

(No Model.)

2 Sheets—Sheet 1.

D. J. CROSBY.

CONNECTING ROD FOR REAPERS, MOWERS, PUMPS, &c.

No. 594,729.

Patented Nov. 30, 1897.

FIG. 1.

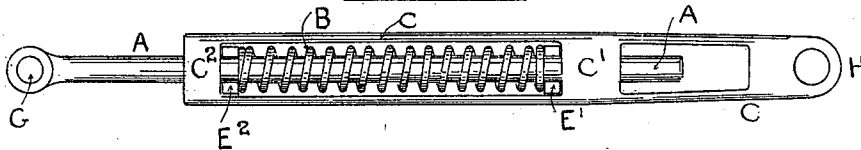


FIG. 2.

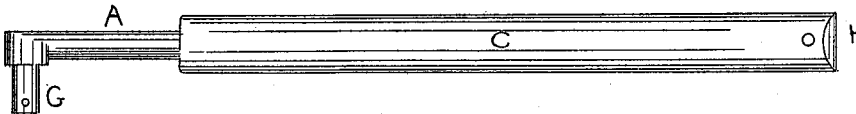


FIG. 3.

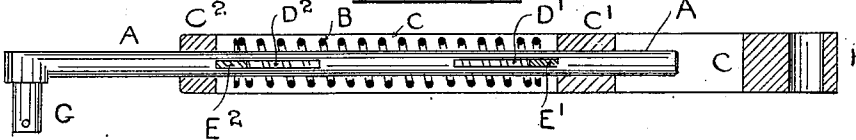


FIG. 4.

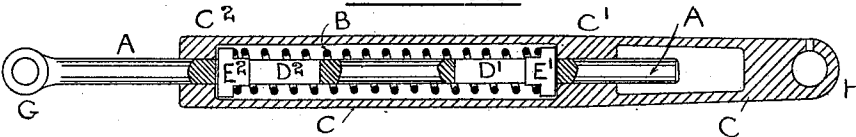


FIG. 5.

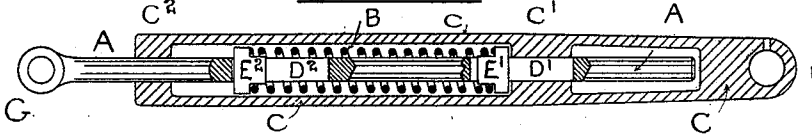
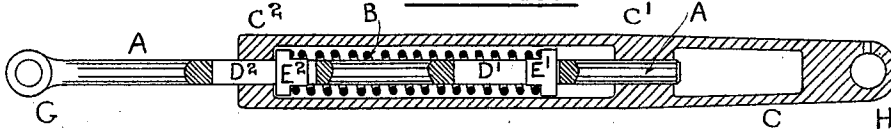


FIG. 6.



WITNESSES.

Julius Lutz.
J. L. McCaffrey

INVENTOR:

BY *D. J. Crosby*
Wm. H. [unclear]
ATTORNEYS.

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FIG. 7.



FIG. 8.

WITNESSES,
Julius Lutz.
J. L. McAniff

INVENTOR:
D. J. Crosby
BY *[Signature]*
ATTORNEYS.

UNITED STATES PATENT OFFICE.

DANIEL JOHN CROSBY, OF KADINA, SOUTH AUSTRALIA.

CONNECTING-ROD FOR REAPERS, MOWERS, PUMPS, &c.

SPECIFICATION forming part of Letters Patent No. 594,729, dated November 30, 1897.

Application filed August 12, 1896. Serial No. 602,577. (No model.) Patented in South Australia January 23, 1896, No. 3,147.

To all whom it may concern:

Be it known that I, DANIEL JOHN CROSBY, farmer, a subject of the Queen of Great Britain, and a resident of Black Oak Farm, Kadina, in the Province of South Australia, have invented Improvements in Connecting-Rods, (for which I have obtained Letters Patent in South Australia, No. 3,147, dated January 23, 1896,) of which the following is a full, clear, and exact specification.

The invention relates to connecting-rods for reapers, mowers, pumps, and other machinery where reciprocating motion is employed.

This invention is for the purpose of actuating the knives of reapers and mowers in such a manner that when obstructions are met with the connecting-rod, which converts the rotary into reciprocal motion, shall lengthen or shorten and thus avoid breakage of the knife or other part of the machine.

