

No. 770,521.

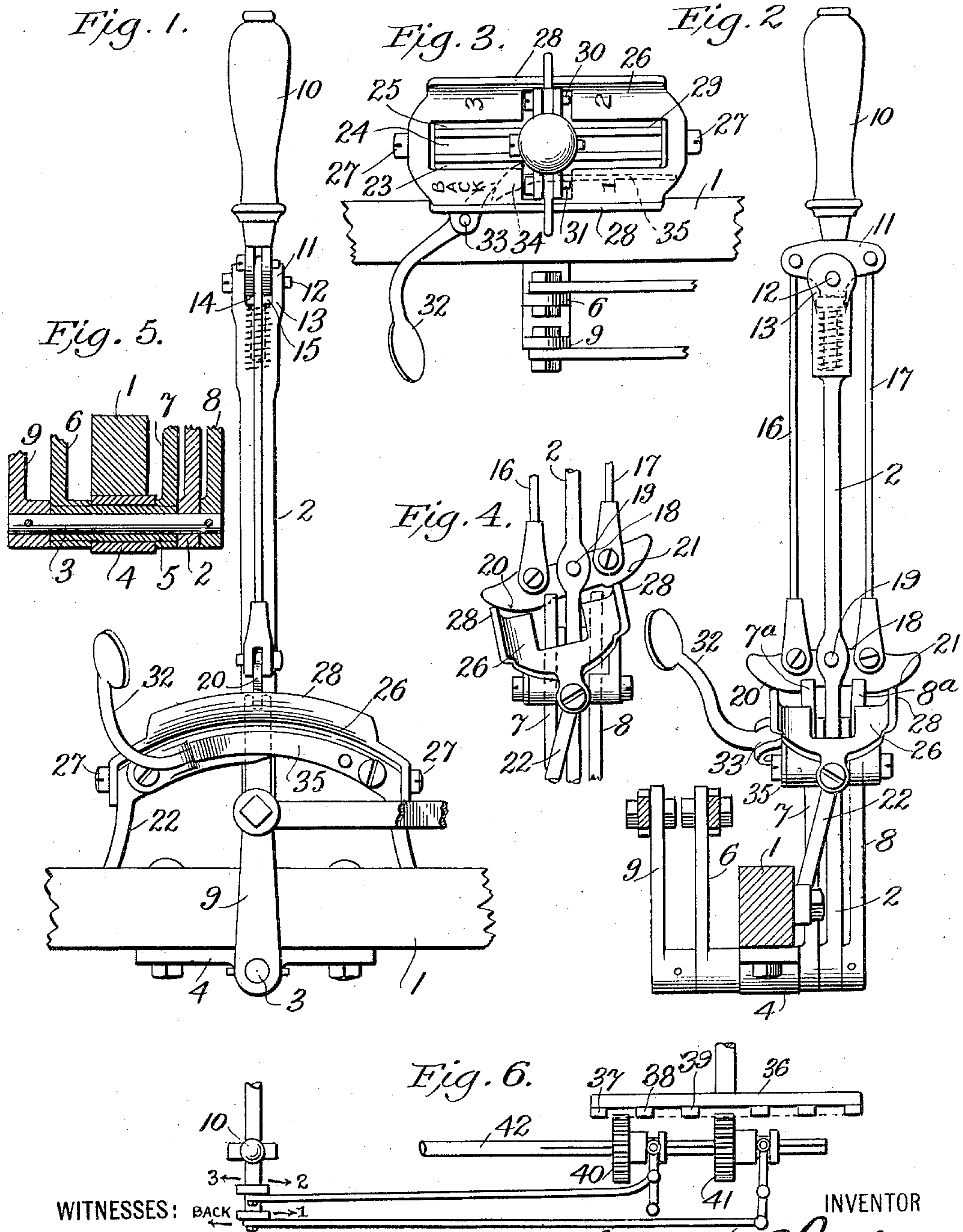
PATENTED SEPT. 20, 1904.

J. L. FITZ GERALD.  
SPEED CONTROLLER FOR MOTOR VEHICLES.

APPLICATION FILED JAN. 30, 1903.

NO MODEL.

