S. R. Higgins,

Hay Elevator,

No. 45,826. Patented Jan. 10, 1865.

Fig: 1

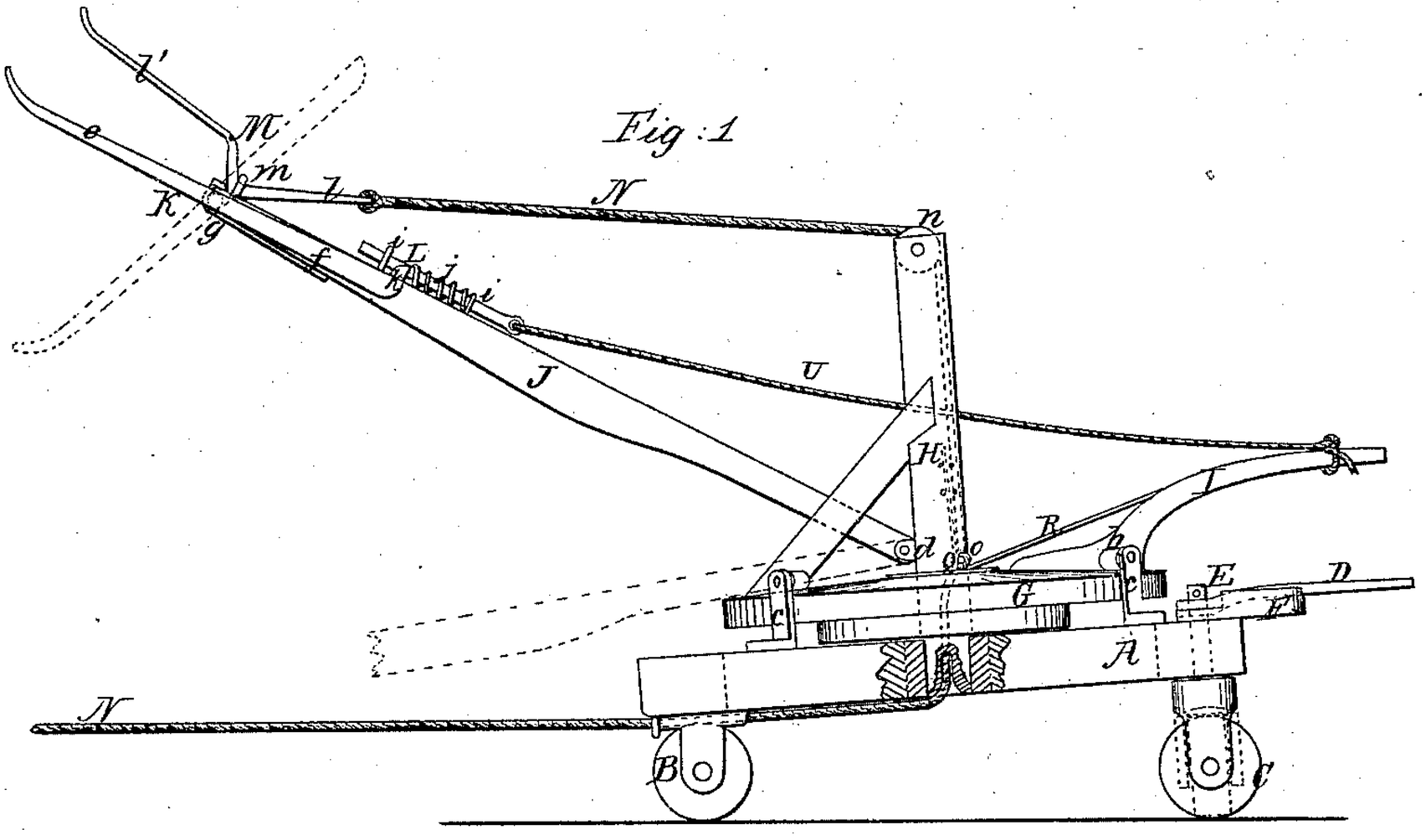
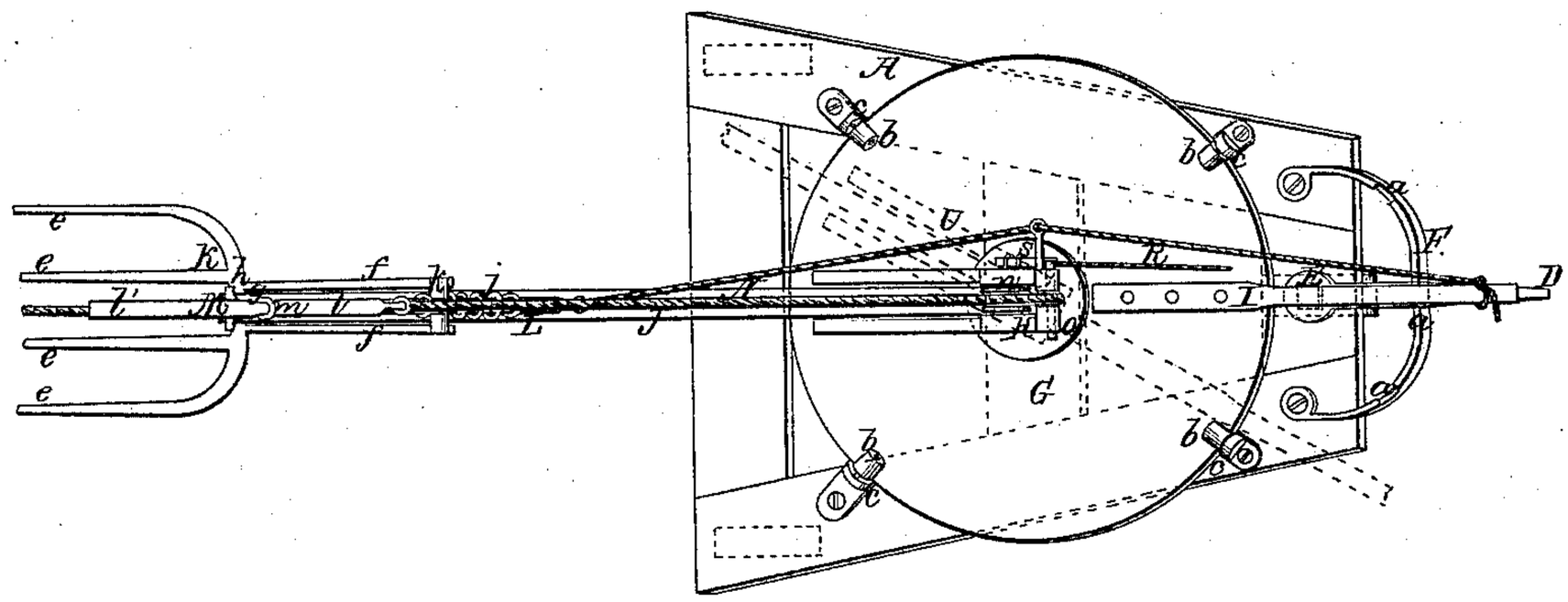


