

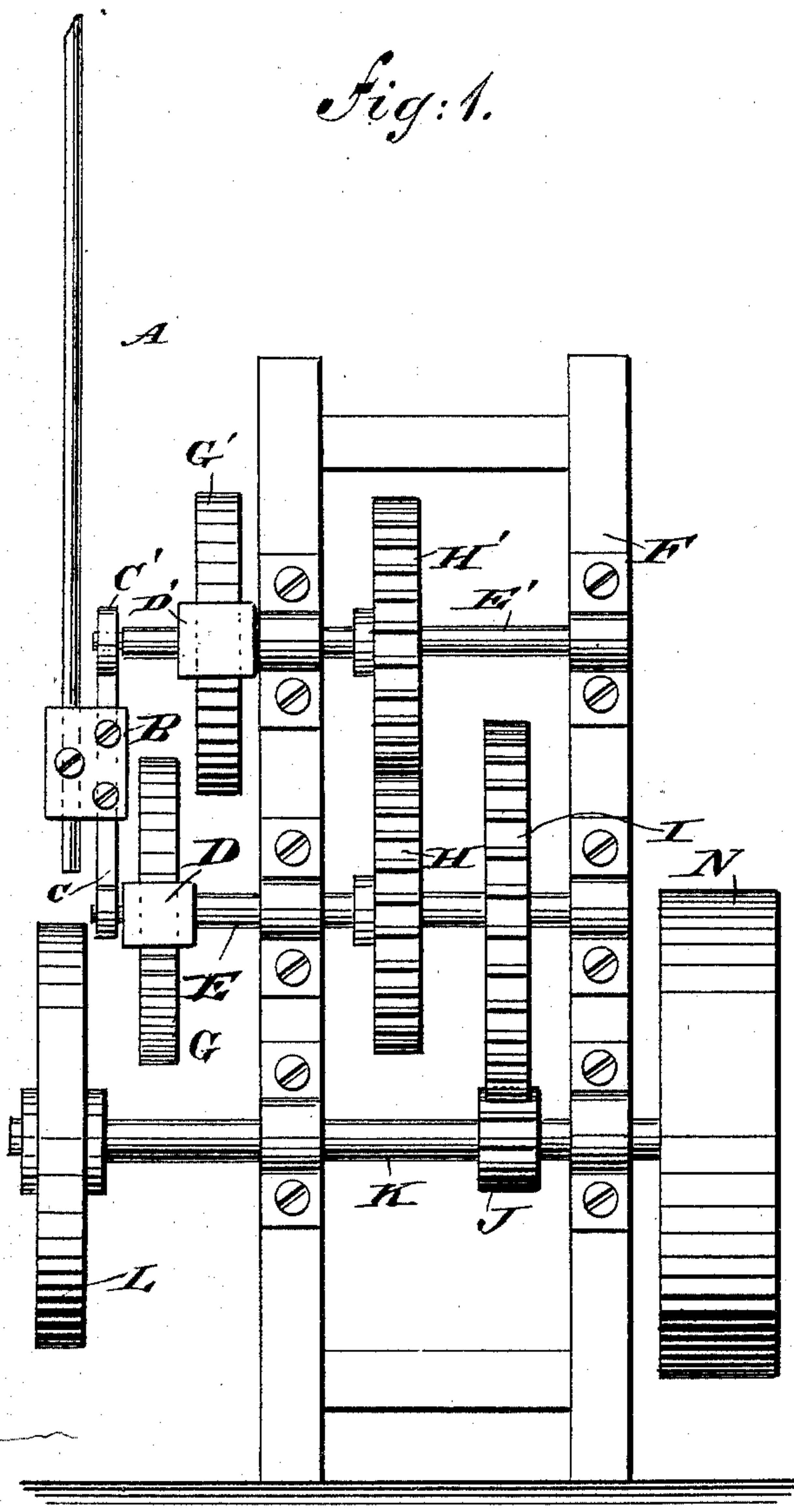
(No Model.)

