3 Sheets—Sheet 1.

C. GIBBS.

Hay Loader.

No. 55,083. Patented May 29, 1866.

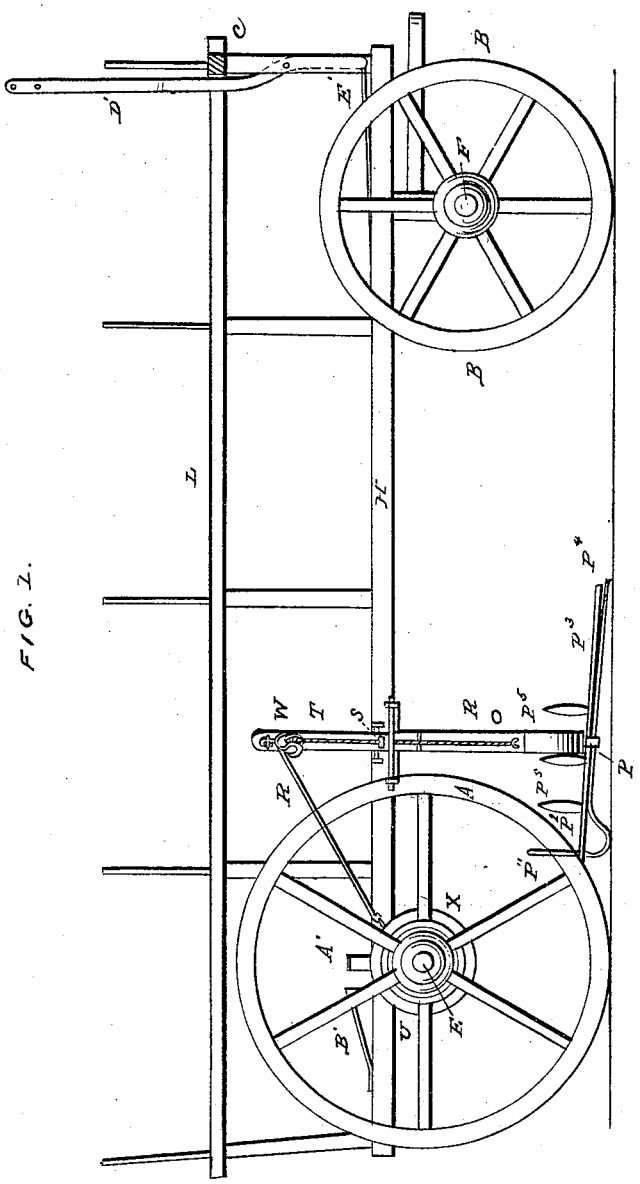

FIG. 1.

WITNESSES:

J. W. B. Covington

L. Topliff.

INVENTOR.

Chas. Gibbs

Per Munn & Co

Attorneys

3 Sheets—Sheet 2.

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Hay Loader.

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FIG. 2.

