C. A. JONES.

CARRIAGE OPERATING MECHANISM FOR SAWMILLS.

APPLICATION FILED MAY 12, 1908.

939,264. Patented Nov. 9, 1909.

Fig. 1.

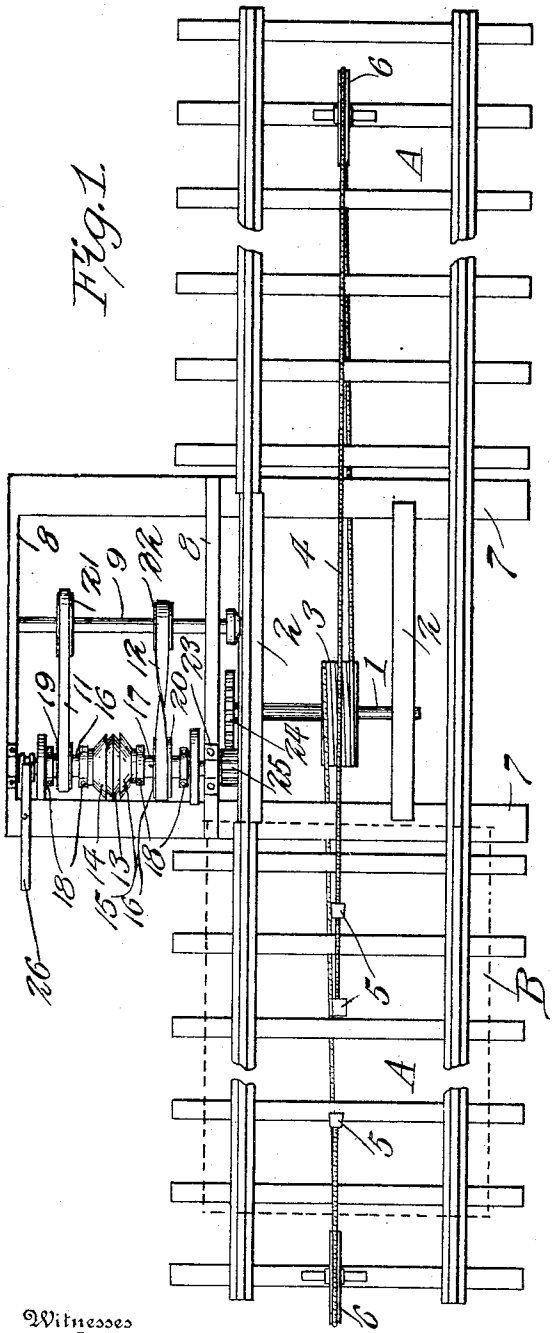
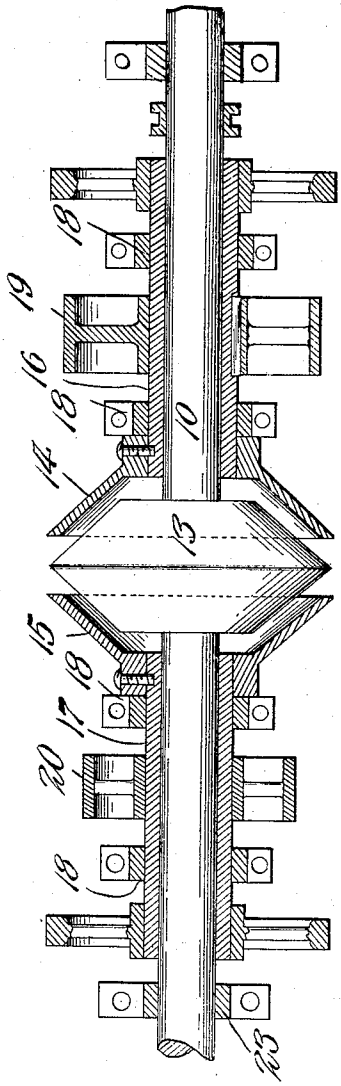


Fig. 2.



Witnesses

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CARRIAGE-OPERATING MECHANISM FOR SAWMILLS.

939,264. Specification of Letters Patent. **Patented Nov. 9, 1909.**

Application filed May 12, 1908. Serial No. 432,499.

To all whom it may concern:

Be it known that I, CHARLES A. JONES, a citizen of the United States, residing at Broadwater, in the county of New Madrid and State of Missouri, have invented new and useful Improvements in Carriage-Operating Mechanism for Sawmills, of which the following is a specification.

This invention relates to saw mills and more particularly to carriage driving mechanism of that type whereby the carriage can be quickly and positively reversed through the agency of a reversing device for transmitting motion alternately in opposite directions to the drum-carrying shaft of the mechanism by straight and cross belts that receive power from the main driving shaft.

The invention has for one of its objects to improve and simplify the construction and operation of apparatus of this character so as to be comparatively simple and inexpensive to manufacture, highly efficient and satisfactory in service, and readily manipulated.

A further object of the invention is the provision of a carriage-driving mechanism including a reversible shaft-carried clutch element with which coöperate independent clutch elements that are driven from the main power shaft by straight and cross belts, the reversible shaft being geared to the drum-carrying shaft of the mechanism, whereby the work carriage will be moved back and forth on its track.

With these objects in view and others, as will appear as the description proceeds, the invention comprises the various novel features of construction and arrangement of parts which will be more fully described hereinafter and set forth with particularity in the claims appended hereto.

In the accompanying drawing, which illustrates one of the embodiments of the invention, Figure 1 is a plan view of the carriage-driving mechanism applied to a saw mill. Fig. 2 is a central longitudinal section of the reversing gear or clutch of the mechanism.

