(No Model.) 2 Sheets—Sheet 1.

J. S. SCOTT.

DERRICK FORK ATTACHMENT.

No. 461,987. Patented Oct. 27, 1891.

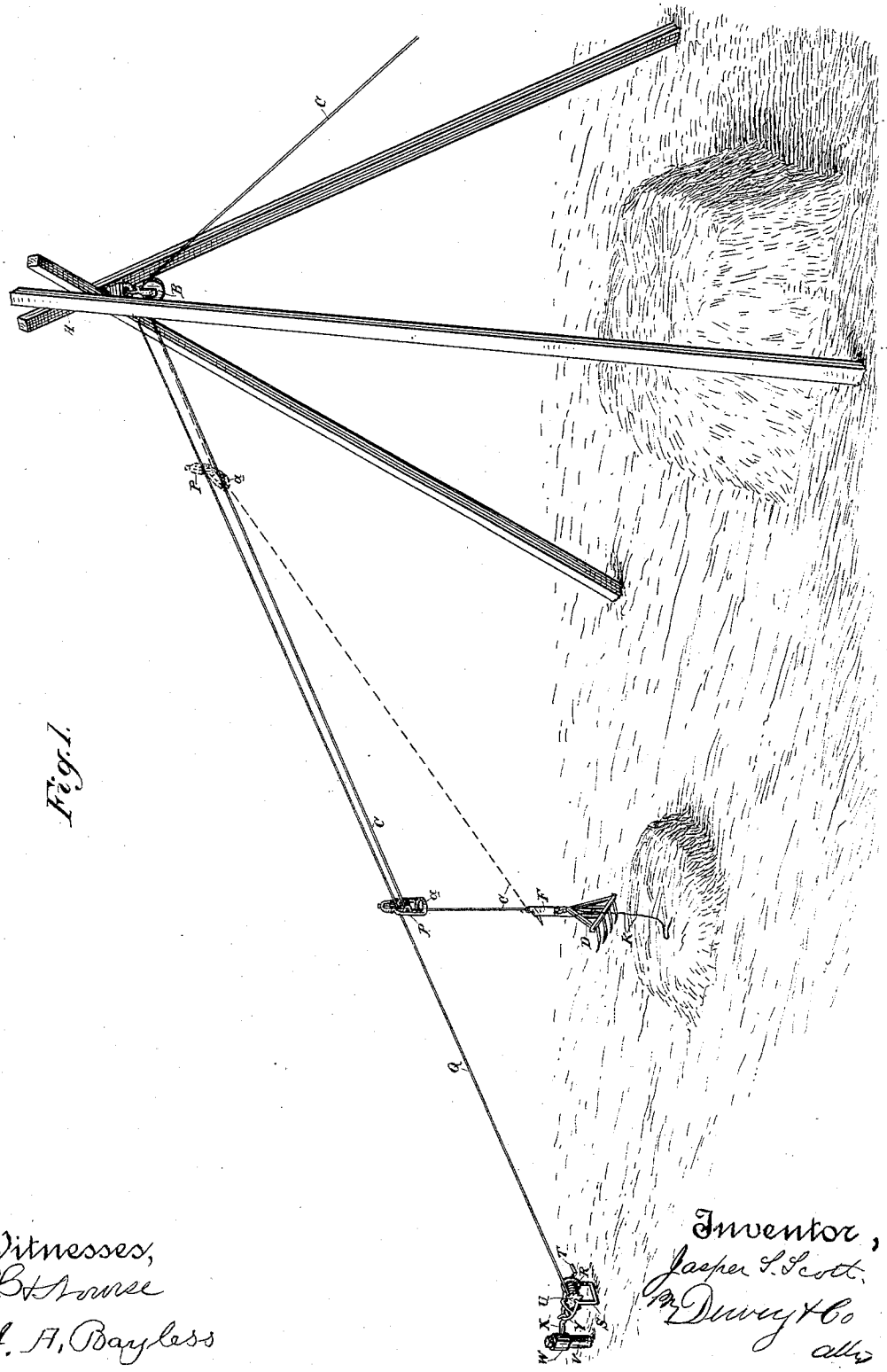

Fig. 1.