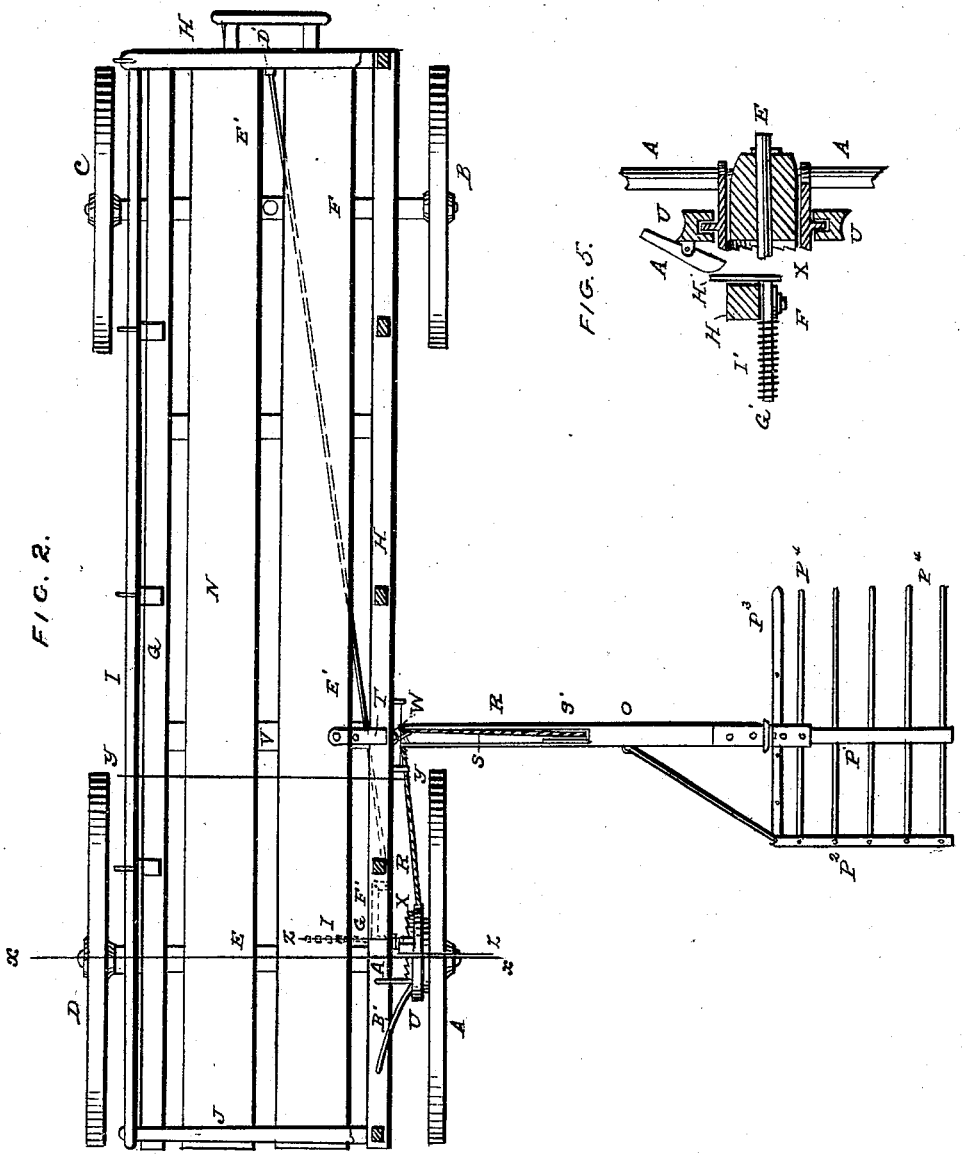

FIG. 3.

WITNESSES:

J. W. B. Covington

Topliff

INVENTOR.

Chas. Gibbs

per Munn & Co

Attorneys

3 Sheets—Sheet 3.

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Hay Loader.

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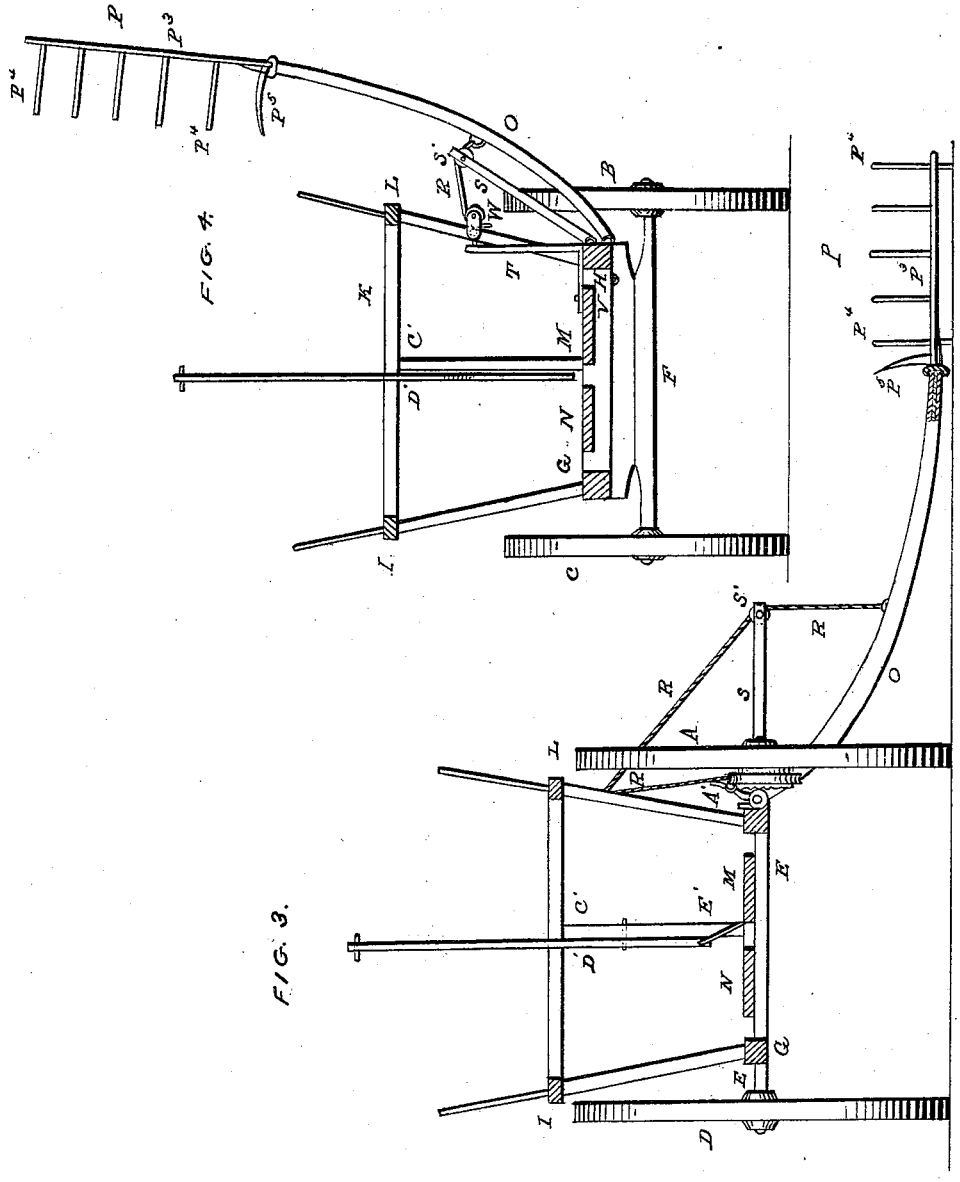