W. LARSON & O. GUNDERSON.  
POWER TRANSMITTER.

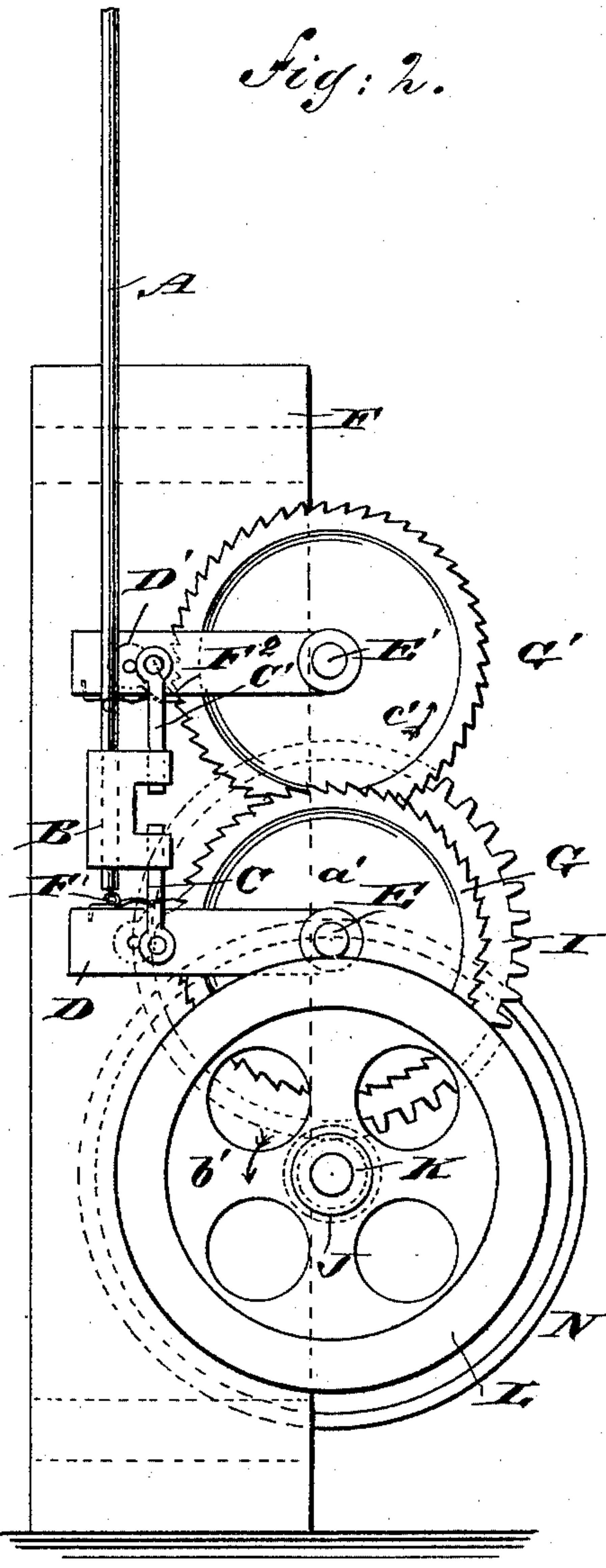
No. 485,952.

Patented Nov. 8, 1892.

