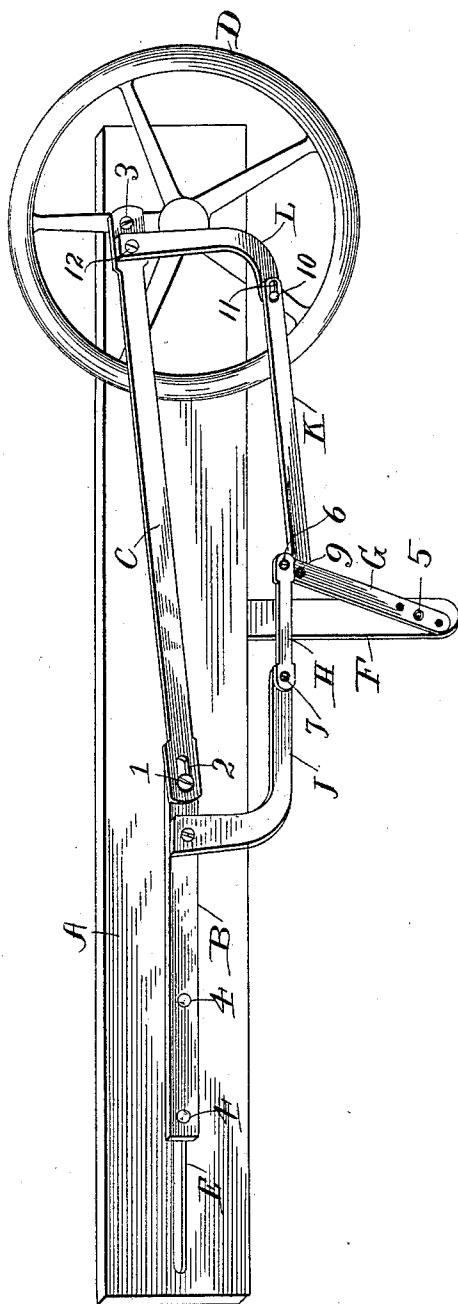


(No Model.)

A. FAHRNEY.
AUTOMATIC PITMAN STARTER.

No. 462,811.

Patented Nov. 10, 1891.



Witnesses
C. C. Burdine
H. P. Wilson.

Inventor
Andrew Fahrney
per J. G. Manahan
his Attorney

UNITED STATES PATENT OFFICE.

ANDREW FAHRNEY, OF MILLEDGEVILLE, ILLINOIS.

AUTOMATIC PITMAN-STARTER.

SPECIFICATION forming part of Letters Patent No. 462,811, dated November 10, 1891.

Application filed June 30, 1891. Serial No. 398,034. (No model.)

To all whom it may concern:

Be it known that I, ANDREW FAHRNEY, a citizen of the United States, residing at Milledgeville, in the county of Carroll and State of Illinois, have invented a new and useful Automatic Pitman-Starter, of which the following is a specification.

My invention has reference to improvements in devices for carrying the actuating end of a pitman or piston past the dead-points, which occur when the reciprocating movement of said pitman or piston is converted into a rotary motion at its working end. This I accomplish by certain devices supplementary to the piston attached at one end to and actuated by the inner portion thereof and attached at the other end to said piston at or near the operating end of the latter.

My invention is by obvious changes applicable to a variety of conditions, and I will show and describe in this application one mode of such adaptation illustrative of the application of the principle of my invention.

In the drawings there is shown a perspective of a pitman or piston rod and a rotating wheel and the adjunctive devices attached thereto embodying my invention.

A is a plate representing the base of the machine and here used to support the several parts of my invention in their relative position.

B is the inner end of a pitman or piston rod, which, in case of a pitman, would be attached to an elbow or wrist crank, and in case of a piston-rod be provided with a head and adapted to reciprocate in a cylinder, and in other situations may be attached to any reciprocating body.

C is the outer portion of said pitman or piston rod pivotally connected to the part B by a pivot 1, rigidly seated in either of the parts B or C and projected through and having a slight reciprocal action in slot 2, formed longitudinally through part B or C.

D is a rotating wheel, to which the outer end of the part C of said pitman is pivotally attached at 3. In plate A is formed a longitudinal slot E, and short studs 4 4 pass through the part B of said pitman and reciprocate in slot E merely as a means of exhib-

iting the reciprocal movement of said pitman and its construction.

F is a post attached to an projected below the plate A, and which, in the application of my invention, may be suitably fixed in any manner in the relation here shown to the pitman, being substantially perpendicular to the movement of the part B of said pitman, and such post may be part of the base or frame of the machine.

