(No Model.)

C. H. UPTON.

PISTON ROD CONNECTION FOR SAWMILL CARRIAGES.

No. 523,299. Patented July 17, 1894.

Fig. 1.

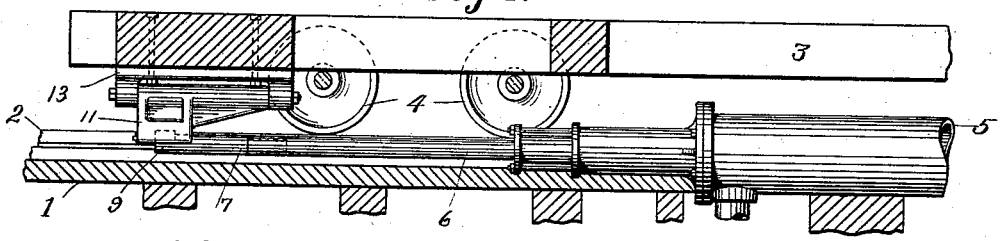


Fig. 3.

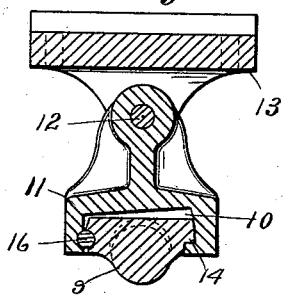


Fig. 2.

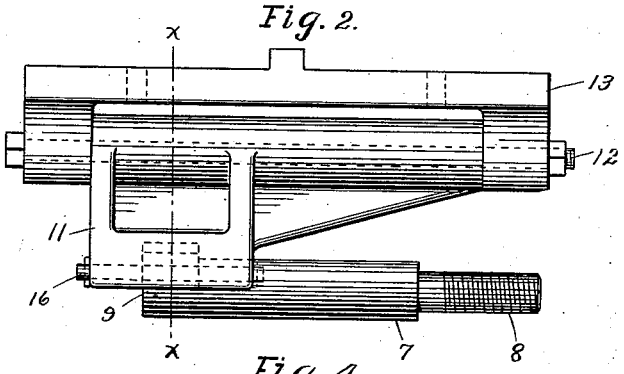


Fig. 5.

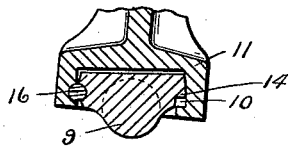


Fig. 4.

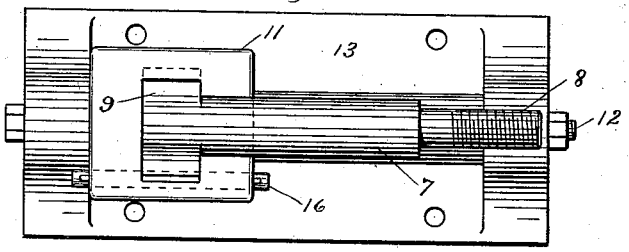


Fig. 7

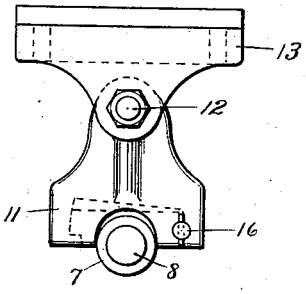


Fig. 6.

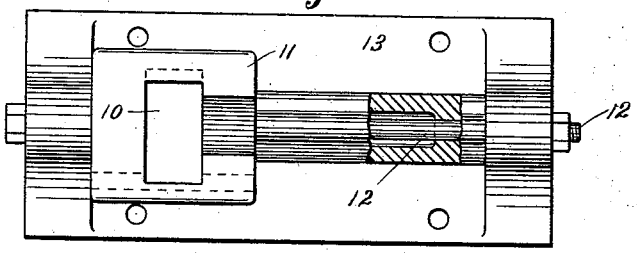


Fig. 8.

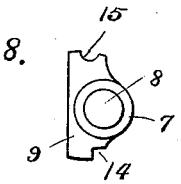
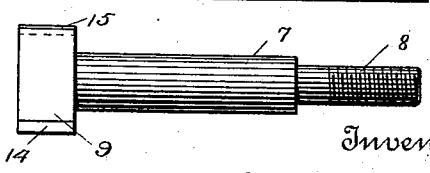


Fig. 9.



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UNITED STATES PATENT OFFICE.

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PISTON-ROD CONNECTION FOR SAWMILL-CARRIAGES.

SPECIFICATION forming part of Letters Patent No. 523,299, dated July 17, 1894.

Application filed February 19, 1894. Serial No. 500,615. (No model.)

To all whom it may concern:

Be it known that I, CHARLES H. UPTON, a citizen of the United States, residing in Minneapolis, in the county of Hennepin and State of Minnesota, have invented a certain new and useful Improvement in Piston-Rod Connections of Sawmill-Carriages, of which the following is a specification.

