(No Model.)

I. G. BOWER.

PITMAN.

No. 247,879. Patented Oct. 4, 1881.

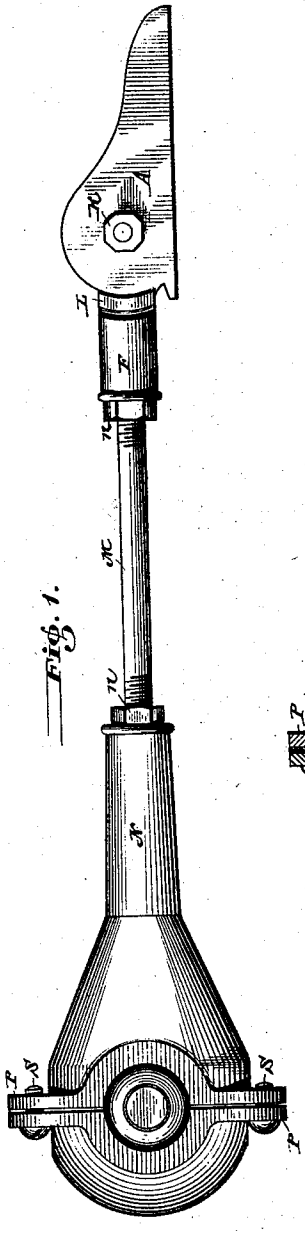

Fig. 1.

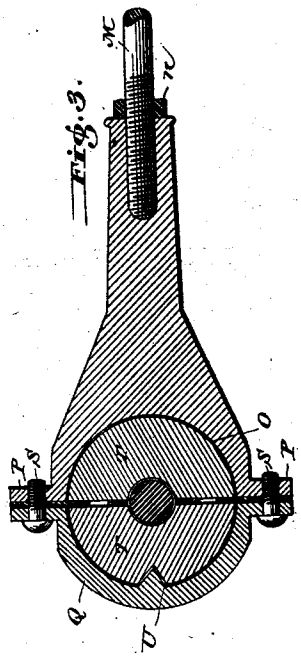

Fig. 3.

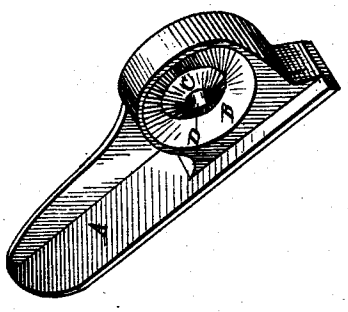

Fig. 6.

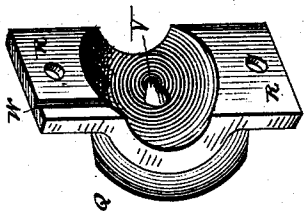

Fig. 5.

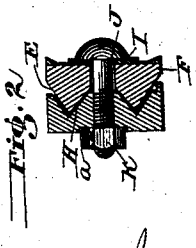

Fig. 2.

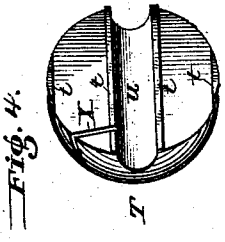

Fig. 4.

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UNITED STATES PATENT OFFICE.

ISAAC G. BOWER, OF FREMONT, OHIO.

PITMAN.

SPECIFICATION forming part of Letters Patent No. 247,879, dated October 4, 1881.

Application filed April 9, 1881. (No model.)

To all whom it may concern:

Be it known that I, ISAAC G. BOWER, a citizen of the United States, residing at Fremont, in the county of Sandusky and State of Ohio, have invented certain new and useful Improvements in Pitmen; 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 letters or figures of reference marked thereon, which form a part of this specification.

The object of the present invention is to provide a pitman and devices for connecting the same with the wrist or crank pin and knife-head of a reaping-machine, or with any other class of machinery, which will enable the platform of the reaper to be raised and lowered and the guards to be tilted without causing the pitman to bind on the crank or wrist pin of the driving mechanism.

It has heretofore been proposed to connect a pitman with a knife or cutter bar by means of a hinge-joint and with a wrist or crank pin by means of a globular or ball joint; but such a form of connection has not proved satisfactory by reason of the defective construction of the devices employed.

The aim of the present invention is to provide a pitman of a simplified construction, and strong and effective devices for connecting the same with the knife-head and wrist or crank pin of the driving mechanism, so that the pitman is free to turn vertically and axially for preventing the strain or breakage thereof, and removing all liability of its binding on the crank-pin. These results I attain by the construction and combination of parts hereinafter described and claimed.

