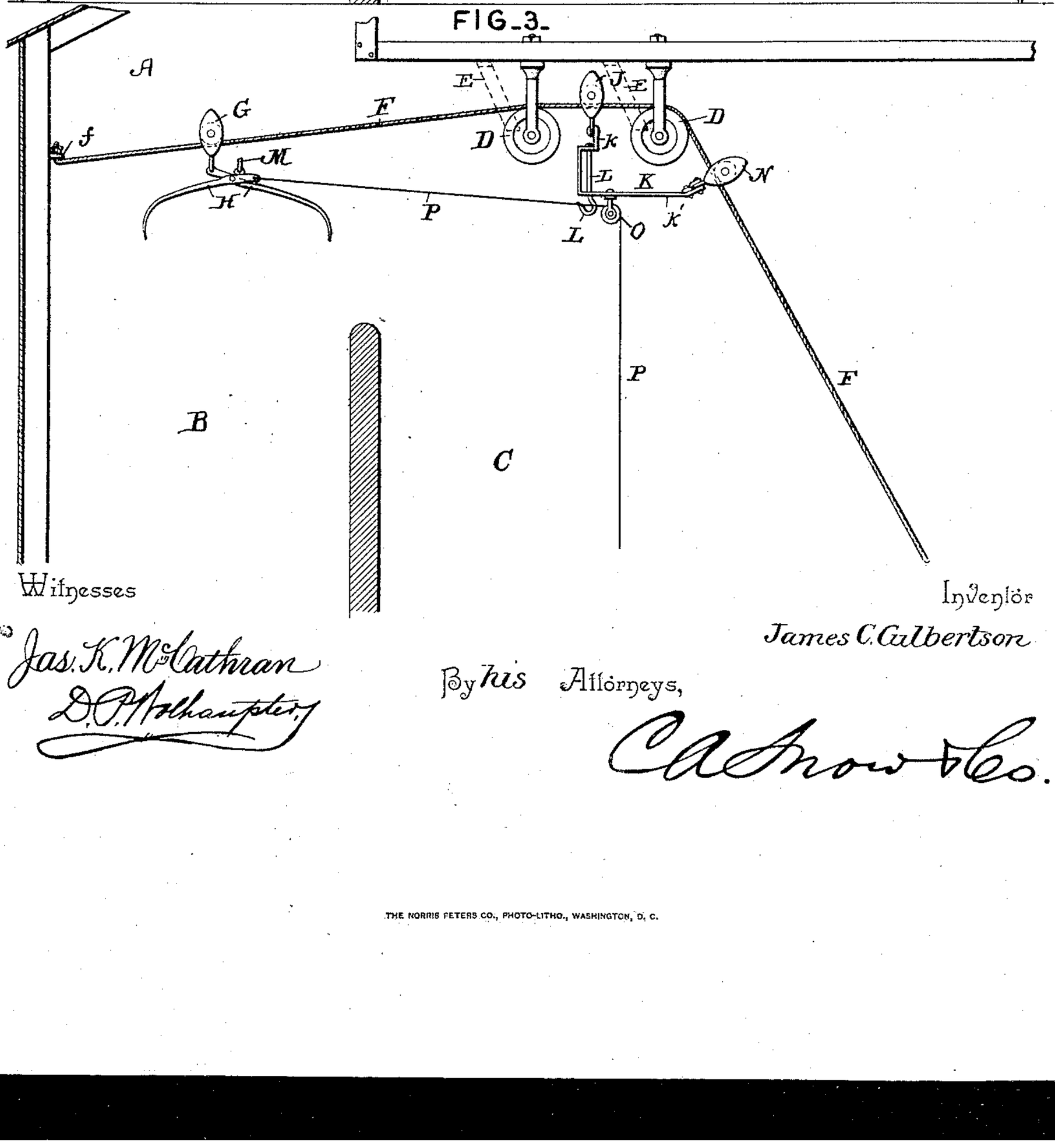


FIG. 3.



Witnesses

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UNITED STATES PATENT OFFICE.

JAMES C. CULBERTSON, OF OAKLAND, PENNSYLVANIA.

