

Aug. 20, 1935.

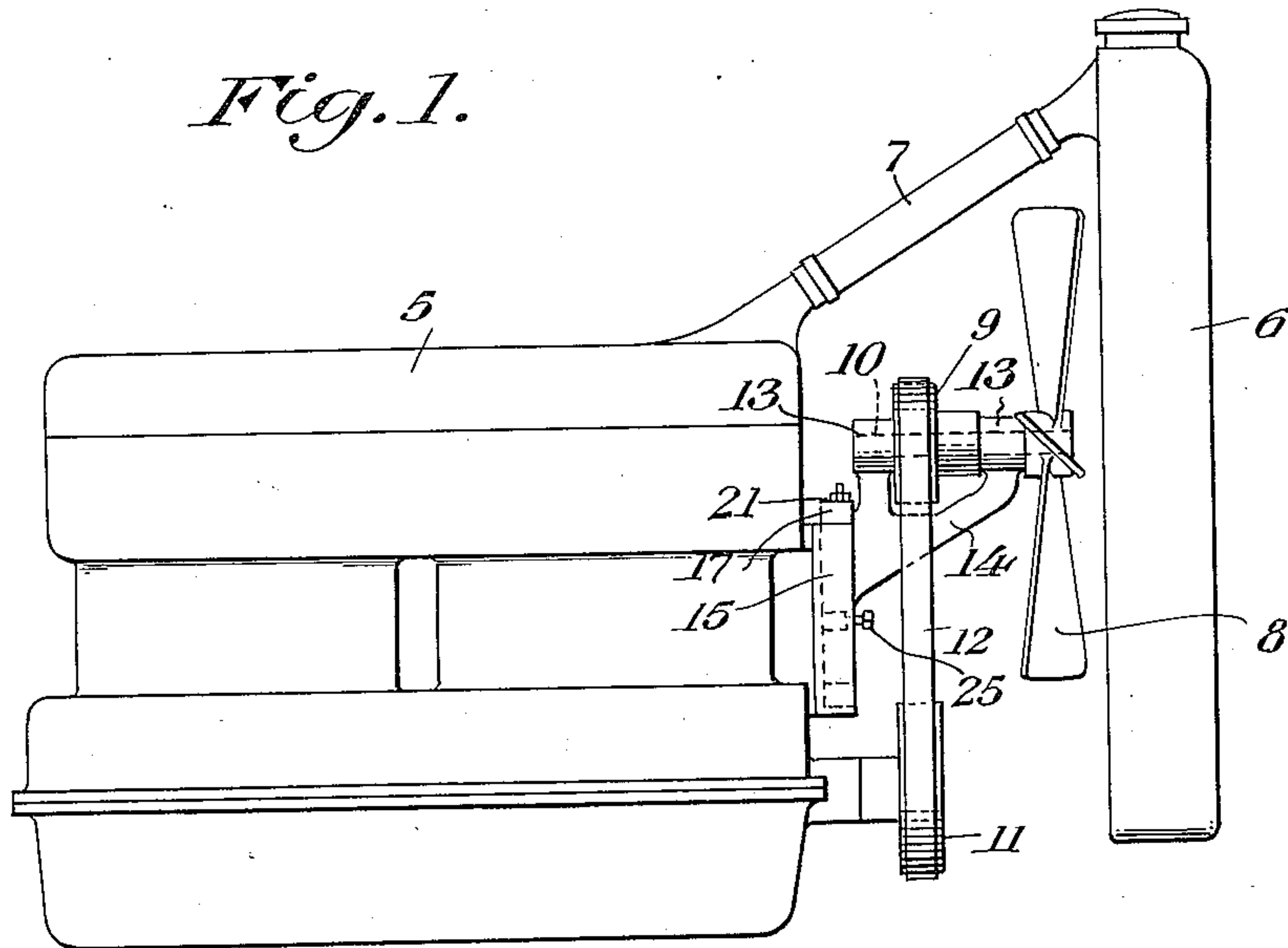
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