(No Model.) 2 Sheets—Sheet 1.

A. & C. A. CHURCH.

HAY SLING.

No. 384,960. Patented June 26, 1888.

Fig. 1.

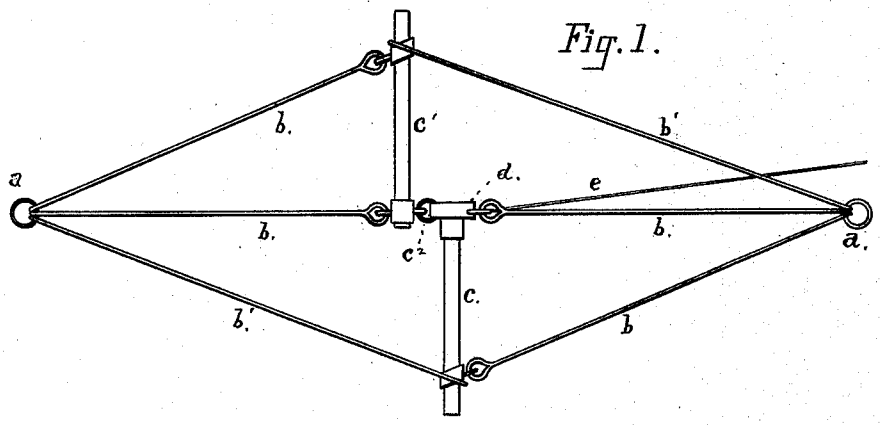
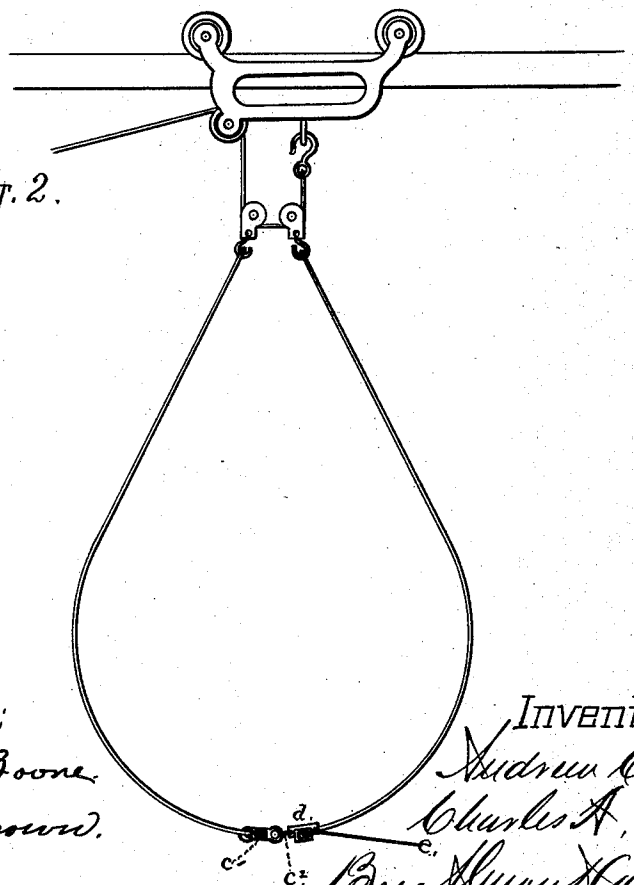


Fig. 2.



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(No Model.) 2 Sheets—Sheet 2.

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Fig. 3.

