

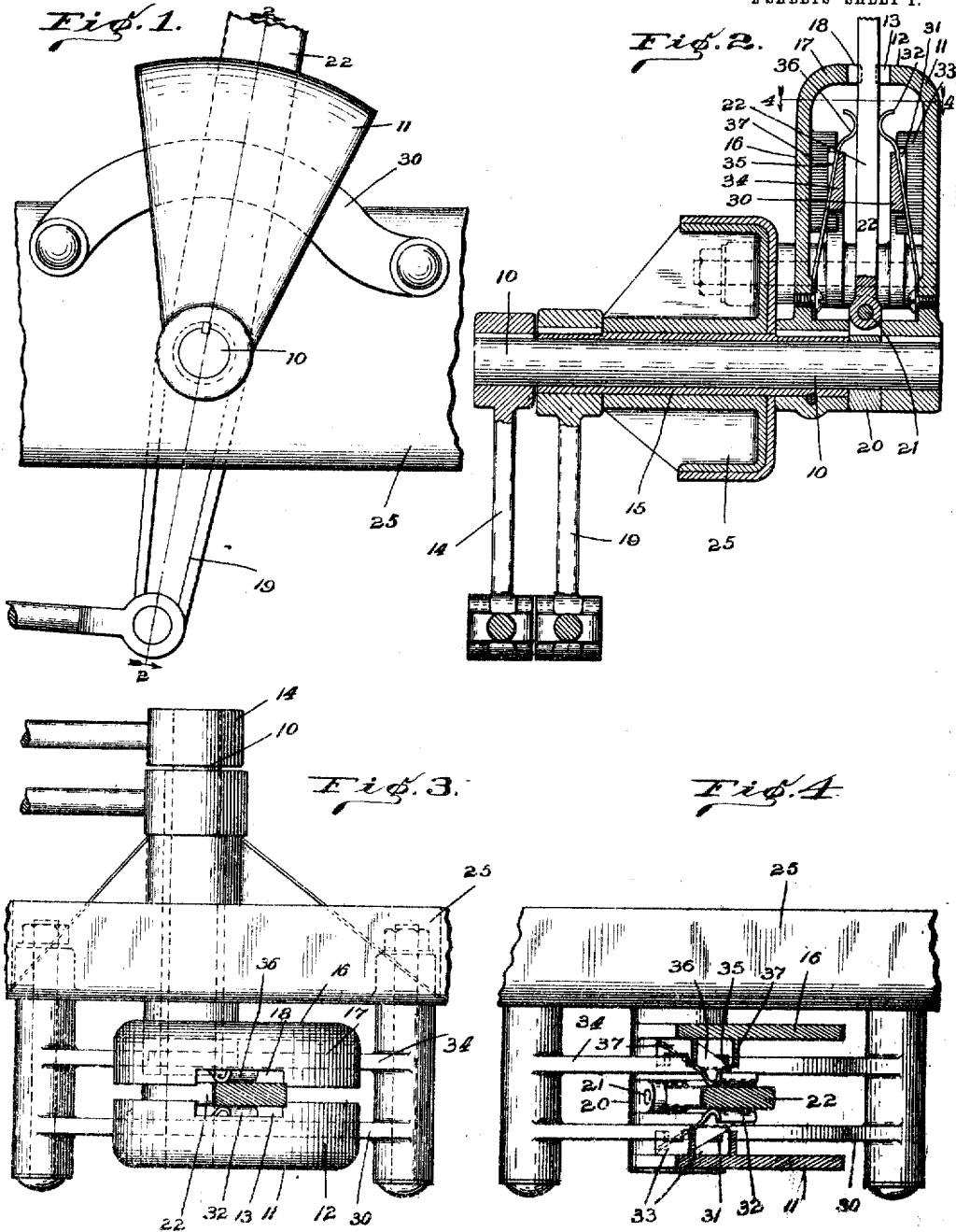
H. C. MARMON.
CONTROLLER.

APPLICATION FILED MAY 4, 1906.

911,419.

Patented Feb. 2, 1909.