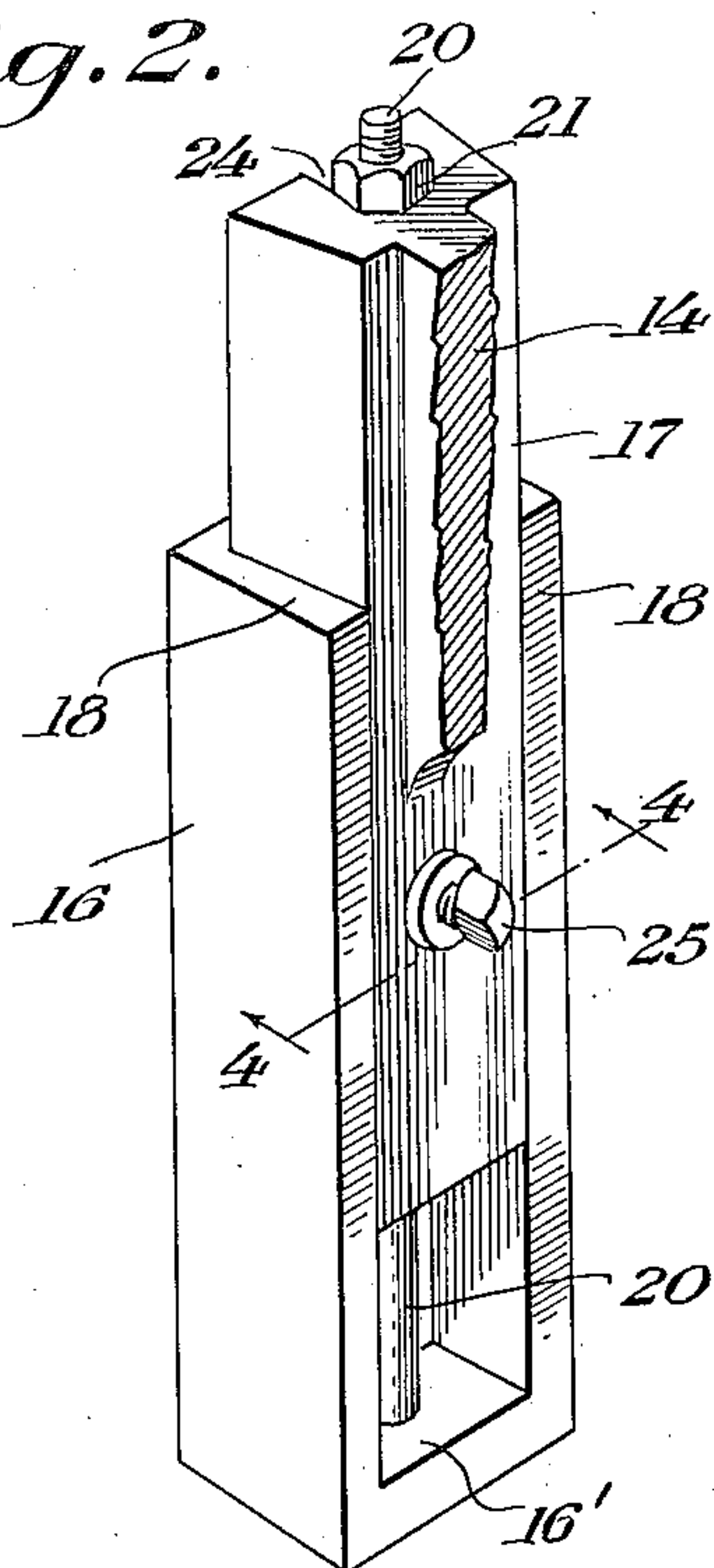
FAN BELT ADJUSTMENT DEVICE

