

No. 740,594.

PATENTED OCT. 6, 1903.

G. W. SCHOCK.
MEANS FOR PREVENTING LOST MOTION.

APPLICATION FILED MAR. 31, 1903.

NO MODEL.

Fig. 1.

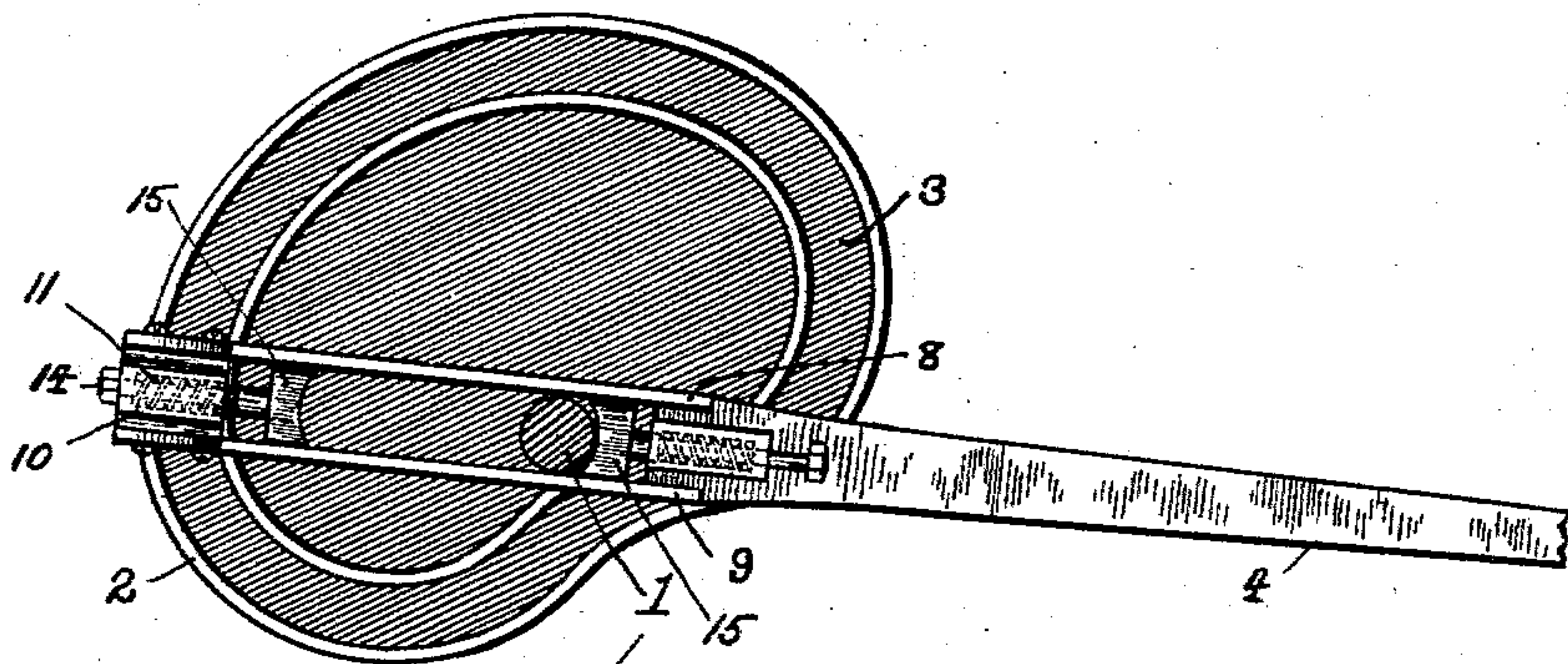


Fig. 2.