2 SHEETS—SHEET 1.



Witnesses
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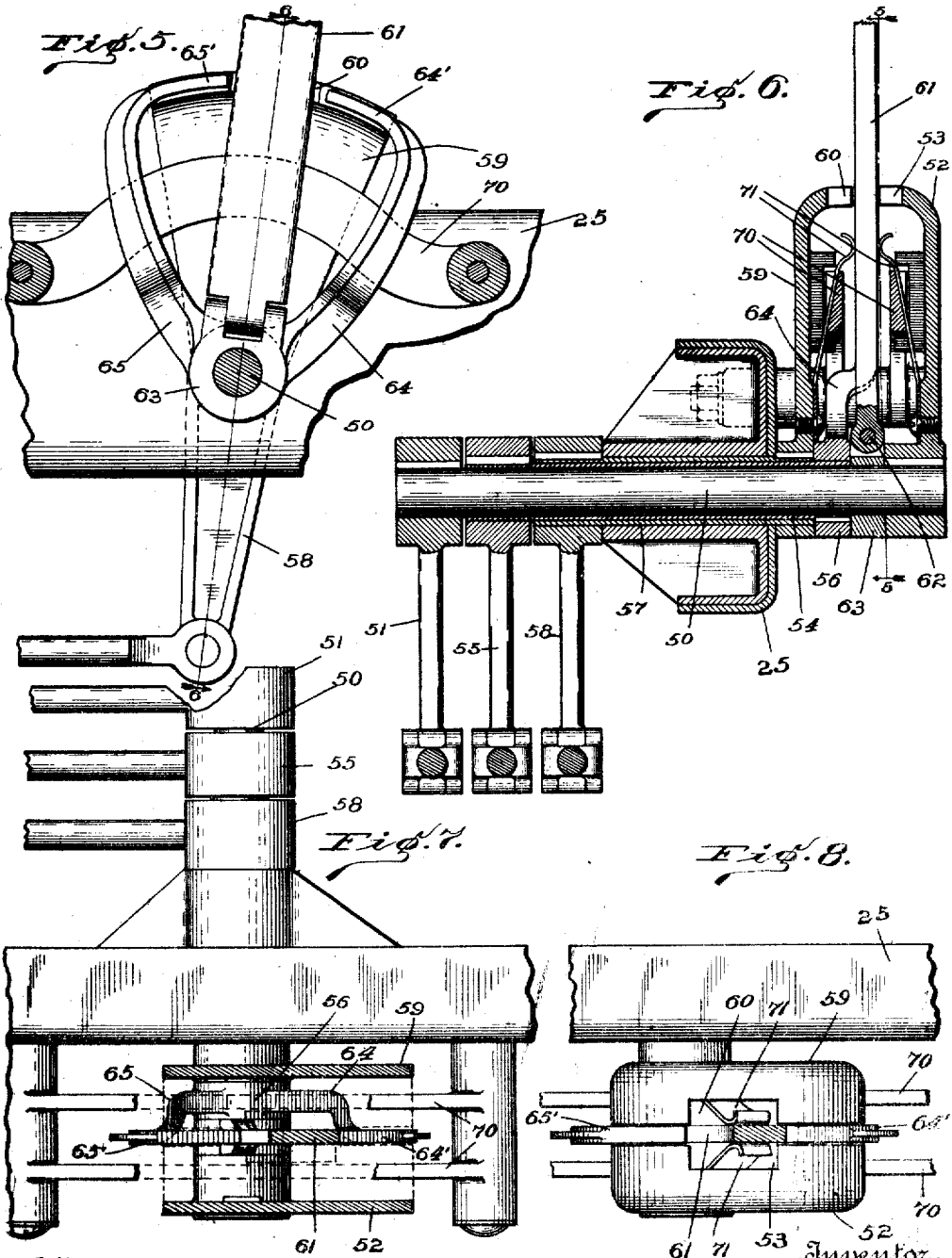
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UNITED STATES PATENT OFFICE.

HOWARD C. MARMON, OF INDIANAPOLIS, INDIANA, ASSIGNOR TO NORDYKE & MARMON COMPANY, OF INDIANAPOLIS, INDIANA, A CORPORATION OF INDIANA.

CONTROLLER.

No. 911,419.

Specification of Letters Patent.

Patented Feb. 2, 1909.

Application filed May 4, 1906. Serial No. 315,153.

To all whom it may concern:

Be it known that I, HOWARD C. MARMON, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented certain and useful Improvements in Controllers, of which the following is a specification.

The object of my invention is to produce a device for shifting speed changing mechanism to any one of its several positions by the manipulation of a single element.

A further object is that the construction be such that any desired portion of the mechanism may be operated by a direct movement of the aforesaid single element without operating other portions.

The accompanying drawings illustrate my invention.