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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

(No Model.) 2 Sheets—Sheet 2.

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Fig. 2.

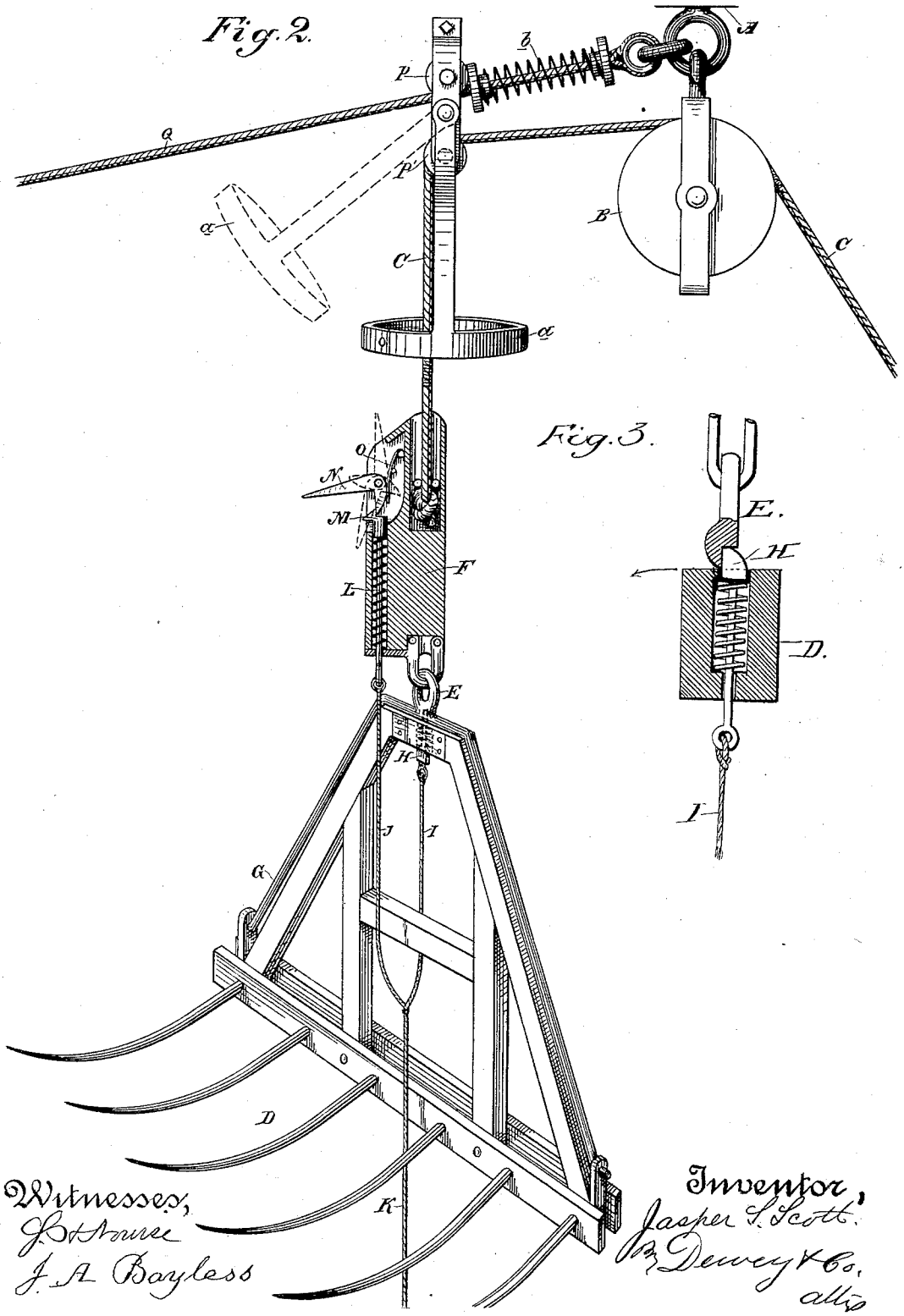

Fig. 3.

