

CHARLES E. DE LORIERE.
 Improvement in Mechanism for Producing Rotary Motion.
 No. 127,682. Patented June 11, 1872.

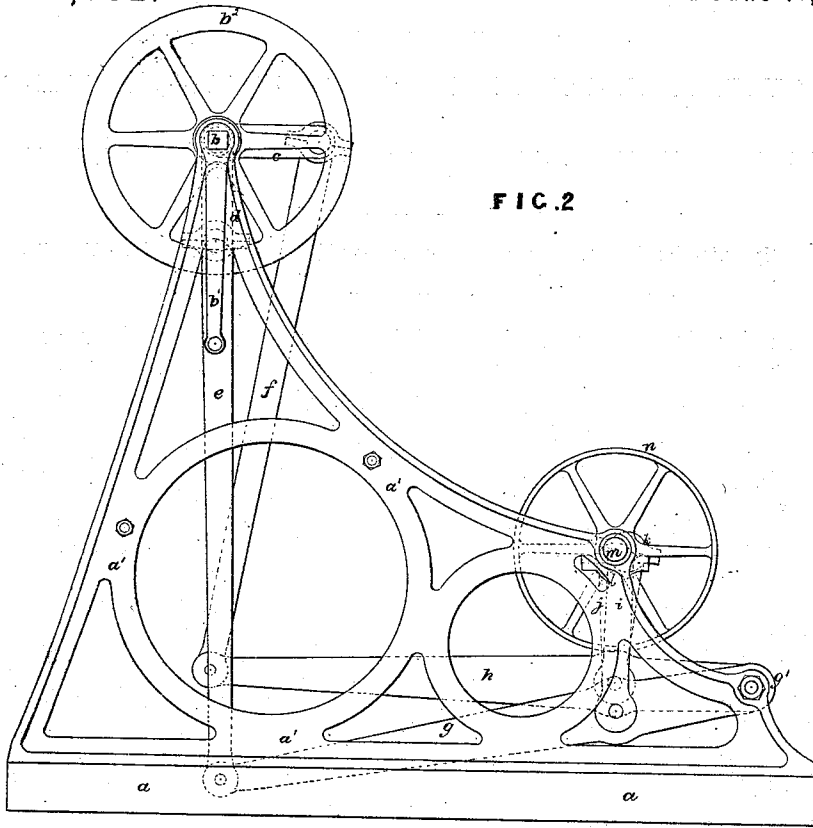


FIG. 2

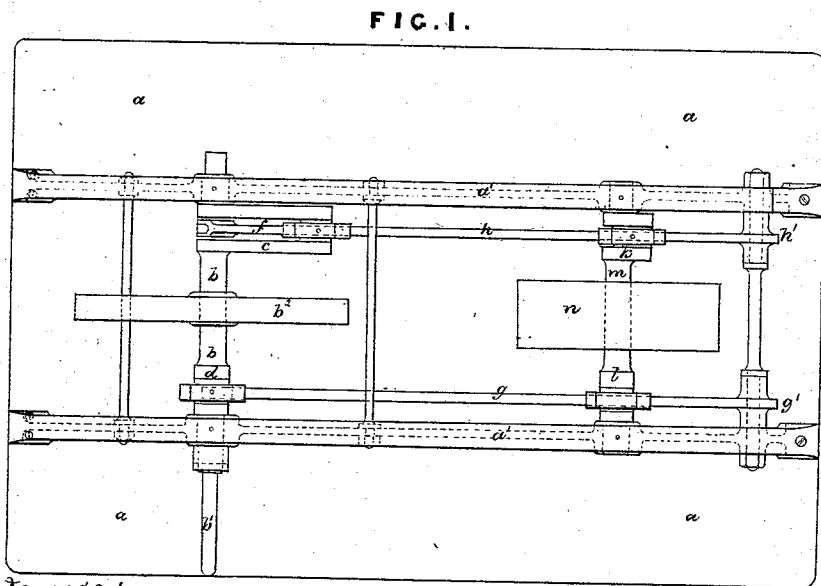


FIG. 1.

Witnesses
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 by *Dyer Beadle & Co.* atty.