2 SHEETS—SHEET 1.



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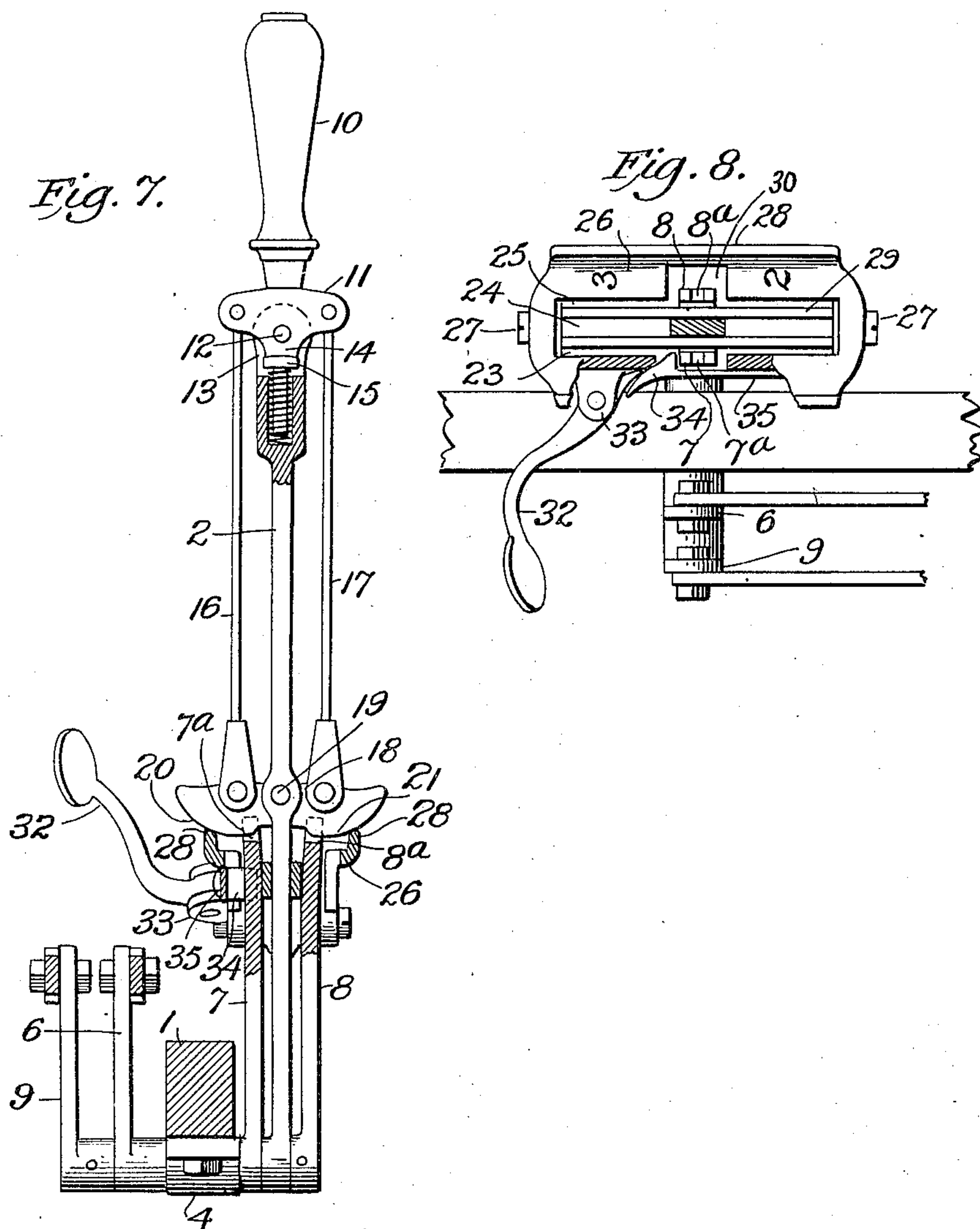
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# SPEED CONTROLLER FOR MOTOR VEHICLES.

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NO MODEL.

2 SHEETS - SHEET 2.



Witnesses  
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# UNITED STATES PATENT OFFICE.

JAMES L. FITZ GERALD, OF NEWPORT, RHODE ISLAND.

## SPEED-CONTROLLER FOR MOTOR-VEHICLES.

SPECIFICATION forming part of Letters Patent No. 770,521, dated September 20, 1904.

Application filed January 30, 1903. Serial No. 141,140. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES L. FITZ GERALD, a citizen of the United States of America, and a resident of Newport, county of Newport, State of Rhode Island, have invented certain new and useful Improvements in Speed-Controllers for Motor-Vehicles, of which the following is a specification.

