(No Model.)

# W. W. SEELEY.

## BELT LEVER POWER.

No. 303,328. Patented Aug. 12, 1884.

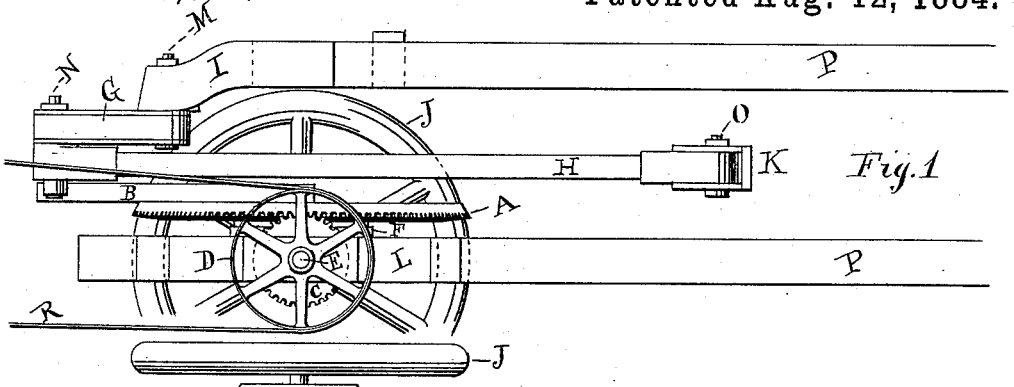


Fig. 1

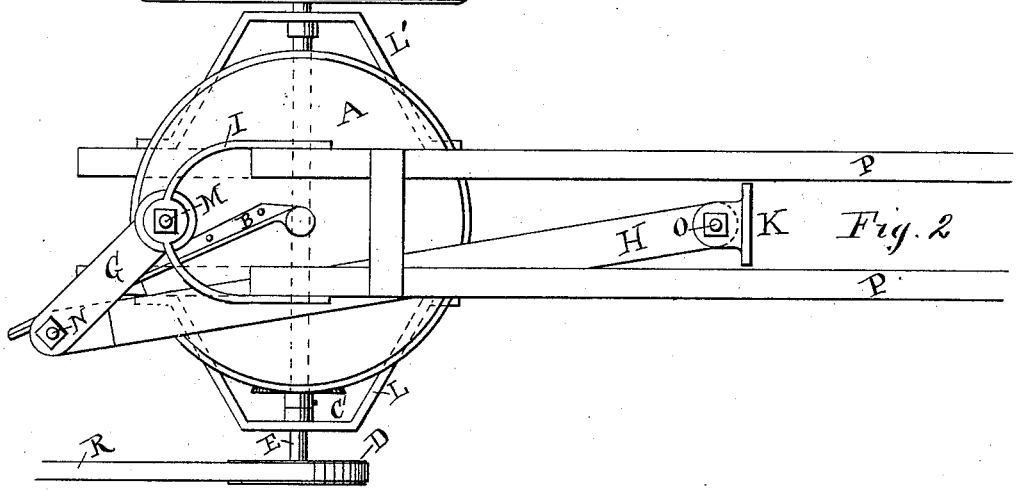


Fig. 2

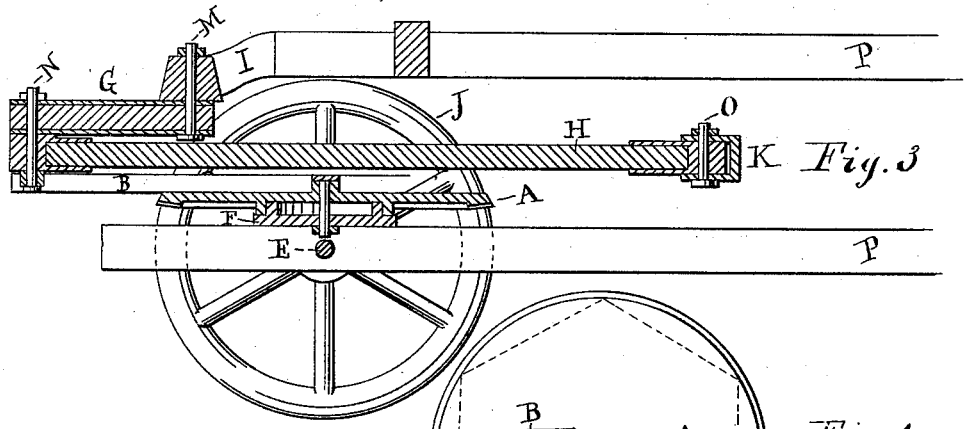


Fig. 3

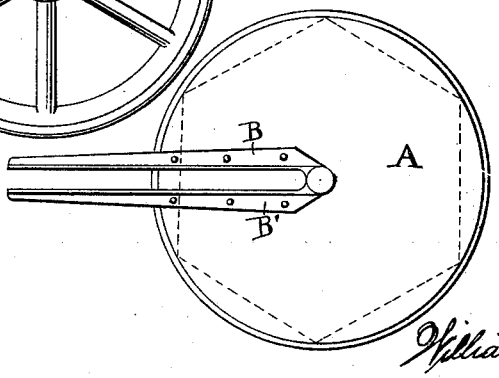


Fig. 4

Witnesses
D. H. Seeley
Edwin G. Day

Inventor
William W. Seeley.

# UNITED STATES PATENT OFFICE.

WILLIAM W. SEELEY, OF ALBANY, NEW YORK.

## BELT LEVER-POWER.

SPECIFICATION forming part of Letters Patent No. 303,328, dated August 12, 1884.

Application filed June 9, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM W. SEELEY, a citizen of the United States, and residing in the city and county of Albany, and State of New York, have invented a new and useful Improvement in Belt Lever-Powers, of which the following is a specification.

My improvement relates to that class of lever-powers which are operated by a belt; and the objects of my improvement are to provide a means by which, while operating the lever, the movement of the belt which passes over the driving-wheel will be continuous in one direction, and to produce a simple and inexpensive mechanism. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is an upright side view of the entire mechanism. Fig. 2 is a top view thereof. Fig. 3 is a vertical sectional view thereof, and Fig. 4 is a top view of the large horizontal geared wheel, showing one of the ways in which I sometimes construct the same.

Similar letters refer to similar parts throughout the several views.

The horizontal pieces of wood or metal P constitute the upper and lower side pieces of the frame of any machine to which the lever-power is to be applied and attached.