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UNITED STATES PATENT OFFICE.

JASPER S. SCOTT, OF SAN JOSÉ, CALIFORNIA.

DERRICK-FORK ATTACHMENT.

SPECIFICATION forming part of Letters Patent No. 461,987, dated October 27, 1891.

Application filed March 30, 1891. Serial No. 387,031. (No model.)

To all whom it may concern:

Be it known that I, JASPER S. SCOTT, a citizen of the United States, residing at San José, Santa Clara county, State of California, have invented an Improvement in Derrick-Fork Attachments; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to an attachment for that class of implements known as "derrick-forks;" and its object is to provide a convenient means for transporting straw from the stack to a point where it is to be delivered to the thrashing-machine or other place of deposit.

It consists in certain details of construction, which will be more fully explained by reference to the accompanying drawings, in which—

Figure 1 is a general view of my device. Fig. 2 is a detail view of the traveler and its connections. Fig. 3 is an enlarged sectional view of the latch H, showing its connections.

A is the derrick or frame-work, which may be a tripod of stout poles of sufficient elevation, as in the present case, or of any other convenient or well-known form. In the upper part of the derrick is suspended the pulley B, over which passes the rope C, one end of which connects with the derrick-fork, and the other leads down to the ground or to a point where horse or other power may be applied to it.

The derrick-fork D is of any usual or suitable construction, and its yoke or frame G is suspended by a link E from the casing F. The rope C is secured to the upper end of this casing, and by this means the fork is suspended.

H is the latch by which the fork is held in the exterior suspended yoke or frame G, and I is the cord by which this latch is pulled so as to disengage it and allow the fork to turn and discharge its load. The rope I is connected with a second rope J, and the two unite in a common rope or cord K, which extends down to a point within easy reach of the operator. The rope J is connected with a rod L, which slides in the front part of the casing F and which is acted upon by a spiral spring, which forces it up. Upon the upper end of this rod is a latch M. This latch engages one end of a bell-crank lever N, which is fulcrumed in the upper part of the casing, as shown. A spring acts against the short arm of the lever, pressing it against the latch M when the latter is in position; but as soon as the latch M is withdrawn, by pulling upon the cord K the spring acts to throw the latch N up into the position shown in the dotted lines.

P P′ are two pulleys or sheaves mounted in a suitably-constructed block. The upper pulley acts as a traveler and runs upon the rope or guide Q. This rope has the upper end strongly attached to the upper part of the derrick, and it extends diagonally downward above the top of the stack from which the straw is to be taken, and its lower end is fixed to the ground in any suitable manner. In the present case I have shown this rope wound upon a drum R, which is journaled in a suitable frame S and has a crank T, by which it may be turned to draw the rope as tight as may be desired.

U is a ratchet-wheel upon the drum-shaft and it is engaged by a pawl, so that it will be held at any point.

V is an anchor-stake, which is driven into the ground at the proper point to make the connection with the winding-drum, previously described. Upon this stake is fitted a yoke or sleeve W, having a stout arm X projecting from one side and provided with a hook, and this hook takes hold of the loop Y of the frame S, before described.

By reason of the rigid connection of the yoke or sleeve W and bar X with the stake V it will be manifest that the upward pull exerted upon the hook when the proper tension is brought upon the rope Q will act to hold the stake V in a vertical position instead of pulling it over to one side, and it thus serves to anchor the parts firmly in place, with no danger of its being pulled out of the ground when the drum is turned to give the rope Q sufficient tension.

