No. 842,153. PATENTED JAN. 22, 1907.

A. N. MANROSS.

LOCKING MECHANISM FOR DRAW BARS.

APPLICATION FILED MAY 16, 1906.

2 SHEETS—SHEET 1.

Fig. 1.

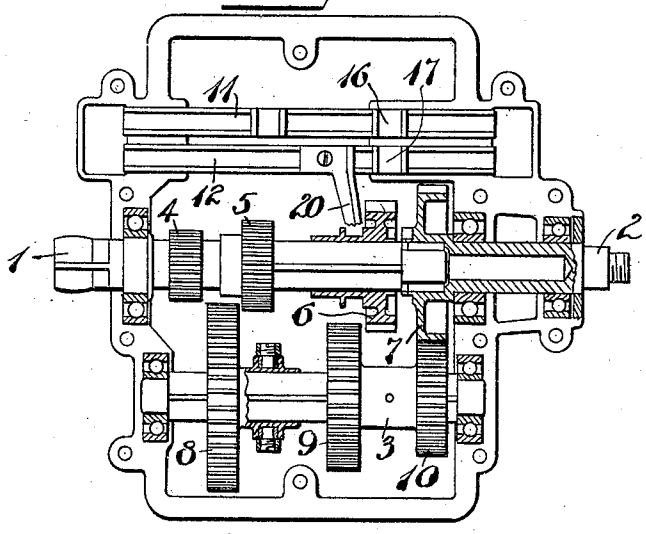
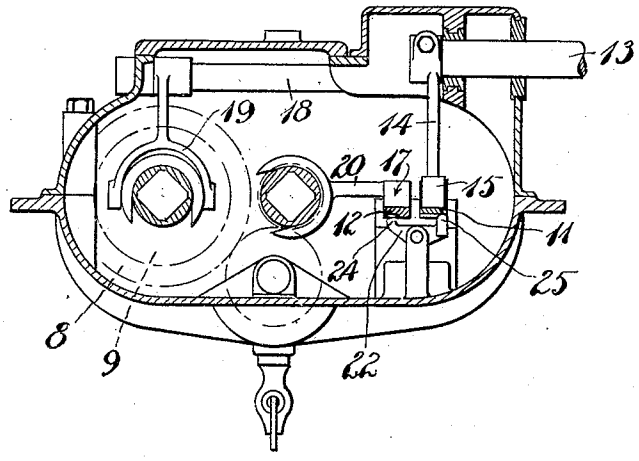


Fig. 2.



Witnesses

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2 SHEETS—SHEET 2.

Fig. 3.

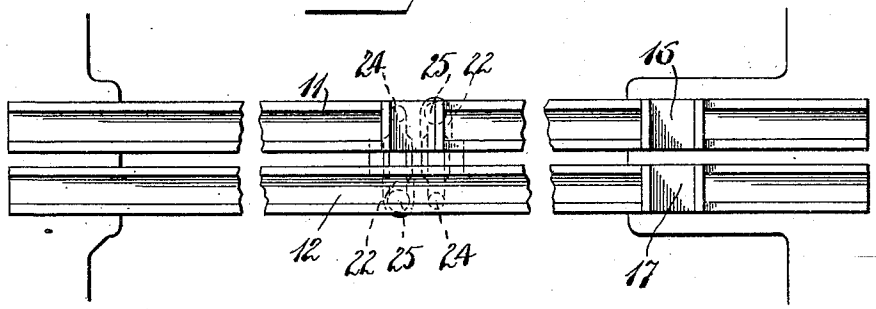


Fig. 4.

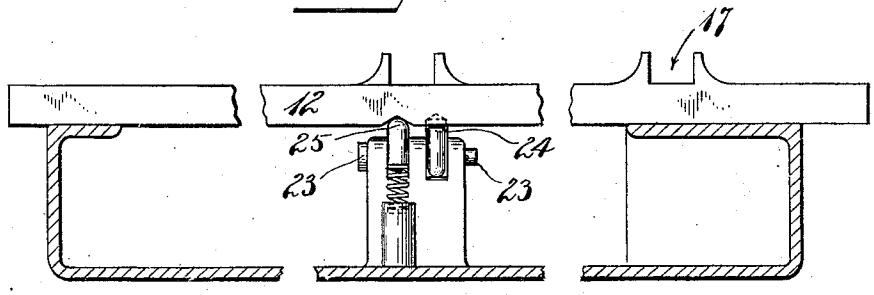


Fig. 5.

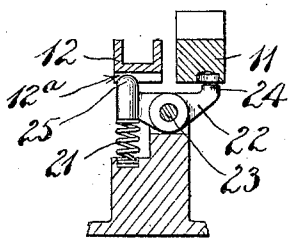
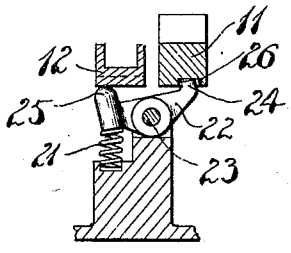


Fig. 6.



