TENSION-EQUALIZING DEVICE.

SPECIFICATION forming part of Letters Patent No. 634,703, dated October 10, 1899.

Original application filed April 13, 1899, Serial No. 712,884. Divided and this application filed June 9, 1899. Serial No. 719,030. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM J. SHAW, a citizen of the United States of America, and a resident of the city of St. Louis, in the State of Missouri, have invented a new and useful Tension-Equalizing Device, of which the following is a specification.

My invention relates to means for transmitting motion from a car-axle to a fan or motor on the car, the present application being a division of an application for patent for a refrigerator-car, Serial No. 712,884, filed by me April 13, 1899.

It consists principally in a shaft intermediate the axle and the motor and mounted automatically to accommodate its position to the varying tension on the driving-belts.

It also consists in the arrangements and combinations of parts hereinafter described and claimed.

In the accompanying drawings, which form part of this invention and in which like symbols refer to like parts wherever they occur, Figure 1 is a side view of my device as applied to a car. Fig. 2 is a plan view thereof. Fig. 3 is a detail section of a car-axle on the line 3-3 of Fig. 2, showing the split pulley in elevation. Fig. 4 is a horizontal section of the same on the line 4-4 of Fig. 3. Fig. 5 is a sectional detail of the journal-box frame on the line 5-5 of Fig. 2, showing a portion of the tension-equalizing shaft and its journal-box; and Figs. 6 and 7 are detail views of the hooked links or cleats for holding the two parts of the split pulley together.

The motor 1 to be driven is located on the car 2, and its shaft 3 is connected by belting 4, either directly or through intermediate connecting devices, to a horizontal tension-equalizing shaft 5, movably mounted on the under-side of the car, and this tension-equalizing shaft is connected by belting 18 to the car-axle 6. The car-axle 6 is provided with split pulleys 7, adapted to set close against the faces of the two wheels 8. For this reason the parts of said pulleys are countersunk in the end designed to rest against the wheel, and hooked straps or links are fitted therein to hold said parts together. The opposite ends of said split parts are provided with projecting flanges 10, through which bolts 11 extend to clamp said parts firmly together on the car-axle. Any suitable belt-pulleys 12 may be used on the tension-equalizing shaft and the counter-shaft 16.

The journal-boxes 13 of the tension-equalizing shaft are not fixed, but are arranged to slide in slotted frames or channel-bars 14, secured to the under side of the car sill or body, the corners of said journal-boxes being rounded off to prevent them binding in the frames. The frame for each journal-box is curved in a practically circular arc whose center is the middle of the equalizing shaft. Each frame is provided with a compression-spring 15, arranged to bear at its respective ends against the journal-box and the end of the frame, whereby a proper degree of tension is maintained on the driving-belts connecting the car-axle and the tension-equalizing shaft. When the car rounds a curve, however, and the position of the axle relative to the body changes, the springs automatically yield to relieve the belt 18 from excessive tension or expand to take up the slack of the belt, according as the change of position may require.

The belts 18, herebefore mentioned, are located under the car-body and connect the car-axle and tension-equalizing shaft. On account of their position there is danger of loose sticks and stones getting between a belt and its pulley, and thus cutting and subjecting such belt to a sudden stress. For this reason the belts 18 should be made as strong and tough as practicable.

The counter-shaft 16, to which the tension-equalizing shaft is connected, is located above it in a line practically perpendicular to the direction of motion of the tension-equalizing shaft. For this reason the tension-equalizing shaft may have a considerable range of movement without materially changing the distance between it and the counter-shaft. As this distance does vary slightly, however, it is desirable to connect the tension-equalizing shaft and the counter-shaft by an extensible belt 17—that is, a belt which will automatically elongate or shorten to accommodate itself to the temporary variations of such distance. The counter-shaft runs in fixed bear-
ings and may be coupled up to any kind of a fan or motor in any suitable manner. Thus by reason of the automatic action of the tension-equalizing bar in accommodating itself to the varying positions of the car-axle and its manner of connection to the counter-shaft there is no interruption or interference with the continuous transmission of motion from the car-axle to the motor.

What I claim is—

1. A car having curved frames mounted under the body thereof, journal-bearings movably mounted in said frames, and springs bearing against said bearings, a tension-equalizing shaft in said bearings, pulleys on said shaft and on the car-axle and a belt connecting them, and a motor in said car and means for transmitting motion from said tension-equalizing shaft thereto, substantially as described.

2. A car having curved frames mounted on the under side thereof, spring-pressed journal-bearings movably mounted in said frames, a horizontal tension-equalizing shaft in said journal-bearings, a counter-shaft above said tension-equalizing shaft in a line substantially perpendicular to the direction of motion of said tension-equalizing shaft, pulleys on said shafts and belts on said pulleys, whereby motion is transmitted from the car-axle to a motor connected to the counter-shaft, substantially as described.

Witnesses:

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