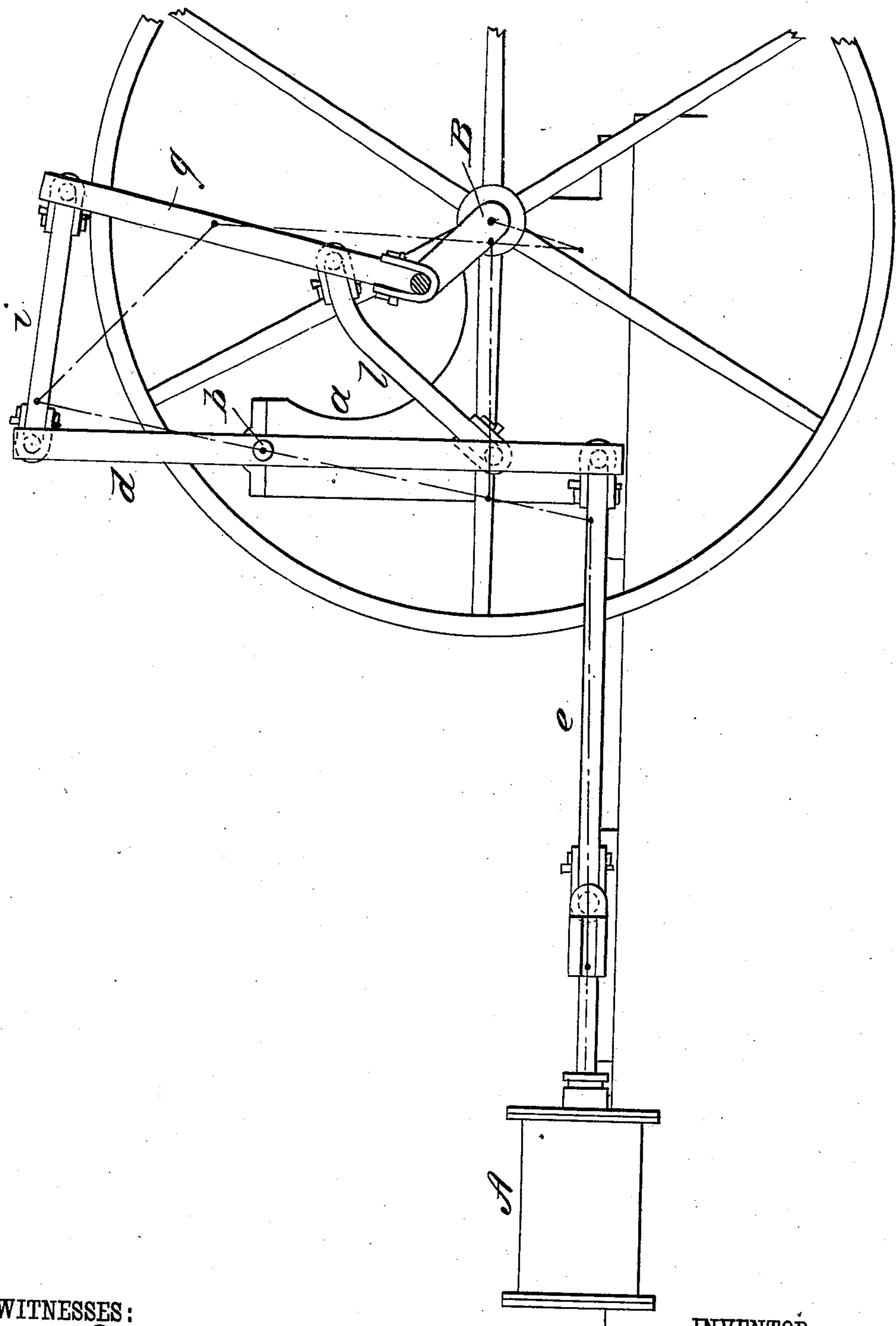


(No Model.)

J. E. PENCILLE.
MECHANISM FOR CONVERTING MOTION.
No. 312,378. Patented Feb. 17, 1885.



WITNESSES:

Donn Twitchell.
C. Sedgwick

INVENTOR:

J. E. Pencille
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ATTORNEYS.

UNITED STATES PATENT OFFICE.

JETHRO E. PENCILLE, OF KENDALL, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO J. C. CUPLER, OF SAME PLACE.

MECHANISM FOR CONVERTING MOTION.

SPECIFICATION forming part of Letters Patent No. 312,378, dated February 17, 1885.

Application filed October 30, 1884. (No model.)

To all whom it may concern:

Be it known that I, JETHRO E. PENCILLE, of Kendall, in the county of McKean and State of Pennsylvania, have invented certain new and useful Improvements in Mechanisms for
5 Converting Motion, of which the following is a full, clear, and exact description.

My improved mechanism is specially applicable to steam-engines; and it consists in a lever mechanism combined with a piston and
10 crank shaft, for operation as hereinafter described and claimed.

Reference is to be had to the accompanying drawing, forming a part of this specification,
15 which is a side elevation of the mechanism as applied to an engine.

A is an engine-cylinder, and B is a crank-shaft.

In suitable bearings, *a*, between the cylinder
20 and shaft, is fitted a rock-shaft, *b*, at a greater or less height above the level of the engine, according to the length of the levers used.

On this shaft *b* in a vertical plane the lever *d* is fulcrumed and the lower end of the lever *d*
25 is jointed to the pitman or connecting-rod *e*.

To the crank of the shaft B is connected a lever, *g*, that extends upward and is connected to lever *d* by a jointed link, *i*, at its upper end. Near the lower end of the lever
30 *g* is connected a link or rod, *l*, that also connects to lever *d*.

In operation the right-line movement of the piston and cross-head is communicated through the connecting-rod *e*, link *l*, and lever
35 *g* to the crank. The end of the lever *d* connected to rod *e* has a movement equal to the

length of movement of the piston, and this movement is multiplied by the lever *d* upon the crank, so that the crank has a longer movement or a movement greater than would
40 be obtained by a direct connection with the pitman. The link *l*, by its connection to the levers *d g*, assists and regulates the movement. By means of this mechanism the short piston movement is made to operate a crank of much
45 greater length, so that there is an increase of leverage and power.

While these devices are specially applicable to a steam-engine, they may be applied, generally, for converting rectilinear into rotary
50 motion.

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

1. The mechanism for converting motion, consisting of the levers *d g*, connected by the
55 links *i* and *l*, combined with a pitman and crank-shaft, substantially in the manner shown and described.

2. In a mechanism for converting motion, the combination of the rock-shaft *b*, the lever
60 *d*, pitman *e*, and lever *g*, being connected by the link *l* to the lever *d*, substantially as described.

3. The combination of the two levers *d g*, connected, respectively, to a pitman and a
65 crank-shaft, and connected with the link *i*, substantially as described.

JETHRO E. PENCILLE.

Witnesses:

JOSEPH T. CHASE,
C. M. PALMER.