FIG. 4.

FIG. 3.

WITNESSES:

J. W. B. Pennington

E. L. Topliff.

INVENTOR.

Chas. Gibbs

per Munn & Co.

Attorneys

UNITED STATES PATENT OFFICE.

CHARLES GIBBS, OF PITTSFIELD, VERMONT.

IMPROVEMENT IN HAY-LOADERS.

Specification forming part of Letters Patent No. **55,083**, dated May 29, 1866.

To all whom it may concern:

Be it known that I, CHARLES GIBBS, of Pittsfield, Rutland county, State of Vermont, have invented a new and useful Improvement in Hay-Loaders; 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, forming part of this specification, in which—

Figure 1 is a side view of a wagon and hay frame with my improved loader attached. Fig. 2 is a top view of the same, a portion of the frame being broken away. Fig. 3 is a cross-section of the same, taken through the line *x x*, Fig. 2. Fig. 4 is a cross-section of the same, taken through the line *y y*, Fig. 2, and showing the loader elevated. Fig. 5 is a detail sectional view taken through line *z z*, Fig. 2.

Similar letters of reference indicate like parts.

My invention has for its object to furnish an apparatus by means of which the hay may be taken from the ground and deposited upon a wagon, said apparatus being attached to the side of the wagon-frame and operated by the advance of the wagon itself; and it consists, first, of a loader, in combination with the hay-frame of a wagon or cart; second, in the combination of the pulleys, arms, and rope by means of which the loader is operated with the loader and frame; third, in the combination of the pulley, ratchet-wheel, stop, spring-pin, and pawl with each other and with the wheel of the wagon or cart; and, fourth, in the combination of the levers, bars, and spring for connecting the pawl with the ratchet-wheel, the whole being constructed and arranged as hereinafter more fully described.

A, B, C, and D are the wheels, and E and F the axles, of the wagon. G and H are the sills, I, J, K, and L the top rails, and M and N the bottom boards, of the hay-frame. About the construction and arrangement of all these parts there is nothing new.

O is a curved arm or bar terminating in a T-shaped cross-head, by means of which it is pivoted to the sill H of the hay-frame. This gives a sufficient bearing to the end of the arm O to enable it to resist the side or backward pressure caused by pushing the loader forward under the hay.

To the outer end of the arm O is attached the loader P, the central bar, p', side bar, p^2, and end bar, p^3, of which are framed together, as shown in Fig. 2. The teeth p^4 of the loader pass down vertically through the side bar, p^2; then all but the two outer teeth are bent at right angles, pass through the central bar, p', and project beyond it a suitable distance, as shown in Fig. 2. The two outer teeth project down a little below the side bar, p^2, and then with a curve pass up to the plane of the other teeth, as shown in the drawings, so as to form runners for the loader to run upon while passing along the ground.

p^5 are pins projecting upward from the end bar, p^3, and slightly curved, as shown in Figs. 3 and 4, so as to allow the hay to slide readily from the loader when said loader has been raised to the position shown in Fig. 4.