HAY-ELEVATOR.

SPECIFICATION forming part of Letters Patent No. 473,915, dated May 3, 1892.

Application filed November 12, 1891. Serial No. 411,724. (No model.)

To all whom it may concern:

Be it known that I, JAMES C. CULBERTSON, a citizen of the United States, residing at Oakland, in the the county of Armstrong and State of Pennsylvania, have invented a new and useful Hay-Elevator, of which the following is a specification.

This invention relates to hay elevators and carriers; and it has for its object to provide a device of this character which will be simple in construction and effective in operation, the same being designed to elevate the hay on a wagon and automatically carry the same directly over the mow after the device has been hoisted to the top of the barn, where it may be readily tripped, the elevating-rope forming in itself a track upon which the fork-carrying pulley-trap travels from the center of the barn over the mow on either side of the wagon-way within the barn.

With these and other objects in view, which will readily appear as the nature of the invention is fully understood, the same consists in the novel hay elevator and carrier constructed in the novel manner hereinafter more fully described, illustrated, and claimed.

In the accompanying drawings, Figure 1 is a vertical transverse sectional view of a hay-barn provided with an elevator and carrier constructed in accordance with my invention and in its upward travel. Fig. 2 is a similar view showing the device at its highest point and the hay-fork at the point of leaving the lifting-bracket. Fig. 3 is a similar view showing the hay-fork over the mow and tripped of its load. Fig. 4 is a detail in perspective of the hoisting and trip bracket.

Referring to the accompanying drawings, A represents an ordinary hay-barn provided with the usual mow B on either side of the ordinary central wagon-way C passing therethrough and accommodating the ordinary hay-racks driven therein and from which the hay is to be unloaded and discharged upon the mow. Suitably supported from the rafters centrally above the road or wagon way C are the opposite depending grooved pulleys D, secured in any suitable manner to said rafters and a sufficient space apart from each other and from the mow to allow a freedom of movement of the various part comprising the elevator and carrier. Bifurcated guards E may be also secured to the rafters of the barn and depend therefrom parallel with each other and take over one edge of each of said pulleys to prevent the continuous hoisting-rope F, passing thereover, from becoming displaced from the grooves in said wheels or pulleys. The said hoisting-rope F is passed continuously over both of said wheels or supporting-pulleys D and is secured at one end to the side of the barn at *f* over the mow and at a plane lower than the plane of said pulleys, so that when the rope is drawn taut and extends in a line from the innermost pulley to the fastening of the rope to one side of the mow the same forms an inclined track over which travels the fork-carrying pulley G, from the block of which is supported the ordinary trip-fork H, which is loaded from the wagon and carried over and discharged on the mow in the manner to be described. The said hoisting-rope F passes under the draft-pulley I, secured to the bottom of the barn, as is usually the case in an apparatus of this character, and is operated by a horse or other suitable power in the usual manner.

A hoist or lift pulley J is carried by the portion of the hoisting-rope F between the supporting-pulleys D, located at the top of the barn, and when in its lowered position over the hay-rack or wagon the said pulley draws the hoisting-rope F down from between the pulleys over which it passes. Said hoist or lift-pulley J carries an approximately L-shaped lifting-frame K, securely but loosely connected therewith at the short arm *k* thereof, and carries a swiveled hook L, mounted in the angle portion thereof and adapted to engage the ring M, loosely connected with the hay-fork H of the fork-pulley G, and thus as the hoisting-rope is elevated will carry the said hay-fork, with its load, in a vertical line to the top of the hay-mow. The weight of the hay-fork and its load holds the long arm *k'* of said L-shaped bracket in a horizontal position, which thus keeps the hook L in engagement with the ring supporting the hay-fork, and the outer end of said arm *k'* is further provided with a traveling guide-pulley N, through which the hoisting-rope passes and which serves to retain the said lifting-bracket in its normal horizontal position during the ascent of the lift-bracket and fork. Suitably

secured to the angle end of said lift-bracket adjacent to the engaging-hook therein is a trip-rope guide-pulley O, over which passes the trip-rope P, which after the hay-fork has been carried over the mow will trip the same and cause it to be discharged or released from its load and by means of which the said fork may be drawn back from over the mow and over the hay-wagon to be reloaded and have the operation repeat itself.