Fig: 2.



Witnesses;
Henry Morris
A. L. Topliff

Inventor;
S. Ross Higgins
per Munn & Co
Attorneys

UNITED STATES PATENT OFFICE.

S. ROSS HIGGINS, OF PARMA, MICHIGAN.

IMPROVEMENT IN MACHINES FOR LOADING HAY.

Specification forming part of Letters Patent No. **45,826**, dated January 10, 1865.

To all whom it may concern:

Be it known that I, S. ROSS HIGGINS, of Parma, in the county of Jackson and State of Michigan, have invented a new and Improved Machine for Loading Hay; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a side view of my invention; Fig. 2, a plan or top view of the same.

Similar letters of reference indicate like parts.

This invention relates to a new and improved machine for loading hay on wagons from cocks or windrows on the field; and it consists in applying an adjustable fork to a turn-table placed on a mounted frame and provided with a guard and connected with the draft-animal in such a manner that the machine may be drawn from place to place with facility, the fork lowered and adjusted to its work, and then raised with its load over the wagon and the former discharged into the latter. The labor is performed by a draft-animal, the attendant simply guiding or manipulating the parts during the loading operation.

A represents a framing, the front part of which is supported by two wheels, B B, and the back part by a caster-wheel, C, having a lever, *d*, at the upper end of its standard E, above the framing A, for the convenience of turning it. The lever D projects over a semicircular bar, F, attached to the back part of the framing A, said bar being notched, as shown at *a*, to hold the lever, and consequently the caster-wheel C, in different positions, for the purpose hereinafter explained.