Witnesses

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UNITED STATES PATENT OFFICE.

ARTHUR N. MANROSS, OF NEW BRITAIN, CONNECTICUT, ASSIGNOR TO CORBIN MOTOR VEHICLE COMPANY, OF NEW BRITAIN, CONNECTICUT, A CORPORATION OF CONNECTICUT.

LOCKING MECHANISM FOR DRAW-BARS.

No. 842,153. Specification of Letters Patent. Patented Jan. 22, 1907.

Application filed May 16, 1906. Serial No. 317,131.

To all whom it may concern:

Be it known that I, ARTHUR N. MANROSS, a citizen of the United States, residing at New Britain, county of Hartford, Connecticut, (post-office address the same,) have invented certain new and useful Improvements in Locking Mechanism for Draw-Bars, of which the following is a full, clear, and exact description.

My invention relates to interlocking devices for draw-bars.

The draw-bars with which my invention may be employed are useful for operating switches, gears, and many like devices.

It is in connection with gear-operating draw-bars that I will describe my improved locking apparatus, although, as above indicated, the invention is by no means limited to this single field of usefulness.

In the accompanying drawings, Figure 1 is a plan view of certain well-known gear apparatus, the gears of which may be operated or shifted by reciprocation of draw-bars. Fig. 2 is a cross-section showing the location of the locking devices. Fig. 3 is a plan view of two draw-bars relatively enlarged and detached and showing in dotted outline two independent locking devices. Fig. 4 is a side elevation of one of the draw-bars, showing both locking devices in end elevation. Fig. 5 is a section of two draw-bars, showing one locking device in end elevation and in the unlocked position. Fig. 6 is a similar sectional view showing the locking device in its locking position.

I need only refer generally to the gear mechanism with which the draw-bars are used, since such mechanism is well known and forms no part of my present invention.

1 is the driving-shaft.

2 is the driven shaft.

3 is a counter-shaft.

4 5 are gears fixed on the driving-shaft.

6 is a gear slidable on the driving-shaft.

7 is a gear fixed on the driven shaft.

8 is a gear slidable on the counter-shaft.

9 10 are gears fixed on the counter-shaft.

11 12 are draw-bars capable of being reciprocated to and fro in any suitable manner—for example, by means of an arm 14, carried by a sliding and oscillating shaft 13.

15 is a head on arm 14, arranged to slide into either one of two sockets 16 17 on the draw-bars 11 12, respectively. As the shaft 13 is rocked, if the head 15 stands in the socket 16, it will move the draw-bar 11 in one direction or the other, as desired. If the head 15 stands in the socket 17 and the shaft 13 is rocked, it will move the draw-bar 12 to or fro, as desired. A suitable connection between the draw-bar 11 and the sliding gear 8 is afforded, so that when the draw-bar 12 is moved to and fro it will shift said sliding gear 8. This connection is conventionally illustrated in Fig. 2 by the shaft 18 and yoke 19. A suitable connection is also made between the draw-bar 12 and the sliding gear 6. This is conventionally illustrated by an arm 20. As the draw-bar 12 is moved to and fro the gear 6 will be correspondingly shifted. The shifting of the gears results in a modification or variation in the speed of rotation of the driven shaft relatively to the driving-shaft. The gear arrangement is only conventionally illustrated and merely for the purpose of illustrating the function and purpose of the draw-bars.

The draw-bars shown in Figs. 1, 2, 3, 4, and 5 are in the normal inoperative position, in which all of the sliding gears are out of mesh or idle. Inasmuch as the head 15 is arranged to engage with only one or the other of the draw-bars, it is obvious that the draw-bar not engaged by the head might be accidentally shifted out of place. It is for this reason that I provide a locking device, so that when one of the draw-bars is intentionally shifted out of its idle position the other one will be locked and cannot be accidentally jarred out of its idle position. This lock comprises merely a latch member 22, pivoted at 23 on a suitable bracket.

21 is a suitable spring for latch 22.

24 is the locking-nose, arranged to engage the draw-bar 11 by projecting into a recess of the lower side thereof when said latch is tilted. The opposite end of the latch is provided with a rounded head 25, which is normally pressed against the other draw-bar 12. In the surface of the last-mentioned draw-bar there is a recess 12^a, formed by oppositely-arranged easy inclines or cam-shoulders. When the head 25 stands in this recess 12^a, the locking-nose 24 will be out of engagement with the opposite draw-bar and the latter may be moved to and fro. When,

however, the draw-bar 12 is shifted so as to move the recessed portion away from head 25, it will tilt the latch, causing the locking-nose 24 to project into the recess of the draw-bar 11, and thus lock it. One of these latches is provided for each draw-bar, so that they may be operated independently. The locking-latches are thus controlled solely by the draw-bars, and they provide a very simple, economical, and effective means for locking the idle draw-bar.

