

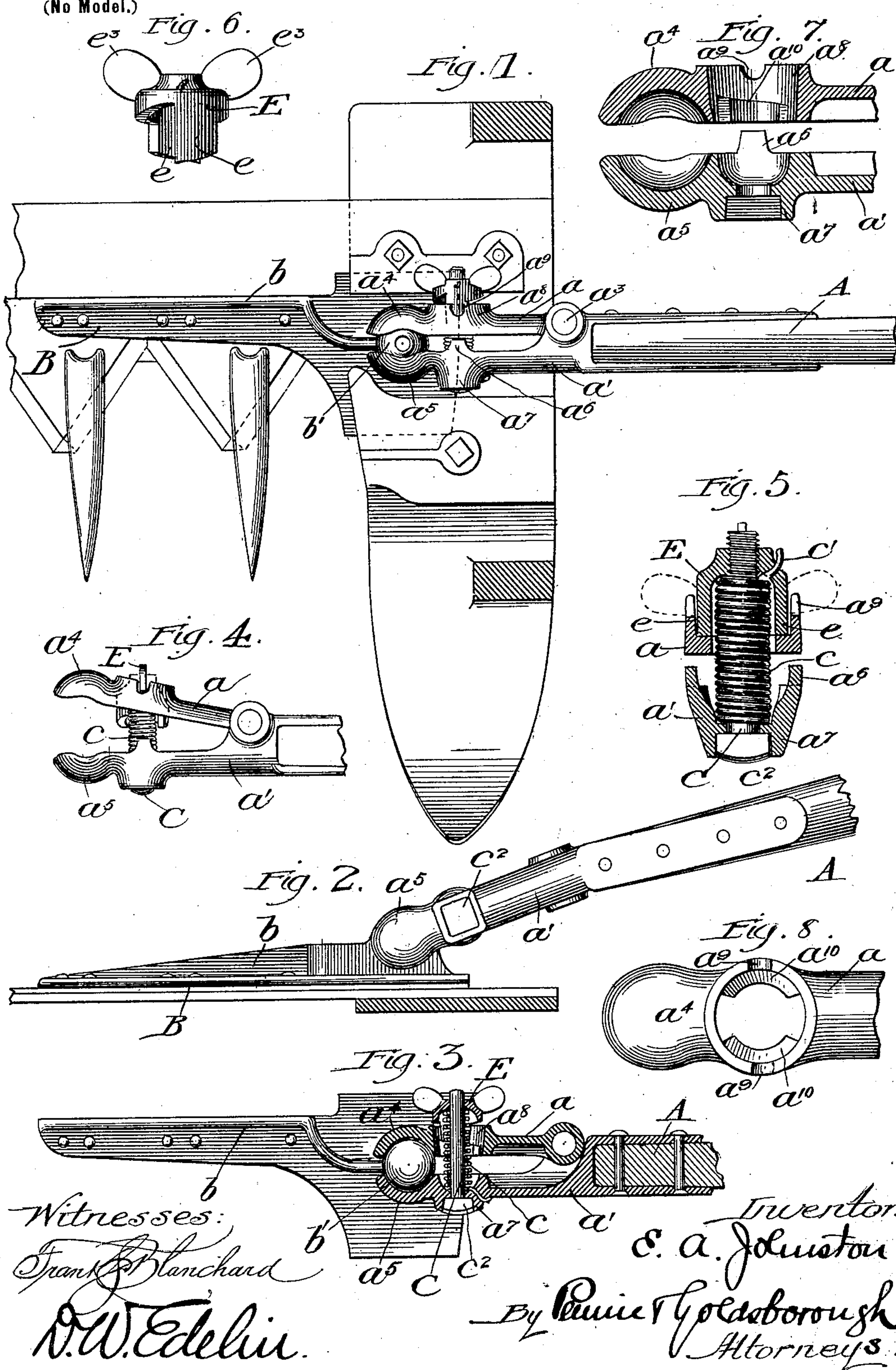
No. 683,049.

Patented Sept. 24, 1901.

E. A. JOHNSTON.
PITMAN CONNECTION.

(Application filed Dec. 22, 1900.)

(No Model.)



UNITED STATES PATENT OFFICE.

EDWARD A. JOHNSTON, OF CHICAGO, ILLINOIS.

PITMAN CONNECTION.

SPECIFICATION forming part of Letters Patent No. 683,049, dated September 24, 1901.

Application filed December 22, 1900. Serial No. 40,751. (No model.)

To all whom it may concern:

Be it known that I, EDWARD A. JOHNSTON, a citizen of the United States, residing at Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Pitman Connections; 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.

My invention relates to improvements in pitman connections, and pertains more particularly to joints for use in connection with the knife-heads of mowing-machines, although it is adapted for use in all analogous relations where a flexible connection between moving parts is desired.

The object of my invention is to provide a ball-and-socket connection between the pitman and the reciprocating part wherein the connection between the ball-bearing and the respective sockets is maintained uniform by spring-pressure and all wear between the parts is automatically compensated for.