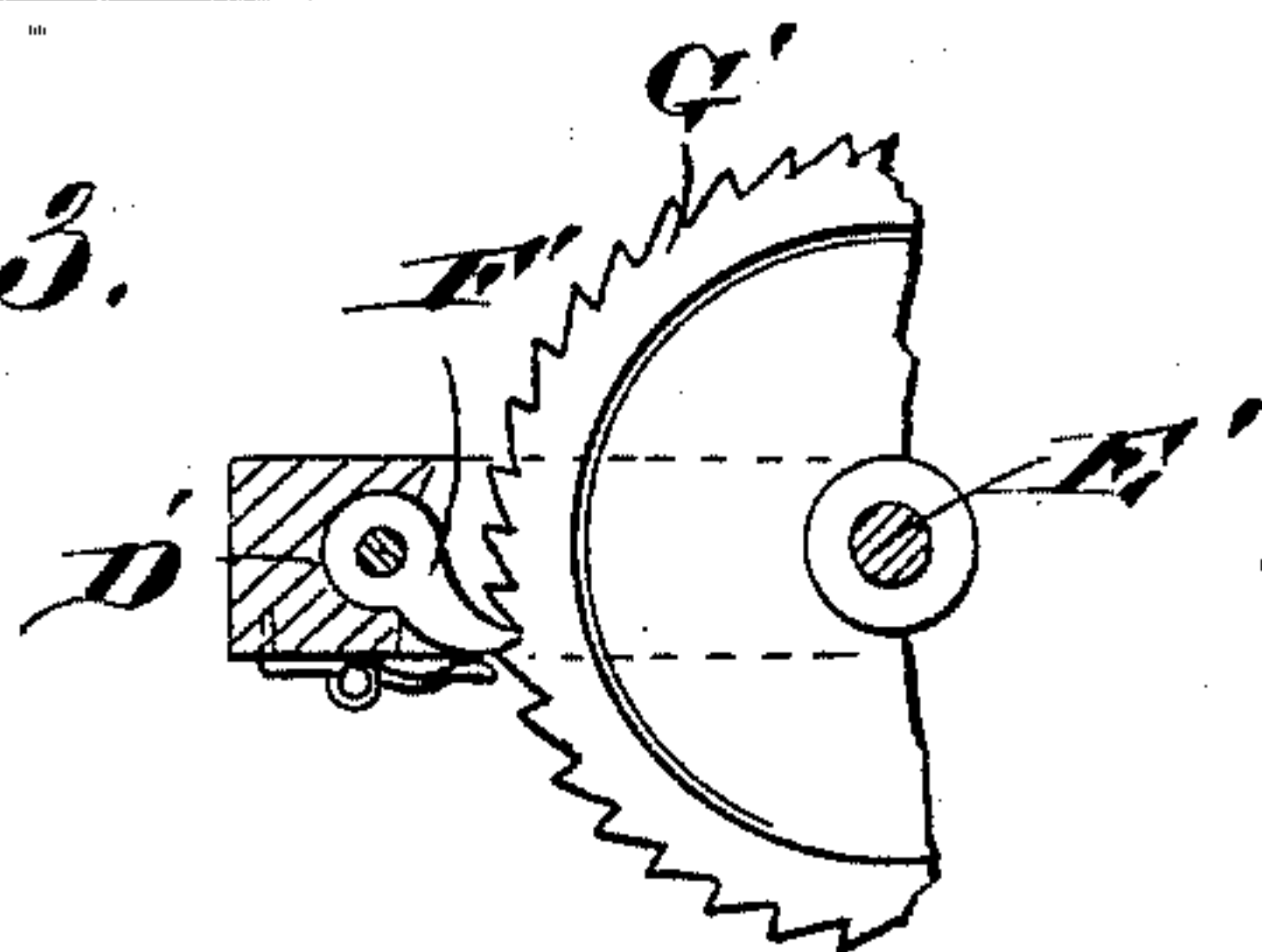
*Fig: 1.*



*Fig: 2.*



*Fig: 3.*



WITNESSES:

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# UNITED STATES PATENT OFFICE.

WILLIAM LARSON AND OLE GUNDERSON, OF LAKE MILLS, IOWA.

## POWER-TRANSMITTER.

SPECIFICATION forming part of Letters Patent No. 485,952, dated November 8, 1892.

Application filed June 25, 1892. Serial No. 437,964. (No model.)

*To all whom it may concern:*

Be it known that we, WILLIAM LARSON and OLE GUNDERSON, both of Lake Mills, in the county of Winnebago and State of Iowa, have invented a new and Improved Power-Transmitter, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved power-transmitter, which is simple and durable in construction, very effective in operation, and more especially designed for converting the reciprocating motion of a wind mill-rod into a rotary motion.

