

H. G. DITTBENNER.

PISTON ROD CONNECTION FOR SAWMILL CARRIAGES.

No. 563,265.

Patented July 7, 1896.

Fig. 1.

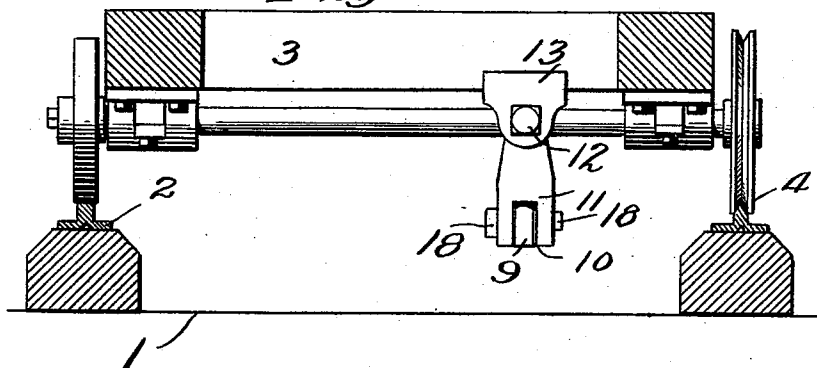
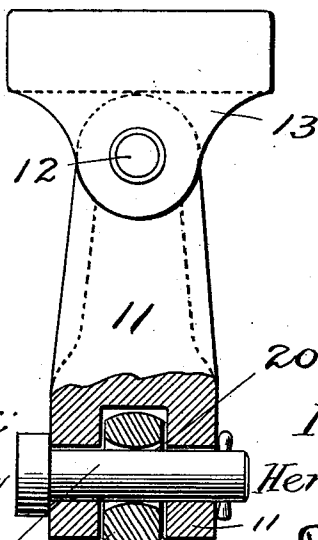
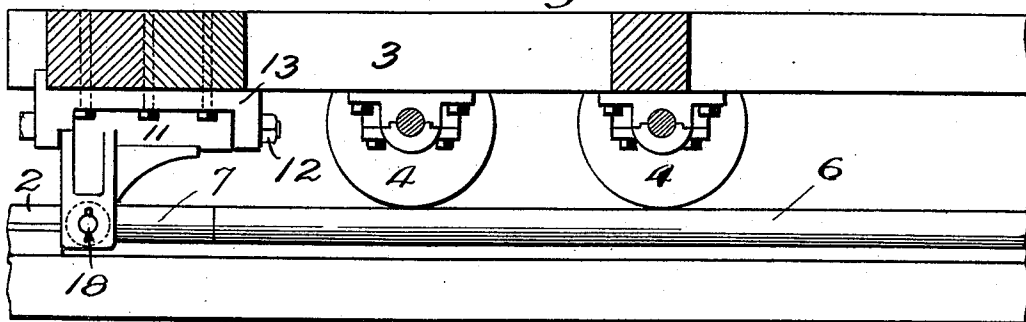


Fig. 2.



Witnesses:
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Fig. 3.

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Fig. 4.

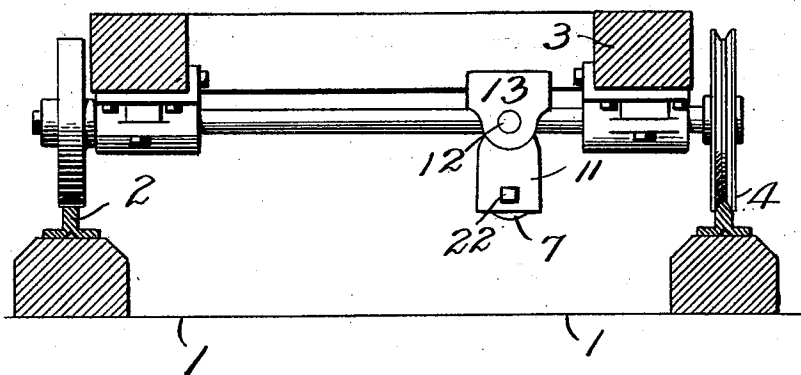


Fig. 5.

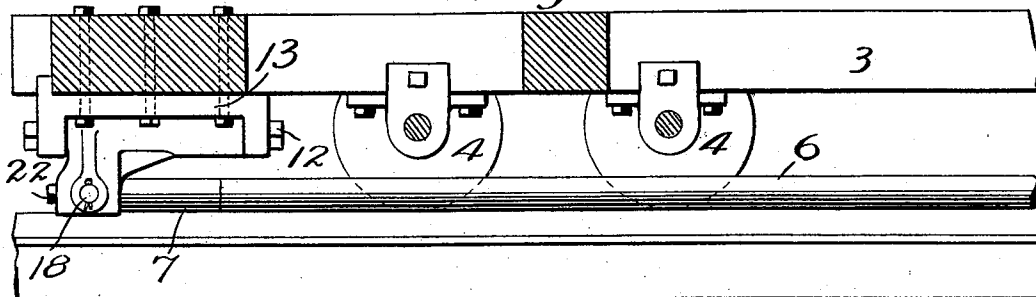
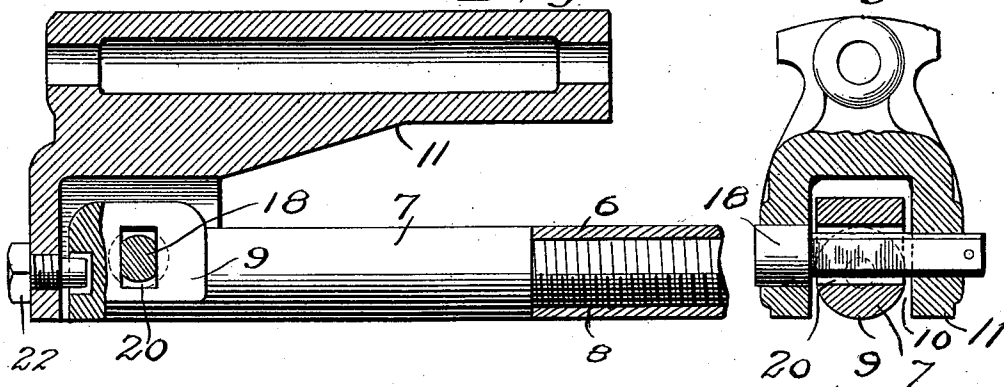