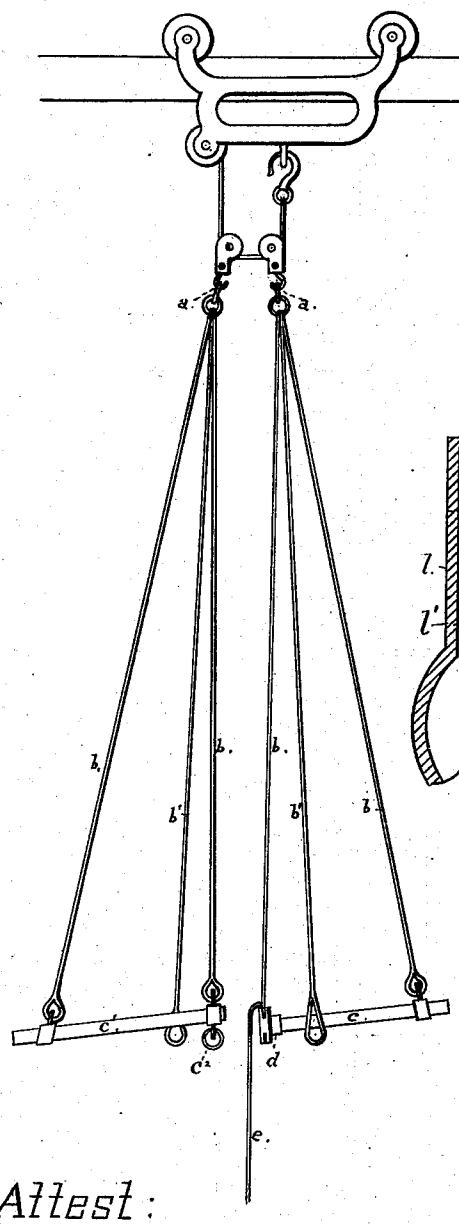


Fig. 4.

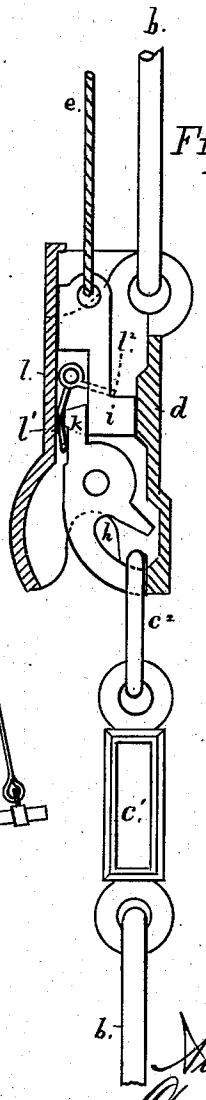
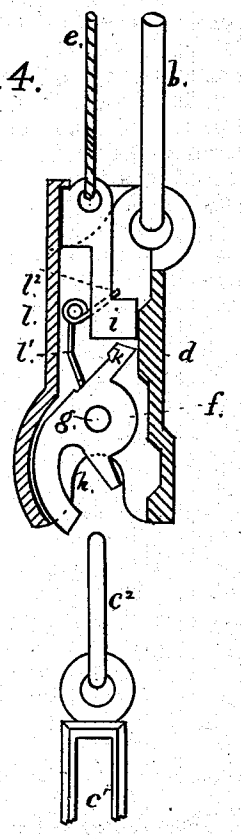


Fig. 5.



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UNITED STATES PATENT OFFICE.

ANDREW CHURCH AND CHARLES A. CHURCH, OF MORENCI, MICHIGAN.

HAY-SLING.

SPECIFICATION forming part of Letters Patent No. 384,960, dated June 26, 1888.

Application filed April 16, 1887. Serial No. 235,039. (No model.)

To all whom it may concern:

Be it known that we, ANDREW CHURCH and CHARLES A. CHURCH, citizens of the United States, residing at Morenci, Lenawee county, Michigan, have invented certain new and useful Improvements in Hay-Slings, of which the following is a specification.

Our invention relates to that class known as "sectional" hay-slings, composed of two or more ropes, parallel or converging at their ends, united by cross slats or bars. In hay-slings of this class the sling is first laid so that the ends extend beyond the ends of the wagon rack or bed. The hay or grain is piled on the sling, and the ends of the sling are then brought together above the hay, which is thus compressed into a bundle which may be readily hoisted and conveyed to any desired part of a mow or stack. In certain hay-slings of this class heretofore in use the cross-bars are entire and the ropes of the sling converge together between the two cross-bars nearest the center of the sling. These ropes are made fast at this point to a tripping device, which when operated permits the two halves of the device to fall asunder, allowing the released bundle to drop. It is found in practice that in this arrangement of cross-bars with centrally-converging ropes between them the cross-bars press into the hay, so that when the two halves of the sling are allowed to drop apart the two cross-bars nearest the center pull the bundle apart and carry with them a considerable quantity of hay, which is either scattered about or which must be pulled off from the bars.

A further disadvantage of the sling here referred to is the shortness and rigidity of the cross-bars, the length of which is of course limited somewhat by the width of the wagon bed or rack upon which the sling is used.