UNITED STATES PATENT OFFICE.

CHARLES ERNEST DE LORIERÈ, OF LONDON, ENGLAND.

IMPROVEMENT IN MECHANISMS FOR PRODUCING ROTARY MOTION.

Specification forming part of Letters Patent No. 127,682, dated June 11, 1872.

Specification describing certain Improved Mechanism for Producing Rotary Motion and applying power for driving machinery and for other like purposes, invented by CHARLES ERNEST DE LORIERÈ, of London, England.

My said invention relates to a novel combination of cranks, levers, and connecting-rods, which are so arranged in relation to each other as to form an effective machine for producing and applying rotative force. The said invention may be applied for driving machinery for propelling ships and other vessels, and for all purposes where rotative force is required. The said machine may be operated by manual force or by any other power, and is adapted for one or the other, according to the particular purpose it is destined to serve.

My improved machine has two crank-shafts. One of these I call the first shaft, and the power is applied thereto and is transmitted through vibrating levers to the second shaft, from which the rotative force is transmitted to perform its work, as follows: The said first shaft is furnished with two cranks placed at right angles to each other and of equal length. Two connecting-rods of equal length are united at one end to the cranks of the aforesaid shaft, and connect them to two levers, which are also of equal length, and are equally divided into the proportions hereinafter specified. Two other connecting-rods are attached to the said levers and to the cranks of a second crank-shaft, whose cranks are also arranged at right angles to each other. These cranks are shorter than the first cranks, and their length bears the same proportion to that of the first cranks as one division of the levers bears to the other division. The power is applied to the first crank-shaft in any convenient manner, and the rotation of the cranks of the said shaft through the connecting-rods imparts a vibrating motion to the levers, and these, through the other connecting-rods and cranks, cause the rotation of the second-shaft, which is connected in any suitable manner to the machinery, apparatus, vessel, or vehicle to be operated or moved.

The manner in which I carry my said invention into practice is illustrated in the accompanying drawing, of which—

Figure 1 is a plan of my improved machine, and Fig. 2 is a side elevation of the same.

Like letters indicate the same parts throughout the drawing.

The whole of the mechanism is supported on a suitable bed or foundation, *a*, by a strong framing, *a'*, of cast-iron or other suitable metal. *b* is a metal shaft, which may be of any suitable length and diameter, and to which the power is applied by a crank-handle, *b'*, or by a wheel, pulley, or drum fixed on the shaft in place of the said handle. *b²* is a fly-wheel. *c d* are two cranks formed on the said shaft. *e f* are the two connecting-rods which connect the said cranks to the extremities of the two levers *g h*, as clearly shown in Fig. 1. These levers have their fulcrums at *g' h'*. *i j* are the other connecting-rods, which connect the levers *g h* to the two cranks *k l* of the second crank-shaft *m*, as shown in the same figure. From this second shaft the power is communicated to the machine or apparatus to be operated, or applied to any other work to be performed, the speed at which such work is performed being determined by the gearing or connections through which the power is transmitted. I may provide the shaft *m* with a drum or pulley, *n*, as shown, or with a toothed wheel, or clutch, or other like contrivance for connecting the said shaft with the machine or part to which the power is to be communicated. The first cranks *c d* have four times the length of the second cranks *k l*, and the levers are divided in the proportions of four to one. The connecting-rods should also be four times the length of the cranks to which they are attached. If desired, the proportions of the levers and cranks may be more or less than four to one, but the machine will not then work so advantageously as when these proportions are maintained. The diameter of the shafts, and the dimensions of the cranks, rods, and levers, and also the strength of the framing of each machine must be such as will best adapt it to the work it is destined to perform and the power it will have to develop.

Claim.

A machine with two crank-shafts or sets

of cranks, in combination with the vibrating levers and connecting-rods, which cranks, levers, and rods have the proportions herein specified, and which are so arranged and connected together that the rotative force applied to the first shaft is transmitted to the second shaft, and may be applied for driving ma-

chinery or for other purposes, as herein set forth.

CHAS. E. DE LORIERÈ.

Witnesses:

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