

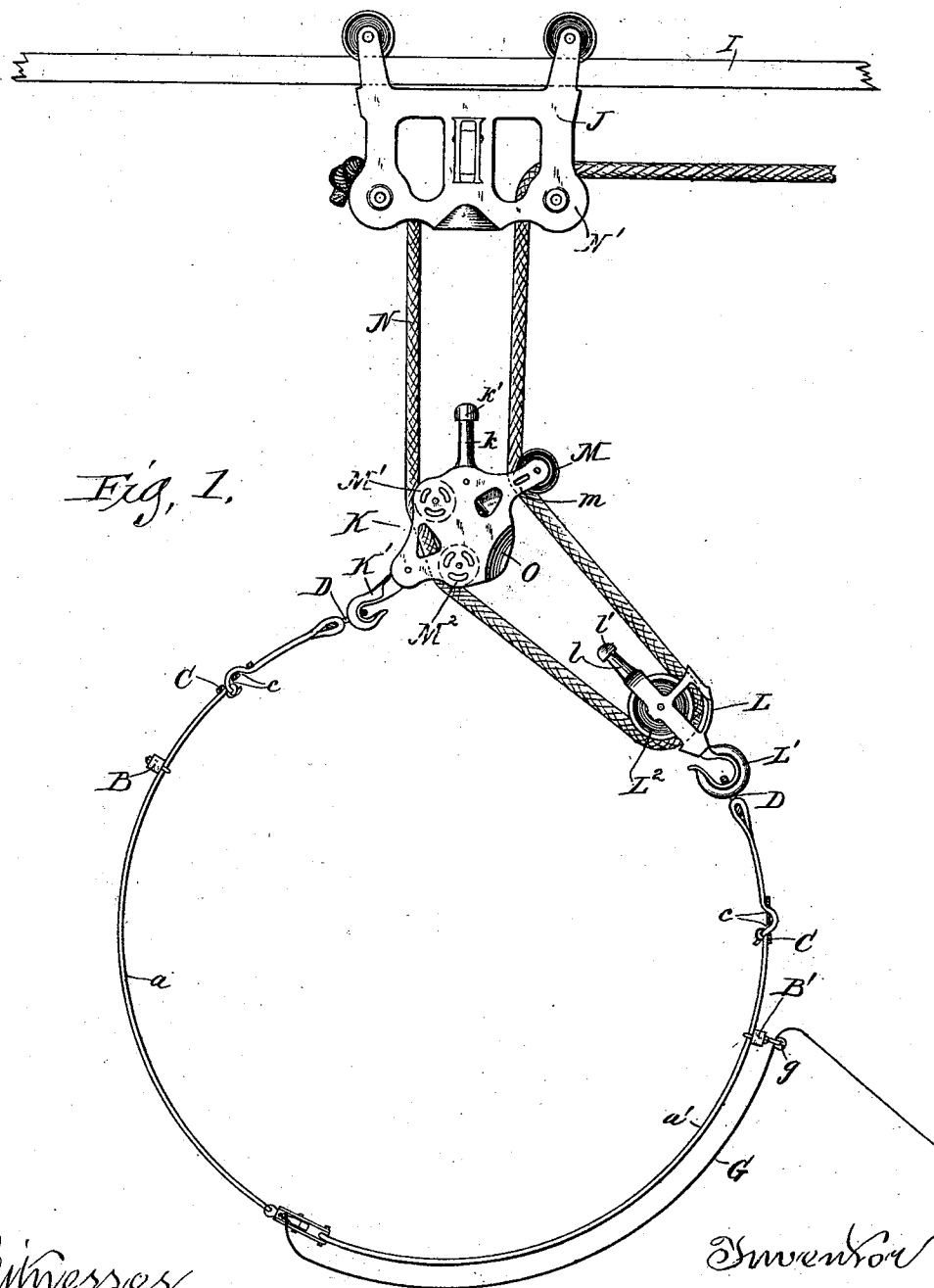
(No Model.)