Fig. 6.

Fig. 7.



Witnesses;

Inventor;

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UNITED STATES PATENT OFFICE.

HERMANN G. DITTBENNER, OF MINNEAPOLIS, MINNESOTA.

PISTON-ROD CONNECTION FOR SAWMILL-CARRIAGES.

SPECIFICATION forming part of Letters Patent No. 563,265, dated July 7, 1896.

Application filed April 22, 1895. Serial No. 546,600. (No model.)

To all whom it may concern:

Be it known that I, HERMANN G. DITTBENNER, of the city of Minneapolis, county of Hennepin, State of Minnesota, have invented certain new and useful Improvements in Piston-Rod Connections for Sawmill-Carriages, of which the following is a specification.

My invention relates to devices for connecting the piston-rods to sawmill-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, the carriage is on its return movement and near the cylinder such deflection from its normal course would be likely to prove disastrous. To avoid such difficulty, devices 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 transverse section a portion of a log-carriage with the bracket and yoke thereon and the means for connecting said yoke to the piston-rod. Fig. 2 is a partial longitudinal section of the carriage, showing the piston-rod and its connection to the carriage. Fig. 3 is a detail of the bracket of the yoke and the connection between the yoke and the piston-rod. Fig. 4 is a transverse section similar to Fig. 1, showing a slightly-modified construction of the devices connecting the piston-rod and the carriage. Fig. 5 is a longitudinal section of the construction shown in Fig. 4. Figs. 6 and 7 are details of the construction shown in Figs. 4 and 5.

In the drawings, 1 designates the 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 operating a piston-rod 6, which, as usual, preferably 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 its end flattened or formed with a head 9, which fits loosely in a socket or recess 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. The rod 7 may be connected to the yoke 11 in any suitable way which will permit a pivotal motion between said rod and said yoke 11 and the bracket 13, and will also permit a slight movement of the yoke 11 around the axis of the piston-rod 7, so 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,

and at the same time the lower end of the yoke has a slight movement around the rod 7, and the connection between the rod 7 and the yoke 11 is such as to permit this movement without twisting or turning the piston-rod.

In the construction shown in Figs. 1, 2, and 3 the end of the rod 7, which is here formed into a flat head 9, is arranged in the recess 10 in the yoke 11, and said head is somewhat smaller than said recess. A pin 18 passes through a hole 20 in said head and the ends of said hole are slightly flared, so as to permit a rocking movement of the yoke upon the piston-rod without twisting or turning the piston-rod. It will also be seen that the pin 18, passing through the opening 20 in the head 9, forms a pivotal connection between the rod 7 and the yoke 11 at right angles to the pivotal connection between the yoke 11 and the bracket 13. This permits the yoke 11 to turn upon the pin 18, as it may be necessary for it to do in cases, for instance, where a track is somewhat uneven.

In Figs. 4, 5, 6, and 7 I have shown a slightly different construction. In this case the head 9 is made somewhat larger than that shown in the other drawings, and it is arranged in the recess 10 in the yoke 11, and said head is somewhat smaller than said recess. A pin 18 passes through the hole 20 in the head 9, and said pin is smaller than the hole 20, so that the yoke may rock upon the piston-rod in the manner already described, without twisting said rod. The yoke 11 may also be provided with a guide-screw 22, arranged to engage a slot in the end of the head 9.

I do not limit myself, however, to the means shown and described for forming the pivotal connection between the piston-rod and the yoke 11, as any convenient or desirable means may be used for connecting the head 9 or the end of the piston-rod with the yoke 11 so that it may have proper play.

Having thus described my invention, I

claim as new and desire to secure by Letters Patent—

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.

4. The combination, with a log-carriage and a piston-rod for moving it, of a device pivotally connected to the carriage and to the end of said piston-rod, for the purpose set forth.

5. The combination, with a log-carriage and a piston-rod for moving it, of a yoke connected to said carriage by a pivot, the axis of which is substantially in line with the line of movement of the carriage and piston-rod and pivotally connected to the piston-rod by a pivot the axis of which is substantially at right angles to the line of movement of the carriage and piston-rod.

6. The combination, with the log-carriage and a piston-rod for moving it, of a yoke pivoted to the carriage and also to the piston-rod, the axes of such pivots being arranged in lines substantially at right angles to each other.

In testimony whereof I have hereunto set my hand this 15th day of April, A. D. 1895.

HERMANN G. DITTBENNER.

In presence of—

F. S. LYON,

M. E. GOOLEY.