

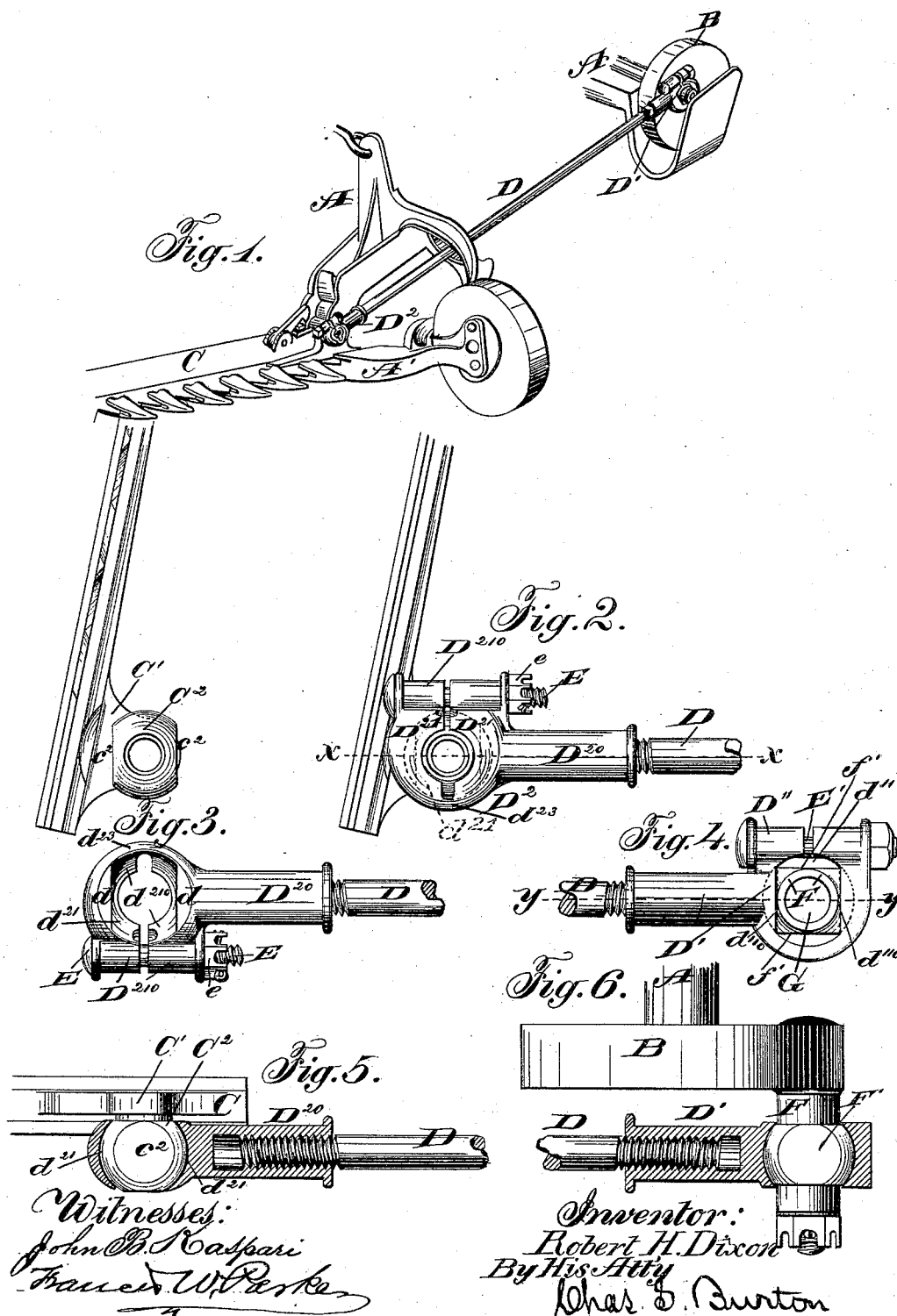
(No Model.)

R. H. DIXON.

PITMAN ROD CONNECTION FOR MOWERS AND REAPERS.

No. 344,034.

Patented June 22, 1886.