3 Sheets—Sheet 1.

W. GUTENKUNST.
HAY SLING.

No. 514,710.

Patented Feb. 13, 1894.



Witnesses

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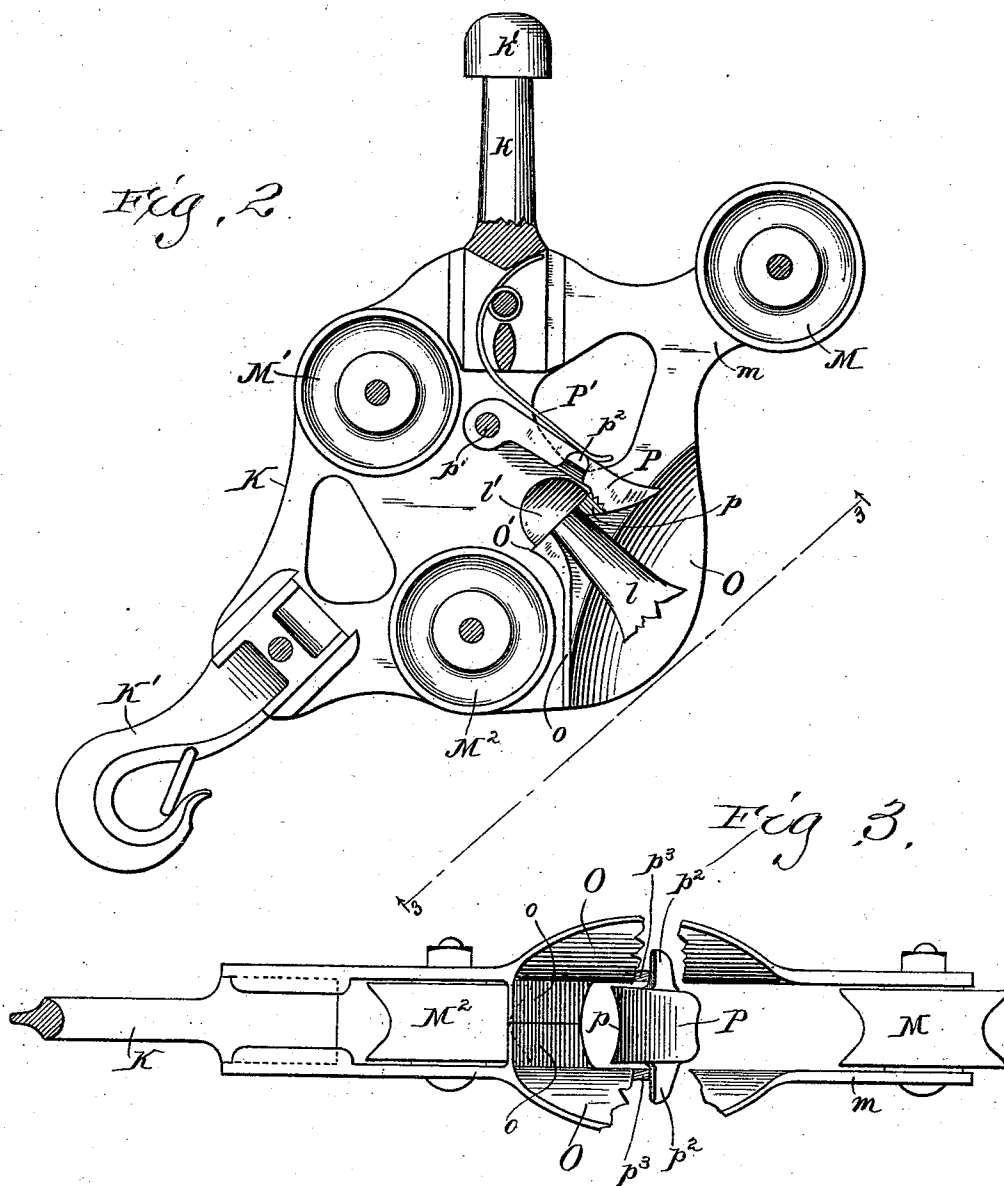
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W. GUTENKUNST.
HAY SLING.

