R. SIDE.

MACHINE FOR OBTAINING MOTIVE POWER.

No. 81,302 Patented Aug. 18, 1868.

Fig 2.

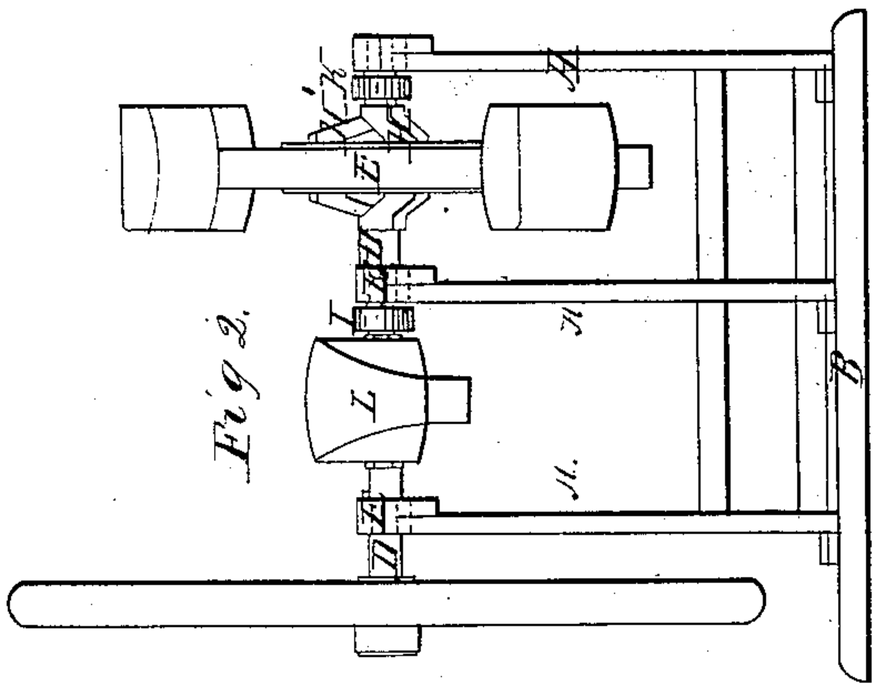


Fig 4

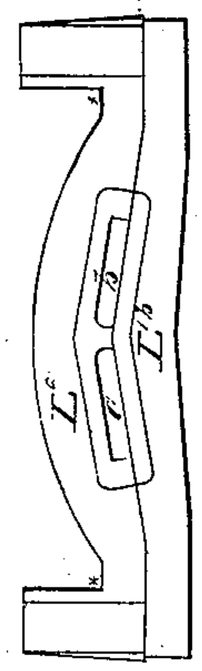


Fig 5.

Fig 3.

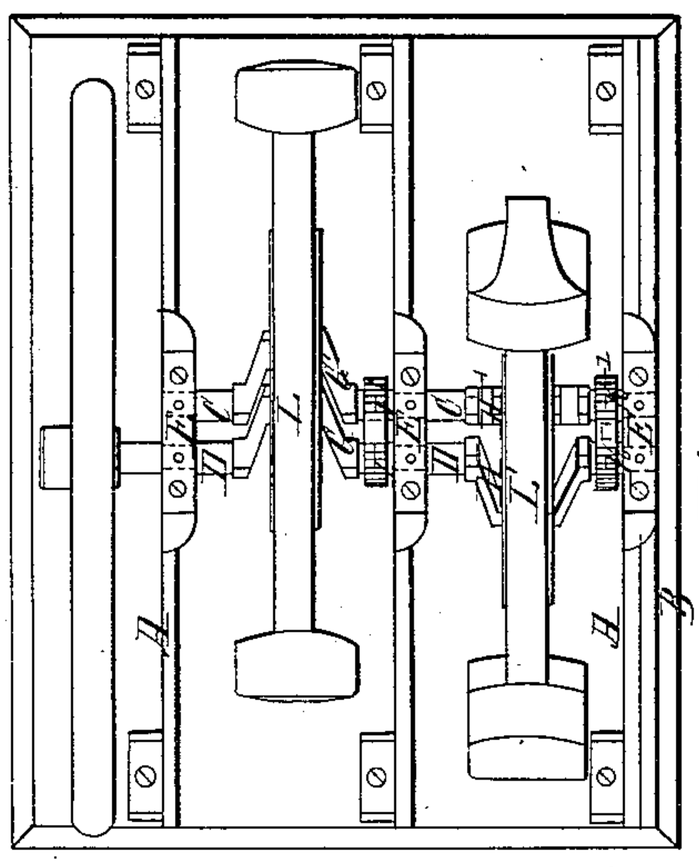
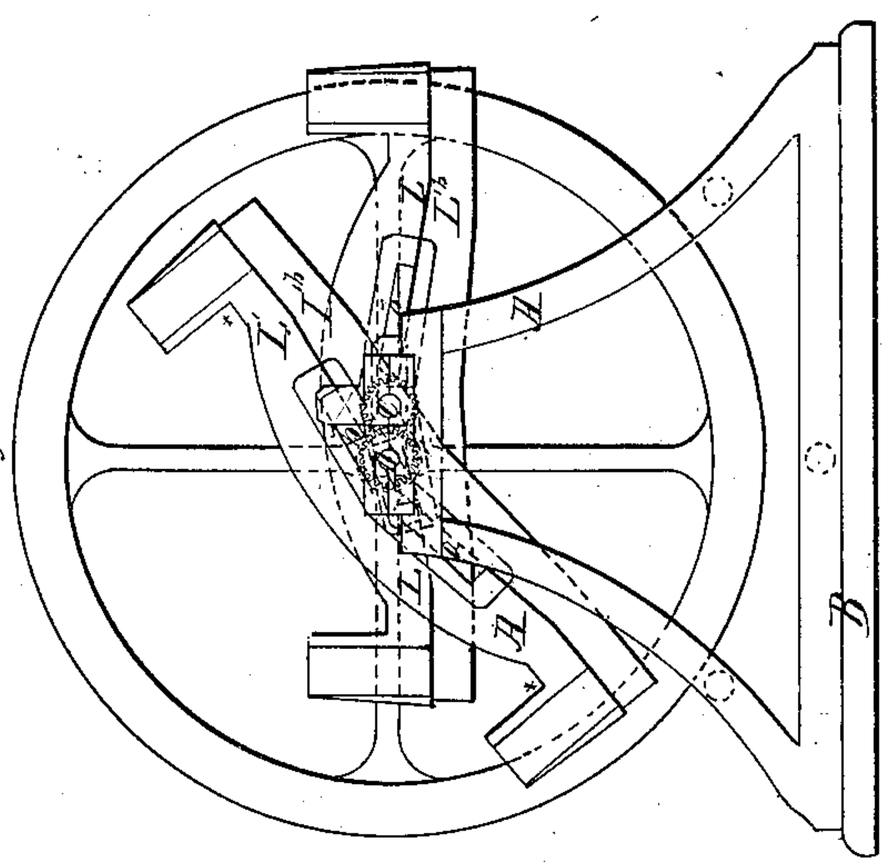


