S. W. BADMAN.

AUTOMATIC FORK TRIPPING MEANS.

APPLICATION FILED APR. 13, 1910.

985,242.

Patented Feb. 28, 1911.

Fig. 1.

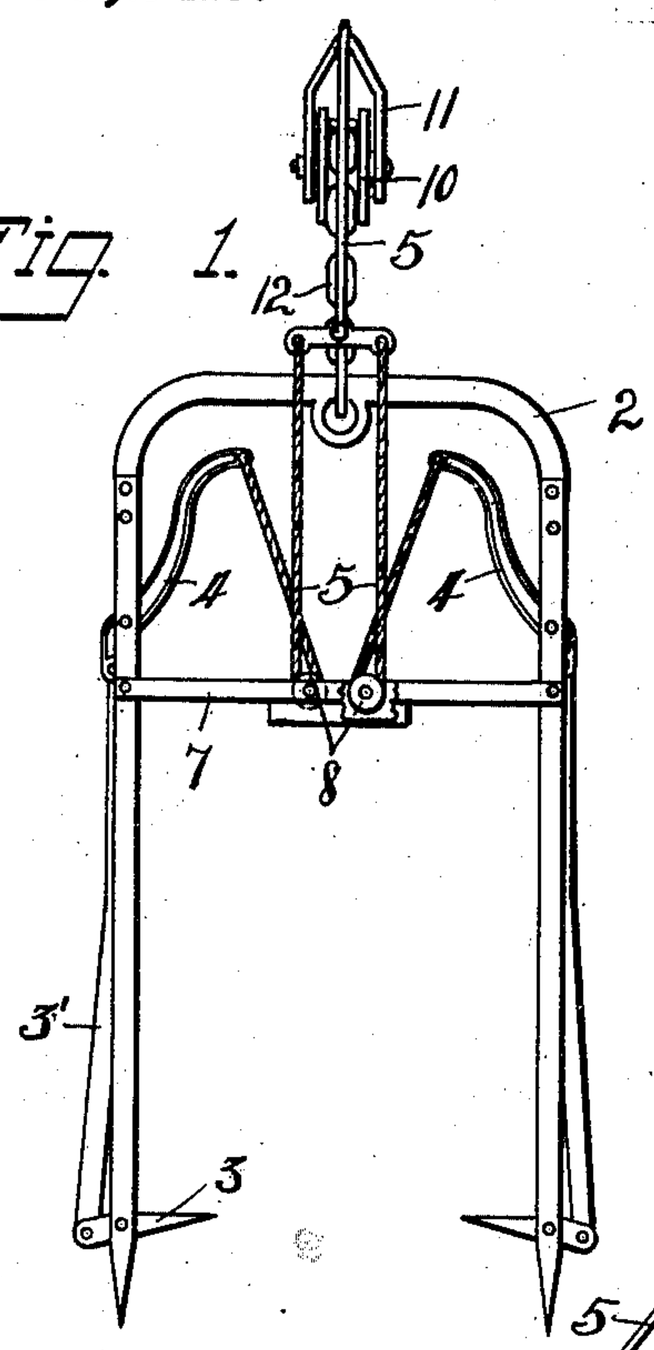


Fig. 2.