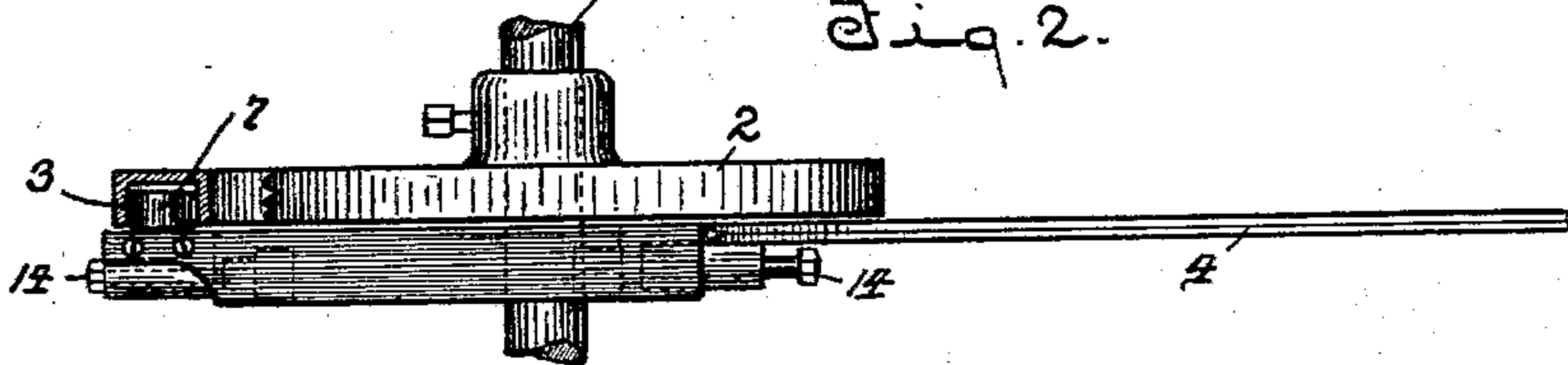


Fig. 3.

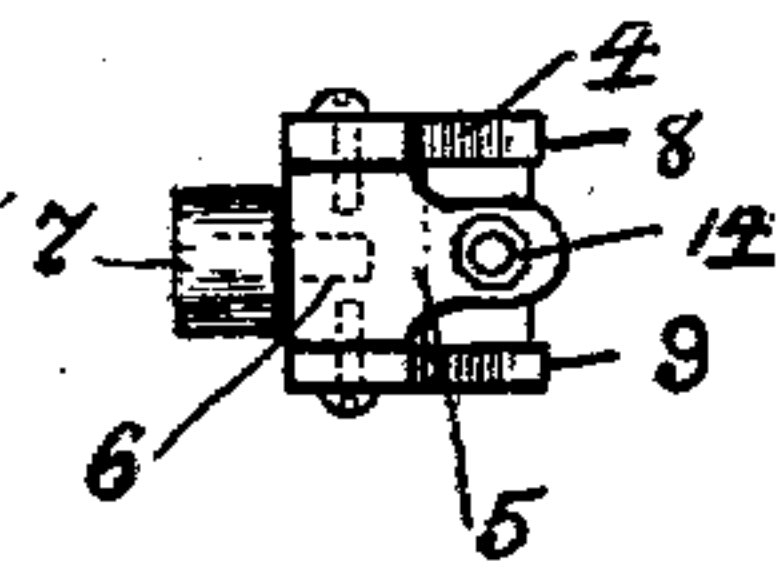
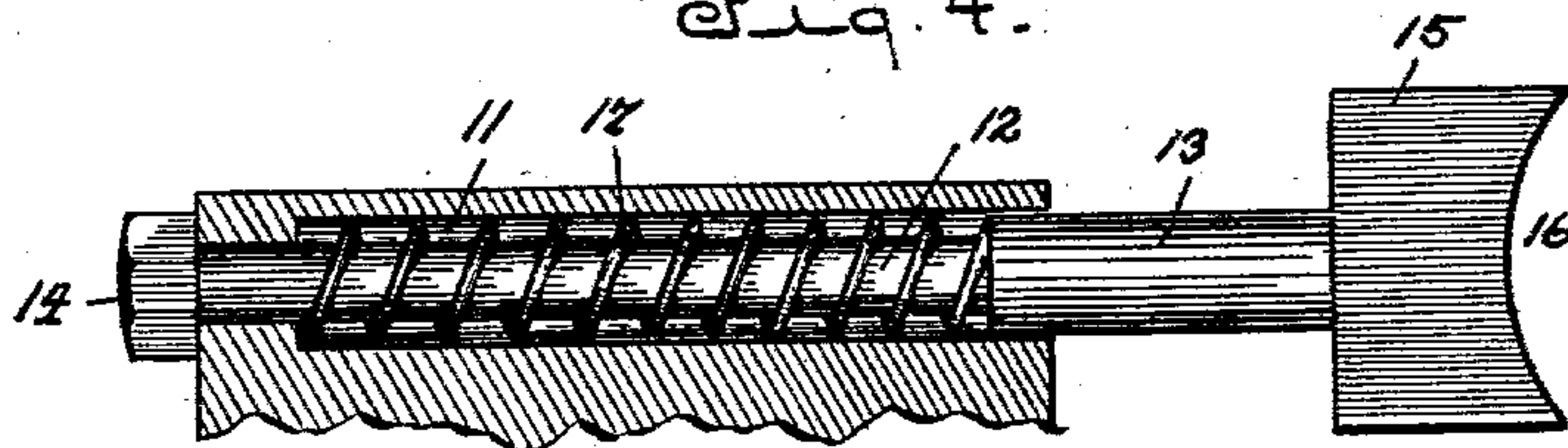


Fig. 4.