In Fig. 5 the draw-bar 12 stands in the idle position, wherein the nose 25 of the latch is projected into the recess of under side of said bar, and the locking-nose 24 is therefore out of engagement with the other draw-bar 11. It is apparent that if the draw-bar 12 is shifted longitudinally the latch will be tilted into the position indicated in Fig. 6, wherein the locking-nose 24 will be projected into and stand in the locking-recess 26 in the under side of draw-bar 11, thus locking the latter against movement so long as draw-bar 12 stands in the position last indicated.

In the drawings I have shown only two draw-bars; but of course the latches may be applied to any number, it being merely necessary to provide one locking-latch for each draw-bar, the same to be controlled by the draw-bar which is moved.

Any suitable means may be employed for rocking the shaft 13—for example, a well-known lever. (Not shown.) Of course each draw-bar might have its own operating-lever, such a provision being well known; but in the form shown only one is necessary, since the shaft 13 has the well-known sliding and rocking movement.

It will be observed that all the draw-bars are unlocked when they stand in the idle position, but that any effort to move both at once would be prevented by the corresponding movement of both latches from the unlocking to the locking position.

What I claim is—

1. In combination, a plurality of draw-bars, means to be operated thereby, a single means to move said draw-bars alternately and independently, a lock comprising a tilting latch member arranged to lock and unlock one of said bars, a spring for moving said latch in one direction, said latch being movable in the opposite direction by another of said bars.

2. In combination, a plurality of draw-bars, means to be operated thereby, a single means to independently and alternately reciprocate said bars, a latch for locking and unlocking one of said bars, a spring for moving said latch in one direction, said latch being movable in the opposite direction by the movement of the other bar when the latter is moved out of its idle position.

3. In combination, a plurality of draw-bars, means to be operated thereby, a single shiftable lever to move either of said draw-bars, an independent positive latch for each of said bars, each of said latches being independently controlled and operated by the movement of one of said bars to lock the other bar.

4. In combination, a plurality of draw-bars, means to be operated thereby, a single operating device arranged to positively move one or the other of said bars, a latch for each of said bars, the latch for the bar that is to remain idle being positively operated and controlled by the bar to be moved, and a spring to return said latch to the unlocking position.

5. In combination, a plurality of draw-bars, means to be operated thereby, a single means to move said bars independently, a spring-pressed tilting latch for each bar, each latch being operated against the action of the spring by the bar that is not arranged to lock.

6. In combination, a plurality of draw-bars arranged side by side, means to be operated thereby, a single operating device arranged to be moved into engagement with one or the other of said bars independently, a latch for each of said bars, one of said latches being operated by one of said bars to lock the other, the other latch being operated by the other bar to lock the first-mentioned bar, said latches being operated independently.

7. A locking device for draw-bars comprising in combination, two independent bars arranged side by side and substantially parallel, means to be operated thereby, a single draw-bar-operating mechanism arranged to be shifted into operative engagement with one or the other of said bars, two tilting latches arranged transversely of said bars, one of said latches being adapted to lock one bar, the other the other bar, spring mechanism for normally holding said latches out of the locking position, one of said latches being operable against the action of the spring by one of said bars when the same is moved out of its normal position to lock the other bar, the other latch being in turn operable by the other bar when the latter is moved out of its normal position.

8. In combination, a plurality of draw-bars arranged side by side, means to be operated thereby, and means to move said bars independently, a tilting latch for each bar, an inclined recess in one of said bars having oppositely-inclined walls, one end of one of the latches arranged to project therein, a recess in the other bar having abrupt-sided walls, the opposite end of said latch being arranged to project therein, and a spring coöperating with the latch and arranged to move it in a direction to seat the latch in the recess having the inclined walls when the draw-bar having said inclined recess is in the idle position.

9. In a device of the character described, draw-bars, means for operating said bars independently, locking devices for said bars comprising independent latch-like devices, each of said latch-like devices being arranged when in one position to positively lock one bar when the other is moved out of the idle position and to frictionally lock the latter when the same is restored to its idle position.

ARTHUR N. MANROSS.

Witnesses:
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M. S. HART.

Correction in Letters Patent No. 842,153.

It is hereby certified that in Letters Patent No. 842,153, granted January 22, 1907, upon the application of Arthur N. Manross, of New Britain, Connecticut, for an improvement in "Locking Mechauism for Draw-Bars," an error appears in the printed specification requiring correction, as follows: In line 86, page 2, before the word "is," the word *it* should be inserted; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 5th day of February, A. D., 1907.

[SEAL.]

F. I. ALLEN,
Commissioner of Patents.