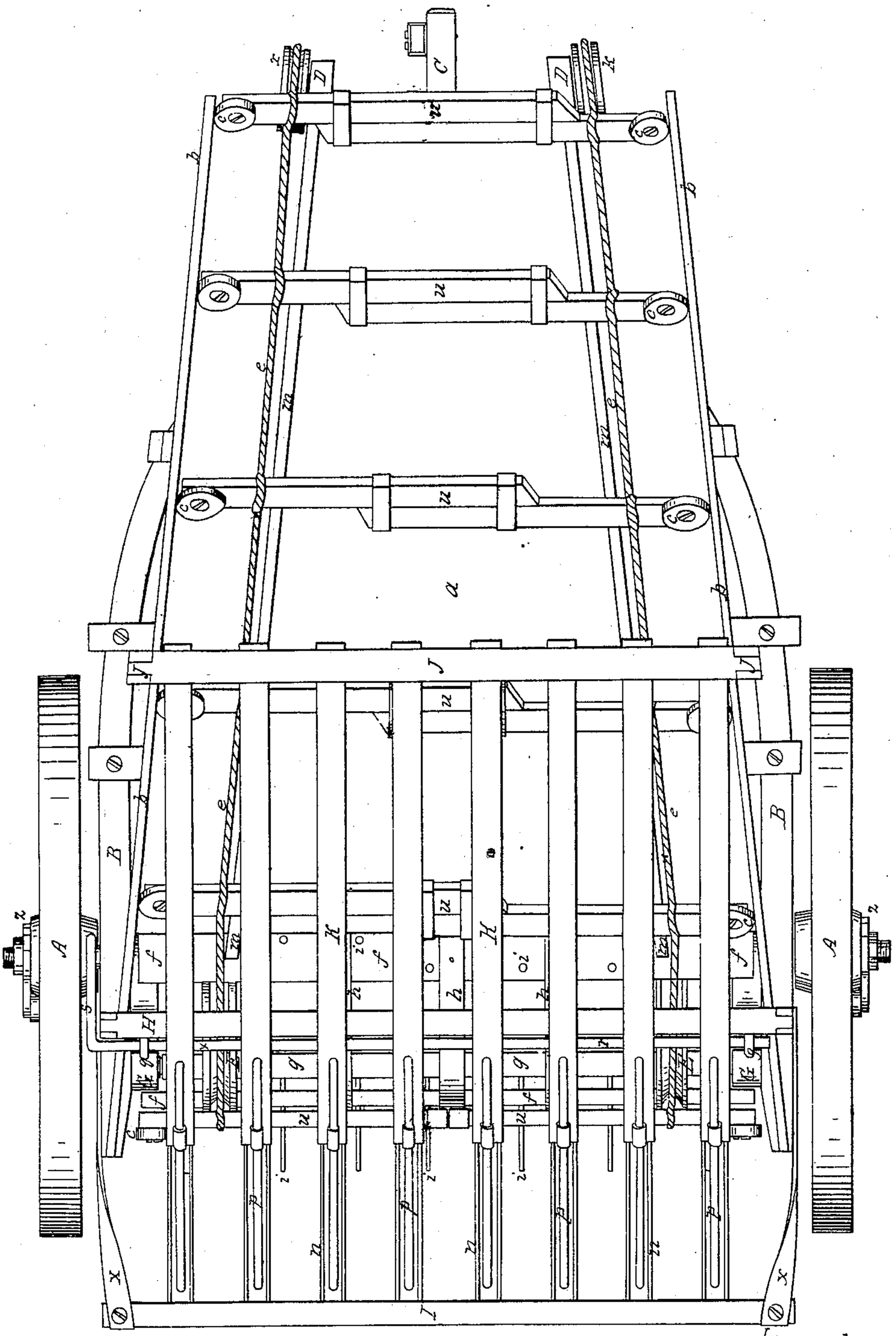
Sheet 1 – 2 Sheets

J. C. Moore, G. B & C. B. Garlinghouse.

Hay Loader.

