WILLIAM H. POWERS.

Improvement in Lumber Racks.

No. 127,921. Patented June 11, 1872.

Fig. 1.

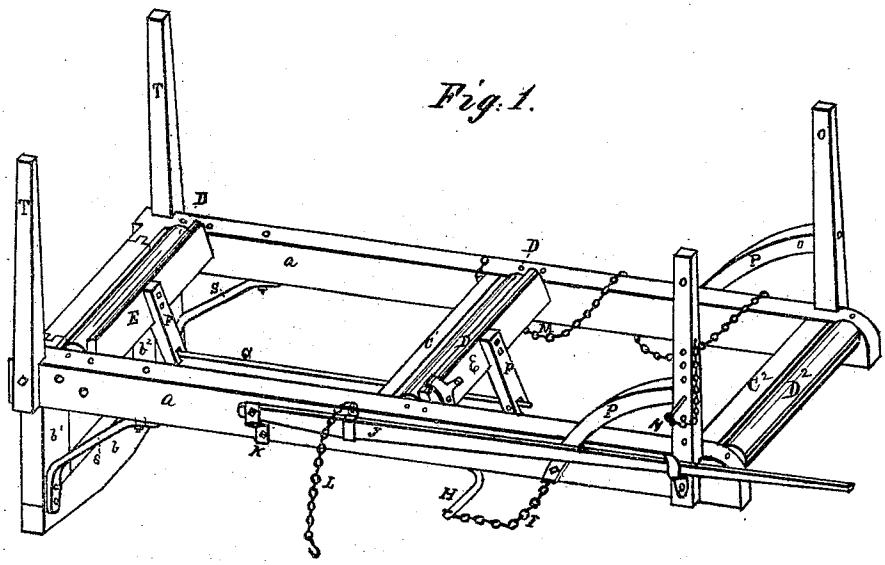


Fig. 2.

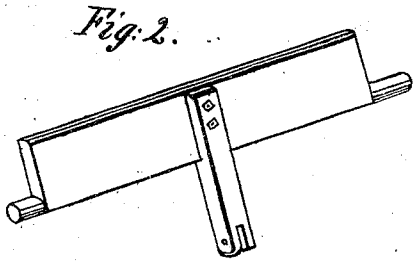
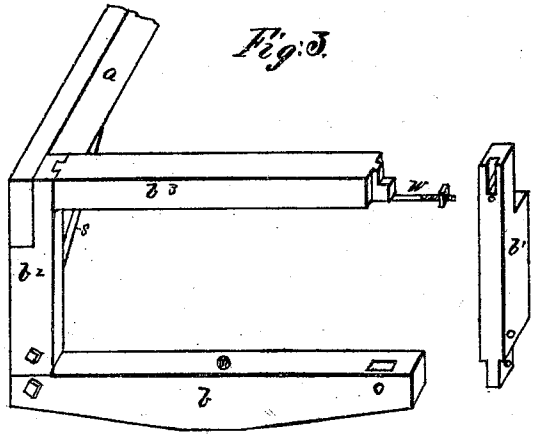


Fig. 3.



Witnesses

Charles H. Scribner

Elijah Hanny

Inventor

William H. Powers

UNITED STATES PATENT OFFICE.

WILLIAM H. POWERS, OF GRAND RAPIDS, MICHIGAN.

IMPROVEMENT IN LUMBER-RACKS.

Specification forming part of Letters Patent No. 127,921, dated June 11, 1872.

To all whom it may concern:

Be it known that I, WILLIAM H. POWERS, of the city of Grand Rapids, in the county of Kent and State of Michigan, have invented new and useful Improvements in Lumber-Racks, for the purpose of facilitating the unloading of lumber from wagons; and also providing a rack which can be used as well for conveying wood or lath, without any alteration; and I do hereby declare that the following is a full and exact, as near as may be, description thereof, reference being made to the drawing accompanying this, as indicated by letters thereon, viz.:

Figure 1 is a perspective view of my improved lumber-rack complete. Fig. 2 is a view of one of the oscillating supports. Fig. 3 is a sectional view of the bolster-frame, with one post removed to show position of tenons and mortises.

