

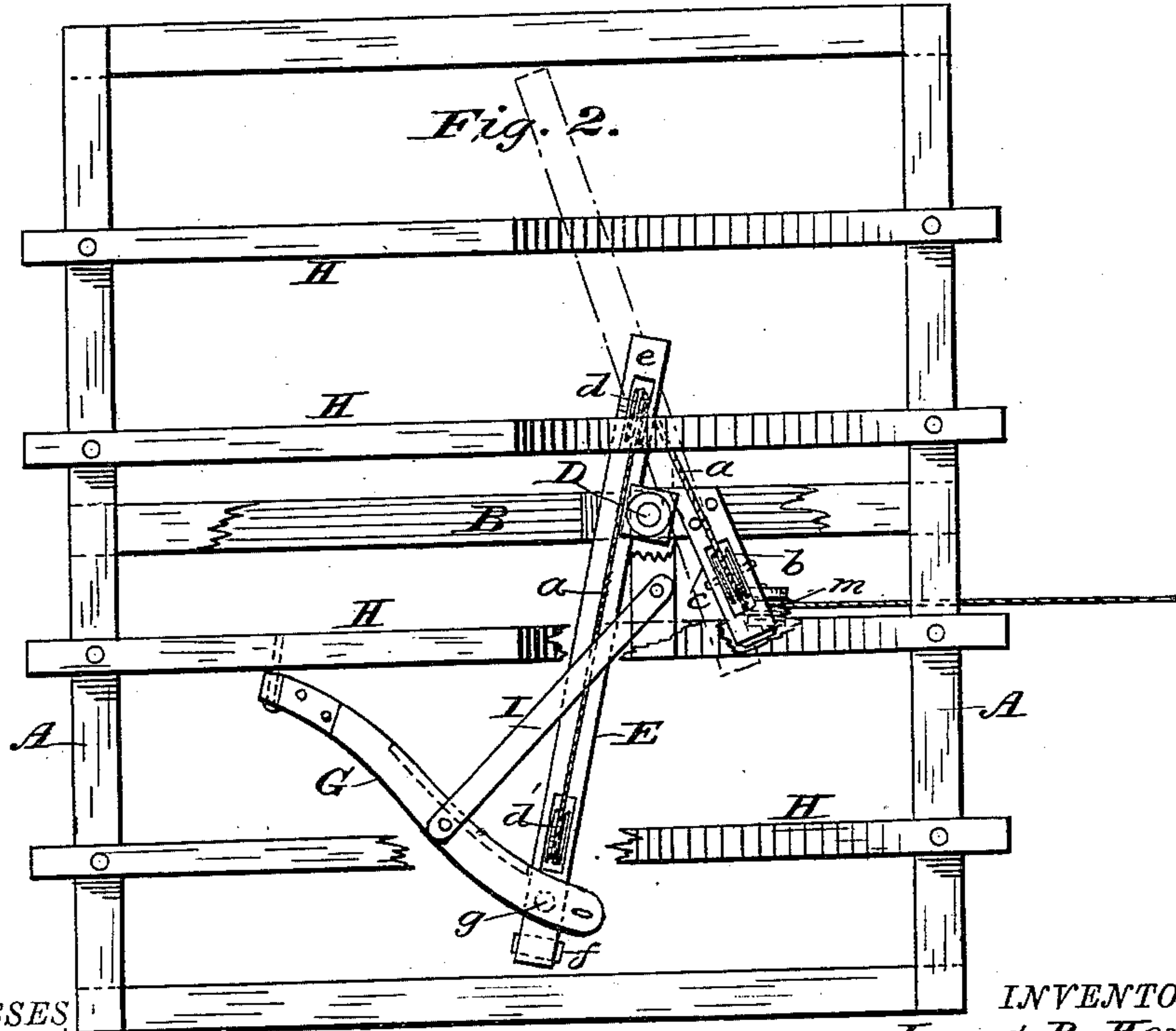
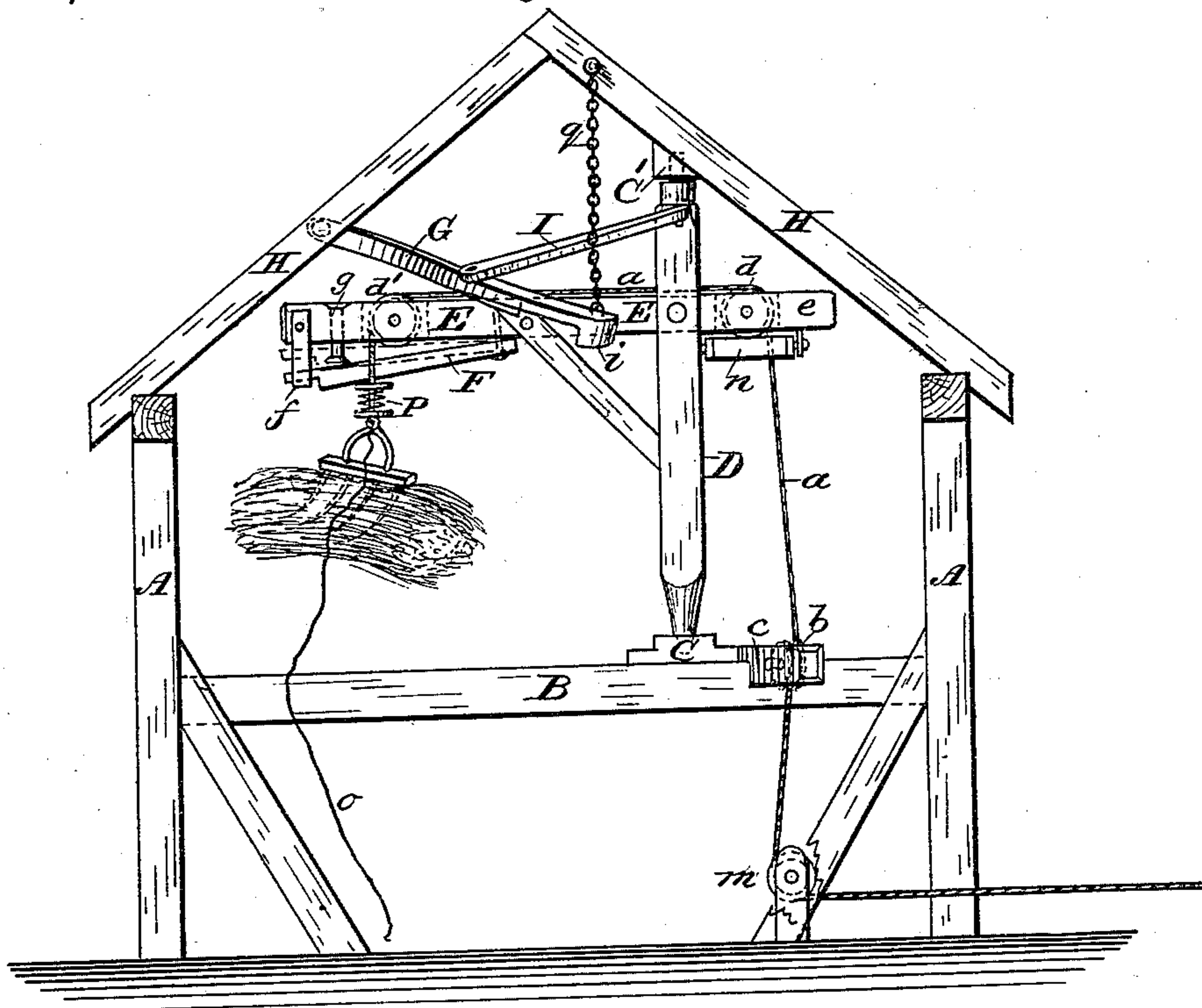
(No Model.)