G and H are two arms of a lever joined together by the bolt N, forming thereby a knuckle-joint, and one end of one of which arms (as, for instance, G) is affixed to that part of the frame which unites the two upper horizontal side pieces, P, by a bolt, M, and the other of which arms (as, for instance, H) is attached to any plunger, K, by a bolt, O.

A is a polygonally-edged or circular metal plate having teeth affixed to or cut in upon its under surface to fit into the cavities formed by the teeth in the perpendicular cog-wheel C, which is firmly affixed on the shaft E, and by which latter wheel C the said plate A is operated. The plate A has also a circular projection upon its under surface, which fits upon and turns around a metallic ring or projection upon the upper face of the metallic plate F, which is firmly secured to the lower part of the frame P. Upon the upper face of the metal plate A is firmly secured, either by being cast with it, or by being bolted or otherwise fastened to said plate, a strip or bar of metal, B, against which the lower part of the bolt N, which joins the two arms of the lever together, is pressed when the belt-wheel D is turned. I sometimes construct the plate A, as in Fig. 4, with two bars or strips of metal, B and B′, upon the upper surface thereof, and thereby form a space between them, into which space and between which bars the end of the bolt N passes. The two ends of B and B′ may be joined, thus forming an elongated ring. I sometimes, where the ends are not joined, make either or both the bars B and B′ loose to pass around a bolt which passes through the two plates A and F, and around which latter bolt the plate A can be turned, and by means of which it can be held in close proximity to the plate F. When I only require the use of one or both of the bars B or B′, I temporarily fasten it or them by pins to the plate A, in any position I may desire.