# UNITED STATES PATENT OFFICE.

ROBERT H. DIXON, OF CHICAGO, ILLINOIS, ASSIGNOR TO WILLIAM DEERING & CO., OF SAME PLACE.

## PITMAN-ROD CONNECTION FOR MOWERS AND REAPERS.

SPECIFICATION forming part of Letters Patent No. 344,034, dated June 22, 1886.

Application filed January 23, 1886. Serial No. 189,494. (No model.)

*To all whom it may concern:*

Be it known that I, ROBERT H. DIXON, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Pitman-Rod Connections for Mowers and Reapers, which are fully described in the following specification.

The purpose of this invention is to provide a new and more simple and easily-constructed joint than has heretofore been used for connecting the pitman-rod to the cutter-bar and to the crank-wrist of a mower in such manner as to permit the movement of the cutter-bar into the different positions which are necessary in tilting, traveling over uneven ground, and in folding it up to pass gateways, and which will also permit the removal of the entire sickle by disconnecting such joint without withdrawing any bolts or other fastenings or locking devices. It is of the nature of a ball-and-socket joint having certain peculiarities of structure, which are hereinafter explained, and which appear fully in the drawings, in which—

Figure 1 is a perspective of the shoe, wrist-wheel, pitman, and sickle of a mower having my said improvement. Fig. 2 is a front elevation of my improved joint, the cutter-bar being folded up in position to be removed. Fig. 3 shows in elevation the same parts as Fig. 2, but detached by turning the pitman-stirrup down toward the observer. Fig. 4 is a front elevation of a similar joint at the crank-wrist. Fig. 5 is a section through  $xx$ , Fig. 2, except that the sickle and ball are shown in plan, and as seen when the sickle is down horizontal. Fig. 6 is a plan of the wrist-wheel and pitman-joint thereat, the pitman-connection being shown as a section through  $yy$ , Fig. 4.

A is the mower-frame. A' is the shoe. A<sup>2</sup> is the finger-bar. B is the wrist-wheel. C is the cutter-bar. D is the pitman-rod. D' is the stirrup at the wrist-wheel. D<sup>2</sup> is the stirrup at the cutter-bar.

The two stirrups are alike, with the exception of a single feature, which will be pointed out. They are both in form spherical shells. The stirrup D<sup>2</sup> consists of the tubular shank

D<sup>20</sup>, interiorly screw-threaded to receive the rod D and the globe D<sup>21</sup>. Said globe has the cylindrical boss D<sup>210</sup>, parallel with the shank D<sup>20</sup>, and is rifted diametrically transversely to said cylindrical boss, said rift  $d^{22}$  extending almost through the shell, but leaving the two hemispheres joined by the neck  $d^{23}$ , opposite the cylindrical boss D<sup>210</sup>. The interior spherical cavity,  $d^{21}$ , opens to the surface of the globe at the rear by the opening  $d^{210}$ , the shape of which is that of a circle having two equal segments cut off from opposite sides by parallel chords  $d\ d$ . It may also have the circular opening  $d^{210}$  at the front. Through the cylindrical boss D<sup>210</sup> the clamp-bolt E is passed, and provided with the lock-nut  $e$ , to clamp the two wings of the rifted globe together when necessary to take up any lost motion in the joint.

The cutter-bar C has the lug C' projecting from its upper surface, and from said lug there is protruded forward a stud terminating in the ball C<sup>2</sup>. This ball fits the spherical cavity  $d^{21}$  of the globe D<sup>21</sup>, and is truncated by the removal of two equal and opposite segments, thus giving it two parallel plane faces,  $c^2\ c^2$ , and adapting it to enter the spherical cavity  $d^{21}$  through the opening  $d^{210}$  when placed in such position that its parallel faces  $c^2\ c^2$  coincide in direction with the parallel edges  $d\ d$ . The faces  $c^2\ c^2$  are preferably slightly oblique to the direction of the length of cutter-bar, but are substantially parallel to the axis of its pivot to the shoe. The direction of such obliquity should be such that the cutter-bar shall lean outward from a vertical line when the faces  $c^2\ c^2$  are in position to allow the ball C<sup>2</sup> to enter the cavity  $d^{21}$ . Obviously the same result may be attained by locating the opening  $d^{210}$  with its parallel edges  $d\ d$  oblique to the direction of the pitman-rod.