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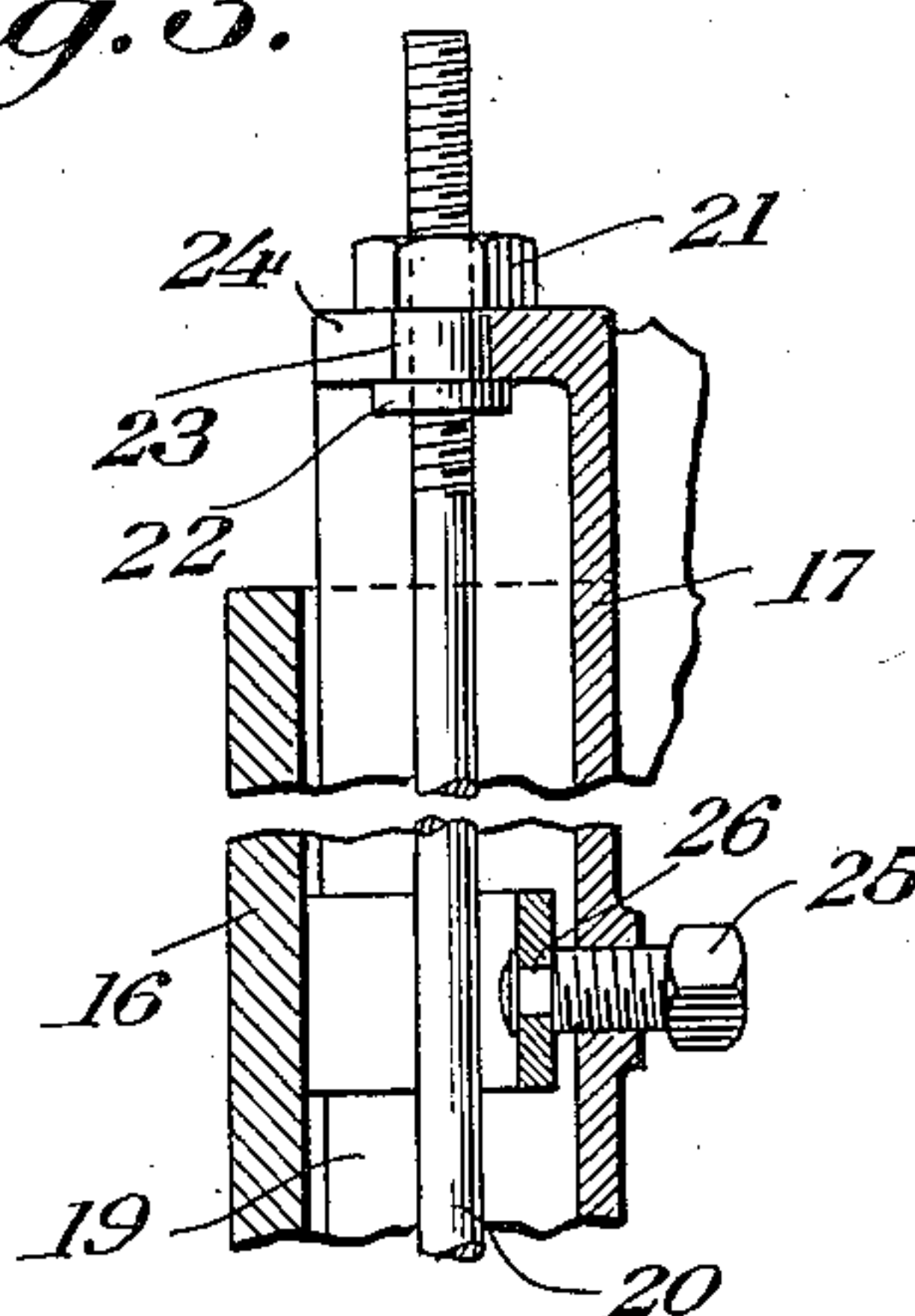
*Fig. 1.*



