

(No Model.)

P. C. N. PEDERSON.
MECHANICAL MOVEMENT.

No. 585,851.

Patented July 6, 1897.

FIG-1-

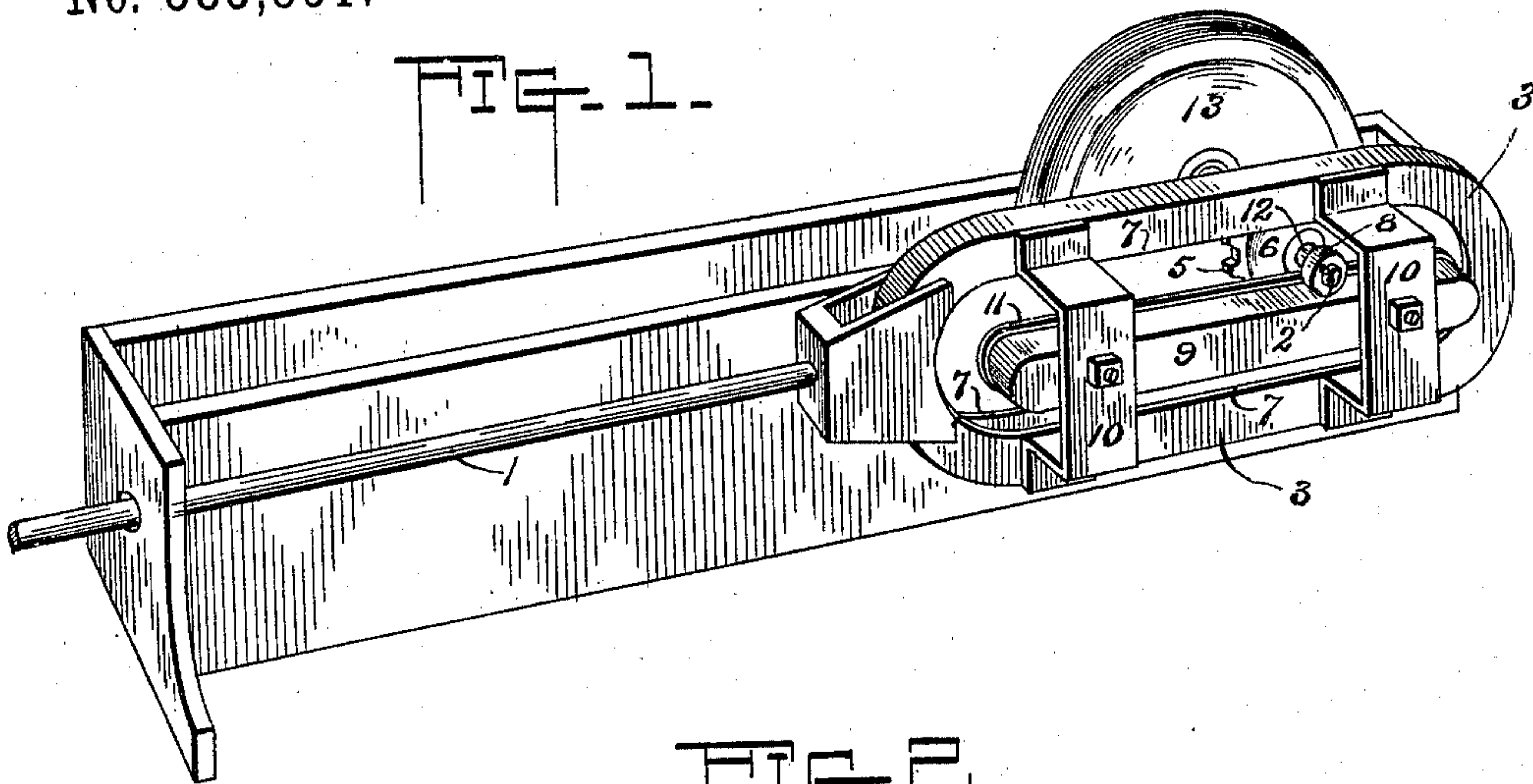


FIG-2-

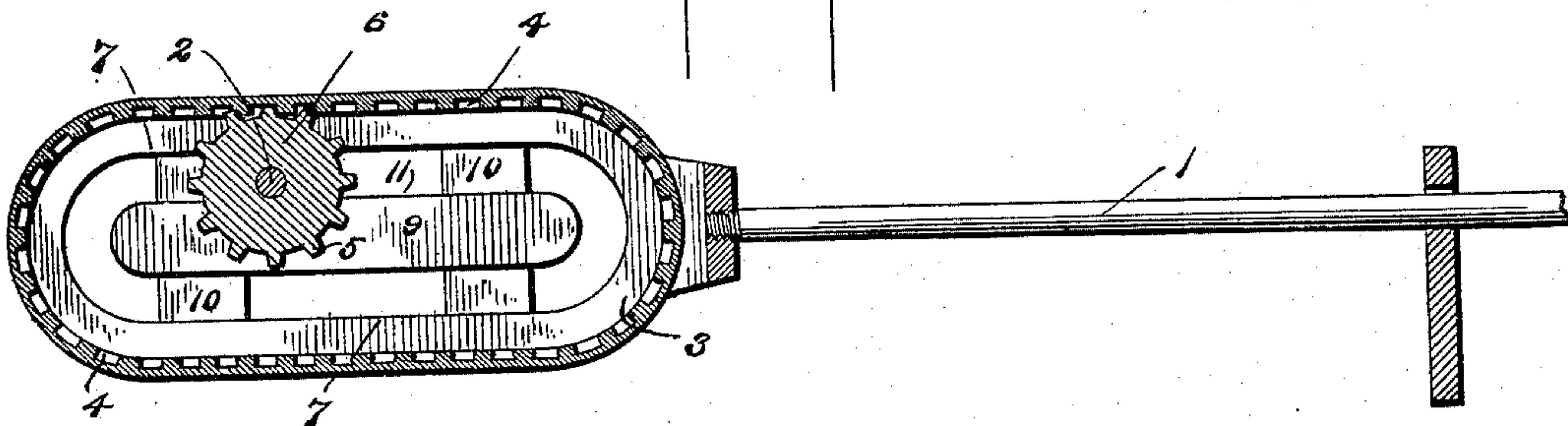
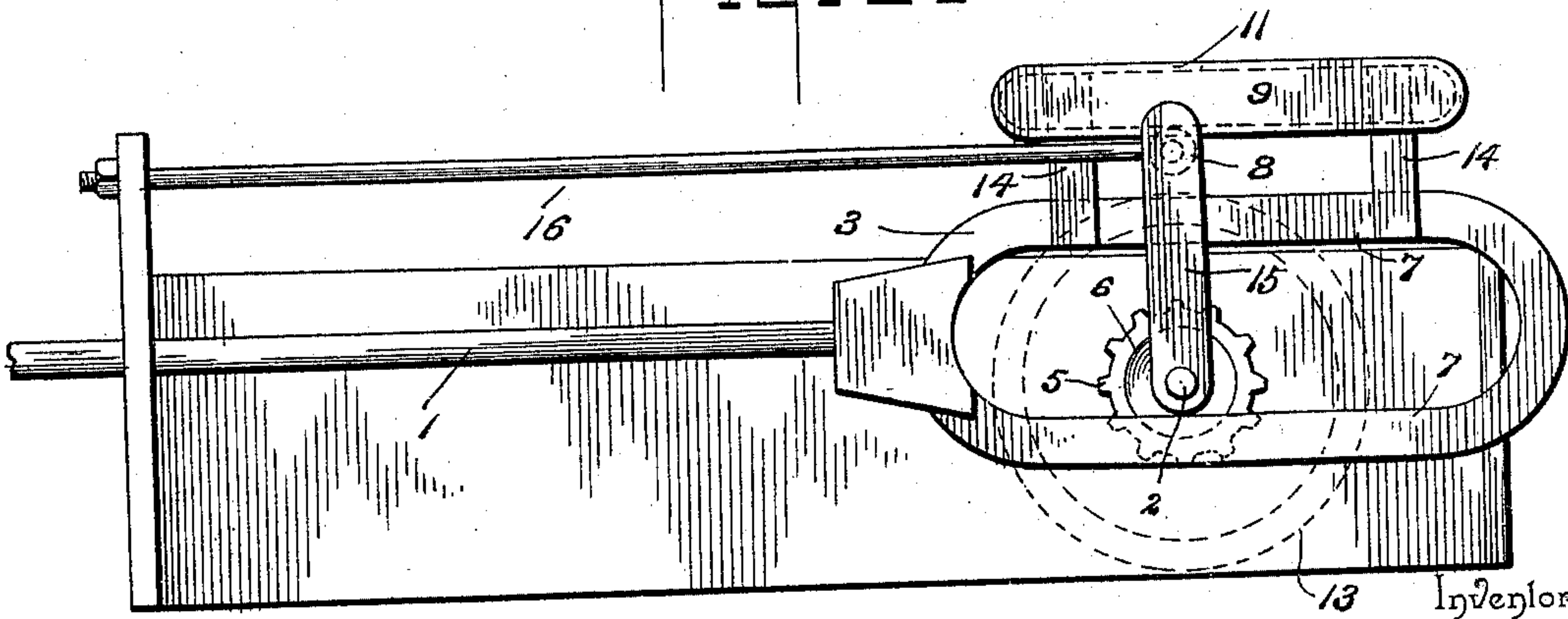


FIG-3-



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Witnesses

A. M. Poynton,
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By his Attorneys,

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UNITED STATES PATENT OFFICE.

PETTER C. N. PEDERSON, OF WEST SUPERIOR, WISCONSIN.

MECHANICAL MOVEMENT.

SPECIFICATION forming part of Letters Patent No. 585,851, dated July 6, 1897.