The mode of connecting and disconnecting the parts of this joint will be obvious from inspection of Figs. 2 and 3. The finger-bar carrying the cutter-bar being folded up into the position shown in those figures, the stirrup D<sup>2</sup> may be placed upon the ball-stud C<sup>2</sup> by inserting the lower spherical side of the latter through the opening  $d^{210}$  in the former and turning the stirrup—as its screw-connection with the rod D will allow—about the axial

line of said rod until the entire surface of the plane faces  $c^2 c^2$  is within the spherical cavity  $d^{21}$ , and then lowering the cutter-bar by rocking the finger-bar on its pivot to the shoe, 5 whereby the parallel faces  $c^2 c^2$  pass out of plane with the edges  $d d$  of the opening  $d^{21}$ , and the ball  $C^2$  is prevented from escaping from the shell-cavity of the stirrup until the cutter-bar is again placed in the position shown in 10 the Figs. 2 and 3.

The joint of the wrist-wheel B is different from that already described in that the ball  $F'$ —similar in form to the ball  $C^2$ —is formed on the thimble or sleeve F, which is the journal-box for the wrist G, and is prevented from 15 turning in the stirrup  $D'$  about the axis of said sleeve and wrist by the fact that the clamp-bolt  $E'$ , which passes through the boss  $D''$ , enters and traverses the spherical cavity  $d^{21}$  at that side on which the boss  $D''$  is located, so forming a key engaging one of the flat faces,  $f'$ , of the ball  $F'$ . To disconnect this joint, the clamp-bolt  $E'$  must be removed and the thimble or sleeve F rolled on the wrist-pin G until 25 the parallel faces  $f'$  of the ball  $F'$  coincide with the parallel edges of the opening  $d^{21}$ , and at that stage, the pitman being given an axial turn of ninety degrees, the joint will be disconnected, the action being precisely similar 30 to that of the other joint, the rolling of the thimble being the equivalent of swinging up the cutter-bar, and so rolling the ball  $C^2$ , fixed to it.

I do not claim the use of the clamp bolt  $E'$  as 35 a key to engage the flat surface of ball  $F'$  and prevent its rotation; nor do I claim the use of the truncated head of said bolt  $E'$ , (shown in Fig. 2) as adapted to engage the shank of the stirrup  $D'$  and prevent accidental rotation and 40 escape of said bolt. The said features are not

my invention, but are claimed by John F. Steward in his pending application, filed January 8, 1886, Serial No. 187,973.

I claim—

1. In combination with a stirrup having a 45 cavity which is circular about an axial line and having an axial opening into such cavity, said opening being incompletely circular about the axis of the cavity, the reciprocating bar having a sideward-jutting stud provided with 50 a pivot of which the cross-section has the form of the axial opening into the stirrup-cavity, substantially as set forth.

2. In combination with the stirrup having its pivot-cavity provided with an opening 55 therein in the form of a segment of a circle, the cutter-bar having a sideward-jutting stud provided with a ball-pivot truncated by a plane parallel to its axis, to fit the segmental opening in the stirrup-cavity, substantially as set forth. 60

3. In combination, substantially as set forth, the wrist G, the thimble F, having the ball-swell  $F'$  cut away to form a key-seat, the stirrup having the spherical cavity to receive the ball, and an opening therein conformed in 65 outline to the mutilated circular outline of the ball, and the removable key-bolt  $E'$ , intruding into the spherical cavity of the stirrup in the locality of the key-seat on the ball when the latter is in working position, the outline of 70 said opening being not coincident with the outline of the ball in working position.

In testimony whereof I have hereunto set my hand, in the presence of two witnesses, at Chicago, Illinois, this 19th day of January, A. D. 75 1886.

ROBERT H. DIXON.

Attest:

WM. D. PORTER,  
JOHN B. KASPARL.