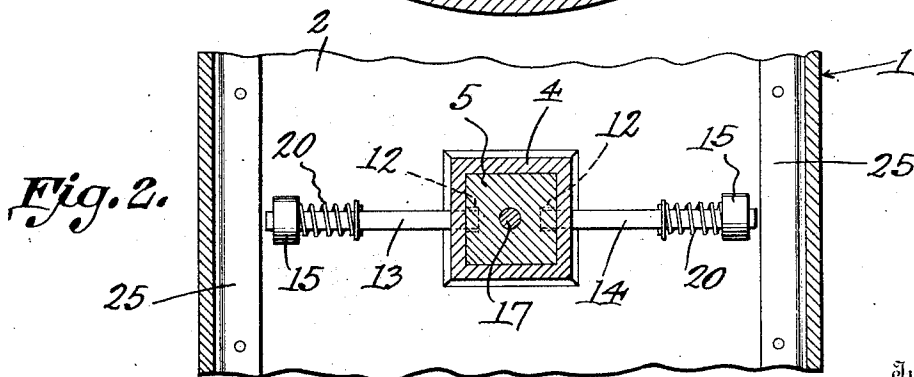
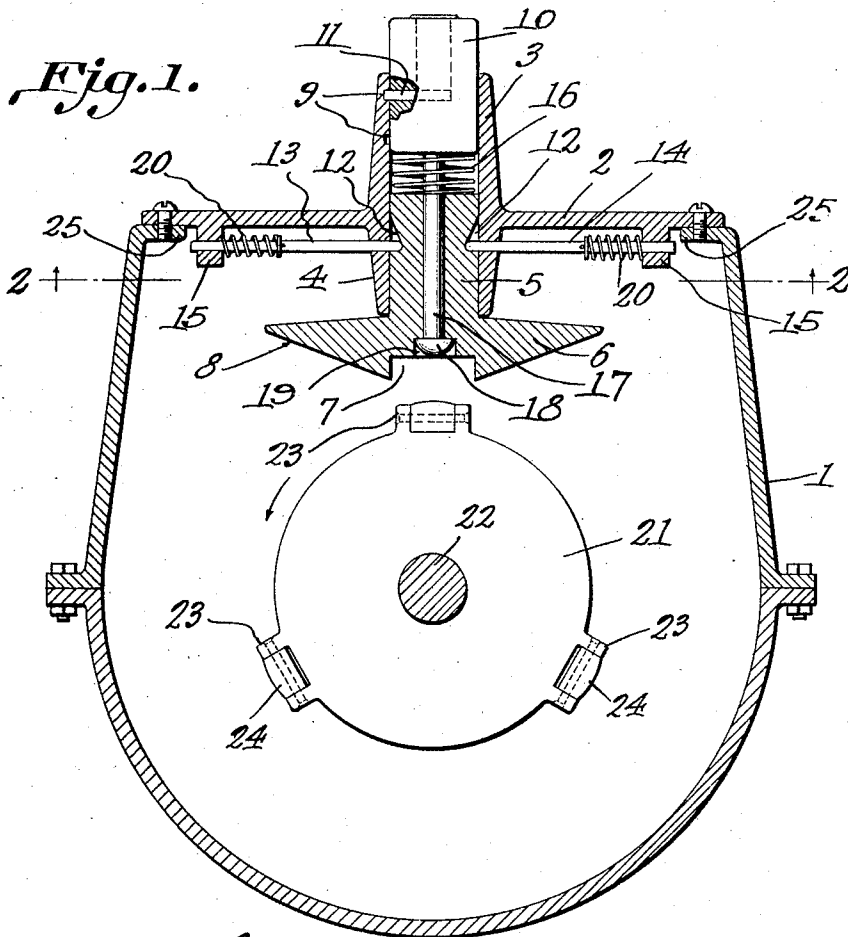


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TRANSMISSION LOCKING DEVICE

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TRANSMISSION-LOCKING DEVICE.

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This invention relates to locking means for automobile transmissions and more particularly to Ford car transmissions.

The object of the invention is to provide means for positively locking the driving shaft when desired, said lock being so constructed that it will also simultaneously lock the transmission housing cover so that the cover cannot be removed and hence will prevent unlocking of the driving shaft.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed may be made within the scope of what is claimed without departing from the spirit of the invention.

In the accompanying drawings:—

Figure 1 represents a transverse section of a transmission housing with this improved lock shown applied; the driving shaft being in section; and

Fig. 2 is a horizontal section taken on the line 2—2 of Fig. 1.