My invention has for its object to furnish a lumber-rack so constructed and arranged that the load of lumber can be more conveniently and expeditiously loaded and unloaded, and at the same time modifying and lessening the parts, so that they are more easily constructed and managed and much lighter than other self-unloading lumber-racks are; and at the same time my rack is adapted for most all of the uses for which a lumber-dealer would require for conveying slabs or lath, &c. And it consists in the combination of the frame and rollers on an inclination of about fifteen degrees from the front to the rear of wagon, with the oscillating supports, binder, and binder-chains; the whole being constructed and arranged as hereinafter more fully described.

In the following description the dimensions given may be varied, according to the circumstances and purposes for which the rack may be constructed.

The frame of the rack consists of the two side pieces *a a*, and the bolster-frame *b*, and the cross-girts *c*, which frame, when placed upon the wagon, forms the bed of the rack, which is on an inclined plane at an angle of about fifteen degrees from front to rear end. The side pieces *a* and *a* are each eleven feet long, and three inches in thickness, and eight inches in width, and said rack-frame, when together, is three feet six inches in width. The bolster-frame *b* is composed of four pieces of hard wood tenoned together and attached to the rack sides *a*, as shown in Fig. 3, and which frame measures in the extreme two feet six inches by three feet six inches, and three inches thick. The rack sides are secured in place on said bolster-frame *b* by means of a three-quarter inch iron bolt, which passes through the sides and the bolster-frame immediately beneath, and under the cap thereof; the uprights or posts b^1 and b^2 are secured to *b* by means of the bolts which pass through and attach the iron braces *s*, as shown in Fig. 3. The cross-girts C are each made with a square tenon on each end and in the center, which are two inches long, and which are fitted into mortises in the rack sides. Girt C^1 is placed in the center of the rack, and girt C^2 is placed within eight inches of the rear end of the rack. These cross-girts are secured and fastened in place by means of three iron bolts three-quarters of an inch in diameter, which run through and across the rack, one in front of and at the center of the cross-girt C^1, and the others, one in front of and near the top edge, the other behind and near the lower edge of the rear girt C^2, which last-mentioned bolt also passes through and secures to the rack the rear stakes O hereafter described. In use, the bolster-frame *b* and the cross-girt C^2 take the places of the front and rear bolsters on ordinary wagons. D represents the rollers, which are made of hard wood, five inches in diameter, with round tenons or gudgeons at each end, two inches in diameter and two and one-half inches long, which gudgeons are fitted into sockets or holes made in the rack sides, in which they revolve when discharging the load from the rack. These rollers are three in number, located in said rack-frame, one near each end and the other in the middle thereof, and all in line, one with the other. E represents the oscillating supports, which are provided for the purpose of sustaining the load from resting on the rollers D and D^1 while in the act of transportation, and which are made of hard wood, two inches in thickness and six inches wide, with round tenons or gudgeons, two inches in diameter and two and one-half inches long, on each end at or near one edge, and the other or top edge is rounded off, all as shown in Fig. 3. These oscillating supports are hung by the tenons or gudgeons on the lower edge at each end, which are fitted into sockets or holes in the rack sides so as to revolve easily, and said holes or sockets are made at such a point behind or back of the rollers D and D^1 so that when in use they

