2 Sheets—Sheet 1.

W. B. DUNNING.

Pitman Connection for Harvester.

No. 213,039. **Patented Mar. 11, 1879.**

Fig. 1.

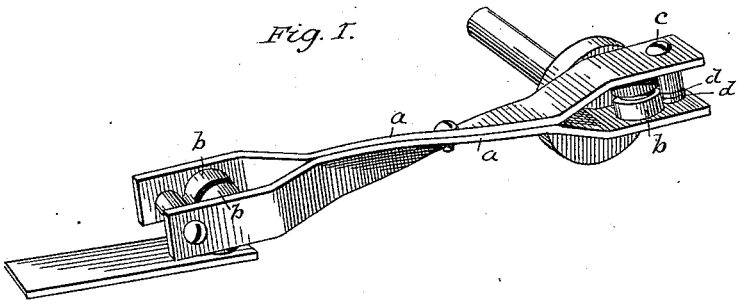


Fig. 2.

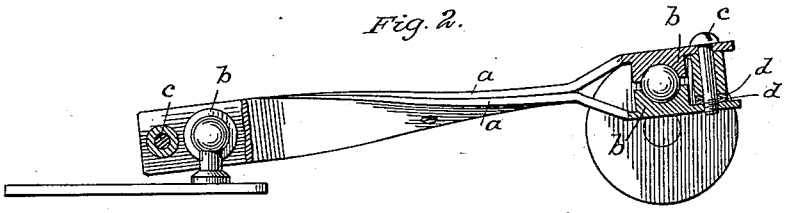


Fig. 3.

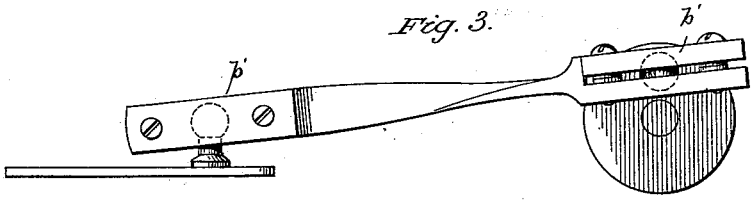
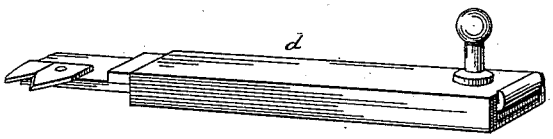


Fig. 4.



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Pitman Connection for Harvester.

No. 213,039. Patented Mar. 11, 1879.

Fig. 5.

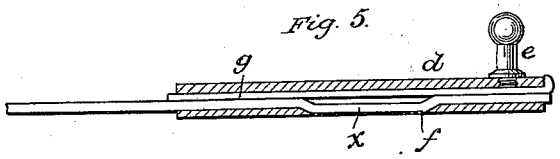


Fig. 6.

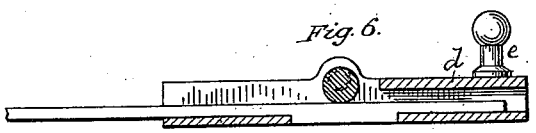


Fig. 7.

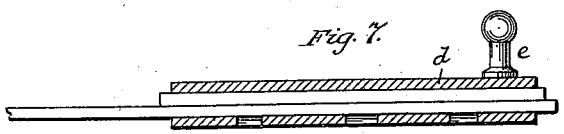


Fig. 8.

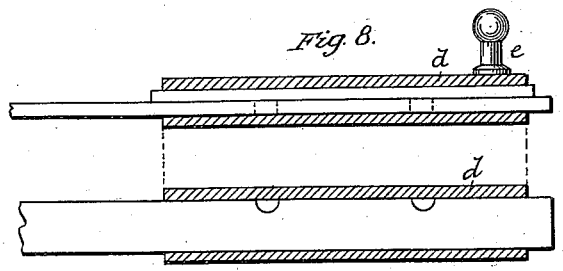


Fig. 9.