The objects of our invention are, first, to obviate the difficulty here pointed out, and, second, to provide a convenient and reliable trip-lock for our device. We attain these objects by means of the mechanism and arrangement of parts shown in the accompanying drawings, made part hereof, in which—

Figure 1 is a plan view of our device as laid upon a wagon bed or rack to receive its load; Fig. 2, a side elevation showing the sling suspended and as if embracing a bundle of hay; Fig. 3, same after coupling of the sections are tripped, showing sections disengaged; Fig. 4, an enlarged longitudinal section through our trip-lock, showing the same closed; and Fig. 5, same showing lock open.

Like letters represent like parts throughout the several views.

From each of the rings *a* lead two ropes, *b*, and a third rope, *b'*. Ropes *b*, at their ends opposite from the rings, are attached to one of the pieces of sectional cross-bar, and rope *b'* terminates in a loop which slips loosely over the outer end of that section of the cross-bar to which the opposite group of ropes *b* is attached. (See Fig. 1.) Section *c* of the cross-bar is provided at its inner end with a trip-lock, *d*, designed to engage an eye or ring, c^2, on the inner end of section of cross-bar *c'*, thus forming a joint which permits the cross-bar to conform somewhat to the bottom of the wagon bed or rack and permitting the cross-bar to partially embrace the sides of the load.

The locking device *d* is tripped and unlocked by means of cord *e* in the hands of the operator.

The case of lock *d* is provided with a mortise to receive the end of bar *c*.

f is a hooked bolt oscillating on pin *g*, provided with opening *h*, forming a jaw to receive the loop or ring c^2 on bar *c'*.

i is a sliding stop to which cord *e* is attached, which stop, being slipped under shoulder *k* of bolt *f*, locks the jaw *h* against the inner side of the lock-case, as in Fig. 4, preventing oscillation of the bolt *f* and escape of ring c^2. Stop *i* being withdrawn, as in Fig. 5, by a pull on cord *e*, the weight of ring c^2 and its appendages causes bolt *f* to perform part of a revolution, opening jaw *h* and releasing ring c^2.

l is a coiled spring, one arm of which, *l'*, presses against the shoulder *k* of bolt *f*, so as to tend to keep jaw *h* open constantly. The spring's other arm, l^2, engages sliding stop *i*, exerting a constant pressure thereon in the direction of bolt *f*. When ring c^2 is pushed against the back of jaw *h*, the pressure of spring-arm *l'* is overcome, jaw *h* is closed, shoulder *k* is moved so that spring-arm l^2 forces sliding stop *i* forward under shoulder *k*, catching and holding the hooked bolt in position.

When cord *e* is pulled, the reverse operation takes place. The pressure of spring-arm l^2 is overcome, sliding stop *i* is withdrawn, bolt *f* is tripped, and ring c^2 is released, the jaw standing open until the ring is again introduced.

The sling being first arranged as shown in Fig. 1, and the sections of cross-bar *c c'* being united by locking ring c^2 into lock *d* and slipping the loops of ropes *b'* over the outer ends of sectional bar *c c'*, the sling is now drawn taut around the bundle of hay to be handled and the load is suspended by rings *a* from the usual pulleys and carriage and conveyed to the point where it is desired to drop the bundle. Cord *e* is now pulled, lock *d* is tripped, as hereinbefore described, the sections of cross-bar *c c'* fall apart, the loop on the end of rope *b'* slips from its place, the two halves of the sling fly asunder, and the bundle is dropped in compact form without being torn apart and without any of the hay being carried off on the bars or scattered around, or it being necessary to pull any of the hay from the bars.

We are aware that sectional cross-bars hinged permanently together so as to form a hinged frame, through the opening of which the load may be dropped, are not new, and we do not therefore claim, broadly, a sectional cross-bar; but

What we claim as our invention, and desire to secure by Letters Patent, is—

1. In a hay-sling, a single central sectional cross-bar composed of two sections meeting centrally of the sling, in combination with a trip-lock uniting the adjacent ends of said two sections, which sections, when said lock is tripped, become disconnected and fall apart, substantially as shown and described, for the purpose specified.

2. In a hay-sling, ropes *b*, ropes *b'*, terminating in a loop, respectively, and sectional cross-bar *c c'*, in combination with a trip-lock, substantially as shown and described, for the purposes specified.

3. In a hay-sling, trip-lock *d*, provided with oscillating bolt *f*, sliding stop *i*, and spring *l*, in combination with sectional cross bar *c c'*, substantially as shown and described, for the purposes specified.

ANDREW CHURCH.
CHARLES A. CHURCH.

Witnesses:
AVERY S. HILL,
RICHARD A. HAYES.