My invention is illustrated in the accompanying drawings, in which—

Figure 1 is a plan view of my improved pitman connection as applied to the knife-head of a mowing-machine. Fig. 2 is a side elevation thereof. Fig. 3 is a longitudinal section through my improved connection, showing the parts in operative relation. Fig. 4 is a plan view illustrating the spoons in open position. Fig. 5 is an enlarged sectional elevation showing the manner of connecting the adjusting means with the respective spoons. Fig. 6 is a detail of the adjusting-nut. Fig. 7 is a fragmentary view in section of the respective spoons. Fig. 8 is a side elevation of the movable spoon.

Referring to the drawings, A represents the pitman of a mowing-machine, to which is firmly secured the spoon a' by means of integral straps lying along the respective sides of the pitman. Pivoted in suitable ears projecting from the spoon a' is a second cooperating spoon a , whose socket a^4 lies adjacent to the corresponding socket a^5 of the spoon a' . The spoon a' has a lateral perforation to receive a bolt C, whose polygonal head c^2 fits a bearing in a corresponding socket a^7 . The spoon a has an enlarged orifice a^8 extending

through it, which bears on its inner wall two projecting cams a^{10} , each of which extends part way around said wall, leaving a space between their contiguous ends. The upper rim of this orifice has two diametrically opposite notches a^9 , the purpose of which will be described later. The upper end of the bolt C is screw-threaded to receive a correspondingly-threaded nut E, which has the customary wings or finger-pieces a^3 and is provided with two depending lugs or ears e , terminating in inclines or cam-surfaces corresponding to the cams a^{10} .

Surrounding the bolt and attached at one end to the spoon a' and at the other to the nut E is a spiral spring c , which is normally under tension and tends to force the nut upon the screw-threads of the bolt toward the head thereof. Spoon a' has two lugs a^6 , which prevent the spoons being brought too close together, thereby causing the joint to bind. The pitch of the threads on the bolt C corresponds to the inclination of the cams a^{10} , so that as the spring c turns the nut E the latter is forced upon the threads of the bolt toward the head and the lugs e are moved upon the cam a^{10} , thereby moving the spoon a toward the spoon a' .

The parts when properly assembled bear the specific relation to each other illustrated in Fig. 3, wherein the nut E has been turned so that its cam-lugs e engage and ride upon the corresponding cams a^{10} on the spoon a , thereby drawing the spoon a toward the spoon a' and causing the respective sockets a^4 and a^5 to embrace the ball-bearing b' on the bracket b of the knife-head B. The pressure between parts of the ball-and-socket joint is just sufficient to insure a good bearing, neither too tight nor too loose, and the degree of this pressure may readily be regulated by adjusting the tension of the spring. To separate the parts, it is only necessary to turn the thumb-nut until its ears come opposite the notches a^9 in the rim of the spoon a . In this position the cams e on the nut are disengaged from the corresponding cams a^{10} on the spoon and the pivoted spoon is forced away from the fixed spoon by the spring, so that the ears e^3 engage the socket a^9 and the parts are held locked in open position.

This construction is simple and effective

as compared with those formerly in use. It is not necessary that the spring be a heavy one to secure the parts in locked position, as the vibrations of the pitman will tend only
5 to force the cams of the nut E higher up the inclines of the cams on the spoon. Furthermore, the device is much to be preferred to the old constructions where unskilful workmen are employed in that it is self-adjusting
10 and once the degree of tension is determined it is not necessary to readjust the parts after each removal of the knife-head.

Having thus described my invention, what I claim is—

15 1. A pitman connection, comprising cooperating spoons, a bolt passing through said spoons, a nut on said bolt, cooperating cams on said nut and one of said spoons, a spring attached to said nut and the other of said
20 spoons, whereby said cams are caused to engage, and said spoons are forced into operative position.

2. A pitman connection, comprising cooperating spoons, a bolt passing through said
25 spoons, a nut threaded on said bolt, cooperating cams on said nut and one of said spoons, a spiral spring attached to said nut and the other spoon, whereby said nut is caused to

turn on the bolt and said cooperating cams are made to engage to force the spoons into
operative relation. 30

3. A pitman connection, comprising cooperating spoons, a bolt passing through said spoons, a nut threaded on said bolt, cam-lugs on said nut working in a flanged orifice
35 in one of said spoons, cams on the walls of said orifice, a spiral spring attached to said nut and the other spoon, whereby said cams are engaged to close the spoons, and means for disengaging said cams. 40

4. A pitman connection, comprising a fixed and a movable spoon, a bolt passing through said spoons, a wing-nut threaded on said bolt, cam-lugs on said nut working in a flanged
45 orifice in said movable spoon, cams on the wall of said orifice cooperating with the cams on said nut, a spiral spring attached to said nut and said fixed spoon, and means for disengaging said cams to permit said spring to
50 open the spoons.

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

EDWARD A. JOHNSTON.

Witnesses:

B. R. BENJAMIN,
WILLIAM WEBBER.