J. L. L. McCORMACK.

TREADLE.

APPLICATION FILED OCT. 2, 1911.

1,115,558. Patented Nov. 3, 1914.

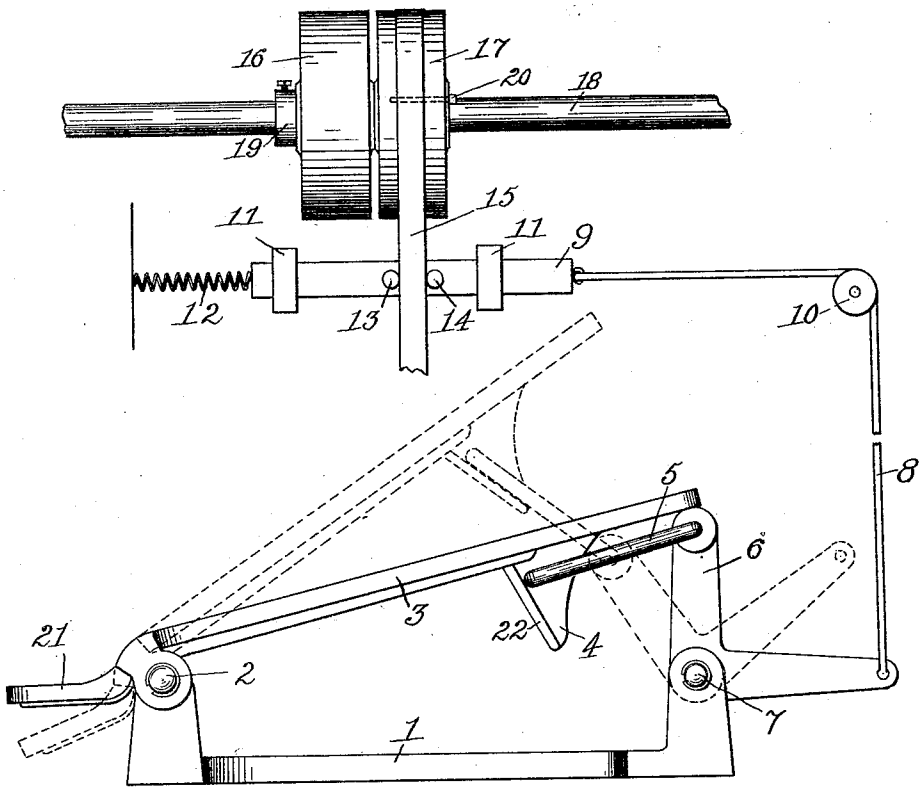


Fig. 1

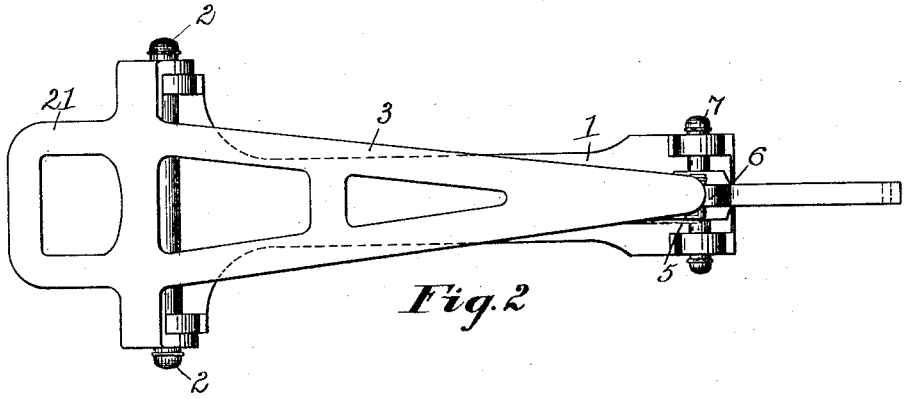


Fig. 2

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UNITED STATES PATENT OFFICE.

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TREADLE.

1,115,558. Specification of Letters Patent. Patented Nov. 3, 1914.

Application filed October 2, 1911. Serial No. 652,417.

To all whom it may concern:

Be it known that I, JAMES L. L. McCORMACK, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Treadles, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to an improved form of treadle mechanism for operating a belt shifter in such a manner that without the use of complicated mechanism the shifter and treadle will be held positively in their operating position, from which position, however, they may be released by a second operation of the treadle. The structure, in other words, is self-locking, so that when the treadle is moved to its operating position it is retained in such position without the use of catches or auxiliary locks. The treadle proper is so formed that by pressing upon a second portion of it, the treadle and belt shifter are returned to their inoperative position.

The several drawings illustrating my invention are as follows:

Figure 1 shows my improved treadle in side view, and in this figure there is also shown diagrammatically a belt shifting mechanism and connections extending from the belt shifter to the treadle mechanism. Fig. 2 is a top view of the treadle mechanism shown in Fig. 1.

Similar numerals refer to similar parts throughout the several views.

As shown in the drawings, the treadle mechanism consists of a base 1, to which there is pivoted upon a suitable rod or shaft 2, a foot treadle 3. The major portion of the treadle projects from the pivoting rod 2 over the base 1, and is pivotally connected by means of a bracket 4 projecting downward from the under side of the treadle with a link 5, the other end of which is pivotally connected with the upper left-hand end of the bell-crank 6, pivotally mounted upon the base 1 by means of a rod 7. The lower right hand end of the bell-crank 6 is connected by a cord or chain 8 with one end of a belt shifter 9, a guiding sheave 10 being employed to properly direct the cord or chain.