In the drawings, Figure 1 is a side elevation of a pitman and means for connecting the same with the knife-head and crank-pin. Fig. 2 is a transverse section taken through the knife-head joint of the pitman. Fig. 3 is a sectional view of the globular or ball joint held in a chambered sectional head of the pitman, and receiving the crank-pin. Fig. 4 is a detail view of one of the sections of the ball-joint having face-ribs and an oil-conducting groove. Fig. 5 is a detail view of one of the sections of the chambered head which receives the ball-joint, and Fig. 6 is a detail view of the knife-head.

The letter A designates a head or plate, which is attached to the end of a cutter or knife bar of a reaping or mowing machine, and is commonly termed the "knife-head." It is preferably secured to the knife-bar by means of slotted pins passed through both the head and bar, and secured by keys fitted into the pins. The end of the knife-head A adjoining the pitman is of a circular form, and has a flaring recess, B, in its inner side, from the base of which extends a projection, C, approximating in shape a frustum of a cone. Said projection has a central opening, D, which also extends through the head A. The flaring recess B receives the cone-shaped projection E of a head, F, carried by the pitman, and said projection is provided with a recess, H, of the same shape as the projection C.

An opening, I, is made through the center of the projection E and through the head F, and a bolt, J, passed through the openings D I is secured by a nut, K, fitted on the screw-threaded end of the bolt. A countersink or recess, *a*, made in the head F, receives said nut. The cone-shaped projections and recesses on the knife and pitman heads constitute double bearing-surfaces, the bolt J being simply the medium for connecting the two heads. The screw-threaded portion of said bolt engages with the internal thread made in the opening D of the projection C, and the smooth portion of the bolt extending beyond said projection and passing through the head F of the pitman is made somewhat smaller in diameter than the opening through which it passes.

The object of this construction is to prevent the pitman-head from wearing the bolt and to decrease friction as much as possible by simply resorting to the conical projections and recesses as bearing-surfaces. The bolt furthermore serves as a means for tightening the joint as the bearing-surfaces wear off. In addition to the internal bearing-surfaces I provide the head F with an external lug or projection, L, which has a concave surface fitting against the circular portion of the head A. In this manner I obtain a bearing-surface especially designed to resist all longitudinal strain to which the pitman may be subjected.

The pitman-rod M has end screw-threads, which are of such length that said rod can be adjusted in screw-threaded sockets of the pitman-heads F and N. Jam or locking nuts *n* retain the rod in position after it has been properly adjusted. The head N, carried by the pitman, has an enlargement at its inner end, which is made with a hemispherical or semi-globular chamber or recess, O, and projecting flanges P.

A cap-piece, Q, having a chamber of the same shape as the head N, is provided with flanges R, which fit against the flanges P, and screw-bolts S, passed through both sets of flanges, serve to secure the cap Q to the head N.

It will be manifest that the head and cap form an internal chamber of a globular form. This chamber contains a journal, T, of a globular form, which is made of two parts or sections, having their contiguous faces provided with interlocking ribs *t* and with a central semi-cylindrical channel, *u*. These channels, when the two sections are fitted together, form a cylindrical bore or opening for the reception of the crank or wrist pin of the driving-wheel or other mechanism. The globular-shaped journal is left free to rotate within the chambered head N, and cap Q, or, more properly, the pitman can turn on said bearing without straining or disturbing the crank or wrist pin.

In order to prevent the complete rotation of the globular-shaped journal within its holding box or head, I provide one of the sections of the journal T with an externally-located conical recess, U, into which enters a conical or tapering pin, V, projecting from the base of the chamber in the cap Q or in the head N. The crank-pin (not shown) passes through the apertured sides of the head N and its cap Q, and through the bore or opening of the globular journal T.

The pitman can articulate or turn on the knife-head bearing in a vertical direction, so as to permit a harvester-platform and its adjuncts to rise and fall, and a similar vertical movement combined with an additional axial or rotary movement of the pitman can freely take place by reason of the globular journal T, fitted into the pitman-head and embracing the crank-pin. As has already been stated, the movement of said globular journal is limited or defined by means of the conical pin and recess, which are of such a size and shape that the free movement of the globular journal is not impeded.

In order to permit the crank-pin bearing to be properly lubricated, I provide the head Q, or the flanges thereof, with vertical grooves W, which serve to convey oil admitted into the same to the globular journal, having oil-conducting channels X on the adjoining faces of the sections composing the same.

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

1. The combination of the pitman-head N and end cap, Q, having a globular chamber, and projection V, with the bisected globular journal T, having a crank-pin opening, and a tapering cavity, U, as and for the purpose set forth.

2. The bisected globular journal T, having interlocking ribs *t*, and oil-channel X, in combination with the pitman-head, having a globular chamber, and oil-channel W, as and for the purpose set forth.

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

ISAAC G. BOWER.

Witnesses:
I. C. O'BRIEN,
G. E. BOOP.