Figure 1 is a side elevation of an apparatus embodying my invention; Fig. 2 a section on line 2 2 of Fig. 1; Fig. 3 a plan; Fig. 4 a section on line 4 4 of Fig. 2; Fig. 5 is a section on line 5 5 of Fig. 6, illustrating a modification; Fig. 6 a section on line 6 6 of Fig. 5; Fig. 7 a plan, in partial horizontal section of the parts shown in Fig. 5, and Fig. 8 a partial plan of the parts shown partly in section in Fig. 7.

In Figs. 1 to 4, 10 indicates a shaft provided at one end with a plate 11 having an intumed upper flange 12 provided in its inner edge with a notch 13. Secured to the other end of shaft 10 is an arm 14 to which may be connected a member for shifting desired elements of a speed changing gearing (not shown).

Sleeved upon shaft 10 is a sleeve 15 which at one end carries a plate 16 similar to plate 11. Plate 16 is provided at its outer end with a flange 17 which projects towards the flange 12 of plate 11 and is provided on its inner edge with a notch 18 similar to the notch 13. Journalled upon shaft 10 between the hubs of the plates 11 and 16 is a collar 20 provided with a pivot pin 21 which lies at right angles to the shaft 10. Pivoted upon the pivot 21 is the inner end of a hand lever 22 which extends outward between the flanges 12 and 17 and is adapted to enter either one of the notches 13 or 18, the arrangement being such that, by swinging the lever 21 to the right or left in Fig. 2 it may be thrown into either the notch 13 or 18 and then, by swinging the same forward

or back on shaft 10 as an axis, may rock either the shaft 10 or the sleeve 15 in either direction and thus swing either arm 14 or arm 19 in either direction.

In the drawings, the sleeve 15 is journalled in the main frame 25 and, in order that the parts may be locked in neutral position I provide the following construction: Arranged between the lever 22 and plate 11 is an arc bar 30 having a notch 31 formed in its outer face, said notch being adapted to receive a spring finger 32 carried by the inner face of plate 11 and lying between a pair of lips 33 integral with plate 11. Similarly arranged between lever 22 and plate 16 is an arc-bar 34 provided in its outer face with a notch 35 adapted to receive a spring finger 36 attached to the inner face of plate 16 and lying between a pair of lips 37. The two spring fingers 32 and 36 are projected into position to be engaged by the hand lever 22 when it is shifted to the right or left in Fig. 2 so that said fingers may be forced out of the notches 31 or 35 by the inward movement of the hand lever.

In the construction shown in the first four figures of the drawings, four possible positions may be had with the hand lever, i. e., three speeds ahead and one reversed, or any other combination desired.

In Figs. 5 to 8 inclusive I show a construction capable of six positions, and the construction is as follows: The shaft 50 may be provided at one end with an arm 51 and at the other end with a plate 52 similar to the plate 11 and provided with a notch 53 in its upper flange. Sleeved upon shaft 50 is a sleeve 54 which is provided at one end with an arm 55 and at the other end with a hub 56. Sleeved upon the sleeve 54 is a sleeve 57 provided at one end with an arm 58 and at the other end with a plate 59 similar to the plate 16 and provided in its upper flange with a notch 60 which practically registers with the notch 53. The upper flanges of the plate 52 and 59 project toward each other, but sufficient room is left between them for the passage of the hand lever 61 which is pivoted on the pivot 62 (at right angles to the shaft 50) carried by the collar 63 which is journalled on shaft 50. Hub 56 is provided with a pair of diverging arms 64 and 65 which, at their outer upper ends are provided with approaching fingers 64' and 65' respectively which lie

between the inwardly projecting flanges of the plates 52 and 59, the inner ends of said fingers approaching each other to substantially the same distance as the width of the adjacent notches 53 and 60. The arms 64 and 65 are first diverged in order that there may be freedom of movement of the hand lever 61. In this frame the plates 52 and 59 may be locked in their middle positions to arc-bars 70, similar to arc-bars 30 and 34, in the manner already described, the spring fingers 71 carried by the plates 52 and 59 serving to normally hold the hand lever 61 in its medial position in the manner already described. In this form the hand lever 61 may be shifted forward or backward in its medial position in which case it will pass between the inwardly projecting flanges of the plates 52 and 59 and will engage the fingers 64' or 65'. By swinging lever 61 to the right in Fig. 6, it may be thrown into notch 53 and then, by swinging on shaft 50, may be used to rock shaft 50, or, by shifting the lever to the left it will be thrown into notch 60, whereupon the lever may be used to rock sleeve 57.

