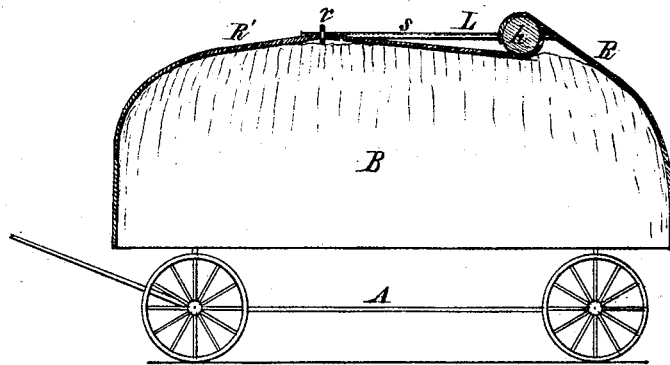


*A. R. Clark,*  
*Hay Binder.*

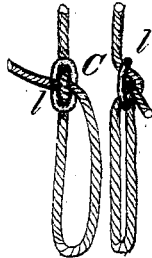
*No. 109,176.*

*Patented Nov. 15, 1870.*

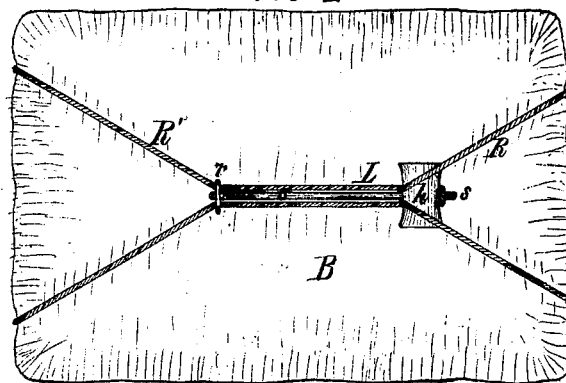
*Fig 1*



*Fig 3*



*Fig 2*



*Fig 4*



*N. B. Smith*  
*C. M. Smith*

*Witnesses*

*A. R. Clark*

*Inventor*

# United States Patent Office.

AUGUSTUS R. CLARK, OF ONONDAGA, NEW YORK.

Letters Patent No. 109,176, dated November 15, 1870.

## IMPROVEMENT IN HAY-BINDERS.

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

*To all whom it may concern:*

Be it known that I, AUGUSTUS R. CLARK, of the town of Onondaga, (Onondaga Valley Post Office), in the county of Onondaga and State of New York, have invented a certain new and improved Hay-Binder; and I do hereby declare that the following is a full, clear, and exact description of the construction of the same and the form thereof when complete and ready for use, reference being had to the annexed drawing forming a part of this specification, in which—

Figure 1 represents a sectional view of a loaded wagon with the binder in position.

Figure 2 represents a top plan view.

Figure 3 represents a loop-link knot, which is sometimes useful in connection with the binder.

Figure 4 shows the metal link used in said link-knots, connected with a staple to fasten the same to the hay-rack when required.

A shows the running-gears of a wagon.

B, the load.

R R' show two ropes with the ends fastened to the hay-rack, either by tying in any ordinary way or using the link and staple shown in fig. 4.

The ropes R R' have to be adjusted for each load, and brought up at a distance of about twelve to twenty inches of each other on the top of the load B.

To do this effectually and speedily I use the link-loop knot C shown in fig. 3, in which the slightly-bent link *l* is made of metal with an opening lengthwise a little larger than the rope used, so that when the rope is pressed into the link from the rounded side of the link *l* an opening will readily be formed for the other loose end of the rope to pass through, and then, when the rope is drawn by the loop thus formed, the loose end becomes thoroughly fastened at the link *l*, as shown in the drawing, fig. 3.

The two loop-ends of the ropes R R', being thus adjusted and brought up to the top of the load, I apply the binding-lever L, which has a head, *h*, about four to six inches in diameter and about eight inches

long, (more or less), and it is better to be made concave, as shown in fig. 2.

Through this head passes the lever-handle S, which should be of hard wood, and about three or four feet in length and about two inches (more or less) in diameter.

The handle S passes through the head *h* far enough to permit a small groove to secure the rope, although this is not absolutely essential, and I also consider it better to have a like groove to hold the ring *r* at or near the other end of the handle S.

The binding-lever L is then applied by passing the head *h* through the loop of the rope R, at or near the top of the load, and catching the other loop of the rope R' upon the extended end of the handle, upon which rope R' is also the ring *r*, and, when thus caught, the loop of the rope R' becomes a lever-support, and by bringing over the handle S to the ring *r*, the same may be fastened by slipping the ring *r* on the handle *h*, or the handle *h* may be extended first through loop of rope R' from the bottom and then through the loop of rope R, and thereby the leverage greatly increased.

The use of the binder is not confined to loads of hay, although that will be the most common form, but is equally applicable to any kind of load that needs to be bound down for safe carriage.

Chains may be used in place of the ropes R R'.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The binding-lever L, when applied to the ropes R R', substantially in the manner and for the purposes described.

2. The combination of the link-loop knot C, when made substantially as described, with the binding-lever L and the ropes R R', substantially as described.

A. R. CLARK.

Witnesses:

N. B. SMITH,  
C. W. SMITH.