3 Sheets—Sheet 2.

No. 514,710.

Patented Feb. 13, 1894.



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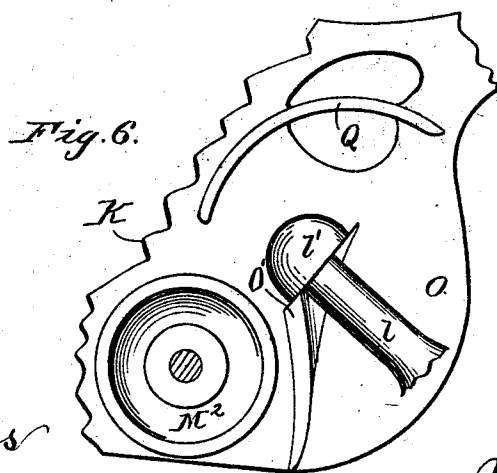
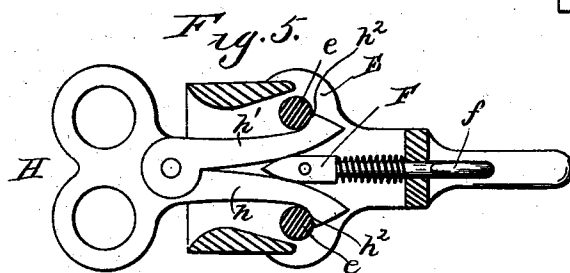
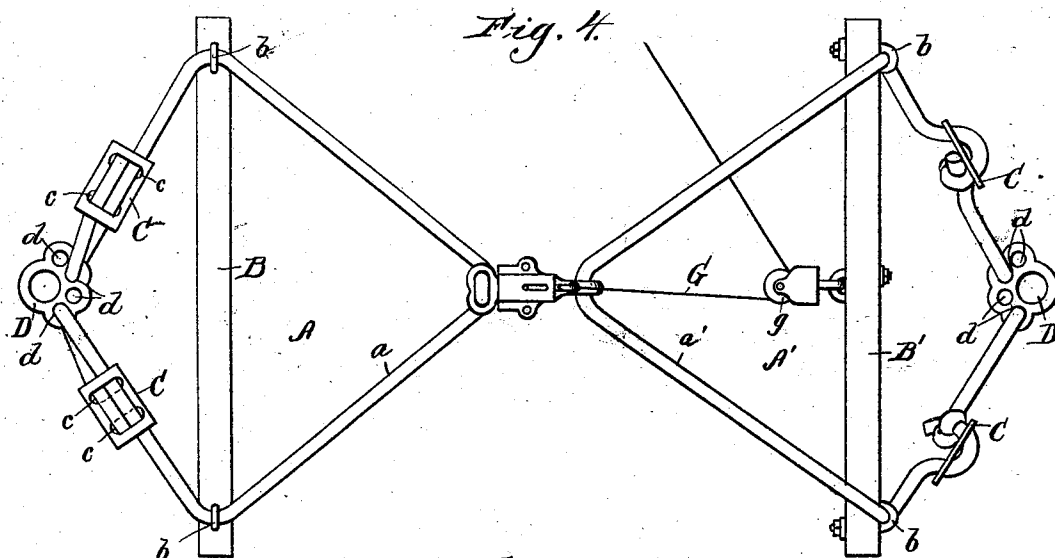
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3 Sheets—Sheet 3.

W. GUTENKUNST.
HAY SLING.

No. 514,710.

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UNITED STATES PATENT OFFICE.

WILLIAM GUTENKUNST, OF MILWAUKEE, WISCONSIN.

HAY-SLING.

SPECIFICATION forming part of Letters Patent No. 514,710, dated February 13, 1894.