Fig 1



Witnesses,
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Letters Patent No. 81,302, *dated August* 18, 1868.

IMPROVED MACHINE FOR OBTAINING MOTIVE-POWER.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, ROBERT SIDE, of Union Street Borough, England, have invented a new "Machine for Obtaining Motive-Power;" and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying sheet of drawings, and to the letters of reference marked thereon.

Figure 1 is a side elevation of a machine constructed according to this invention.

Figure 2, an end view thereof.

Figure 3, a top plan view; and

Figures 4 and 5 are views of a detached part hereinafter described and referred to.

The nature of my said invention consists in combining together certain well-known mechanical powers, so as to form a machine or engine considerably cheaper than engines worked by steam, gas, air, or other fluids.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

A A are the framings of the machine, fixed to a bed-plate, B. C D are shafts, mounted in bearings E fixed to the upper part of the framings A. G G′ and H H′ are cranks, fixed upon the shafts C C and D D respectively, each pair of cranks being at right angles, or nearly so, to the other pair of cranks, to overcome or pass the null-points during their rotation.

I I′ and K K′ are wheels, fixed on to the shafts C and D, for causing these shafts to rotate together. L L′ are metal balance-beams, formed each in two parts, L^a and L'^b, as at figs. 4 and 5, the two parts being fixed together by bolts and nuts at * *, after the beams have been placed upon the pins of the cranks G G′ and H H′; the said pins working in the slots *a b* in the said beams. These beams are loaded at each end with weights, equal to the power required to be exerted by the machine, and the operations of the machine thus constructed are as follows:

Suppose two beams to be in the position represented, the beam L being horizontal, the other beam will, by the gravitating power of its weight, rest by the slot *a* on the crank-pin of the lowermost crank, and, as the cranks rotate one within the other, in opposite directions in each pair of cranks, the lowermost crank will lift one end of the beam, and the other crank will depress the opposite end of the said beam, and, when that end of the beam which is being lifted has passed a horizontal line, the opposite end of the beam will move downward, thereby lengthening this end of the beam, and causing it to descend with a force equal to the difference between the long and short-weighted levers of the beam thus brought into action, and the power so obtained may be transmitted by pulleys and bands, or toothed wheels, and, as the shafts continue to rotate, the other beam will come into action, and be in its most effective position for exerting power when the other beam is in its least effective position, and, by these means, each beam will assist the other past the null-points, namely, when either of the cranks is directly under the centre of its respective shaft.

The beams being thus mounted on two movable rolling-centres, a very little effort will be necessary to start and keep up the motion of the machine, for which purpose a small engine, worked by steam, may be applied to one end of the aforesaid beam or beams. It is also proposed, if necessary, to employ one or more fly-wheels, fixed on the shafts C and D.

Having now fully described my invention, and the manner of construction and operation, I hereby declare that what I claim, and desire to secure by Letters Patent, is as follows:

I claim the cranks, working in pairs, one within the other, in opposite directions, for imparting rocking motion to weighted beams, having no fixed axis of motion, but so constructed that the crank-pins move in slots in the said beams, substantially as above described.

London, 1868.

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