G is an oscillating arm pivoted near its lower end at 5 to near the lower end of the post F. A series of holes can be formed in either the post F or arm G, or both, for the optional seat of the pivot 5. To the arm G, near the upper end thereof, is pivotally attached at one end, at 6, the toggle-arm H, projecting in the line of oscillation of the arm G toward the end B of the pitman and pivotally attached at its other end at 7 to a curved post J, having a lower horizontal portion and also a vertical upper portion, and rigidly attached at the upper end of its vertical portion at 8 to the end B of the pitman. The rod K is pivotally connected at one end, at 9 to the arm G, and extending outward in line of the oscillation of the arm G is pivotally connected at 10 near its opposite end to the lower end of a curved post L, rigidly seated on the outer end of the part C of said pitman by bolt 12. The pivot 10 is seated in the slot 11, formed longitudinally in either the rod K or post L and rigidly seated in either said rod or said post.

The operation of my invention is as follows: When the pitman C has reached the limit of its outstroke, it will be at the dead-point in a line with the axis of wheel D and the part B of said pitman. When said pitman starts on its return stroke, the pivot 1 will be at the inner end of the slot 2 and the pivot 10 at the inner end of slot 11, and at the initiative of the instroke said pivots will traverse said slots, respectively. This will cause the pivot 10 to pass to the outer end of slot 11, and pivot 1 to the outer end of slot 2, and the part B of said pitman, through the medium of the post J, arm H, rod K, and post L, will draw the pivotal point of the outer end of the pitman C downward past the aforesaid

dead-point, when the farther instroke of the pitman C will be accomplished by the end B drawing upon the pivot 1. When the pivot end 3 of the pitman C is at the dead-point in line between the axis of the wheel D and the end B of said pitman, the pivots 1 and 10 will be at the outer ends of the slots 2 and 11, respectively, and at the initiative of the outstroke of said pitman the pivots 10 and 1 will start toward the inner end of their respective slots, when the outward thrust of the pitman end B, through the medium of the post J, arm H, and rod K and post L, will push the pivot-point 3 upward past the dead-point last aforesaid, when the farther outstroke of the part B will be communicated to the pivot 3 through the medium of the end C of said pitman. The slot 1 is slightly longer than the slot 11, which causes the pivots 10 to make the initiative action in each movement. The arm H is shown pivoted to the arm G near the upper end of the latter. It can be pivoted lower on the arm G and nearer the pivotal point 5 of the latter, in which event the slot 2 may be made shorter and nearly simply a pivot, and thereby preclude any noticeable lost motion between the parts B and C of the pitman. The movement of pin 10 in slot 11 is caused regularly by the oscillation of the lower end of the post L consequent upon the oscillation of the outer end of pitman C and the rigid connection of post L thereto. A connection may be formed between the posts J and L which will be self-supporting, in which event the arm G may be dispensed with. It is evident, also, that the devices extending from the end B of the pitman to the outer end of the part C thereof may with equal advantage be placed above said pitman, the sole purpose being to form a lateral side connection between the portion of the pitman which has a straight reciprocal motion to the point of attachment to the wheel D. It is obvious that the attachment through the posts J and L and arms H and rod K permits the portion B of said pitman to exert a side draft on the dead-points of attachment of the arms C to the wheel or axle D, and that is the objective point of my invention.

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

1. The combination of the part B of a pitman or piston-rod, the post J, rigidly attached thereto at one end, the part C of said pitman or piston-rod, the post L, rigidly attached at one end thereto, arm H, and rod K, pivotally connecting said posts, and the arm G, supporting the arm H, and rod K, substantially as shown, and for the purpose described.

2. The combination of the parts B and C of the piston-rod or pitman pivotally connected, post J, rigidly attached at one end to part B, arm G, post L, rigidly attached at one end to the outer end of the part C, the arm H, pivotally attached at one end at the opposite end of post J, and the rod K, pivotally connecting the opposite end of arm H to the lower end of post L, substantially as shown, and for the purpose described.

3. The combination of the parts B and C of pitman or piston-rod having slotted mutual connections, post J, rigidly attached at one end to part B and extending below the same, arm H, pivotally attached at one end to the lower end of post J and pivotally supported at its opposite end upon the oscillating arm G, post L, rigidly attached at its upper end to part C, rod K, pivotally attached at one end to arm G and having a pivotal slotted connection to the lower end of post L, substantially as shown, and for the purpose described.

4. In combination with a pitman or piston-rod consisting of a reciprocating portion B and the oscillating portion C, having a pivotal or hinged interconnection, a series of posts and toggle-arms located alongside of said pitman and rigidly attached at or near the extremities of said series to said parts B and C, respectively, substantially as shown, and for the purpose described.

In testimony whereof I affix my signature in presence of two witnesses.

ANDREW FAHRNEY.

Witnesses:

JOHN G. MANAHAN,
ADDA E. WARD.