Application filed May 16, 1893. Serial No. 474,468. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM GUTENKUNST, a citizen of the United States, residing at Milwaukee, county of Milwaukee, State of Wisconsin, have invented a certain new and useful Improvement in Hay-Slings; and I declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to new and useful improvements in hay slings, and consists in the matters hereinafter described and more particularly pointed out in the appended claims.

In the accompanying drawings illustrating my invention Figure 1. is a view in elevation of a hay sling constructed in accordance with my invention, and illustrates the same in the position it assumes when inclosing a bundle of hay, and in the act of compressing the same and lifting it to the carrier. Fig. 2. is a vertical sectional view of the main lifting block with its connections. Fig. 3. is a view of the same looking in the direction indicated by the arrows 3 3, of Fig. 2. Fig. 4. is a plan view of the flexible lifting frame which forms a part of my invention. Fig. 5. is a horizontal sectional view of the trip lock for securing the two parts of the flexible frame together. Fig. 6. is a detail sectional view illustrating a somewhat different form of locking device for securing the two lifting blocks together.

My improved device consists primarily of a two part, flexible frame adapted to be placed upon the wagon in the field, and upon which the hay is loaded, so that the hay may be lifted from the wagon by means of said frame when it is desired to unload the wagon, and a pair of lifting blocks adapted for engagement respectively with the two parts of the flexible frame, these lifting blocks being of a peculiar construction as will be presently described.

Referring by letter to the drawings, A and A' designate the two parts of the flexible frame respectively, which are constructed from ropes *a* and *a'* respectively, suitably engaged in the manner illustrated in the drawings with stretcher bars B and B', passing through staples *b b* in said bars, and thence

being carried to and connected with the two parts of the trip lock, as in Fig. 4. The ropes are passed through suitable slots *c c* in take up plates C C, at the outer ends of the two parts of the flexible frame, and thence through eyes *d d* in the edges of suitable suspension rings D D, which are adapted for engagement with the lifting devices as will be presently described. Said ropes are then carried back and through the slots in said take up plates in the manner shown, and may if desired, be knotted at their ends so as to prevent any liability of the ropes accidentally slipping out of the same. It follows from this construction, that the ropes may be readily adjusted as to length, by loosening and slipping them lengthwise through the slots in said plates, and when the ropes are drawn taut in the plates, they will bind against the sides of the slots *c, c*, in an obvious manner, so as to prevent slipping. This arrangement therefore, affords a convenient means for adjusting the two parts of the flexible frame or "sling" as it is termed so as to conform to various sizes of wagons.

The trip lock which detachably connects the two parts of the flexible frame or sling together, may be of any desired or convenient form of construction, but I prefer to construct said trip lock in substantially the form illustrated in Fig. 5, of the drawings. In this particular form of construction, the trip lock consists of a suitable casing E, formed from two parts, and through which two transverse bolts or rivets *e e* are passed, the casing being provided at one end with a suitable eye or connection for a rope or cord forming part of one section of the flexible frame or sling, and a spring actuated wedge or spreader F movably engaged within the casing and adapted to move longitudinally between the two bolts or rivets *e e* as shown more particularly in Fig. 5, of the drawings, a suitable eye or ring being provided at the outer end of said wedge or spreader for connection with a cord G. The other member of the trip lock consists of a suitable catch H, provided at its outer end with eyes or loops for engagement with the rope or cord of the other section or half of the frame or sling, and at its inner end, with two suitably shaped jaws *h h'*, the latter being pivotally secured to the other

jaw, which is formed integral with the portion having the eyes or loops. These jaws are provided upon their outer edges, with lateral shoulders $h^2 h^2$, and at their inner edges, are beveled outwardly in the manner shown, so as to facilitate the entrance of the wedge or spreader F between the jaws to force them apart.