J. R. & J. M. HOWELL.

HAY ELEVATOR.

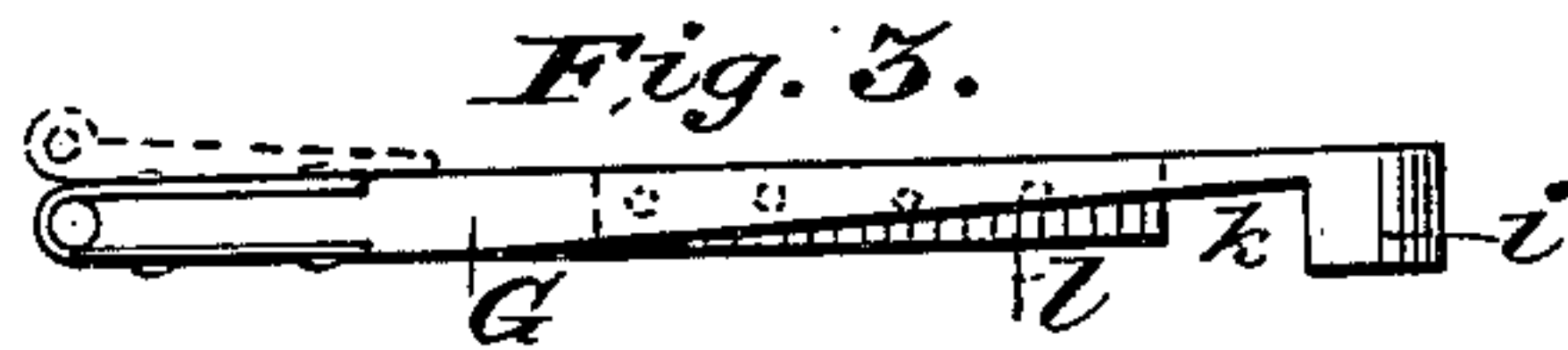
No. 259,312.

Fig. 1. Patented June 13, 1882.



