

M. A. DILLEY.

Improvement in Hay-Binders.

No. 131,509.

Patented Sep. 24, 1872.

Fig 1.

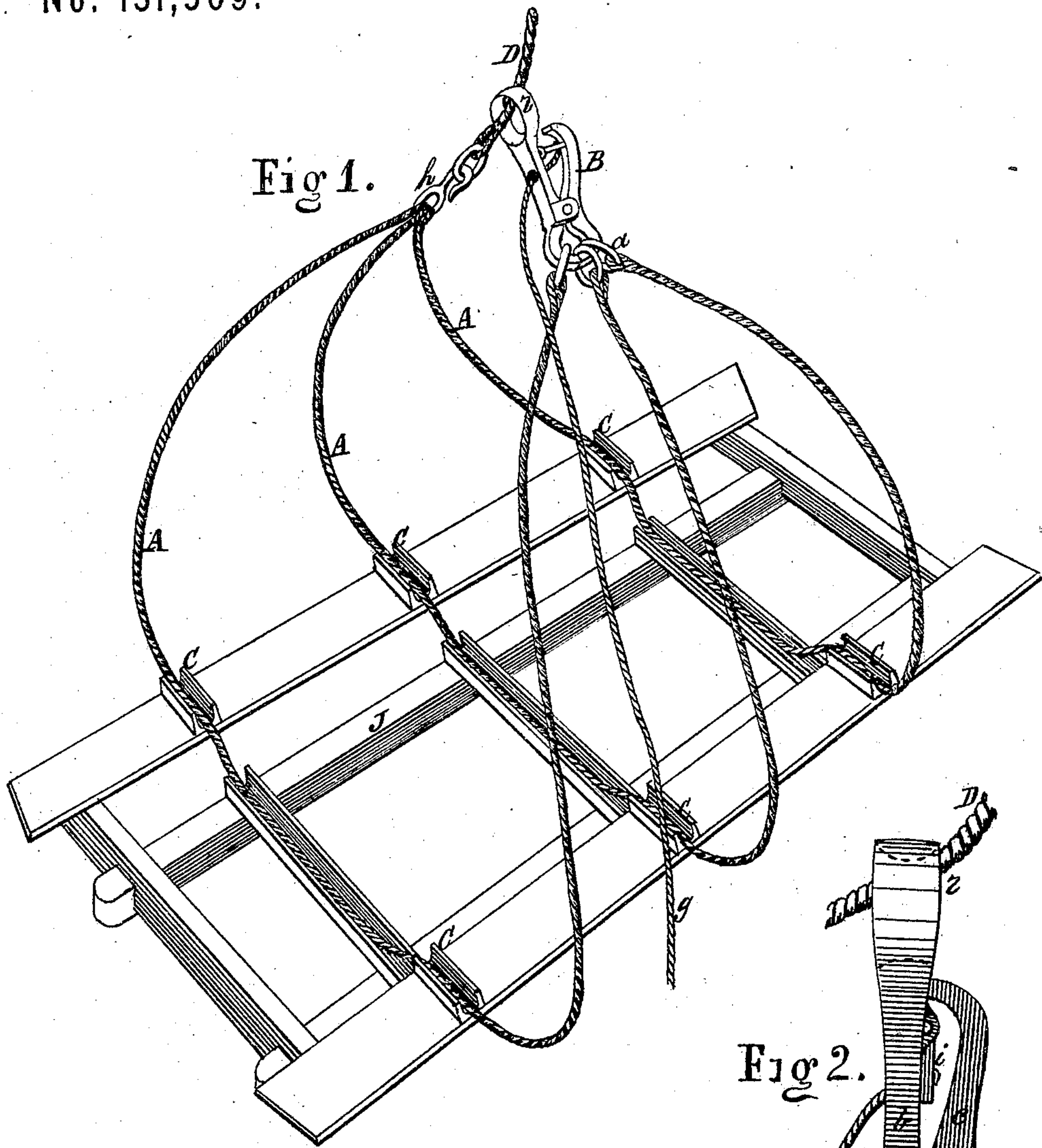
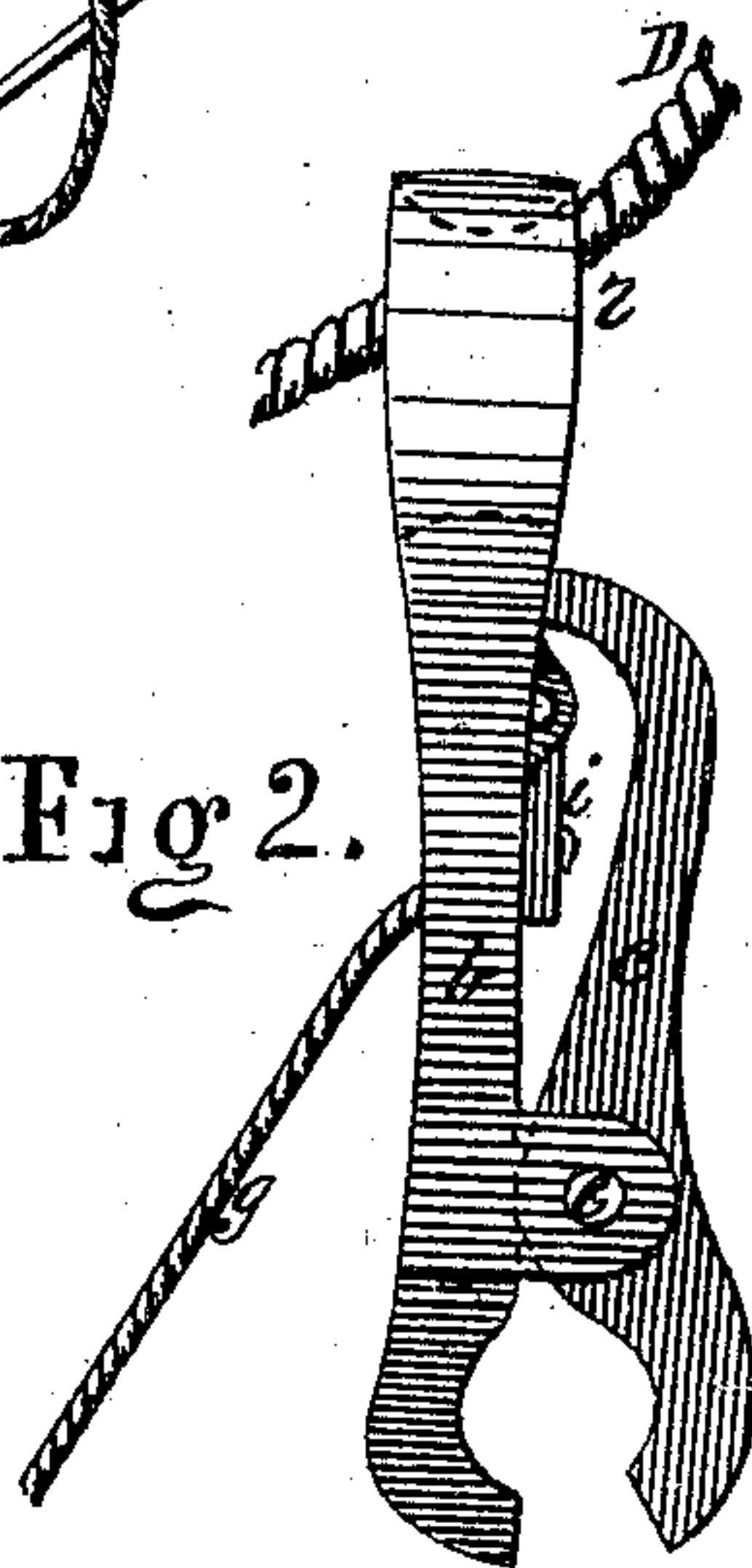