On the framing A there is placed a turn-table, G, having an upright shaft, H, passing centrally through it. The lower end of the shaft H is stepped in the framing A, and the turn-table is retained in proper position by friction-rollers *b*, which project over its edge and are attached to brackets *c* on the framing A.

I is an arm attached to the turn-table, said arm projecting beyond the rear end of the framing A; and J is a bar the inner end of which is attached by a joint, *d*, to the lower part of the shaft H, just above the turn-table, said joint allowing the bar J to rise and fall.

K is a fork having any suitable number of tines, *e*, and provided with two tangs or shanks, *f f*, which extend backward, one at each side of the bar J. This fork is attached to the bar J by means of a metal strap, *g*, which passes around the head *h* of the tines and admits of the fork swinging freely on the outer end of the bar. The tangs or shanks *f f* are sufficiently heavy to overbalance and keep the tines upward.

L is a bolt or latch formed of a rod fitted in guides *i i* on the upper surface of the bar J, and having a spiral spring, *j*, upon it. The front part of the bolt or latch is provided with a cross-head, *k*, which the spring *j* has a tendency to keep over the back ends of the tangs or shanks, and thereby hold the fork K upward when its load is upon it, the back ends of the tangs or shanks, as well as the upper surface of the cross-head *k*, being beveled in order that the tangs or shanks may, when they descend, engage themselves with the bolt or latch.

M represents a guard, which is constructed of a metal bar bent so as to have its back part, *l*, quite close to the bar J. The other part, *l'*, extends upward and then outward above the fork, as shown clearly in Fig. 1. This guard M is attached to the bar J by means of a staple, *m*, which forms a joint near the angle of its bend.

To the end of the part *l* of the guard M there is attached a rope, N, which passes back over a pulley, *n*, on the top of shaft H, and downward at the back of said shaft through the turn-table G and lower end of shaft H, and thence forward in front of the machine. The draft-animal is attached to the front end of this rope, and at the lower part of the rear of the shaft H there is a notch or recess, *o*, to receive a bar, Q, attached to rope N.

R is a rope, which is attached to the lower end of a spring, S, at one side of the shaft H, the bar Q being sufficiently long to extend past this spring when in the notch *o*. The inner end of the bolt L has a rope, U, connected to it, and the ends of both ropes U R are attached to the arm I.

The operation is as follows: The horse or other draft-animal is attached to the front end of the rope N, and the attendant is at the

rear of the machine, the reins being in his left hand and his right hand on the lever D, by which the caster-wheel C is turned and the machine guided. The machine is drawn along with the bar J down and the fork K resting on the ground, the fork passing into the bottom of the cock toward which the machine was guided by the attendant. The latter now turns the lever D so that the caster-wheel C will be brought around at right angles with the machine, thereby arresting the movement of the latter, the horse being stopped by the attendant. This position of the caster-wheel serves to anchor the machine, and the horse being again started the bar J and fork K are raised until the bar Q of rope N enters the notch or recess in the rear of the shaft H, said bar holding the fork and its load in an elevated position and the guard M holding the hay on the fork. The attendant now turns the turn-table G and brings the loaded fork over the wagon to be loaded, or brings the elevated fork in such a position that the wagon may be driven under it, and when the loaded fork is over the desired spot the rope U is pulled and the bolt L drawn, which releases the tangs or shanks *f f* and allows the fork to tilt and discharge its load. The fork then returns and is locked in its proper position by the gravity of the tangs or shanks *f f*, and the machine is then drawn to another cock, the bar J and fork K being lowered by pulling the rope R, so as to draw the bar Q out from the notch *o*.

By this machine hay may, after being raked into cocks or windrows, be readily loaded upon wagons, and with a great saving of time and labor.

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

1. The turn-table G, placed on a mounted framing, A, and having a fork-bar, J, connected to it, to be operated by means of a rope, N, under the action of the draft-animal, substantially as and for the purpose set forth.

2. The guard M, with its forward and rear bars, *l'* and *l*, and pivoted to the fork-bar J, in combination with the pivoted fork K and the rope N, by tension on which the guard is pressed down upon the hay, the whole arranged substantially as and for the purpose described.

3. The caster-wheel C, when used in combination with the framing A, turn-table G, fork-bar J, and fork K, for the purpose described.

4. The bar Q on the rope N, in connection with the notch *o* in the shaft H, and the rope R and spring S, for the purpose set forth.

S. ROSS HIGGINS.

Witnesses:
JOHN D. OLCOTT,
M. M. LUDLOW.