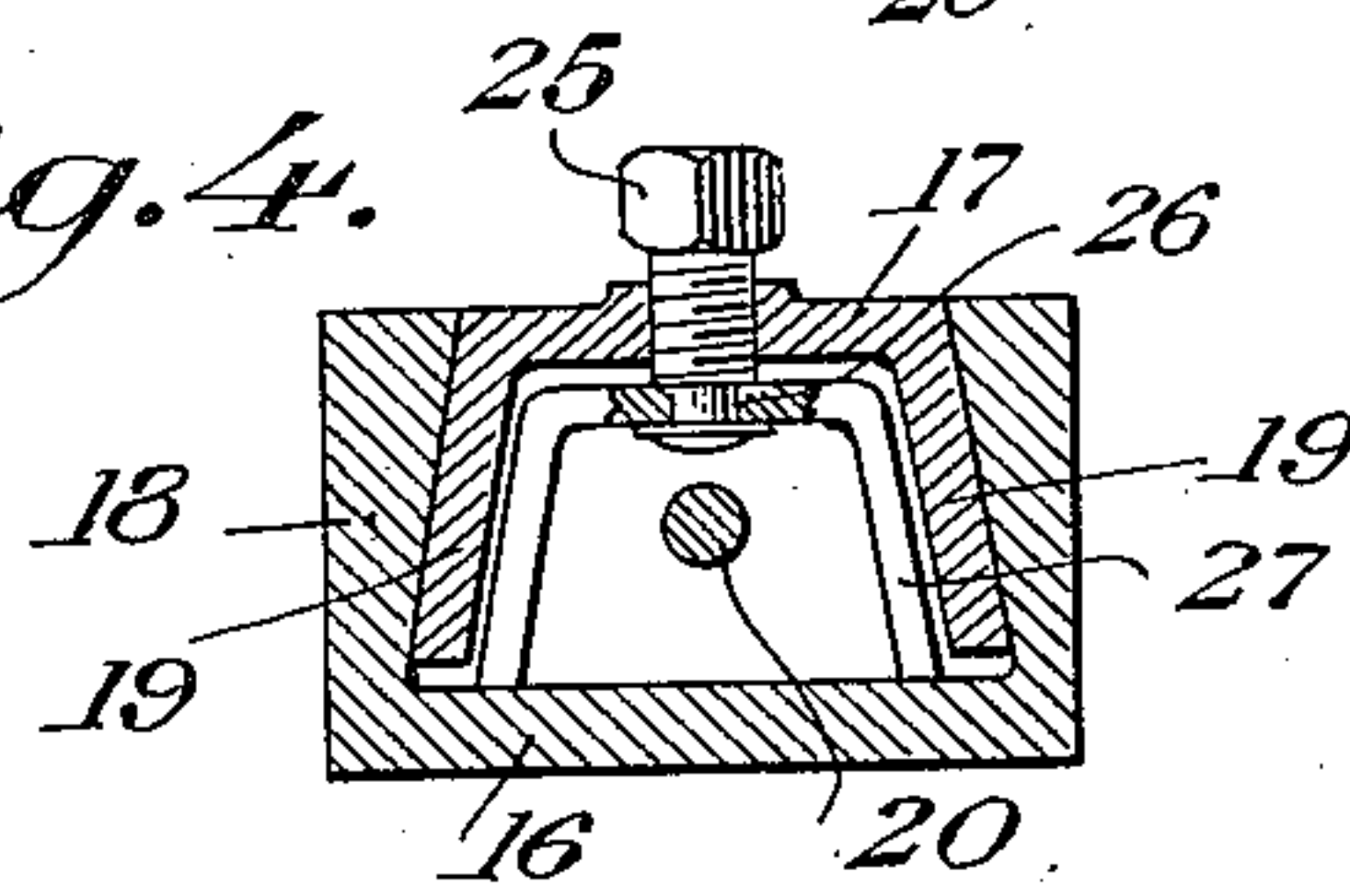
*Fig. 2.*



*Fig. 3.*



*Fig. 4.*



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## UNITED STATES PATENT OFFICE

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## FAN BELT ADJUSTMENT DEVICE

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2 Claims. (Cl. 74-242.14)

This invention relates to devices for the adjustment of belts and more particularly to such devices especially adaptable for the adjustment of engine cooling fans of vehicles.

In the operation of internal combustion engine propelled vehicles, the engine operates in a wide range of temperatures occurring in both summer and winter driving. To obtain maximum efficiency in the operation of such engines it is pertinent that they be subject to as even a temperature as possible. My device provides means by which the driven speed of the engine's cooling fan may be varied for either summer or winter driving so that during the cooler months the fan will be rotated at a lesser speed than normally, thus causing the engine's cooling water to circulate at a higher degree of temperature.

With the above condition of operation in mind it is the specific object of my invention to provide a simple and effective means by which the position of the fan belt pulley may be conveniently adjusted to effect the desired change.

A further object of my invention is to provide an adjustment device by which the tension of the fan belt may be accurately adjusted and which, after the desired adjustment is attained, may be securely locked in that position.

The invention will be fully and comprehensively understood from a consideration of the following detailed description when read in connection with the accompanying drawing which forms part of the application, with the understanding, however, that the improvement is capable of extended application and is not confined to the exact showing of the drawing nor to the precise construction described and, therefore, such changes and modifications may be made therein as do not affect the spirit of the invention nor exceed the scope thereof as expressed in the appended claims.

In the drawing:

Fig. 1 is a side elevational view of a typical vehicle engine and the cooling radiator thereof, illustrating the application of my fan belt adjustment device.

Fig. 2 is a perspective view of the adjustment mechanism with parts broken away.

Fig. 3 is a central vertical sectional view of Fig. 2; and

Fig. 4 is a transverse sectional view taken on line 4-4 of Fig. 2.