In the embodiment illustrated a transmission housing 1 is shown such as is ordinarily used on Ford automobiles and which is equipped with a removable cover 2, this cover 2 has a central opening surrounded by an upstanding cylindrical sleeve 3 and with a depending sleeve 4 in which is mounted to reciprocate a spring pressed plunger 5 the lower end of which is equipped with a head 6 having a recess 7 in its lower face, the lower wall or face of said head inclining outwardly and upwardly from said recess as shown at 8 in Fig. 1. The sleeve 3 is provided on its inner face with vertically spaced notches 9 designed to receive the locking pin 11 of a cylinder lock 10 which is mounted in the sleeve and adapted to be controlled by a key.

The lower sleeve 4 is polygonal in cross section as shown clearly in Fig. 2 while the upper sleeve 3 is cylindrical to receive the lock 10. It is of course understood that the plunger 5 corresponds in cross sectional contour to the sleeve 4 and said plunger is provided at diametrically opposite points with ratchet-like recesses or seats 12, the upper walls of which are inclined upwardly and outwardly and are designed to receive spring

projected locking pins or rods 13 and 14 mounted to slide in apertures in the side walls of the sleeve 4 and in depending apertured lugs 15 carried by the lower face of the cover member 2. When these rods are so engaged with the plunger the head 6 is locked in raised position as shown in Fig. 1.

A coiled spring 16 is mounted in the sleeve 3 between the upper end of the plunger 5 and the lower ends of the lock 10. A stem or pin 17 extends through the plunger 5 into the cylinder lock 10, the spring being coiled around this pin as shown in Fig. 1. The pin 17 has a head 18 at its lower end which is mounted in a seat 19 formed in the lower face of the plunger head 6.

Coiled springs 20 are mounted on the locking pins 13 and 14 and exert their tension to normally project these pins so that when the plunger is raised to the full line position shown in Fig. 1 the pins will enter the ratchet seats 12 and lock the plunger in this position which holds it out of contact with the cooperating locking collar 21 carried by the driving shaft 22 and hence permit said shaft to turn freely and permits the cover 2 to be removed if desired.

The collar 21 which is fixed to the shaft 22 is provided with radially extending lugs or projections 23 any desired number of which may be employed, three being here shown and which are preferably equipped with rollers 24 although not necessarily so.

In the use of this improvement the parts being in the position shown in Fig. 1 when it is desired to lock the driving shaft 22 the pin 11 is retracted by means of the usual key to release it from the upper notch 9 in the sleeve 3. The lock 10 is then moved bodily inward whereby forcing the plunger inward against the tension of spring 16 until the head 6 is positioned so that the recess 7 therein will engage with one of the lugs or projections 23 on the shaft carried collar 21. When this position of the plunger is reached the pins 13 and 14 will ride out of the ratchet seats 12 and engage the periphery of the plunger which forces them outward against the tension of their springs 20 and positions their outer ends under the flange 25 of the housing and thus prevents all possibility of the cover member 2 being removed. When these parts are so positioned the locking pin 11 of the lock 10 enters the lowermost notch 9 in sleeve 3 and locks the plunger in this

position and it cannot be disengaged unless released by a person carrying the key. When the plunger head is engaged with one of the projections 23 on the shaft collar 21 the shaft will be securely locked against turning and thus prevent driving of the car and the simultaneous locking of the cover 2 prevents all possibility of the shaft being released by removing the transmission cover.

10 It will thus be seen that this lock first positively locks the driving shaft when desired and second whenever the driving shaft is locked it automatically locks the cover 2 on the transmission housing so that it cannot be removed.

When the lock 10 is slid inwardly, the spring 16 is compressed. The spring 16 holds the head 6 yieldably in such a position that any one of the lugs 23 may ride along the inclined surfaces 8 and then snap into the recess 7.

We claim:—

1. The combination with a transmission casing having a removable cover, a shaft journaled in the casing, of a plunger slidable in the cover, the plunger and the shaft being provided with cooperating parts which coact to hold the shaft against rotation when the plunger is advanced, a locking bolt slidable on the cover, the plunger being provided with a seat wherein one end of the locking

bolt is received to hold the plunger releasably retracted, and spring means for moving the locking bolt in one direction to engage the locking bolt with the seat as aforesaid, the seat comprising a cam surface which, when the plunger is advanced to hold the shaft against rotation, moves the locking bolt in an opposite direction, against the action of the spring means, and engages the locking bolt with the casing to hold the cover in place.

2. A device of the class described, constructed as set forth in claim 1, and further characterized by the fact that the said cooperating parts of the plunger and the shaft embody a sleeve on the shaft and having a lug, the plunger being provided with a recess for the reception of the lug, and being provided with inclined surfaces cooperating with the lug to guide the lug into the recess when the shaft and the sleeve are rotated with respect to the plunger, and spring means for advancing the plunger, to cause the plunger to cooperate with the sleeve.

In testimony that we claim the foregoing as our own, we have hereto affixed our signatures.

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