P. H. THOMPSON.

TANDEM TWO-BELT FAN DRIVE FOR TRACTOR ENGINES.

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1,429,464. Patented Sept. 19, 1922.

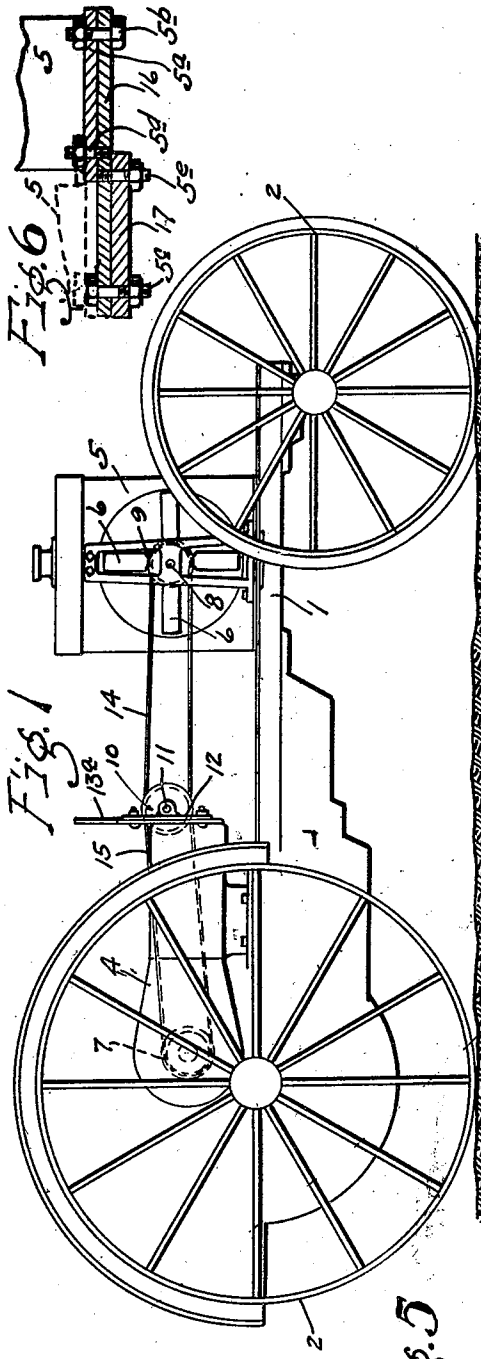


Fig. 1

Fig. 6

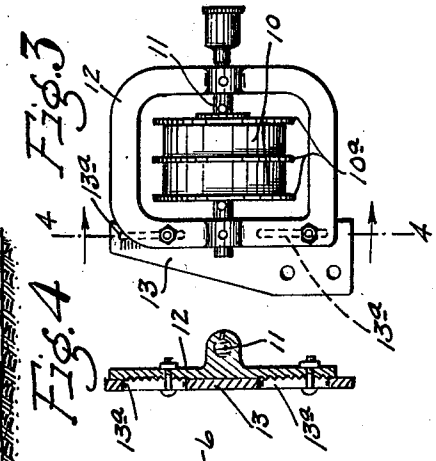


Fig. 3

Fig. 4

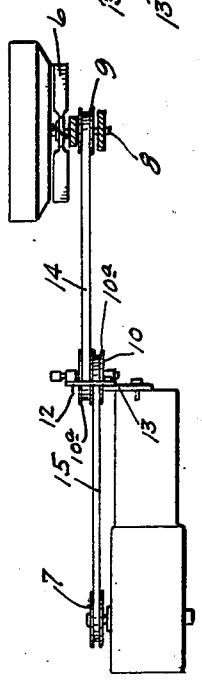


Fig. 2

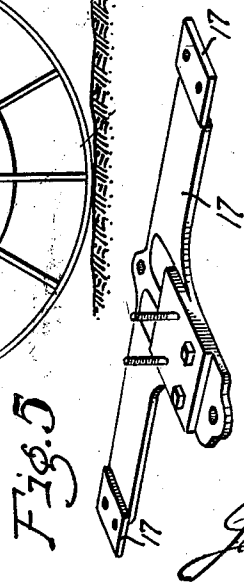


Fig. 5

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UNITED STATES PATENT OFFICE.

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TANDEM TWO-BELT FAN DRIVE FOR TRACTOR ENGINES.

Application filed April 21, 1921. Serial No. 463,300.

To all whom it may concern:

Be it known that I, PETER H. THOMPSON, a citizen of the United States, residing in the township of Rome, in the county of Faribault and State of Minnesota, have invented certain new and useful Improvements in Tandem Two-Belt Fan Drives for Tractor Engines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to a tractor and particularly to the radiator and radiator fan thereof and the driving means for the same. It is the practice in most standard types of tractors to drive the radiator fan by a narrow belt passing over small pulleys, one of which is attached to or geared to the crank shaft of the engine and the other of which is attached to the fan shaft. Considerable difficulty has been experienced with the belts for driving the radiator fan. If the belt is sufficiently tensioned to properly transmit the power to the fan, the same will almost invariably break either at the joint thereof or at some other point. On the other hand, if the belt is permitted to run loosely over the pulleys, it will vibrate and jump off of the pulleys. Furthermore, with a loose belt the power cannot be properly transmitted. It is a great trouble and inconvenience to have the belt frequently run off and much time is consumed in stopping the engine to replace the belt.