My invention relates to devices for connecting the piston rods to saw mill carriages; and its object is the provision of means for making such connection as will permit the carriage to be reciprocated and offset without exerting a lateral or twisting strain on the piston rod; and so to avoid the breaking of the rod which is a common occurrence in the use of present methods of making such connections.

The improvements, it should be understood, are designed to be used in connection with classes of mechanisms that are well-known and extensively used, and that they relate solely to devices for connecting the other mechanisms, and particularly in mills which employ band-saws. In the class of machinery to which these improvements relate, the log-carriage is advanced to the saw by means of a piston rod connected to it which is utilized to advance and retract the carriage; and that, as is customary, after the cut has been made and the carriage is to be retracted (particularly in the instance of the use of band-saws) the carriage must be moved laterally to a sufficient distance for the retreating log to clear the saw. This is a customary practice and the means for accomplishing such movement are not shown because they form no part of the present invention. It should be understood also that the piston rod commonly used is a pipe of considerable length—varying from, say twenty-five to sixty feet—which is connected only at its extremity to the log-carriage; and that while when at the limit of its outward thrust its end might be slightly moved laterally or twisted without detriment, when, on the other hand, it is on its return movement and near the piston such deflection from its normal course would be likely to prove disastrous. To avoid such difficulty devices capable of a rocking movement are commonly used to connect the piston rods with the carriages; but they do not obviate or lessen the twisting effects upon the rods when the carriage is offset. And it is to this specific object that the present improvements are directed.

The connection of the improvements with the mechanisms to which they relate, and the improvements themselves in detail, are illustrated in the accompanying drawings, in which—

Figure 1 shows, in sectional elevation from the side, a portion of a log-carriage, the piston and cylinder for operating it and a track upon which it reciprocates and the devices of my improvement. Fig. 2 is a side elevation of the devices for connecting the piston rod to the carriage. Fig. 3 is a vertical section of the same on the line *x*—*x* of Fig. 2; both of which show the devices when the carriage is in sawing position. Fig. 4 is a plan view of Fig. 2 inverted; Fig. 5 a vertical section similar to Fig. 3 showing the position of parts when the carriage has been moved laterally and away from the saw. Fig. 6 is a view similar to Fig. 4 with the connecting head of the piston rod removed. Fig. 7 is an end view of Fig. 2; and Figs. 8 and 9 are details of the piston rod connecting head.

In the drawings 1 designates a floor or base upon which is laid a track 2 upon which the log-carriage 3 runs. The carriage is movable laterally to move the log or cant laterally to or from sawing position, (by means well-known and having no reference to the present improvements,) while the wheels 4 remain upon the track. The carriage is reciprocated in the usual way by means of a cylinder 5 for operating a piston rod 6 which, as usual, consists of a pipe to avoid unnecessary weight.

To the piston rod 6 is attached a short rod 7 having an end 8 fitting in the end of the piston rod and secured by screwing in or otherwise. The rod 7 has formed on its end a head 9 which fits loosely in a socket 10 formed in the yoke 11 which connects it with the carriage. The yoke is pivoted in the usual way, as at 12, to a bracket 13 which is bolted or otherwise attached to the frame of the carriage.

It will be apparent that when the carriage is offset carrying with it the bracket 13, it will also move laterally the yoke 11, while permitting it to turn on the axis 12; that is, will move it from the position indicated in Fig. 3 to that indicated in Fig. 5.

It will be obvious that if the end of the piston rod were rigidly connected to the yoke 11 this movement would twist the rod to an extent equal to the twist given the yoke. By providing the slot 10 in which the head 9 fits loosely the yoke may be moved without twisting the rod.

Any convenient or desirable means may be used for connecting the head 9, or an equivalent body, in the socket so that it may have the proper play. As shown in the drawings, the means of connection comprise a somewhat angular head having at one side an incline or shoulder 14, and at the other a groove 15. This body after being inserted in the opening 10 is held in place by a bolt 16 engaging the wall of the groove 15 and a corresponding groove in the wall of the yoke.

It will be readily seen that the yoke 11 may be rocked upon the bolt 16 as an axis so as to move it from the position shown in Fig. 3 to that shown in Fig. 5, and so to permit lateral movement of the carriage without twisting or moving the piston rod.

Having described my invention, what I claim is—

1. The combination, with a log-carriage and a piston rod for moving it; of a device pivotally connected to the carriage, and a second device carried by the piston rod and pivotally connected to the before mentioned pivoted device, whereby the carriage is permitted to be offset without twisting the piston rod, substantially as set forth.

2. The combination with a log-carriage and piston-rod, of a pivoted yoke connecting the latter to the former, and a head carried by the piston-rod and pivotally connected to the yoke, for the purpose set forth.

3. The combination with a log-carriage and piston-rod, of a pivoted yoke connecting them and providing a recess, and a head on the piston-rod of smaller dimensions than such recess and arranged to rock therein, substantially as set forth.

CHARLES H. UPTON.

Witnesses:
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