When it is desired to secure the two parts of the flexible frame or sling together, the catch having the two jaws is pressed into engagement with the casing E, the said jaws being crowded between the two bolts or rivets $e e$, in an obvious manner, and pressing the wedge or spreader backward until the shoulders $h^2 h^2$ on said jaws have passed the said bolts or rivets, when they are free to spread apart. At this instant, the wedge will be forced forward by the spring, so as to spread the jaws apart in an obvious manner, thus securely locking the catch in engagement with the bolts or rivets in the casing E. The cord G is carried back and around a pulley g, on one of the spreader bars of the sling in the manner described, so as to enable the operator to retract the wedge or spreader F by a pull upon said cord in an obvious manner. It follows from this construction, that when the frame or sling is loaded with hay, the trip lock will securely hold the two parts of the sling together, while the load is being transported to its destination, and when it is desired to dump the load, the operator, by a pull upon the cord G, may retract the wedge or spreader from between the jaws of the catch, when the weight upon the sling will operate to press the said jaws together so as to permit them to slip freely out of engagement with the casing E. It will of course be understood, that the bolts or rivets $e e$ simply act as retaining or locking shoulders for engagement with the jaws of the catch, and that said shoulders might be made integral with the casing if desired, in an obvious manner.

The track I and the carriage j mounted thereon, may be of any desired or familiar form of construction, the carriage being however, provided with suitable locking devices for engagement with the upwardly extending pin upon the main lifting pulley.

My improved lifting devices comprise a main lifting pulley block K provided with an upwardly extending pin k having a suitable head k' for engagement with the locking devices in the carriage, the frame of the said block being conveniently formed from two parts or halves suitably secured together, and provided at its lower end with a suitable hook for engagement with the ring D at one end of the sling, and a second lifting pulley block L similarly provided with a pin l having a head l' adapted for engagement with suitable shoulders within the frame of the main pulley block K as will be presently described, this latter lifting pulley block being also provided with a hook L' for engagement with the ring D at the end of the other section of the

sling. An arm m is arranged to extend obliquely upward from the upper part of the frame of the main pulley block K, and a pulley M is journaled at the end of said arm as shown, two other pulleys M' and M² being journaled in the frame of said pulley, as shown, these three pulleys being arranged with their axes at the three angles of a triangle and the rope N which actuates the device is made fast at one end to the carriage J, and is passed down through the frame of the block K upon the outside of the pulleys M' and M², thence around a pulley L² in the block L and back beneath the pulley M at the end of the arm m of block K, in the manner illustrated in Fig. 1, of the drawings, and thence over the pulley N' on the carriage J and off to the locality of the snatch pulley block or other actuating device.

By the described construction of the main lifting block K and the arrangement of the three pulleys M, M' and M² therein, the strain of the rope N is brought against said pulleys in such a manner that the resultant of said strain will serve to keep the pin k in a vertical position at all times and thus insure the entrance of the said pin into the locking devices upon the carrier when the load is raised.

As illustrated more particularly in Figs. 2 and 3, of the drawings, the block K is provided at one side with outwardly diverging guide flanges O O, between which the head of the pin l on the block L enters as the two lifting blocks are brought together, and upon the inside of said block K, upwardly extending guide flanges $o o$ are provided which terminate at their upper ends in shoulders O' O' for engagement with the head of the pin l .

Any suitable means may be provided for guiding and retaining the pin l in position within the block K, as for instance, the device illustrated in Fig. 2, of the drawings, which is a spring actuated pawl or detent P, provided with a shoulder p opposed to the shoulder O', this pawl being pivoted within the block K as at p' and pressed downwardly by a suitable spring P'. At opposite sides of the pawl P, I prefer to provide suitable lugs $d^2 p^2$ which are arranged to come into engagement with suitable shoulders $p^3 p^3$ on the frame of the block K, so as to limit the movement of the pawl P. The free end of the said pawl is beveled in the manner shown, so that as the head l' of the pin l enters the block K, the pawl will assist in guiding said head into place, and after the head has passed into engagement with the shoulders O' O', will assist in retaining the pin in engagement with the same in an obvious manner. In this construction, when it is desired to disengage the block L from the block K, the operator raises the pawl P so as to free the pin l and then lifts the head of said pin out of engagement with the shoulders O' O'.