The invention consists in certain parts and details and combinations of the same, as will be fully described hereinafter, and then pointed out in the claim.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is an end elevation of the improvement. Fig. 2 is a side elevation of the same, and Fig. 3 is a broken sectional side elevation of one of the ratchet-wheels and its pawl.

The rod A of the wind-mill or other machinery has the usual reciprocating motion and is connected to a head B, provided with two arms C and C', which, with the head B, form a link for connecting the arms D and D' with each other. The arms D and D' are fulcrumed loosely on shafts E and E', respectively, mounted to turn in suitable bearings arranged in a frame F of any approved construction. On the pivoted arms D and D' are fulcrumed the spring-pressed pawls F' and F<sup>2</sup>, respectively, engaging ratchet-wheels G and G', respectively, secured on the shafts E and E', respectively. The teeth of the ratchet-wheels G and G' extend in opposite directions, as will be readily understood by reference to Fig. 2, and the pawls F' and F<sup>2</sup> are correspondingly arranged upward and downward, so that when the arms D and D' swing simultaneously upward the pawl F' engages its ratchet-wheel G and turns the same, while at the same time the other pawl F<sup>2</sup> glides over the back of the teeth of the other ratchet-wheel G'. On the downward motion of the arms D and D' the spring-pressed pawl F' glides over the teeth of its ratchet-wheel G,

while the other pawl F<sup>2</sup> engages its ratchet-wheel G' and turns the same.

The shafts E and E' are connected with each other by gear-wheels H and H', respectively, and on the shaft E is secured a large gear-wheel I, in mesh with a pinion J, secured on the main driving-shaft K, carrying at one end a fly-wheel L and at its other end a pulley N, connected by belt with other machinery for transmitting the rotary motion of the shaft K to the said machinery.

The operation is as follows: When the several parts are in the position shown in the drawings and the rod A moves upward, then an upward swinging motion is simultaneously given to the arms D and D', as the latter are connected with the said rod A by the link composed of the head B and the arms C and C'. The upward swinging motion of the arms D and D' causes a revolving of the shaft E in the direction of the arrow a' by the action of the pawl F' on the ratchet-wheel G, as above described. The motion of the shaft E is transmitted by the gear-wheel I to the pinion J and shaft K, so that the latter rotates in the direction of the arrow b'. During the upward stroke of the arms D and D' the spring-pressed pawl F<sup>2</sup> loosely glides over the teeth of the ratchet-wheel G', so that the shaft E of the said ratchet-wheel is free to revolve in the direction of the arrow c' on account of the movement given to it by the gear-wheels H and H'. On the downward movement of the rod A a downward swinging motion is given simultaneously to the arms D and D', so that the shaft E' is again revolved in the direction of the arrow b' by the action of the pawl F<sup>2</sup> on the gear-wheel G'. The motion of this shaft E' is now transmitted by the gear-wheels H' and H to the shaft E, which latter continues in its movement in the direction of the arrow a', so that a like rotary motion is given to the shaft K in the direction of the arrow b'. During this downward stroke of the arms D and D' the pawl F' glides over the back of the teeth of its ratchet-wheel G, so that the movement of the latter and that of the shaft E is not interfered with. It will be seen that by this arrangement a continuous rotary motion is given to the shaft K during the time the rod A is reciprocated.

It will further be seen that the device is very simple and durable in construction, composed of but few parts, and not liable to get out of order. The rod A is preferably secured by 5 set-screws in the head B, and the arms C and C' are likewise fastened in place by set-screws, so that a ready adjustment can be made at any time between the link composed of the arms C C' and the head B with the rod A and 10 the arms D and D'.

Having thus described our invention, we claim as new and desire to secure by Letters Patent—

The herein-described power-transmitter,

comprising a frame, three parallel shafts E 15 E' K, mounted therein and geared together, ratchet-wheels mounted on the shafts E E', parallel arms D D', also on the shafts E E', and provided with pawls engaging said ratchets, arms C C', projecting from arms D D' to 20 ward each other, and a head B, to which the adjacent ends of arms C C' are clamped, substantially as set forth.

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Witnesses:

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