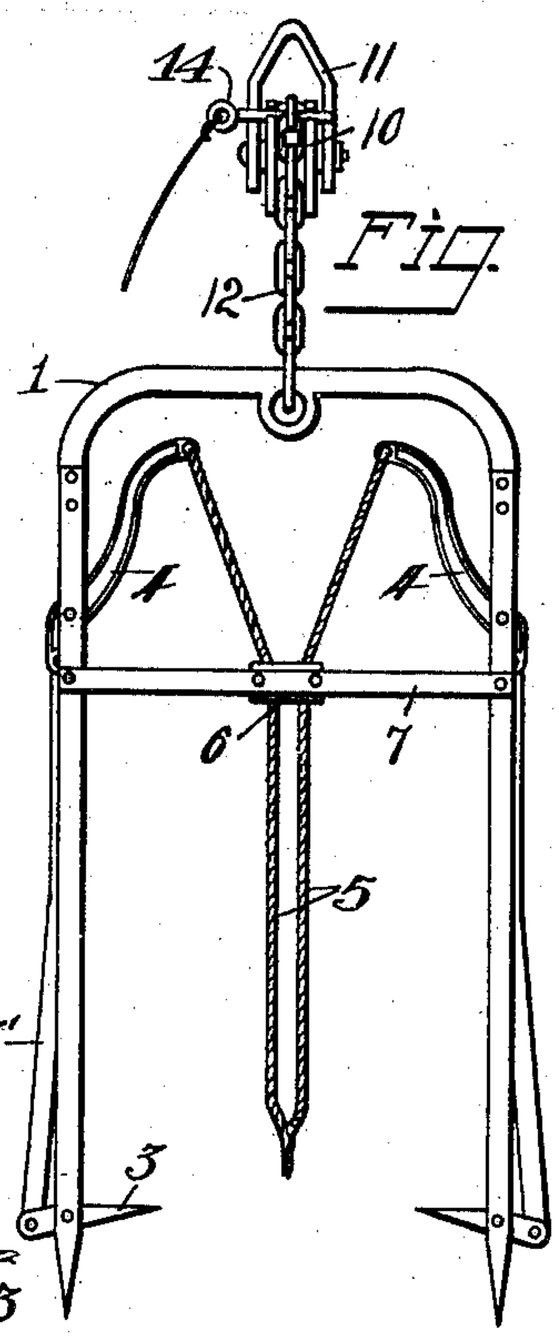
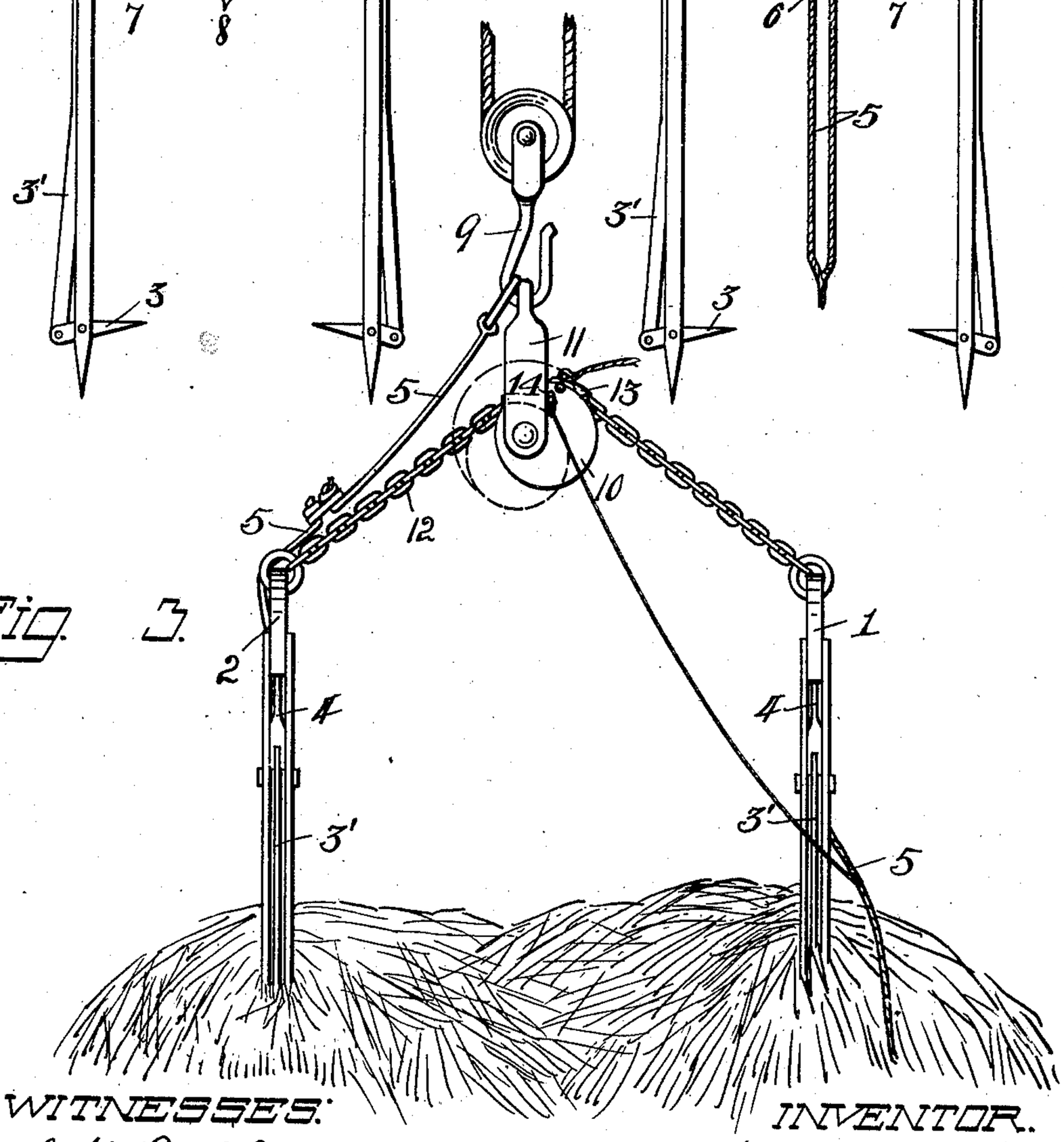