Similar reference characters are employed to designate corresponding parts throughout the several views.

Referring to the drawing, A designates a track of ordinary construction which has adjacent to its center a shaft 1 mounted in beams 2, and on the shaft is a drum 3 on which winds a cable 4, the ends of which are connected at 5 with the work carriage designated by B. The cable is guided on grooved wheels 6 suitably supported on the track and is wound on the drum 3 in such a manner that the rotation of the drum alternately in opposite directions will move the carriage back and forth over the track. The beams 2 rest on sleepers 7 that extend transversely under the rails of the track and project beyond one side of the latter, there being secured to the projecting ends of the sleepers parallel beams 8. On the beams 8 is mounted a driving shaft 9 that receives power from any suitable source and is rotated continuously in one direction, and disposed parallel with the shaft 9 and mounted in the beams 8 is a countershaft 10, there being straight and cross belts 11 and 12 between the two shafts for transmitting motion to the latter. On the shaft 10 is a double cone 13 with which coöperate hollow conical clutch elements 14 and 15 secured respectively to sleeves 16 and 17.

The sleeves are rotatably mounted in bearings 18 and are provided respectively, with pulleys 19 and 20 around which the belts 11 and 12 pass, there being pulleys 21 and 22 on the main driving shaft 9 for transmitting power to the belts. The shaft 10 being mounted in independent bearings 23, can rotate with comparatively little friction between the idle clutch-carrying sleeve and the shaft is mounted in its bearings to have longitudinal movement so as to bring the clutch element 13 into engagement with either element 14 or 15, according to the direction in which the shaft is to be rotated.

The shafts 1 and 9 are arranged out of alinement and their adjacent ends are connected by suitable gearing, the gearing in the present instance, consisting of a cog wheel 24 that meshes with a pinion 25, the axial dimension of the pinion being such that the teeth thereof will be in permanent mesh with those of the wheel 24, while the shaft 10 is moved back and forth for throwing the clutch into and out of operation. When the shaft is in the position shown, the clutch device is open so that no motion will be imparted to the shaft, but by shifting the shaft by means of the lever 26, the clutch element 19 will be clutched to either one of the sleeves so that power will be transmitted to the shaft 10 and through the gearing members 24 and 25 to the drum-carrying

shaft 1 so as to thereby move the work carriage. If desired, the sleeves 16 and 17 can be slidably mounted to bring the clutch elements 14 and 15 into engagement with the double cone 13, in which case the shaft 10 would be held from longitudinal movement.

From the foregoing description, taken in connection with the accompanying drawing, the advantages of the construction and of the method of operation will be readily apparent to those skilled in the art to which the invention appertains, and while I have described the principle of operation of the invention, together with the apparatus which I now consider to be the best embodiment thereof, I desire to have it understood that the apparatus shown is merely illustrative, and that such changes may be made when desired as are within the scope of the claims.

Having thus described the invention, what I claim is:—

1. In operating mechanism for saw mill carriages, the combination of a shaft, bearings forming mountings for said shaft, means for moving the shaft longitudinally in its bearings, a clutch member fast to said shaft, sleeves constituting hollow shafts located upon opposite sides of said clutch member, and mounted concentric with the aforementioned shaft, independent bearings for said sleeves, clutch members secured to the inner ends of said sleeves and adapted to coöperate with the clutch member of the first-mentioned shaft, said clutch members being in contact with the innermost bearings of the respective sleeves so as to be supported thereby against lateral thrust when the clutch member of the shaft is in engagement with the clutch member of either of said sleeves, and means for rotating the said sleeves in opposite directions.

2. In carriage operating mechanism for saw mills, the combination of a shaft 10 adapted to receive both a rotary and a longitudinal movement, bearings supporting said shaft, a clutch member 13 fast to the shaft, sleeves concentric with the shaft and arranged upon opposite sides of the clutch member 13, independent bearings for the sleeves, clutch members 14 and 15 secured to the inner ends of the respective sleeves and adapted to coöperate with the clutch member 13, and supported against lateral thrust by respective inner bearings of said sleeves, drive pulleys fast to the said sleeves, a shaft 9 mounted parallel with the shaft 10 and adapted to have the driving power applied thereto, drive pulleys fast to the shaft 9, and drive belts connecting the drive pulleys of the shaft 9 and the aforesaid sleeves, one of said drive belts being crossed.

3. In carriage operating mechanism for saw mills, the combination of a reciprocating carriage, a shaft 1, connecting means between said shaft and carriage to effect opposite movement of the latter in both directions, a gear wheel fast to the shaft 1, a shaft 10 mounted to receive both a rotary and a longitudinal movement, a gear wheel fast to the shaft 10 and of such length as to maintain intermeshing relation with the gear wheel fast to the shaft 1 throughout the range of movement of the shaft 10, a clutch member fast to the shaft 10, sleeves concentric with the shaft 10 and arranged upon opposite sides of the clutch member thereof, independent bearings for said sleeves, clutch members secured to the inner ends of the sleeves and supported against lateral thrust by the innermost bearings of the respective sleeves when the clutch members of the shaft 10 and one of the sleeves are in engagement, pulleys fast to said sleeves, a shaft 9 mounted parallel with the shaft 10 and adapted to have the driving power applied thereto, pulleys fast to the shaft 9, and drive belts connecting the pulleys of shaft 9 with the pulleys of the said sleeves, one of said belts being crossed.

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

CHARLES A. JONES.

Witnesses:
L. H. Van Cleve,
W. J. Davis.