The rope C, which connects with the casing F, from which the derrick-fork is suspended, passes over the lower pulley P′ of the traveler, which is suspended upon the rope Q, thence passing over the pulley B in the top of the derrick, and to the source of power by which it is operated. Suspended below the frame

which carries the pulleys P and P′ is a ring *a*, through which the rope C passes as it leads upward from the derrick-fork and the suspending-casing F. The object of this ring is to form a connection with the derrick-fork after the load has been discharged, so as to hold it up until it shall have traveled down the inclined rope Q to a point above the stack, after which it is released from this ring and allowed to drop directly upon the stack, as will be hereinafter described. If it were not for some device of this sort, it would be manifest that as soon as the hoisting-rope C was relieved of the tension the fork would simply be lowered at the point above which it was at that time suspended, while by means of this device it is prevented from being lowered until it reaches the point where it is desired to lower it upon the stack. This is effected as follows:

The fork is fixed into the stack, and when the draft or tension is put upon the rope C it draws the fork and its load up until the projecting arm N strikes against the bottom of the ring *a*. At the same time the traveler or supporting-pulley P moves up the inclined rope Q until it reaches the point where it is desired to drop the load. The fork is tripped and the load released by pulling upon the rope K, which acts through the rope I to trip the fork and allow its load to discharge. After the traveler has reached the point above which it is desired to discharge the load it strikes a stop with an elastic spring *b* behind it, which prevents its being pulled any farther in that direction. A further pull upon the rope C will, however, fold the lever-arm N downward alongside the casing F, so as to allow the upper end of the casing to pass up through the ring *a*, and after the end of the lever has passed through the ring the spring O will force it out into the position shown in Fig. 2, where it is held by the latch M. It will be manifest that when in this position it will not be possible for the casing F to pass back through the ring *a*, as this lever-arm locks it in place. When, therefore, the tension upon the rope C is relieved, the traveler P will move down the inclined rope Q, and the derrick-fork will be suspended from the ring *a* by reason of the lever-arm N projecting above the ring and preventing the fork from dropping downward. When the traveler has reached the point above the stack and it is desired to allow the fork to descend upon the stack for another load, the rope K is pulled so that through the rope J it acts upon the rod L and the latch M, pulling the latter down until the point of the short arm of the lever N is released. This allows the lever N to turn up into the position shown in the dotted lines, and it and the upper end of the casing are then free to descend through the ring *a*, when the fork may be again lowered upon the stack. By this arrangement I am enabled to move the loaded fork up the incline, discharge the load at the desired point, and retain the fork in its suspension from the traveler until it is again moved down the incline to the point where it is to be dropped upon the stack.

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

1. The traveler adapted to move upon an inclined guide-rope and having a pulley over which the hoisting-rope passes, a horizontal ring suspended from the traveler, surrounding the vertical portion of the hoisting-rope, a casing of smaller diameter than the ring attached to the rope and having the fork suspended from it, a lever fulcrumed in the casing, with one end projecting outward therefrom, a spring-actuated latch engaging the other end, and an independent spring holding the end of the lever against the latch when the latter is in place and forcing the outer arm of the lever into a vertical position when the latch is disengaged, said spring also yielding to allow the outer arm of the lever to be moved downward when passing through the ring, substantially at herein described.

2. A derrick-fork with a suspending and hoisting rope and a tripping device, an inclined guide-rope and a traveler moving thereon, a pulley connected with the traveler, over which the hoisting-rope passes, a stop-lever fulcrumed above the fork, a latch engaging the lever to prevent its moving in one direction, a cord by which the latch is disengaged from the lever, a spring holding the lever against the latch, said spring yielding to allow the lever to turn down in the opposite direction, and a ring through which the lever is allowed to pass upward by the yielding spring and above which it is held by the latch until the latter is released, substantially as herein described.

In witness whereof I have hereunto set my hand.

JASPER S. SCOTT.

Witnesses:
S. H. NOURSE,
J. A. BAYLESS.