WITNESSES
S. F. Keeler
J. M. Breese

INVENTORS:
James R. Howell,
John M. Howell,
By J. C. Brecht,
Attorney



UNITED STATES PATENT OFFICE.

JAMES R. HOWELL AND JOHN M. HOWELL, OF ACADEMIA, PENNSYLVANIA.

HAY-ELEVATOR.

SPECIFICATION forming part of Letters Patent No. 259,312, dated June 13, 1882.

Application filed April 1, 1882. (No model.)

To all whom it may concern:

Be it known that we, JAMES R. HOWELL and JOHN M. HOWELL, citizens of the United States, residing at Academia, in the county of Juniata and State of Pennsylvania, have invented certain new and useful Improvements in Hay-Elevating Machines; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to make and use the same.

Our invention relates to improvements in hay-elevators; and the object is to construct them so that they can be easily and quickly manipulated, are not liable to get out of order, and they can be readily applied to barns, stables, or other places used for depositing hay, straw, &c.

The invention consists in the construction and arrangement of parts of a hay-elevator, as will be more fully described hereinafter, reference being had to the accompanying drawings and the letters of reference marked thereon.

Like letters refer to like parts in the different figures of the drawings, in which—

Figure 1 is a side elevation of our improved hay-elevator applied to a building. Fig. 2 is a plan view of the same with the crane shown in the position for taking up a bundle of hay and in dotted lines for depositing the hay. Fig. 3 is a detail view of the lock-bar.

In the drawings, A represents a building of any suitable size and construction for the reception of hay, straw, &c. In this building is arranged a cross-beam, B, upon which is secured a base-block, C, and to the rafters above a head-block, C', between which is pivoted a crane, D. The horizontal arm E of this crane is arranged in the rear of perpendicular post D, and is extended back of the main post, as shown at e, for the purpose of obtaining sufficient leverage to revolve the crane by the obliquity of the rope a from a sheave or grooved pulley, b, in an arm, c, secured to the beam B, to a sheave, d, in the extension e. Another sheave, d', is arranged in the outer end of the arm E.

A latch or trap, F, is pivoted or hinged to the arm E and supported in a stirrup, f, on the outer end.

A bolt or double-headed pin, g, is placed in the outer end of the arm E, against which the latch F strikes when the fork with the hay comes in contact therewith as it is elevated, and thus releases a lock-bar, G. This lock-bar is hinged or pivoted at one end to the rafters H of the building, and has at its opposite end a head, i, and notch k, between which the arm E of the crane is held while loading the hay. On the inner side of the lock-bar G is secured in any suitable manner a slider, l, which forms the notch k with the head i.

A chain, q, supports the outer end of the lock-bar.

A brace, I, is pivoted to the lock-bar G and the head-block C', and serves to steady it.

A sheave, m, supported in a suitable bracket, is secured to the floor, and a friction-roller, n, attached to the extension e, serves to keep the rope a in a square manner on the sheave d.

A jack-rope, o, serves to bring the crane back to its normal position after the load of hay has been deposited in place.

A spiral spring, P, is preferably arranged on the rope a, over the hay-fork, to take up the shock in hoisting the hay.

The operation is as follows: The crane is held in the position shown in full lines in Fig. 2 until the hay-fork has been filled with hay, straw, &c., when the operator draws upon the end of the rope a until the bundle of hay, &c., strikes against the pivoted latch F, which elevates the double-headed bolt g, and this releases the lock-bar G from the crane. The crane will then swing by its own weight, as well as the leverage obtained by the obliquity of the rope a, from pulley c to d to the position shown in dotted lines, where it is intended to deposit the load of hay, &c. A slight pull forward upon the jack-rope o returns the crane again to its former position, where it will be again held by the lock-bar, by which it is automatically locked until the operation is repeated.

It will be thus seen that the apparatus is automatic in its operation and is not liable to get out of order.

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

1. In a hay-elevator, the combination of:

crane with a hinged lock-bar and a pivoted latch or trap and suitable rope and pulleys, substantially as specified.

2. In a hay-elevator, the crane D, having the
5 arm E arranged out of the perpendicular line of the crane-post, and provided with extension e for obtaining sufficient leverage to revolve the crane by the obliquity of the rope a passing over pulleys c d, arranged substantially as
10 set forth.

3. In combination with a crane, D, the hinged lock-bar G, having head i and notch k and slider l, and supported by a chain, g, all substantially as and for the purpose specified.

15 4. In an apparatus for elevating hay, &c.,

the combination of a crane, D, a hinged lock-bar, G, and pivoted latch F with pulleys c d d' and rope a, arranged substantially as shown, and for the purpose set forth.

5. The combination of a crane, D, having 20 arm E, pivoted latch F, and double-headed pin g, with the lock-bar G, brace I, pulleys c d d' m, friction-roller n, and rope a, all arranged substantially as shown and specified.

JAMES R. HOWELL.

JOHN M. HOWELL.

Witnesses:

J. M. BRESEE,

WORDS STERRETT.