Fig. 3.



WITNESSES:

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UNITED STATES PATENT OFFICE.

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AUTOMATIC FORK-TRIPPING MEANS.

985,242. Specification of Letters Patent. Patented Feb. 28, 1911.

Application filed April 13, 1910. Serial No. 555,249.

To all whom it may concern:

Be it known that I, SCOTT W. BADMAN, a citizen of the United States, and a resident of Continental, in the county of Putnam and State of Ohio, have invented a certain new and useful Automatic Fork-Tripping Means; and I do hereby 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 appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

My invention relates to hay forks of the class commonly used for conveying hay or the like from a wagon to a hay mow or other dumping place, and has reference more particularly to trip means for one of two forks when used in conjunction.

The object of my invention is the provision, in combination with a pair of hay forks which are connected for conjoint use, of simple, efficient and inexpensive means which, upon the release of the weight of a load from one fork, is automatically actuated to trip the other fork and release the load therefrom, thus simplifying the handling and operation of double forks of this nature.

The invention is fully described in the following specification, and a preferred embodiment of the same illustrated in the accompanying drawings, in which,—

Figure 1 is a side elevation of one fork of the set. Fig. 2 is a similar view of the other fork of the set, and Fig. 3 is a view of the forks connected and in operative engagement with a load of hay.

Referring to the drawings, 1 and 2 designate forks of the double harpoon type, each of the prongs of which carries a pivoted spur 3 adjacent its free end and is connected by a link 3′ to a trip-lever 4, pivoted to the prong adjacent its inner end, as is customary in forks of this type.

To the inner ends of the trip-levers 4 of each fork are attached ends of a trip-rope 5, which rope in the case of the fork 1 passes down through an eye 6 carried by the cross-bar 7 in the usual manner. In the case of the fork 2, however, the trip-ropes 5 of the levers 4 pass down under sheaves 8 carried by the cross-bar 7 of the fork and then extend upwardly and anchor to a pulley-hook 9 carrying the forks or to any other suitable anchoring means.

A cam sheave or disk 10 is suspended from the pulley-hook 9 or other draft means by a clevis member 11 and has a chain or other suitable means 12 passing thereover and attached at its opposite ends to the upper or looped ends of the forks 1 and 2, as indicated. The chain 12 is secured to the cam 10, as at 13, to cause a positive turning of the cam on its axis when the chain is pulled in one direction or the other.