It is an object of this invention therefore to provide means for driving the fan shaft from the engine pulley by means of which the belt will be kept in proper position on the pulleys and can be safely tensioned as desired.

It is a further object of the invention to so construct such means that the same can also be used to tighten the belt as desired.

It is another object of the invention to provide a support for the radiator by means of which the position thereof can be easily and conveniently varied.

These and other objects and advantages of the invention will be apparent from the following description made in connection with the accompanying drawings in which like reference characters refer to the same parts throughout the different views and in which,

Fig. 1 is a view in side elevation of a standard type of tractor;

Fig. 2 is a plan view of a portion of the same;

Fig. 3 is a front elevation of the auxiliary pulley and support;

Fig. 4 is a section taken on line 4—4 of Fig. 3 looking in the direction of the arrows;

Fig. 5 is a perspective view of the radiator supporting plate; and

Fig. 6 is a sectional view through the bottom of the radiator and the support thereof.

Referring to the drawings,—a tractor of any common standard type is shown in Fig. 1 and comprises a frame 1, wheels 2, the engine casing 4, a radiator 5, and the radiator fan 6. A pulley usually provided on the engine for driving the radiator fan is shown as 7 and the radiator fan is mounted on a shaft 8 supported in suitable brackets, to which shaft is attached the pulley 9 for driving the said shaft and fan.

In accordance with the present invention, a double pulley 10 is provided having two separate belt faces defined by the flanges 10^a. This pulley is mounted on a shaft 11 arranged to run loosely in bearings provided in the closed bracket 12. This bracket can be supported from the tractor frame or the engine casing and in the embodiment of the invention illustrated, the same is shown as adjustably carried by a bracket 13 bolted to the front of the engine casing. This bracket is provided with elongated slots 13^a through which headed and nutted bolts are passed which also extend through the bracket 12. By this structure the bracket 12 can be adjusted vertically to various positions on the bracket 13 by loosening and tightening the connecting bolts. The surface of the bracket 12 contacting the bracket 13 as shown in Fig. 4 is roughened or corrugated to firmly clamp the surface of bracket 13 and thus be held securely in adjusted position. A belt 14 passes from the fan pulley 9 to one side of the pulley 10 and another belt 15 passes from the other side of pulley 10 to the pulley 7.

With this construction two short belts are used in place of one long belt and bracket 12 having its upper and lower arms extending close to the pulley 10 acts to retain the belts thereon and said bracket can be vertically adjusted to tighten the belt as desired. It

has been found in practice that by thus using two short belts no trouble is experienced in keeping the same on the pulleys and properly tensioned.

The radiator 5 has a flange 5^a at each side thereof adapted to be bolted to a plate or base member 16 which is in turn bolted to the ends of a plate 17 suitably secured to the tractor frame. It will be noted that as shown in Fig. 6, the plate 16 has a hole through each end for the passage of the bolts 5^b and 5^c attaching the flange 5^a to the same and also for attaching the said plate to the plate 17. The plate 16 is also provided with two tapped holes adjacent its center portion which likewise receive bolts 5^d and 5^e for securing the flange 5^a and attaching the plate to the plate 17. With this construction, the position of the radiator can be changed by loosening the various bolts mentioned and inverting the plate 16. The plate will then be shifted so that the bolt 5^d will project through the hole in plate 17 which before received the bolt 5^c and the hole in the end of plate 16 which received the bolt 5^b will be in alinement with the hole in plate 17 which received the bolt 5^e. The plate 16 will thus project to the left of plate 17 as shown in Fig. 6 and the radiator flange 5^a can be bolted to the same through the bored hole and the tapped hole as before.

From the above description it is seen that applicant has provided a simple and efficient means for eliminating a troublesome problem and feature from the ordinary tractor. The device and invention is quite simple and can be readily applied to practically every standard type of tractor and the same is also easily and inexpensively made. It will, of course, be understood that various changes may be made in the form, details and arrangement of the device without departing from the scope of applicant's invention which, generally stated, consists in the matter shown and described and set forth in the appended claims.

What is claimed is:

1. In a tractor having a radiator fan pulley and a pulley connected to the engine for driving the fan, a double loose pulley disposed between said pulleys, a belt for driving the same from the engine pulley and a belt extending from the loose pulley to the fan pulley and driving the latter.

2. In a tractor having the usual radiator fan, and pulley for driving the same, and a pulley connected to the engine adapted to be connected to the said pulley, a double flanged loose pulley disposed between said pulleys, means for supporting the same, a belt extending from the engine pulley to said loose pulley and a belt extending from said loose pulley to the fan pulley.

3. The tractor set forth in claim 2, said means being adjustable in position to form a belt tightener.

4. In a tractor having a radiator fan, and pulley for driving the same, a pulley connected to the engine adapted to be connected to said fan pulley, and an engine casing, a double pulley disposed intermediate of said two pulleys, a loosely journalled shaft and support for said pulley, a bracket in which said shaft is journalled and a bracket bolted to the engine casing to which said first mentioned bracket is adjustably secured.

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

PETER H. THOMPSON.

Witnesses:

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