Referring now to the drawing for a more detailed description thereof and particularly to Fig. 1, the numeral 5 indicates the typical combustion engine of the water cooled type which is con-

nected to the cooling radiator 6 by the water tube 7. Disposed at the rear surface of the radiator 6 is the cooling fan 8 by which air is drawn thru the radiator 6 and thrown against the engine 5.

To effect the desired adjustment of the speed of cooling fan 8 a cone pulley 9 is affixed to a shaft 10 at the forward end of which is attached the fan 8. The shaft 10 is journaled in a pair of bearings 13, which bearings are supported on a bracket 14. Cone pulley 9 comprises a plurality of pulleys, I have shown two, each component pulley of which is of suitable diameter with relation to the driving pulley 11, so that when the fan 8 is driven by a belt 12 the desired speed of the fan is attained. The setting of the fan drive, as illustrated, is for winter driving in that the fan belt 12 transmits its power to the larger portion of the pulley 9. To make the desired adjustment for summer driving, specifically, to increase the speed of the fan 8, the cone pulley 9 is removed from the shaft 10 and replaced on the shaft, reversing the pulley 9 end for end so that its smaller section will be in alignment with the drive pulley 11.

To effect this change in the setting of the pulley 9 it is obviously necessary to release the tension of the fan belt 12 and subsequently to re-adjust same. This is accomplished by the operation of my adjustment device indicated by numeral 15, which, briefly stated, comprises an outer channel member 16 and an inner slide block 17 slidably retained therein, on which block the bracket 14 is integrally formed, and includes means by which slide block 17 may be raised or lowered in member 16 and subsequently locked to the desired position. The outer channel member 16 is rigidly mounted in substantially vertical position to the forward end of engine 5 and has the inner surface of its side walls 18 anti-parallel from each other, as shown more clearly in Fig. 4. The slide block 17 is of U-shaped cross-section, the longitudinal side walls 19 of block 17 being laterally tapered, thus resembling a keystone in cross-section, which fits snugly into the interior of member 16 when in tightened position. To facilitate the vertical adjustment of block 17 in member 16 a screw rod 20, having its lower end secured to the end wall 16' of member 16, has its upper end threaded to receive an adjustment nut 21. The lower portion of nut 21 is provided with a collar 22 and a circumferential groove 23 so as to engage in an open slot 24 provided in the upper end wall of block 17. By this construction the nut 21 is rotatably retained on member 14 so that upon screwing nut 21 on



the rod 20 the vertical adjustment of member 14 is obtained. The locking of the adjustment is effected by the provision of a set screw 25 which is threadedly engaged with the front wall of block 5 17 and has its inner end swivelly connected as at 26 to a U-shaped shoe 27. Shoe 27 is prevented from turning at the operation of screw 25 by its engagement with the interior of the walls 19. When screw 25 is turned into block 17 the ends 10 of the shoe 27 engage with the rear wall of member 16, thus wedging the block 17 into the synclined interior surface of the member 16.

It is obvious from the drawing that the convenient adjustment of the tension of fan belt 15 12 may be easily effected by the operation of the nut 21, which adjustment is securely locked when the set screw 25 is tightened.

What is claimed as new is:

1. In an adjusting means, an outer member of 20 channel form, an inner member of channel form telescoping and dovetailed with said outer member, a rod secured at one end to said outer member and passing thru and positioned within said inner member, the latter being slidable relative 25 to said rod and to said outer member, adjustable means securing said inner member to said rod, and means acting transversely to said members to prevent relative movement, the last mentioned

means comprising a screw threadedly engaging said inner member and a U-shaped shoe loosely mounted on the screw and straddling said rod and disposed within said inner member and adapted to be pressed against said outer member by turning of said screw. 5

2. In adjusting means, an outer member of channel form, an inner member of channel form telescoping and dovetailed with said outer member, a rod secured at one end to said outer member and passing thru and positioned within said inner member, the latter being slidable relative to said rod and to said outer member, adjustable means securing said inner member to said rod, and means acting transversely to said members 10 to prevent relative movement, the last mentioned means comprising a screw threadedly engaging said inner member and a U-shaped shoe loosely mounted on the screw and straddling said rod and disposed within said inner member and adapted to be pressed against said outer member by turning of said screw, said rod being threaded and said inner member having an end adjacent said threads, said adjustable means 15 comprising a nut threadedly engaging said rod and having a groove in which said end of the inner member is disposed. 20 25

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