I sometimes construct the plates A and F without the circular projection or rings upon the under and upper surfaces of said plates, respectively, and join or hold the same in position by a bolt, which passes through both said plates, so that the plate A can be turned around thereon.

D is the belt-wheel, which is affixed to one end of the shaft E, the latter resting in and passing through the lower horizontal side pieces P, and which wheel is operated by the belt R. A counterbalance-wheel, J, is affixed to the other end of the said shaft E.

I is a bar of metal, used to join the ends of the two upper side pieces P, and through which the bolt M, which holds one end of one of the arms G of the lever, passes.

In order to add greater strength to and the better to support the shaft E, I sometimes affix to the outside of the lower side pieces P a metal frame, L and L″, and pass the shaft through such metal frame. This latter addition, however, is not necessary for the proper working of my invention, and I do not, therefore, limit myself to its use.

I sometimes construct the plate A without the bars B and B′, and in lieu thereof cut a groove in the upper face thereof in order to receive the bolt N, and when the diameter of such plate A is not sufficient I add a bar of

metal to the periphery of such plate in a horizontal position, and at such part of said periphery as that such bar, while being at one side of such groove, yet one of the perpendicular faces of such bar will be continuous with one of the faces of such groove. The edge of the metallic plate having the teeth upon its under side thereof may be of any form, and I therefore choose to denominate its edges "polygonal," as I do not wish to be confined to any style of formation of its edges. The said metallic plate need not be solid. I sometimes use instead of a solid plate a cog-wheel, and affix in any manner the bars B or B′ to it, either by casting them with the wheel or bolting them firmly thereto; or, as before stated, the bars can be made loose and fastened to the wheel when in use, and I do not therefore confine myself to a solid plate.

In operating my invention I pass a belt, which is connected to the driving-wheel of an engine or of any motive power, over the driving or belt wheel D. When the wheel D is turned, the axle E, to which it is firmly affixed, also turns, and with it the cog-wheel C, which in turn operates the plate A, causing it to turn. When the bar B strikes against the bolt N, the latter is moved by and is caused to slide along said bar B, and the two arms of the lever are made to assume any angle, and the plunger at the end of the arm H pushed backward and forward.

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

1. A lever-power consisting of a polygonally-edged or circular metallic plate having teeth cast with, affixed to, or cut in the same, upon its under surface, and one or more bars firmly affixed to or cast with said plate, upon its upper surface, the two arms of a lever joined together by a bolt, which extends down to said plate, and is operated upon by the bar or bars affixed thereto, a perpendicular cog-wheel which operates upon and in connection with said metallic plate, and means for turning said perpendicular cog-wheel, and the frame of any machine to which said mechanism is to be applied, by which said plate and cog-wheel can be supported and held in position, and to which the ends of the arms of the lever can be attached, for the purposes set forth.

2. A lever-power consisting of a polygonally-edged or circular metallic plate having teeth cast with, affixed to, or cut in the same, upon its under surface, and one or more bars loosely affixed to said plate, upon its upper surface by means of the pin which holds the plate to the frame, the two arms of a lever joined together by a bolt, which extends down to said plate, and is operated upon by the bar or bars when temporarily fastened to said plate, a perpendicular cog-wheel which operates upon and in connection with said metallic plate, and any means for turning said perpendicular cog-wheel, and the frame of any machine to which said mechanism is to be applied, by which said metal plate and cog-wheel can be supported and held in position, and to which the ends of the arms of the lever can be attached, for the purposes set forth.