will incline toward and lie against the said rollers, and at the same time, when in said position, the upper edge of said supports must be fully above the line of the top of the rollers D and D^1, so that when the rack is loaded the lumber will lie upon the said supports and the rear roller D^2, and will be entirely free and above the rollers. F represents the arms, made of hard wood, one and one-half inch by two and one-half inches, and eighteen inches long, which are provided with a slot one-half inch wide and two inches deep, in the lower end of each. These arms are bolted one onto the center of each of the supports E, with the lower end of the arm projecting down beneath the supports so as to receive the iron connecting-rod G, which is connected to each of the said arms by a pin or bolt in the slots at the lower end thereof. By this connection both of the said oscillating supports are operated together and in unison. H represents a crank, made of one inch round iron, flattened or bent at the upper or connecting end, and which is attached by hooking over the upper edge and by a bolt passing through the support E at or near the side of the rack, and by which crank the oscillating supports are worked in discharging the load, and by means of which they are held in position while the load is being placed upon the rack, as hereafter more fully described. I is a chain and hook, which is permanently attached to the rack side *a* on the under edge thereof, and which chain and hook are used to fasten back the crank H while the load is being placed upon the rack. J is the binder, made of tough, hard wood, one and one-half inch thick and three and one-half inches wide at the bulge, which is about fifteen inches from one end, and tapering gradually from that point to two inches at the shorter end and one inch at the longer end, and said binder should be nine feet long. K is the fulcrum, to which the lever or binder J is pivoted, and which is bolted onto the side of the rack at a point about eighteen inches from the center girt toward the front of the rack. L is an iron clasp, with chain and grab-hook attached, through which the lever is inserted as far as the bulge and there fastened by means of two small iron screws, one on either side of the clasp on the under side of the said lever. The chain, to end of which is attached the grab-hook, should be about eighteen inches long. M is another chain, attached to the opposite side of the rack at the center thereof, which chain should be about ten feet long, and is used in binding the load, as hereinafter more fully explained. N is a pin, which is attached to the rear stake O by means of a small chain and staple, and is used to secure or fasten the binder J, when the load is bound, by inserting in one of the holes provided in the stake O immediately over the binder. P represents the segment or arched braces, made of bent wood or iron, describing a circle enough larger than that of the hind wheels to the wagon so that when wood or lath are loaded across and on the rack it cannot come in contact with the said wheels. These braces, if of wood, are secured and fastened to the rack sides by means of two screw-bolts, and to the stakes by means of a short tenon fitted into a mortise in the said stake and fastened there by means of a joint-bolt passing through the stakes and into the braces, as shown in Fig. 1. The rear stakes O are secured and fastened to the rack sides by the bolt which ties the rear end of the rack-frame together, as heretofore described. T represents the front stakes, which are secured and fastened in a similar manner as the rear stakes. These stakes should be notched or gained onto the sides of the rack sufficiently to make the distance between them at least one-half an inch less than the distance between the rear stakes, so as to allow the load to run off without cramping in passing between the rear stakes.

In operating this rack, before commencing to load the chain I should be hooked onto the crank H, so as to avoid any sudden start of the wagon from starting the load off from the rack. When the load is on, pass the chain M over the load, raise the lever J, and connect the grab-hook on the chain L with the chain M, taking up all the slack; now apply the weight of the operator to the extreme end of the binder, then place the pin N in one of the holes in the stake O nearest to and over or above the lever; this will secure and hold the binder until the load is ready to be discharged; now loosen the chain I which holds the crank H, and the load is ready for transportation. In case the load is inclined to slide or move back, the supports E will move with it, and consequently tighten the binder chains, because the supports will continue to raise the load against the said chains until they have moved back far enough to have passed a line which would be at right angles with the edge of the rack, at the center of the gudgeons or tenons on which the said supports are hung. To unload this rack, remove the binder-pin, disconnect the chains L and M, then by moving the crank H toward the front of the wagon the load is given a start backward by the movement of the supports E, which drop back out of the way, and leaving the load upon the rollers free to run off from the rear of the rack.

What I claim as new and novel in this rack is the oscillating supports E, connected as shown in drawing, or separately.

What I want to secure by Letters Patent is—

The oscillating supports, connected or separately, in combination with the crank H, binder J, fulcrum K, pin N, and chains L, M, and I, on lumber-racks, with rollers in frame on an inclined plane, for the purposes substantially as hereinbefore described.

WILLIAM H. POWERS.

Witnesses:
CHARLES H. SCRIBNER,
ELIJAH HANEY.