No. 87106 Patented Feb. 23, 1869



Witnesses
Henry Barnett
H. Quigley

Inventors
J. C. Moore
G. B. Garlinghouse.
C. B. Garlinghouse.

Sheet 2 - 2 Sheets

J. C. Moore, G. B & C. B. Garlinghouse.

Hay Loader.

No 87106 Patented Feb. 23, 1869

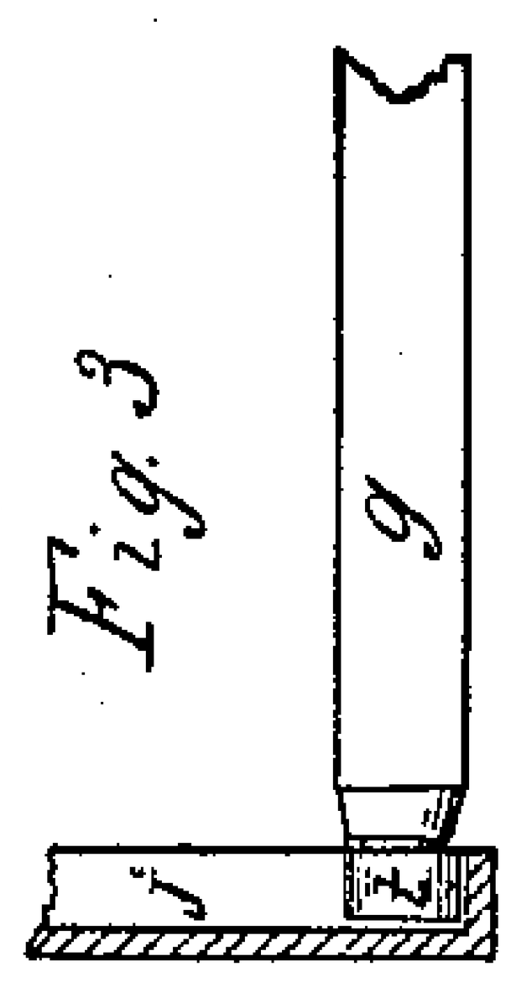


Fig. 3

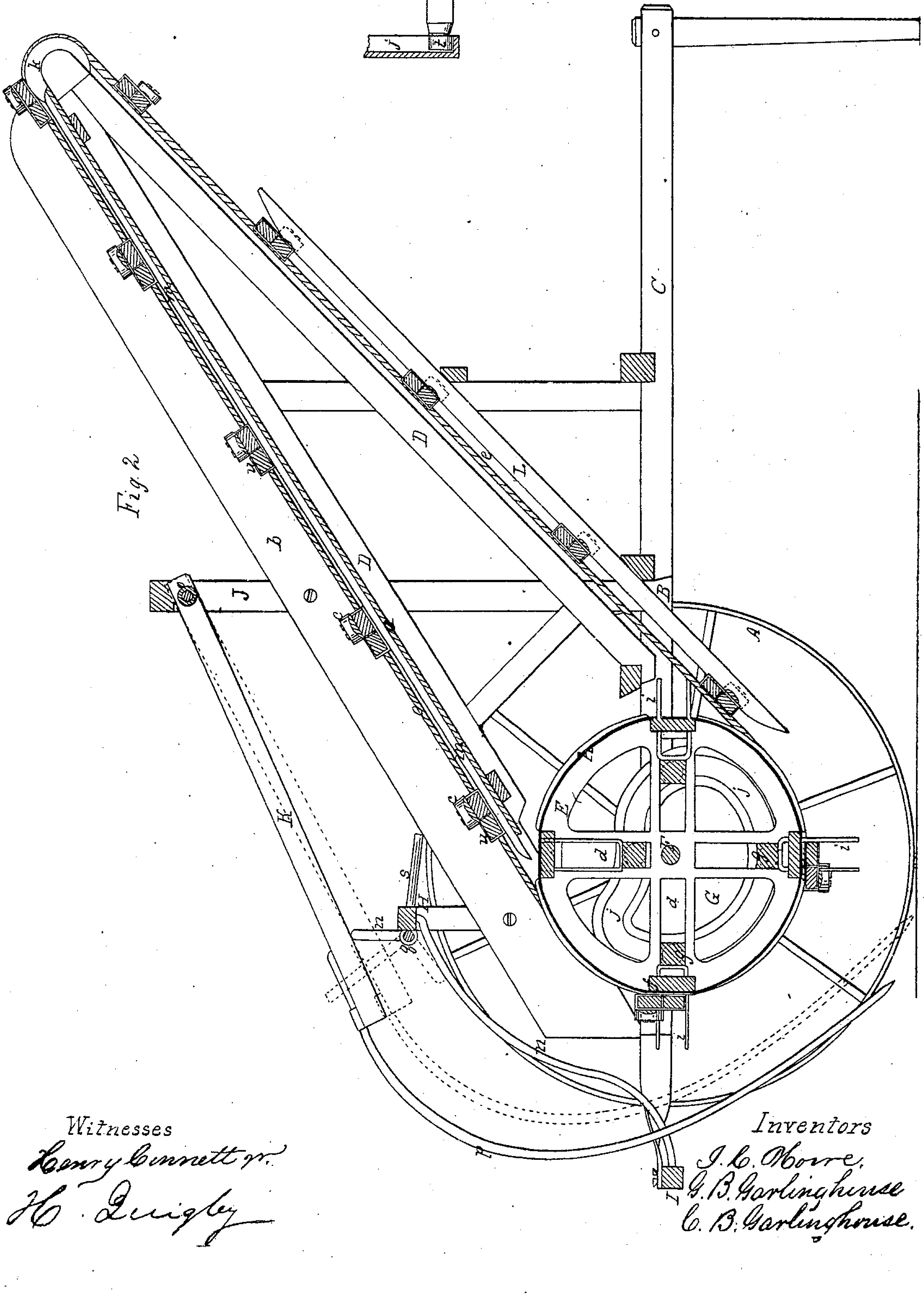


Fig. 2

Witnesses
Henry Cennett jr.
H. Quigley

Inventors
J. C. Moore.
G. B. Garlinghouse
C. B. Garlinghouse.

United States Patent Office.

J. C. MOORE AND C. B. GARLINGHOUSE, OF MADISON, AND GEORGE B. GARLINGHOUSE, OF NORTH MADISON, INDIANA.

Letters Patent No. 87,106, *dated February* 23, 1869.

IMPROVEMENT IN HAY-RAKERS AND LOADERS.

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

To all whom it may concern:

Be it known that we, J. C. MOORE and C. B. GARLINGHOUSE, of Madison, and GEORGE B. GARLINGHOUSE, of North Madison, all in the county of Jefferson, and State of Indiana, have invented an Improved Hay-Raker and Loader; and we do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawings, making part of this specification—

Figure 1 being a plan or top view of the machine.

Figure 2, a longitudinal vertical section of the same.

Figure 3, a view of the cam-roller on the tooth-bar.

Like letters of reference designate corresponding parts in all of the figures.

Our invention consists in improvements on the hay-raker and loader patented by Garlinghouse and Moore, on the 14th day of April, 1868, and numbered 76,743.

Let A represent ground-wheels;

B, a body-frame;

C, a tongue; and

D, a carrier-frame for the contracting-apron, framed and braced substantially as indicated.

The apron is constructed similar to that in the patent above referred to; that is, two endless cords, or, preferably, chains, *e e*, are provided with slats *u u*, overlapping each other, and sliding longitudinally in bands, or collars, the said slats being pressed endwise by contact with converging side-boards *b b*, the cords, or chains, passing over grooved rollers, or sheaves, E E and *k k*.

An important feature of our invention consists in providing the outer end of each slat with a friction-roller, at the point of contact of the said slat with the side-boards *b b*.