The belt shifter 9 is slidably mounted in supports 11, and has connected to it a spring 12 which moves the shifter to its left-hand position when such motion is permitted by the disposition of the parts of the treadle mechanism. The belt shifter 9 is provided with two pins 13 and 14, which engage the belt 15 upon opposite edges, as a result of which when the shifter is moved from one position to the other, the belt is moved from one to the other of two pulleys 16 and 17 carried by the shaft 18. The pulley 16 is loosely mounted on the shaft 18, and is held in place by a collar 19, while the pulley 17 is rigidly keyed on to the shaft as indicated at 20. The shaft 18 shown in the drawing is assumed to be a shaft which it is desired to drive by means of the belt 15, power being communicated to the belt from a suitable source not shown.

The belt shifter 9 is normally caused to occupy its left hand position by means of the spring 12, which keeps the treadle 3 in its upper position, indicated by the dotted lines, as the result of which the belt 15 normally engages the loose pulley 16 and thus does not operate the shaft 18. When it is desired to drive the shaft 18, the treadle 3 is depressed, which through the coöperation of the link 5 and bell-crank 6, rotates the bell-crank around to the right upon its support, thus moving the belt shifter 9 to the right against the action of the spring 12, to move the belt 15 from the pulley 16 to the pulley 17. The parts of the treadle mechanism are so proportioned that when the treadle 3 is depressed to the position indicated in Fig. 1, its right hand end strikes the upper end of the bell-crank 6 which serves as a stop to prevent further motion of the treadle. For this position of the parts the thrust exerted upon the link 5 by the bell-crank 6 due to the tension of the spring 12, is exerted in a line practically through pivotal support 2 of the treadle 3, and thus there is no tendency for the thrust exerted to raise the treadle. When it is desired to stop the shaft 18, the treadle 3 is raised by pressing upon the portion 21 extending to the left of the pivot 2. As soon as the right hand end of the treadle is raised sufficiently so that the line of the thrust exerted upon the treadle by the link 5 is above the pivot 2, the tension of the spring 12 serves to lift the treadle to its uppermost position, indicated in dotted

lines, for which position the belt 15 rests upon the loose pulley 16. Motion of the parts of the treadle beyond the position indicated in dotted lines, is prevented by a flange 22 formed on the rear edge of the bracket 4, which engages the link 5 when the treadle 3 is in its raised position. The flange 22 is so disposed upon the bracket 4 that when the treadle mechanism is in the position indicated in dotted lines, the line of thrust exerted upon the bell-crank 6 by pressing upon the treadle 3 will be sufficiently above the pivot 7 of the bell-crank, so that the bell-crank may be rotated without difficulty by such pressure.

While I have shown my invention in the particular embodiment herein described, I do not, however, limit myself to this exact construction, but may employ any mechanical equivalent for carrying out my invention.

What I claim is:

1. In a treadle mechanism the combination of a base, a treadle pivoted to the base, a bell-crank pivoted to the base, and a link connecting the treadle with one end of the bell-crank so that when the treadle is in one of its positions the axis of the link extends practically through the pivot of the treadle.

2. In a treadle mechanism the combination of a base, a treadle pivoted to the base, a bell-crank pivoted to the base, and a link connecting the treadle with one end of the bell-crank so that when the treadle is in one of its positions the axis of the link extends practically through the pivot of the treadle, and when the treadle is in its other position, said axis extends outside of the pivot of the bell-crank.

3. In a treadle mechanism the combination of a base, a treadle pivoted to the base, a bell-crank pivoted to the base, and a link connecting the treadle with one end of the bell-crank so that when the treadle is in one of its positions the axis of the link extends practically through the pivot of the treadle, and a projection secured to the treadle and extending from the treadle pivot in a direction opposite to that in which the treadle extends.

4. In a treadle mechanism the combination of a base, a treadle pivoted to the base, a bell-crank pivoted to the base, and a link connecting the treadle with one end of the bell-crank so that when the treadle is in one of its positions the axis of the link extends practically through the pivot of the treadle, and when the treadle is in its other position, said axis extends outside of the pivot of the bell crank, and a projection secured to the treadle and extending from the treadle pivot in a direction opposite to that in which the treadle extends.

5. In a treadle mechanism, the combination of a base, a treadle, a bell crank lever pivoted to the base, a member connected with one arm of the bell crank lever exerting thereon at all times a force tending to turn it upon its pivot, and mechanism for connecting the treadle and the other arm of the bell crank lever, said mechanism being so disposed relatively to the bell crank lever and treadle that the force communicated to said mechanism through the bell crank lever from said member retains the treadle in actuated position when operated.

6. In a treadle mechanism, the combination of a base, a treadle, a lever pivoted to the base, a member connected with the lever exerting thereon at all times a force tending to turn it upon its pivot, and mechanism for connecting the treadle and lever, said mechanism being so disposed relatively to the lever and treadle that the force communicated to said mechanism through the lever from said member retains the treadle in actuated position when operated.

In witness whereof, I hereunto subscribe my name this 26th day of September, 1911.

JAMES L. L. McCORMACK.

Witnesses:
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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."