In using the forks with my invention associated therewith, the forks are each forced into the hay to be conveyed at suitable distances apart with the greatest radius of the cam 10 disposed in the direction of the fork 1, as indicated. In this position the trip-rope 5 of the fork 2, which rope is anchored to a convenient part of the draft means, such as the pulley-hook 9, is drawn substantially taut, as indicated. When the load has been conveyed to its destination the trip-rope 5 of the fork 1 is pulled to actuate the trip-levers 4 to release the load in the usual manner. Upon the fork 1 being relieved of its load the weight of the load of the fork 2 causes the cam to turn from the full line position to the dotted line position which permits a lengthening of the portion of the chain 12 attached to the fork 2 and effects a consequent pulling of the associated trip-rope 5 to trip the load holding parts and release the load from the fork 2, as is apparent. Care should be taken in the use of this apparatus that the weight of the portion of the load engaged by the fork 2 is not sufficient to overcome the weight of the portion of the load engaged by fork 1, for if such is the case the chain 12 will be drawn to its limit of movement toward the fork 2 and the fork 2 tripped before the load of the fork 1 is released.

14 designates a pin which may be attached to a cord, for instance the trip-cord 5 of the fork 1, and inserted through a hole of the cam 10 in position to coact with the clevis 11 to positively lock the chain against a tripping movement.

It is apparent that I have provided a simple and efficient load releasing means for one or more forks of a set which is automatically actuated by the weight of the load of such forks when one fork of the set is relieved of its load, and also that such means is not restricted to use in conection with forks

of the type shown but may be used in connection with any form of fork having load engaging and releasing means associated therewith.

I wish it understood that my invention is not limited to any specific construction or arrangement of the parts, except in so far as such limitations are specified in the claims.

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

1. The combination of a draft member, means carried by such member for longitudinal movements relative thereto, forks attached to said means at opposite sides of its point of attachment to said member, each of said forks having load securing and releasing mechanism associated therewith, manually operative means for tripping such mechanisms of the forks on one side of the draft member, and means automatically operative by a movement away from the draft member of the forks on the other side thereof for tripping and load holding mechanisms of such forks.

2. The combination of draft means, a plurality of forks attached to such means, each having load securing and releasing mechanism associated therewith, means connecting the forks and draft means adapted to permit a movement of a portion of such forks away from the draft means when the remainder of such forks are relieved of a load and trip means attached to the load securing and releasing means of the forks which are movable away from the draft means when the other forks are relieved of their loads and operative to trip such load releasing means upon such movement of said forks.

3. The combination of draft means having a flexible member attached thereto for relative longitudinal movements, forks attached to the opposite ends of such member, and load tripping means attached to one of such forks and automatically operative upon a longitudinal movement of said member in one direction relative to the draft means to release a load from such fork.

4. The combination of draft means, a pair of load engaging members, an element attached to the draft means and connecting said members, such element being capable of longitudinal movements relative to the draft means, and means associated with one of such members for actuating it to release an engaged load when said element moves longitudinally in one direction relative to the draft means.

5. The combination of draft means, a pair of load engaging members, a cam carried by the draft means, a flexible part connecting said members and operating over such cam for longitudinal movements relative to the draft member, and means connecting the draft means and one of said members, such means being automatically operative to release the associated member from its load when said flexible part moves in one direction relative to the draft member.

6. The combination of a draft member, a pair of hay forks, a cam revolubly carried by the draft member, a flexible part working over such cam and connecting said forks, load engaging and releasing means associated with each fork, trip means connecting said draft means and the load engaging and releasing means of one fork and operative to trip such means when the associated fork moves away from the draft member upon a release of the load from the other fork, and mutually controlled means associated with the other fork for releasing the load therefrom.

7. The combination of a draft member, a pliable element carried by and longitudinally movable relative to said draft member, hay forks carried by said element at opposite ends thereof, said forks each having load holding and releasing means, means for manually tripping the load holding means of one fork and means connecting the draft member and the tripping means of the other fork for automatically tripping such load holding means when the associated fork lowers by gravity upon the release of a load from the other fork.

In testimony whereof, I have hereunto signed my name to this specification in the presence of two subscribing witnesses.

SCOTT W. BADMAN.

Witnesses:
J. J. FRY,
J. C. MADDEN.