The loader P is connected to the end of the arm O by a square head and socket-joint, as shown in Fig. 3, so that it may have a slight rolling and also a slight vertical movement to enable it to accommodate itself to the inequalities of the ground.

To the arm O, about half-way from the sill H to the loader P, is attached one end of a rope, R. This rope then passes over a pulley, S′, attached to the end of the arm S, thence over a pulley swiveled to the end of the upright stationary arm T, and thence to the pulley U, and should be of such a length that when the loader is in the position represented in Figs. 1, 2, and 3 it may be taut.

The arm S is pivoted to the sill H just above the point at which the arm O is pivoted, as seen in Fig. 4, so that when the loader is in the position represented in Fig. 3 the arm S may be supported by the cross-head of the arm O and be prevented from dropping any lower. The object of this arm is to change the direction of the rope R, so that it may act more directly upon the said arm O in raising the loader P.

The arm T is attached to the sill H and to the cross-bar V of the hay-frame, and to its upper end is swiveled the pulley W, by passing around which the rope R receives a proper direction for being wound upon the pulley U.

Around the hub of the wheel A is placed a ratchet-wheel, X. This wheel X is secured to the wheel A by bands passing around two or more of the spokes and bolted fast to the ratchet-wheel X, so that the ratchet-wheel may be readily removed from the wheel A when desired. The teeth of the ratchet-wheel X are formed upon its side, as shown in Fig. 3. The pulley U works loosely upon the ratchet-wheel X, and is kept in place thereon by either a flange or sleeve formed on said ratchet-wheel, as may be most convenient.

To the side of the pulley U is pivoted a pawl, A′, which, when forced down in the manner hereinafter described, takes hold of the teeth of the ratchet-wheel X, causing the pulley U, ratchet-wheel X, and wheel A to revolve together, winding the rope R around the pulley U and raising the loader P into the position shown in Fig. 4, and discharging the hay from the loader P upon the hay-frame. As soon as the hay has been discharged from the loader the upright end of the pawl A comes in contact with the stop B′, attached to the sill H, which forces the said upper end of the pawl outward, releasing the pulley from the ratchet-wheel. The weight of the loader now causes it to descend, drawing the pulley U and pawl A′ back into their former position.

To the central upright stake, C′, of the forward end of the hay-frame is pivoted an upright lever, D′, the upper end of which extends so far upward that it can be reached and operated even when the frame is loaded with hay. To the lower end of this lever D′ is attached a rod or bar, E′, extending back obliquely to the rear axle, E, as shown in Fig. 2, where it is attached to one arm of the bent lever F′. The other arm of this lever F is pivoted to a slide-bar, G′, as seen in Fig. 2. This bar or pin G′ slides back and forth in a support attached to the sill H of the hay-frame, and has an arm, H′, attached to its projecting end, which, as the said pin G′ is pushed forward, strikes against the lower end of the pawl A, forcing the pawl forward against the teeth of the ratchet-wheel X, and operates the loader, as before described. When the upper end of the lever D′ is drawn back its lower end swings forward. This draws the rod E′ forward and operates the bent lever F′, forcing the pin G′ forward against the pawl A′, as before described. As soon as the lever D′ is released the pin G′ is drawn away from the pawl A′ by the coiled-wire spring I′, one end of which is attached to the rear end of the said pin G′ and the other end presses against the support in which the pin G′ slides.

I claim as new and desire to secure by Letters Patent—

1. The loader P, constructed substantially as described, in combination with the hay-frame of a wagon or cart, for the purpose set forth.

2. The combination and arrangement of the pulleys S, W, and U, the arms O, S, and T, and the rope R with each other and with the hay-frame, substantially as described, and for the purpose set forth.

3. The combination of the pulley U, ratchet-wheel X, stop B′, spring-pin G′, and pawl A′ with each other and with the wheel of the wagon or cart, substantially as described, and for the purpose set forth.

4. The combination of the levers D′ and F′, the bar E′, pin G′, and spring I′ with each other and with the pawl A′ and hay-frame, substantially as described, and for the purpose set forth.

The above specification of my invention signed by me this 8th day of February, 1866.

CHARLES GIBBS.

Witnesses:
M. M. LIVINGSTON,
JAMES T. GRAHAM.