In the form of construction illustrated in Fig. 6, of the drawings, the spring actuated

pawl is dispensed with and instead of said pawl, suitable inwardly curved flanges or ribs Q Q are provided within the block K, one of which is conveniently cast upon the inside of each half of the block, and which serve to guide the head of the pin l into engagement with the shoulders O' O' in an obvious manner as the two lifting pulleys are drawn together. With this latter construction, when it is desired to disengage the pulley block L from the block K, it is only necessary to lift the block L so as to raise the head of said pin l out of engagement with the shoulders O' O'.

In practice, the hooks K' and L' are engaged with the rings D D when it is desired to lift and transport a sling loaded with hay, the rope N being then drawn out by the horse or team in the usual way, so as to cause the pulley block L to be raised, and the main lifting block K to be raised, and drawn together as indicated in Fig. 1. As the two lifting pulley blocks are raised, and drawn together, the pin l will be directed toward the opening between the flaring flanges O O and when the bundle is fully raised, the head of said pin will be forced into the casing of said block K, and into engagement with the locking or retaining shoulders therein, as indicated in Fig. 2, of the drawings. By my improved construction, therefore, I am enabled to provide an apparatus in which the proper engagement of the two lifting pulleys with each other when the load is raised, and the proper engagement of the main lifting pulley with the carriage after the load is raised, is insured.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. In a hay carrier, the combination with a suitable track and carriage, and a two part flexible frame or sling, of a main lifting pulley block carrying a hook for engagement with one section of the frame or sling, suitable rope carrying and guiding pulleys journaled in said block, and arranged in the same plane, and in a triangular position and adapted to maintain the said block in a vertical position beneath the carriage, a locking pin upon the upper side of said block adapted for engagement with locking devices in the carriage, suitable locking shoulders in said block, a second lifting block also carrying a hook for engagement with the other section of the frame or sling, and a locking pin upon the latter block, adapted for engagement with

the said shoulders in the main lifting block, substantially as described.

2. In a hay carrier, the combination with the track and a suitable carriage, of a main lifting block provided with an upwardly projecting pin having a head adapted for engagement with locking devices in the carriage, rope carrying and guiding pulleys journaled in said block and arranged at the three angles of a triangle, outwardly divergent flanges at one side of said block, suitable locking shoulders adjacent to the inner edges of said flanges, a second lifting pulley provided with a locking pin having a head adapted for engagement with the said shoulders in the main pulley block, and suitable means for guiding and retaining said pin in engagement with said shoulders, substantially as described.

3. In a hay carrier, the combination with a suitable track and carriage, of a main lifting block provided with a locking pin adapted for engagement with locking devices in the carriage, three rope carrying and guiding pulleys journaled in said block and arranged at the three angles of a triangle, suitable locking shoulders within the frame of said block, a second lifting block provided with a locking pin adapted for engagement with said shoulders, outwardly divergent flanges at the side of the main lifting block adjacent to the said shoulders, and arranged to guide said pin into engagement with said shoulders, a pulley journaled in said latter block, and a rope engaged at one end with the carriage and passed over the entire series of pulleys in the two blocks, substantially as described.

4. In a hay carrier, the combination with a suitable track and carriage, and suitable lifting devices, of a two part frame or sling adapted for engagement with said lifting devices, and a trip lock for securing the two sections of the said frame or sling together, said lock comprising a suitable casing having two stationary locking shoulders, and a wedge or spreader movable between said shoulders, and a catch provided with expansible, shouldered jaws adapted to be spread apart by said wedge or spreader into engagement with said shoulders, substantially as described.

In testimony whereof I sign this specification in the presence of two witnesses.

WILLIAM GUTENKUNST.

Witnesses:

JOHN E. WILES,
M. M. WILES.