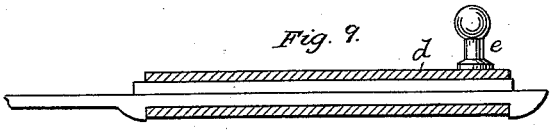
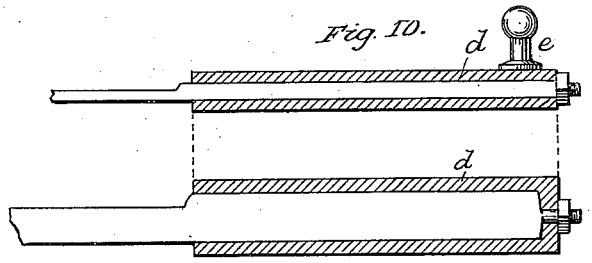


Fig. 10.



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UNITED STATES PATENT OFFICE.

WILLIAM B. DUNNING, OF GENEVA, NEW YORK.

IMPROVEMENT IN PITMAN-CONNECTIONS FOR HARVESTERS.

Specification forming part of Letters Patent No. **213,039**, dated March 11, 1879; application filed January 22, 1879.

To all whom it may concern:

Be it known that I, WILLIAM B. DUNNING, of Geneva, New York, have invented an Improvement in Pitman-Connections for Harvesters, of which the following is a specification:

My invention relates to the pitman for reapers and mowers, and the connection of said pitman with the crank-shaft and the cutter-bar. Its object is to render the parts more simple and economical in construction and more durable and efficient in use.

It consists of a particular and improved form of the pitman, in a particular form of connection between the said pitman and wrist-pin and cutter-bar head, and in the connection of said head to the cutter-bar. These peculiarities in the construction of the pitman and in the connections thereof I proceed to describe fully, and indicate them definitely in the claims.

In the drawings hereunto attached and forming part of this specification, Figure 1 is a perspective view of the pitman. Fig. 2 is a side view of the same with the ends in section. Fig. 3 is a modification of the same. Fig. 4 is a perspective, and Fig. 5 is a vertical longitudinal section, of the device for connecting the head to the cutter-bar. Figs. 6, 7, 8, 9, and 10 are modifications of this connection.

In the form shown in Fig. 1 the pitman or connecting-rod between the crank-shaft and the cutter-head is represented as made in two parts, *a a*. They may be made of cast-steel or any material suited to the purpose. Upon the inner sides of these pieces, near the ends thereof, and directly opposite each other, are boxes with hemispherical cavities on the inner faces thereof.

These boxes *b b* may be cast with the bars upon chills for the purpose of hardening them, or they may be made separate and attached to the bars in any suitable manner. After the bars are formed and the boxes milled and fitted the bars may be twisted so as to bring their faces at each end at right angles to those of the other end, so as to fit the crank-pin and the pin on the cutter-bar head. The parts are then fastened together, as represented in Fig. 1, by small bolts at the center and a bolt on each side of the boxes at each end.

I have shown in the drawings a bolt, *c*, at each end, which passes through a sleeve between the two parts, with thin metal washers *d d* interposed between the end of the sleeve and the inner face of the bar. The sleeve and the washers serve to keep the bars at a proper distance from each other.

When the parts wear in the ball-and-socket joint, by the removal of one or more of the metallic washers they may easily be brought together in order to fit snugly, and the bolts tightened upon the remaining washers.

I have shown in Fig. 3 a modification of this connecting-rod or pitman, said form consisting of a solid bar, which may be made in any suitable manner well known to the art. The ends of this bar are formed on one side of separate pieces *b' b'*, in which sockets may be formed for the admission of the ball upon the wrist-pin, or upon the pin of the cutter-bar head. The parts *b'* may be fastened to the opposite side by bolts in the same manner as shown in the other form with simply interposed washers.