Witnesses.

George Oltsch
Maggie Oltsch

George W. Schock.
Inventor.

By Theodore Dalton
Attorney.

UNITED STATES PATENT OFFICE.

GEORGE W. SCHOCK, OF SOUTH BEND, INDIANA.

MEANS FOR PREVENTING LOST MOTION.

SPECIFICATION forming part of Letters Patent No. 740,594, dated October 6, 1903.

Application filed March 31, 1903. Serial No. 150,387. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. SCHOCK, a citizen of the United States, residing at South Bend, in the county of St. Joseph and State of Indiana, have invented certain new and useful Improvements in Means for Preventing Lost Motion; 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 has relation to improvements in improved means for preventing lost motion at dead-point in mechanism for converting rotary into rectilinear motion; and the object is to provide an improved assemblage or aggroupment of parts which will be of simple construction, efficient in attaining the purpose, and at the same time strong and durable in use. I attain the objects of the invention by the means and mechanism illustrated in the accompanying drawings, to be taken as a part of this specification, and wherein—

Figure 1 is a side view of a rotatable cam and a piston-rod or pitman connected by my improved means. Fig. 2 is a top plan view, partly in section, showing the antifriction-roller as engaged in the race of the cam. Fig. 3 is a detail view of the antifriction-roller and supporting-bracket. Fig. 4 is a detail view, on enlarged scale, partly in section, showing the plunger and its buffer-spring.

In the drawings similar references indicate like parts in the several illustrations.

It will be premised that in mechanical movements of the kind involved it is well known that the lost motion present under ordinary constructions increases proportionately as the train of connected mechanism is multiplied. It may also be noted that in mechanism requiring accurate adjustment, in which cams and levers are used to convert the movement from one kind to another, it has been found difficult to prevent or overcome the lost motion which occurs at opposite points in each stroke or revolution of the mechanism. In order to prevent and overcome this common difficulty, I provide the reciprocating element or member with oppositely-arranged spring-actuated plungers, which contact yieldingly against the shaft of the rotary member and by their recoil action take up all lost motion

of pitman as same is carried over the dead-points.

Referring to the drawings, 1 designates a rotatable shaft, on which is mounted and secured to rotate with the shaft a cam 2, having formed at its side face a cam-race 3, the walls of which are in concentric relation.

4 designates the reciprocable rod or pitman, on the end of which is mounted a suitable bracket 5, formed with a socket 6, constituting a bearing, wherein is arranged a bearing-stem of a roller 7, extending laterally from the rod 4 and engaging in the cam-race 3 of the cam. The pitman or rod 4 is made with side plates or pieces 8 9, forming a slot through which the cam-shaft loosely projects and between the outer ends of which is secured a bracket 10, wherein is formed a longitudinally-arranged socket 11, wherein is slidingly disposed the stem 12 of a plunger or buffer 13, the stem extending through the end of the bracket and provided with a threaded nut 14. The buffer is formed with a head 15, having a concaved outer face 16 coincident with the perimeter of the shaft. A buffer-spring 17 is mounted on the stem of the buffer. At the opposite end of the slotted portion of the pitman is positioned a buffer, which in construction and operation is the duplicate of that above described, and therefore the parts have been designated by the same references.

It will be perceived from the foregoing description, taken in connection with the drawings, that when the rotating member reaches a dead-point in relation to the reciprocating member the buffer will contact with the shaft before the limit of the stroke is reached and the buffer-spring will be gradually depressed, so that when the dead-point is reached the force of the spring will be exerted to overcome any lost motion by taking up the play that may exist between the cam-race and roller on end of reciprocating rod or pitman. The opposite buffer acts opposite to the other, or, in other words, prevents movement of any kind on the part of reciprocating rod as the roller passes over the dead-centers.

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

1. In a mechanism of the kind described, the combination of a cam having a cam-race

in the face thereof, a reciprocable pitman
formed with a slot through which the cam-
shaft loosely projects, spring-actuated buffers
in the pitman at the ends of the slots, and
5 a roller on the pitman to engage in the cam-
race.

2. In a mechanism of the kind described,
the combination of a cam having a cam-race
in the face thereof, a reciprocable pitman
10 formed with a slot through which the cam-
shaft loosely projects, and formed with sock-

ets at the ends of the slot, buffers slidingly
arranged in the sockets, springs in the sock-
ets on the buffers, and an operative connec-
tion between the pitman and the cam-race. 15

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

GEO. W. SCHOCK.

Witnesses:

GEORGE OLTSCH,
MAGGIE OLTSCH.