This invention relates to a speed-regulating mechanism for automobiles and other motor-vehicles driven by any suitable kind of power.

The object of the invention is to simplify and make more perfect the construction of devices of this character, besides promoting ease and accuracy in operation and giving as many degrees of speed as possible.

It consists, essentially, in an improved speed-changing lever and also in the construction and combination of parts and in certain details and peculiarities thereof, substantially as will be hereinafter described and claimed.

In the annexed drawings, illustrating my invention, Figure 1 is a side view of my improved lever device. Fig. 2 is an edge elevation of the same. Fig. 3 is a top plan view. Fig. 4 is a detail edge view of some of the parts in position for a change of speed. Fig. 5 is a detail sectional view of the pivoting means for the handle, and Fig. 6 is a view representing a form of variable-gear mechanism with which the lever device is connected. Fig. 7 is an edge elevation of my improved lever device similar to Fig. 2, with certain parts shown in section. Fig. 8 is a sectional top plan view.

Like numerals of reference denote like parts in all the figures.

1 denotes some portion of the vehicle-frame which supports the lever device of the speed-regulating mechanism.

2 indicates the main rod of the lever device. Its bottom or inner end is loosely supported on a pivot-pin 3, carried in a bearing 4, that is bolted to the frame 1. Within bearing 4 is a sleeve 5, that is loose in the bearing and loose around the pin 3, which sleeve is integral with or securely fastened at the ends to the parallel arms 6 and 7, one being on one side and the other on the other side of the frame 1. The arm 7 lies close to the rod 2 on one

side, and on the other side is a similar arm 8, which is securely fastened to the end of pin 3. The free ends of the parallel arms 7 and 8 are slotted at 7<sup>a</sup> and 8<sup>a</sup>. Alongside of arm 6 is another arm 9, which has its end rigidly secured to the pin 3. Thus it will be seen that the two arms 6 and 7 are arranged to move in unison with each other and also the two arms 8 and 9 are arranged to move in unison with each other.

The main rod 2 is provided at its outer end with a pivoted operating-handle 10. It has a T-shaped cross-head 11, which is pivoted between the jaws of the recessed end 13 of rod 2 by means of the pivot pin or screw 12. The cross-head 11 has an inner bearing-surface 14, which rests on a yielding or spring-pressed pin 15, that is carried in the recess in the end 13 of rod 2, the object of the yielding pin being to keep the handle 10 normally in axial alinement with the rod 2. To the ends of the cross-head 11 are pivoted the links 16 and 17, the opposite ends of which are pivoted to the cam-plate 18 at points on opposite sides of its center, its center being pivotally supported by pin 19 in a slot in the rod 2. Thus the oscillation of handle 10 on pivot 12 is transmitted by links 16 and 17 to the cam-plate 18, so that the latter is shifted in one direction or the other. (See Fig. 4.) This cam-plate 18 has two cam edges 20 and 21, the edge 20 when the handle 10 is in its normal position engaging the slot 7<sup>a</sup> in arm 7 and the edge 21 at the same time engaging the slot 8<sup>a</sup> in arm 8. Thus it will be seen that I provide a controlling-lever moving in a fixed plane and that said lever carries a dog which is movable relatively thereto, for the cam-plate 18 performs the function of a dog. Furthermore, there are means for operating the dog to cause it to engage either one of the vibratile arms.

Supported by attachment to the frame 1 is a suitable guide-carrying frame 22, provided with three parallel guides 23, 24, and 25, in the middle of one of which, 24, the middle rod 2 plays back and forth at the will of the operator, while in the other two slots the arms 7 and 8 play back and forth when locked to the operating-rod 2, as I shall now set



forth, the arm 7 in slot 23 and the arm 8 in slot 25.

26 denotes a slotted locking-plate which is pivoted at each end to frame 22 by means of the pivot-pins 27. This plate 26 vibrates laterally across the face of the guides 23, 24, and 25. It has raised ledges or flanges 28 on its longitudinal edges and also a central longitudinal slot 29, in which slot the rod 2 moves, and said slot during all the lateral oscillations of the locking-plate 26 leaves the guide 24 entirely open, so that the rod 2 is free to move in said guide. The edges of slot 29 are notched near the center on both sides at 30 and 31, said notches being preferably rectangular. Notch 30 receives the arm 8 and locks it. Notch 31 receives the arm 7 and locks it. (See Fig. 3.) By shifting the plate 26 on its pivots (see Fig. 4) in one direction or the other, which is accomplished by causing the cam-plate 18 to act against one or the other of the ledges 28, either the notch 30 or the notch 31 can be disengaged from the arm it holds and said arm released and set free to move in its guide, it being noted that the same movement of the cam-plate 18 which throws the locking-plate over on its pivot disengages the cam from the arm, which remains locked.