I claim as my invention:

1. In a controller for motor vehicles, the combination with a pair of nested co-axial controlling elements, of an operating lever coaxial and nested therewith and having a joint permitting movement of said operating element in opposite directions toward either of said controlling elements, said controlling elements each having a portion adapted to receive a portion of the operating element, a stationary member extending between the operating element and each controlling element, and a spring catch carried by each controlling element and adapted to engage the adjacent stationary member to normally prevent movement of its controlling element and arranged in the path of transverse movement of the operating element, substantially as described.

2. In a controller for motor vehicles, the combination with a pair of nested coaxial controlling elements, of an operating lever coaxial and nested therewith and having a joint permitting movement of said operating element in opposite directions toward either of said controlling elements, said controlling elements each having a portion adapted to receive a portion of the operating element, a stationary member extending between the operating element and each controlling element, a spring catch carried by each controlling element and adapted to engage the adjacent stationary member to normally prevent movement of its controlling element and arranged in the path of transverse movement of the operating element, and a third element coaxial and nested with the first-mentioned controlling elements and lying between the same in position to be engaged

by a swinging movement of the operating element between the two first mentioned controlling elements.

3. The combination, in a selective speed gear controlling mechanism, of a support, a fixed guide having a single slot and locking notches in the members bounding said slot, nested coaxial shafts mounted in said support, sub-levers mounted on said shafts, spring locking devices carried by said sub-levers and adapted to engage said locking notches, and a control lever mounted to swing both longitudinally and transversely and adapted to engage with and operate said sub-levers selectively.

4. The combination, in a selective speed gear controlling mechanism, of a support, a fixed guide having a single slot, coaxial shafts mounted in said support, sub-levers carried by said shafts, and a control lever pivotally mounted on one of said shafts and having a joint therein the pivot whereof extends at right angles with the axis of the shaft and adapted to operably engage with either of said sub-levers while working in said single slot.

5. The combination, in a selective speed gear controlling mechanism, of a support, a fixed guide having a single slot only, coaxially arranged shafts mounted in said support, sub-levers carried by said shafts, spring locking devices carried by said sub-levers, the members of said fixed guide and said spring locking devices having interengaging formation, and a control lever adapted to work in said single slot for operating said sub-levers selectively.

6. The combination in a speed gear controlling mechanism, of a pair of sub-levers, means for supporting said sub-levers, a guide having a single slot only therein, means for supporting said guide, means for locking the sub-levers to the members of said guide respectively, and a control lever adapted to work in said single slot and engage successively with said sub-levers and having two principal movements one in the direction of movement of the sub-levers and the other substantially at right angles thereto.

7. The combination, in a controller, of a support, nested coaxial shafts mounted in said support, sub-levers mounted on said shafts respectively, spring locking devices carried by said sub-levers, a fixed guide comprising two members each of which has a notch therein with which the spring locking member carried by the corresponding sub-lever is adapted to be brought into registry and engage, and a control lever arranged between the two sub-levers and pivotally mounted coaxially with said shafts and also capable of being moved transversely of said pivotal mounting to engage with one or the other of the said two sub-levers, the arrangement being such that when said lever is en-

gaged with one of said two sub-levers the spring locking device on the other sub-lever will engage with the notch in the corresponding guide bar and be locked to position thereby.

8. The combination, in a controller, of a support, a plurality of shafts, sub-levers carried by said shafts, an operating lever arranged between said sub-levers and adapted to move both in the direction of said sub-levers and substantially at right angles thereto, said sub-levers having extended faces parallel with their line of movement and approaching each other so that the distance therebetween is less than the intermediate dimension of the controlling lever and each of which is provided with a notch into which the controlling lever may be moved and with which it may engage, the arrangement being such that said controlling lever will be held into the notch in either of said sub-levers by the aforesaid extended

face on the other sub-lever except when it is brought to position opposite the notch in said last named sub-lever.

9. The combination, in a controller, of sub-levers having extended faces arranged nearer to each other than the diameter of the control lever, said control lever arranged between said sub-levers and adapted to engage with either, each of said sub-levers being provided with a notch into which the control lever may enter, the face of the sub-lever opposite the one with which the control lever is at the time engaged serving to hold the control lever into engagement.

In witness whereof, I have hereunto set my hand and seal at Indianapolis, Indiana, this 26th day of April, A. D. one thousand nine hundred and six.

HOWARD C. MARMON. [L. s.]

Witnesses:

ARTHUR M. HOOD,
THOMAS W. McMEANS.