The operation of the device is as follows: After the hay-fork has been filled with a suitable amount of hay the lifting-bracket and pulley are drawn downward and the hook thereof is placed into engagement with the ring loosely connected with the hay-fork of the fork-carrying pulley. The power is now applied and the lifting-bracket and pulley and the hay-fork carried thereby are drawn in a straight line to the top of the hay-barn, the said guide-pulley N traveling over the portion of the hoisting-rope between the first supporting-pulley G and the bottom draft-pulley, serving to keep the lifting bracket or frame in a horizontal position, and thus keep the hook thereof in engagement with the ring of the hay-fork and cause the apparatus to travel in a vertical plane. Having reached the top of the hay-barn, the lifting-pulley carrying the lifting-bracket passes up between the two supporting-pulleys D at the top of the barn and the hoisting-rope assumes a horizontal position over and between said pulleys. By a continued pull of the main hoisting-rope the portion of the same between the pulley next to the mow and its lower connection at the side of the barn assumes an inclined position, thus elevating the fork-pulley after the lifting-frame has become stationary and thus automatically throwing the ring loosely connected to said fork out of engagement with the lifting-hook, and, being thus released, the fork-pulley and the fork carried thereby of their own weight travel down the inclined portion or track of the hoisting-rope and over upon the mow, where it may readily be tripped at any point desired by means of the trip-rope P. After the fork has been tripped of its load the same is drawn back from over the mow by the trip-rope while the hoisting-rope is in its taut position, and by a continued pull on said trip-rope the whole device may be lowered over the hay-wagon to be reloaded and carried back over the mow in the same manner as that just described.

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

1. In a hay-elevator, the combination, with the supporting-wheels, a single hoisting-rope passing over said wheels, and a hay-fork having a ring, of an L-shaped hoisting-bracket loosely connected at the short arm thereof with the hoisting-rope between said pulleys, a guide-pulley secured to the end of the long arm of said bracket and engaging the hoisting-rope on the outside of one of said supporting-pulleys, a hook swiveled in the angle end of said bracket and adapted to be connected with said fork-ring, and a trip-rope, substantially as set forth.

2. In a hay elevator and carrier, the combination of a pair of grooved supporting wheels or pulleys located at the top of the barn, a continuous hoisting-rope passing over said pulleys and secured at a point lower than the same, a hoisting-pulley carried by the portion of the rope between the supporting-pulleys, an L-shaped hoisting bracket or frame connected to said hoisting-pulley and provided with a swiveled hook at one end and directly in a line with the hoisting-pulley and with a guide-pulley at the other end thereof, through which the hoisting-rope passes, and a fork-carrying pulley having a ring engaging said swiveled hook and thus carrying the same in a vertical line to the top of the barn with said lifting-bracket and adapted to be automatically released from the same and travel over the inclined portion of the hoisting-rope, substantially as set forth.

3. In a hay elevator and carrier, the combination of a pair of grooved supporting wheels or pulleys, a continuous hoisting-rope passing over said pulleys and secured at one end at a point lower than the same, an L-shaped lifting-bracket carried by the portion of the hoisting-rope passing between the supporting-pulleys, the said lifting-bracket being provided with a guide-pulley located at the end of its long arm and receiving the hoisting-rope, over which said guide-pulley travels and holds the bracket in a normal horizontal position, a hook swiveled at the angle end of said bracket, a trip-rope pulley secured to said bracket adjacent to said hook, a fork-carrying pulley provided with a ring adapted to loosely engage said hook, thus carrying the same in a vertical line with said lifting-bracket up to said supporting-wheels and adapted to be automatically released from the same and travel over the incline of the hoisting-rope, and a trip-rope passing over said trip-pulley and connected to the hay-fork to operate the same, substantially as set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

JAMES C. CULBERTSON.

Witnesses:
GEO. L. THOMAS,
J. D. O'DONNEL.