Fig 2.



WITNESSES:

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UNITED STATES PATENT OFFICE.

MARTIN A. DILLEY, OF LE ROY, KANSAS.

IMPROVEMENT IN HAY-BINDERS.

Specification forming part of Letters Patent No. 131,509, dated September 24, 1872.

To all whom it may concern:

Be it known that I, MARTIN A. DILLEY, of Le Roy, in the county of Coffey and State of Kansas, have invented certain improvements in apparatus for binding, elevating, and discharging, at one operation, an entire load of hay, grain in the sheaf, or of other analogous material, and the following is a specification thereof.

My invention relates to the combination of a set of connected ropes (by which the entire load is slung and bound) with a ring-stock caliper having tripping attachments, and with the hoisting-tackle, said ropes being either spread across the wagon-rack before loading, or are inserted through open transverse channels under the load when it arrives at the place of discharge, said channels being formed in the rack itself. The object of my invention is to enable farmers to house or stack their fodder and cereals with great expedition by means of a simple and compact apparatus for unloading in mass; that will be readily applied to the load and hitched to and discharged from the tackle; that will bind large and small loads with equal compactness, hold them securely in suspension while being elevated, and without injuriously jamming or cramping the tripping device; all of which will hereinafter be more fully explained.

In the accompanying drawing, Figure 1 represents, in perspective, a wagon-rack and unloading apparatus embodying my invention; and Fig. 2 is an enlarged side elevation of the ring-stock calipers as opened to discharge the load.

The slinging and binding ropes are shown at A A A, as though encircling the load, and ranged to support and bind its whole extent, the outer ropes being proportionally longer than the middle one, to enable them all to converge toward the center of the load on top. These ropes may consist of any desired number to the set, and some products, as cereals, may require two sets of ropes—one set binding transversely and the other longitudinally. The ends of the ropes that pass around one side of the load are all attached to a single hook-ring, *h*, by eye-splices, the opposite ends being left free and ringed, as at *a*, provided said ends are to be inserted under the load through the channels C C, &c., in the wagon-

rack J, at the place of unloading; but should the rack not be furnished with such facilities to pass the ropes under the load, then the ends on both sides of the load may be united to single rings and the ropes spread evenly over the rack before the load is put on. In this latter case every wagon in use to hurry in the crop must have a separate set of these ropes; but in the former but one set at the place of housing or stacking is needed. It is equally difficult and unimportant to describe the various ways in which the open channels C C, &c., may be formed, because wagon-racks differ so much in construction; but two strips of board, fastened edgewise at a proper distance apart and at suitable points across the side-boards or cross-bars, will form good enough channels to pass the ropes through (by hand or otherwise) between the rack and the load. B indicates the ring-stock caliper, its details being more clearly shown in Fig. 2. It is so called from its general resemblance to a pair of calipers, and consists in part of the main stock *b*, having a bowed termination at one end and a ring, *r*, formed on it at the other, said ring being sufficiently large to permit the hoisting-rope D, with the hitching-hook, ring *h*, and gathered ends of the sling-ropes to run freely through it; hence its inner edge should be smooth, and shaped to prevent fraying. A lever-bar, *c*, bowed at one end, similarly to the stock *b*, is pivoted to said stock at *e*, as shown, or in any other suitable way, and a set-bar, *i*, furnished with a tripping-cord, *g*, is hinged to said stock in such manner that when the free end of the set-bar is swung and pressed against the lever *c* it will jam the bowed ends together. The elevating-rope D passes upward through a pulley-block hung overhead in the barn, or in a derrick or shears where stacking, and connects near the ground with any suitable mechanical device for hoisting, such as a capstan or gear-winch, to be operated by horse or other power; but as these form no part of my invention I do not deem it necessary to illustrate or further describe them, as they are devices in common use.

The slinging and binding ropes being under the load, as described, are carried up over it, and the rope D being slacked back, its end ring or hook is passed through the ring of the caliper-stock and hitched to the ring connect-

ing the ends of the sling-ropes on one side, as at *h*. The ring or rings of the ropes on the opposite side are now inserted and strung within the open caliper-bows, the ends of which are then closed tightly together by jamming the trip-bar *i* snugly (as shown) against the end of the bow-lever *c*. The ring *r* now acts as a noose, and the harder the rope *D* draws the tighter the load is bound. The action of the tackle will not elevate the load from its place until it is snugly bound by the sling-ropes *A*; and when it is elevated, or elevated and conveyed over the desired place of discharge, the trip-bar *i* is swung back by pulling the cord *g*, and the load pressure on the rings *a a*, &c., acting on the slightly-sloping ends of the bows, forces them open, liberates the rings, and the load is dropped.

In my arrangement, should the slings happen to be too long for a small load, they will yet bind compactly, as the surplus length will be run through the noose-ring of the calipers, the bows of said calipers (whatever general form may be given to them) being so shaped near the abutting ends, where the pressure of

the rings *a a*, &c., is sustained, that such pressure will not tend materially to force the bows apart and unnecessarily jam the trip-bar *i*, but will be just enough to cause the rings to open the bows and liberate themselves when said trip is sprung, as aforesaid, by the pulling of the cord *g*.

I claim as my invention—

1. The channels *U U U* in the wagon-rack for the passage of the slinging and binding ropes underneath the load at or near the place of discharge, substantially as described.

2. The combination of the calipers *B*, constructed substantially as described, with the slinging and binding ropes and hoisting-tackle rope, substantially as described.

3. The combination of the channeled rack *J C*, ropes *A A D*, and calipers *B*, all constructed and operating substantially as described.

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Witnesses:

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