The wrist-pin and the pin upon the cutter-bar head are made in the form clearly shown in the drawings. The ball upon the end of these pins is fitted in size and shape to the cavities in the boxes. The pins may be cast upon metal chills in the same manner as the boxes, and for the same purpose. The construction of the parts is such that when the balls upon the end of the pins are in place and the parts drawn closely together they will work snugly without special care in getting the said parts into line, and without noise and with little friction. Further, when, by reason of long use, the wear of the boxes and the ball renders the connections loose, they may be easily and expeditiously brought together by simply unloosening the bolts, removing one of the washers, and again tightening the bolts.

The ball-and-socket joints at both ends of the pitman afford a free working connection between the parts without liability to binding and consequent tendency to unusual friction and heating and breakage, all of which are more liable to occur with other forms of connection.

The connection between the pitman and the cutter-bar is shown more particularly in Fig. 4, and the modifications of the same in Figs. 7, 8, 9, and 10. This connection consists es-

sentially of a sleeve of suitable shape, having a pin rigidly affixed thereto for connection with the pitman, and having also internal recessses or projections fitting corresponding projections or recesses in the end of the cutter-bar. The cutter-bar is held in this socket by means of a key or cam, or some equivalent device.

In Figs. 4 and 5, *d* represents one form of this cutter-bar head. Upon the end next to the pitman is fixed a connecting-pin, *e*, having the head thereof ball-shaped and fitted to its appropriate socket-joint in the end of the connecting-bar. The sleeve or cutter-bar head is made of the same width as the end of the cutter-bar, but is of a depth greater than the thickness of the said bar.

Upon one side is an opening, *f*. An offset, *x*, is made in the end of the cutter-bar corresponding to this opening, and when the cutter-bar is in place within the head a key, *g*, is inserted in its place, as shown in Fig. 5, which holds the head to the cutter-bar, and thus forms secure connection with the pitman.

Many different forms may be devised of this method of connection, some of which are shown as modifications, heretofore referred to. These are clearly illustrated in the drawings, and need not be particularly described.

The end of the cutter-bar may be split, with ledges or offsets upon each side instead of one, as in Figs. 4 and 5, and the key may be driven between the slit portions, obviously, with the same effect. The offsets or ledges in such case may lock over the end of the cutting-bar socket instead of being let into openings within the said socket.

It is plain that a cam or set-screw may be easily made to take the place of the key shown in Figs. 4 and 5.

The connecting-pin upon the cutter-bar head may be turned at right angles to the position shown in Fig. 1, if desired. In this case the bars which form the pitman need not be twisted, and the faces of the boxes at each end may be parallel to each other. Whether a cam or eccentric or key be used to fasten the cutting-bar in the socket, it may be placed either lengthwise or crosswise of the socket.

Any one of these forms of head may be readily fastened or loosened by the workman.

It is apparent that in all the forms the size of the end of the cutter-bar is not materially enlarged, and said bar may be withdrawn from the head and removed at the outer end of the finger-bar without disturbing the connection between the pitman and the cutter-bar head. The cutter-bar head may therefore be fitted in permanent slides or ways instead of being loose, as it usually is now.

I am aware that the connecting-bar or pitman for connecting the cutter-bar of a harvester to the crank-shaft formed of two parts is not new; and I am also aware that ball-and-socket joints have been heretofore used for these and other similar connections.

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

1. The combination, in the pitman, of the two parts formed with cavities for the ball of the pin with the bolts and the washers interposed between these parts, the whole being constructed and arranged in the manner and for the purpose shown.

2. A pitman consisting of the two parts *a a*, provided with the boxes *b b*, formed to receive the ball of the pin, in combination with the bolts *c* and the interposed washers, all arranged as set forth.

3. A cutter-bar head consisting of a sleeve provided with a pin for connection with the pitman, and adapted to receive the end of the cutter-bar within the said sleeve, in combination with the locking devices, as and for the purpose shown.

4. The combination of the detachable cutter-bar head formed for connection with the pitman, and with a cavity for the reception of the end of the cutter-bar, with the said cutter-bar formed for locking within said cavity without material enlargement, as and for the purpose set forth.

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

WILLIAM B. DUNNING.

Witnesses:
S. SOUTHWORTH,
CHAS. H. RUSH.