32 denotes a foot-lever which is pivoted to the guide-carrying frame 22 at 33 and carries a latch 34, projecting through an opening into the interior of the guide 43, where it acts as a stop to normally prevent the arm 7 from moving in the direction for "back" motion except when the latch 34 is released by pressing the foot against lever 32, which is done in case it is desired to back the machine. A spring 35 bears against the under side of the catch 34 and holds the latter inside of guide 23.

The lever mechanism just described may be connected with any suitable variable-speed gearing for regulating the speed of the machine. An example thereof is shown in Fig. 6, comprising a disk 36, having gears 37, 38, and 39 thereon. Pinions 40 and 41 are arranged to slide on a drive-shaft 42 and are actuated by leverage connections with arms 6 and 9, so that the movement of these arms will move the pinions to engage the gears, so as to furnish any one of three forward speeds and one back motion.

A further word about the operation will give all the explanation needed. The operator when a certain speed is to be had will move the handle 10 in one direction or the other. If speed No. 1 is required, (notice the markings on the locking-plate 26,) he will move handle 10 so as to disengage cam 21 from arm 8, but leave cam 20 engaged with arm 7, at the same time shifting the locking-plate 26, as in Fig. 4, arm 7 and rod 2 being thus connected to move in unison. Then by moving the handle 10 at right angles to its former movement without relaxing it from the position gained

by the former movement the rod 2 and the arm 7, and likewise the arm 6, will be shifted into the place shown at 1. Other shifts for other speeds, as well as the movement for backing, can be made in a similar way.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a speed-controller for motor-vehicles, the combination of a pivoted lever, pivoted arms, means on the lever engaging the arms, and a vibrating plate also engaging the arms and controlled by the aforesaid means on the lever.

2. In a speed-controller for motor-vehicles, a pivoted lever in combination with pivoted arms, and means consisting essentially of a vibrating plate for connecting one of said arms temporarily to the lever so that it may move in unison therewith and for simultaneously locking the other arm in a stationary position.

3. In a speed-controller for motor-vehicles, a pivoted lever, in combination with arms hung on the same pivot as said lever, guides for said lever and said arms, locking means for locking the arms at times in a stationary position, and locking means for connecting one or the other of the arms to the lever so that it may vibrate in unison therewith while the other arm remains stationary.

4. In a speed-controller for motor-vehicles, a pivoted lever, in combination with arms hung on the same pivot as the lever, guides for the lever and arms, a slotted and pivoted locking-plate having notches to engage the arms, a cam-plate pivoted to the main lever and acting to engage the arms and control the locking-plate, and means for operating the said cam-plate.

5. In a speed-controller for motor-vehicles, a pivoted lever, in combination with arms hung on the same pivot as the lever, guides for the lever and arms, a slotted and pivoted locking-plate having notches to engage the arms, a cam-plate pivoted to the main lever and acting to engage the arms and control the locking-plate, and means for operating the said cam-plate, consisting of a pivoted handle on the end of the main lever and links extending from it to the opposite ends of the cam-plate.

6. In a speed-controller for motor-vehicles, a combination of a pivoted lever, arms hung on the same pivot as the lever, a slotted and pivoted locking-plate having notches to engage the arms, and a cam-plate pivoted to the main lever and acting to engage the arms and control the locking-plate.

7. In a speed-controller for motor-vehicles, the combination of a pivoted lever movable by hand, arms hung on the same pivot as the lever, guides for the lever and arms, a slotted and pivoted locking-plate having notches to engage the arms, a cam-plate pivoted to the main lever and acting to engage the arms and

control the locking-plate, a foot-lever, and a latch controlled thereby.

8. A controlling device for motor-vehicles, &c., comprising a controlling-lever moving in  
5 a fixed plane, independently-vibratile arms connected with the devices to be controlled, detent devices for holding said arms in the position to which they may be moved, and means carried by said lever for connecting it

at will with either of said arms, substantially as described.

Signed at Newport this 24th day of January, 1903.

JAMES L. FITZ GERALD.

Witnesses:

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