Connecting-rods as at present used for converting rotary into reciprocal motion are made of the necessary length to suit the machine on which they are employed, and being of a rigid character maintain a fixed length.

It sometimes happens that the operated portion of the machine becomes obstructed or choked—for instance, sticks, stones, and bits of wire catch in the knife-bar—and as the driving power cannot be stopped or disconnected immediately breakage takes place, involving not only loss of time, but great expense for repairs. Now by my invention I provide an automatic self-relieving connecting-rod, so that when an obstruction or choke is met with the rod accommodates itself in length, and in effect a disconnection is made until the return stroke or until the driving power is cut off or stopped and the obstruction drops out or is removed. This result is achieved by forming the rod in two parts—first, a sleeve or frame provided with two bosses or bearings, and, second, a slotted spindle or plunger which passes through such bearings. The spindle or plunger is slotted and is encircled by a coil-spring of sufficient strength to stand the tension required and confined between keys carried in the slots. The spring is so set and fitted that when the machine is working in a normal manner the rod acts as a rigid one, but when an obstruc-

tion is met with, such as before mentioned, the slotted spindle slides through its bearings in the sleeve, comprising the spring, and increasing or decreasing the length of the rod as necessary, and the operated portion is not further actuated until the obstruction has been removed. It is necessary that the spindle should slide through its bearings a sufficient distance to allow the pin on the driving-disk to turn center, and the slots and keys or other supports which confine the spring at each end are therefore constructed in accordance with this condition.

In order that my invention may be clearly understood, I will describe the same with reference to the accompanying drawings, in which—

Figure 1 is a side elevation, and Fig. 2 is a plan, of a simple form of my connecting-rod. Figs. 3 and 4 are sectional views of the same. Fig. 5 is a similar view to Fig. 4, but showing the rod shortened. Fig. 6 is a similar view to Fig. 4, but showing the rod lengthened. Fig. 7 shows a portion of a mowing-machine fitted with a rigid connecting-rod. Fig. 8 is a similar view, but with my self-relieving rod substituted for the rigid one.

The same letters refer to like parts in all the figures.

A is the spindle or plunger, around which the spring B is supported.

C is the sleeve or frame, between the bosses or bearings C' C² of which the spring B is carried.

E' E² are keys which pass through suitable slots D' D² in the rod A and confine the spring between them. Washers may be interposed between the ends of the spring and the keys, if desired; but I consider it quite sufficient to form a flat coil upon each end of the spring.

G is the stud or pin to which the end of the knife-bar is connected, and H is the eye or socket which fits upon the pin of the driving-disk of the machine.

The outer ends of the slots D' D² in the spindle A coincide with the inner faces of the bosses C' C², so that the backs of the keys E' E², when the rod is of normal length and working freely, bear against the outer ends of the slots D' D² and against the inner faces of the bosses C' C². Should an obstruction be met with on the forward stroke, the rod is short-

ened, the key E² is carried along with the spindle A, and the key E' bears against the boss C', thereby compressing the spring, as shown in Fig. 5. Should an obstruction be met with on the backward stroke, the rod is lengthened, the key E' is drawn along with the rod A, and the key E² bears against the boss C², the spring being compressed, as shown in Fig. 6.

I would have it understood that I do not confine myself to the form or details herein set forth.

It will be obvious that modifications of form and detail may be made as required without departing from the principle of my invention.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is—

1. A connecting-rod having a spindle, a frame having two bearings through which the spindle is longitudinally movable, a spring located between the bearings of the frame, and two pins slidable in the spindle and confining the spring, the pins being respectively capable of engaging the bearings as the spin-

dle reciprocates in the frame, substantially as described.

2. A connecting-rod having a frame with two bearings, a spindle movable through the bearings, a spring located between the bearings, and means at each end of the spring, such means confining the spring and being slidable on the spindle, substantially as described.

3. A connecting-rod having a frame provided with two bearings, a rod having two longitudinal slots, the rod being reciprocal through the bearings, a pin slidable in each slot, the pins being respectively capable of engaging the bearings, and a coil-spring encircling the rod and located between the pins, substantially as described.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 19th day of June, 1896.

DANIEL JOHN CROSBY.

Witnesses:

CHARLES NICHOLAS COLLISON,
ARTHUR GORE COLLISON.