3. A lever-power consisting of a polygonally-edged or circular metallic plate having teeth cast with, affixed to, or cut in the same, upon its under surface, and a groove extending from or near the center to the circumference thereof, cut in its upper surface, the two arms of a lever joined by a bolt, which extends down to and into and is operated by the said groove cut in said metallic plate, a perpendicular cog-wheel which operates upon and in connection with said metallic plate, and means for turning said perpendicular cog-wheel, and the frame of any machine to which said mechanism is applied, by which said plate and cog-wheel can be supported and held in position, and to which the ends of the arms of the lever can be attached, for the purposes set forth.

4. A lever-power consisting of a polygonally-edged or circular metallic plate having one or more bars firmly affixed to or cast with said plate, upon its upper surface, and also having teeth cast with, affixed to, or cut in upon its under surface, and having also on its under surface a circular ring cast with or affixed to the same, which ring fits and turns upon a ring cast with or affixed to a metallic plate, which supports said polygonally-edged metallic plate having said teeth, the said supporting metallic plate with said ring affixed thereto or cast therewith, the two arms of a lever joined together by a bolt which extends down to said plate, and is operated upon by the bar or bars affixed thereto, a perpendicular cog-wheel, which operates upon and in connection with said metallic plate, and means for turning said perpendicular cog-wheel, and the frame of any machine to which said mechanism is to be applied, by which said plate and cog-wheel can be supported and held in position, and to which the ends of the arms of the lever can be attached, for the purposes set forth.

5. A lever-power consisting of a polygonally-edged or circular metallic plate having one or more bars loosely joined to said plate, upon its upper surface, by means of the pin which holds the said plate to the frame, and also having teeth cast with, affixed to, or cut in the same, upon its under surface, and having also on its under surface a ring cast with or affixed to the same, which ring fits and turns upon a ring cast with or affixed to a metallic plate which supports said polygonally-edged metallic plate having teeth, the said supporting metallic plate with said ring affixed thereto or cast therewith, two arms of a lever joined by a bolt which extends down to said toothed plate, and is operated upon by the bar or bars when temporarily fastened by any means to said toothed plate, a perpendicular

cog-wheel, which operates upon and in connection with said toothed plate, and means for turning said perpendicular cog-wheel, and the frame of any machine to which said mechanism is to be applied, by which said toothed plate and cog-wheel can be supported and held in position, and to which the ends of the arms of the lever can be attached, for the purposes set forth.

6. A lever-power consisting of a polygonally-edged or circular metallic plate having a groove extending from or near the center to the circumference thereof, cut in its upper surface, and also having teeth cast with, affixed to, or cut in the same, upon its under surface, and having also on its under surface a circular ring cast with or affixed to the same, which fits and turns upon a ring cast with or affixed to a metallic plate which supports said polygonally-edged metallic plate having said teeth, the said supporting metallic plate with said ring affixed thereto or cast therewith, the two arms of a lever joined together by a bolt which extends down to and into and is operated by said groove in said toothed metallic plate, a perpendicular cog-wheel, which operates upon and in connection with said toothed metallic plate, and means for turning said perpendicular cog-wheel, and the frame of any machine to which said mechanism is to be applied, by which said toothed plate and cog-wheel can be supported and held in position, and to which the ends of the arms of the lever can be attached, for the purposes set forth.

7. A lever-power consisting of a horizontal cog-wheel and the necessary supporting-frame, one or more metal bars placed above said cog-wheel, upon the pin around which said cog-wheel turns, and which bar or bars, when in use, is or are firmly fastened to the upper surface of said horizontal cog-wheel, the two arms of a lever joined together by a bolt which extends down to said bar, or into the spaces between said bars, and is operated by said bar, a second and perpendicular cog-wheel, which operates upon and in connection with said horizontal cog-wheel, a supporting-frame for said second cog-wheel, and mechanism for turning said perpendicular cog-wheel, and the frame of any machine to which said mechanism is applied, and by which both said cog-wheels can be supported and held in position, and to which the ends of the arms of the lever can be attached, for the purposes set forth.

WILLIAM W. SEELEY.

Witnesses:
D. W. SEELEY,
EDWIN G. DAY.