Application filed April 30, 1896. Serial No. 589,716. (No model.)

To all whom it may concern:

Be it known that I, PETTER C. N. PEDERSON, a citizen of the United States, residing at West Superior, in the county of Douglas and State of Wisconsin, have invented a new and useful Mechanical Movement, of which the following is a specification.

This invention relates to mechanical movements, and has for its object to provide mechanism for converting a reciprocating movement into a rotary movement, or vice versa, and at the same time to so construct and arrange the several parts of the mechanism that they will mutually support and brace each other at all times.

The movement is applicable to all kinds of vehicles and machinery—such as bicycles, engines, lathes, &c.—or may be used in any place where a crank has formerly been employed.

To this end the invention consists in certain novel features and details of construction and arrangement of parts, as hereinafter fully described, illustrated in the drawings, and finally embodied in the claims.

In the accompanying drawings, Figure 1 is a perspective view of the improved mechanism. Fig. 2 is a longitudinal section through the same. Fig. 3 is an elevation showing a modified arrangement of the guide and guiding-roller.

Similar numerals of reference designate corresponding parts in the several figures of the drawings.

Referring to the accompanying drawings, 1 designates a reciprocating rod, bar, or other device, and 2 the shaft or axle to which rotary movement is to be communicated from or transmitted by the reciprocating element.

In order to accomplish this, a substantially oval driving-frame 3 is provided, which consists of parallel side portions and rounded end portions forming a continuous open frame or rim, the inside surface of which is provided with cogs or teeth 4, the same being adapted to intermesh with peripheral cogs or teeth 5 on a wheel 6, fast on the shaft or axle 2, to which rotary motion is to be transmitted.

Both the reciprocating rod 1 and the axle or shaft 2 are mounted in bearings in suitable framework, so that they are properly supported and guided, and the driving frame

or rim is provided with inwardly-extending parallel flanges 7, which are spaced apart a distance equal to the thickness of the wheel 6, so as to embrace said wheel upon opposite sides and obviate relative lateral movement between such rim and wheel. One end of the shaft or axle 2 is extended sufficiently to have loosely journaled thereon an antifriction-roller 8, which is adapted to roll in contact with a central guide 9, extending longitudinally of the driving rim or frame 3. This guide is rigidly connected to the driving frame or rim by means of U-shaped brackets 10, arranged near each end thereof and fastened at their extremities to the adjacent flange of the rim. The guide 9 is arranged at one side of the driving-rim, but in a plane parallel therewith, and is provided at its inner edge with a lateral flange 11, which extends entirely around the same and operates in a groove or rabbet 12 in the antifriction-roller 8. This construction serves as an additional means for keeping the driving-rim and the gear-wheel 6 in proper working alinement.

The space between the working surface of the guide 9 and the teeth of the driving-rim is the same at all points, and as the driving-frame is reciprocated by the rod 1 the roller 8 travels around the guide 9 and by reason of its contact therewith it keeps the teeth of the gear 6 constantly in mesh with the teeth of the driving-rim. The passage of the roller 8 around the rounded ends of the guide 9 is facilitated and insured by mounting a fly-wheel 13 on the revolving axle or shaft 2, the momentum of said wheel causing the gear 6 to actuate the driving-rim laterally until the roller has passed around to the other side of the guide.

Fig. 3 shows a modified arrangement in which the guide 9 instead of being arranged centrally of the driving-rim 3 is arranged upon one side thereof and connected thereto rigidly by means of arms or brackets 14. The roller 8 may be mounted conveniently on the machine-frame or it may be carried by an arm or bar 15, in which the gear 6 is also journaled, and said arm or bar 15 may be braced by a rod or bar 16 or in any desired manner for holding the roller 8 stationary. The relative disposition of the roller 8 and guide 9 is such that as the roller travels around the

guide it will maintain the proper engagement between the gear-wheel 6 and the driving-rim 3 in the same manner as in the construction illustrated in Figs. 1 and 2.

5 It will also be apparent that the device is susceptible of other changes in the form, proportion, and minor details of construction, which may accordingly be resorted to without departing from the spirit or sacrificing
10 any of the advantages of this invention; also that the application of the principle is not limited to any particular class of machines, but may be utilized at any point in any machine or vehicle, &c., where it is desired to
15 convert reciprocating motion into rotary motion.

Having thus described the invention, what is claimed as new is—

A reciprocating member, and an internally-

toothed rim carried thereby, in combination 20 with a rotating member, a gear-wheel thereon meshing with said rim, a guide arranged centrally of said rim and mounted rigidly on the reciprocating member, a flange extending continuously around said guide, and a roller on 25 the rotating member outside of the gear-wheel traveling around and in rolling contact with the outer surface of said guide and provided with an annular rabbet in which the continuous flange on the guide is received, substan- 30 tially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

PETTER C. N. PEDERSON.

Witnesses:

A. A. CAMPBELL,

H. JEFFERSON O'BRIEN.