By reason of these rollers being placed on the upper side of the slats, they will, in passing down on the under side of the carrier-frame, catch on the outer sides of the diverging spreaders L L, (one only shown, see fig. 2,) and thus distend the apron to its proper width below, the "spreaders" having sufficient obliquity given them for this purpose.

The rollers *c c* might be placed on the under sides of the slats, provided a corresponding change of position was made in the spreaders.

Another feature of our invention consists in the grooved wheels E E, and the mechanism connected therewith, which we will now describe.

These wheels have a suitable number of slotted arms *d d*, (four are shown, though more or less may be used,) and are rigidly attached to the axle F of the machine.

Two cams, G G, of the form shown, or any similar one adapted to the purpose, are firmly secured to the inside of the frame B B, the axle F running through them.

Bars *g g* extend across the machine, from cam to cam, and are provided with friction-rollers *t t*, (see fig. 3,) which rest in the grooves in the said cams.

These bars are equal in number to, and rest in the slots *d d* in the wheels E E, sliding radially in the same, in obedience to the shape or curvature of the cam-groove, as the said wheels revolve.

As these bars bear the carrier-teeth *i i*, we will call them "tooth-bars."

To connect the wheels E E more firmly together, and also to furnish guides for the carrier-teeth, we provide broad strips, *f f*, which extend across the faces of the said wheels, and are let into the same, as shown, over the ends of the slots *d d*. These strips are perforated, for the free passage of the teeth *i i*. These teeth are not set continuously, in a straight line, on the tooth-bar, but, as one duty they have to perform is to revolve the apron by contact with the slats of the same, they are so set as to conform to the broken line caused by the lapping of the said slats, as clearly shown.

As we do not claim the gathering-rake as new, a description will not be necessary, as it is clearly shown in the drawings.

When the machine is driven from one field of operation to another, the rake may be lifted clear off the ground by means of the crank-bar *r* and lever *s*, as shown in fig. 2.

To prevent the hay from falling through the apron before it reaches the bottom, *a*, of the carrier-frame, we surround the strips *f f* with bands or hoops *h h*, (see black circle in fig. 2,) at suitable distances apart; or, the entire space between the wheels E E may be enclosed, to form a drum to accomplish the same object as the bands.

We also provide the bottom, *a*, of the carrier-frame with strips *m m*, to serve as "ways;" on these the slats of the apron slide, and thus materially lessen the friction.

The cross-bar I is supported by projecting pieces *x x*, which are twisted, so as to assist in turning or directing the hay inward, and prevent its catching on the said bars.

In the operation, the raker and loader is attached to the rear axle or bed of the hay-wagon by means of a hook or other similar device. The rake gathers the hay either from the "windrow" or from the mower, and the carrier-teeth raise it, by a rotary hoist, to the bed of the carrier, and thence the slats carry it up and deposit it on the bed of the wagon. The teeth *i i* are

withdrawn from the hay at the proper moment (see fig. 2) by the operation of the cam on the tooth-bar, to be again protruded in time to catch the slats on the under side of the carrier-frame.

This operation will be readily understood by reference to the drawings.

Having thus described our invention,

What we claim as new, and desire to secure by Letters Patent, is—

1. The tooth-bars *g g*, provided with teeth *i i* and rollers *t t*, when arranged to operate in connection with cams G G, wheels E E, and strips *f f*, substantially in the manner and for the purposes as specified.

2. The rollers *c c* on the slats *u u*, in combination with the side-boards *b b* and "spreaders" L L, when used for the purpose and in the manner specified.

J. C. MOORE.
GEO. B. GARLINGHOUSE.
C. B. GARLINGHOUSE.

Witnesses to signatures of J. C. MOORE and G. B. GARLINGHOUSE:
HENRY CONNETT, JR.,
A. M. CONNETT.

Witnesses to signature of C. B. GARLINGHOUSE:
C. A. GARLINGHOUSE,
JOHN R. DICKERSON.