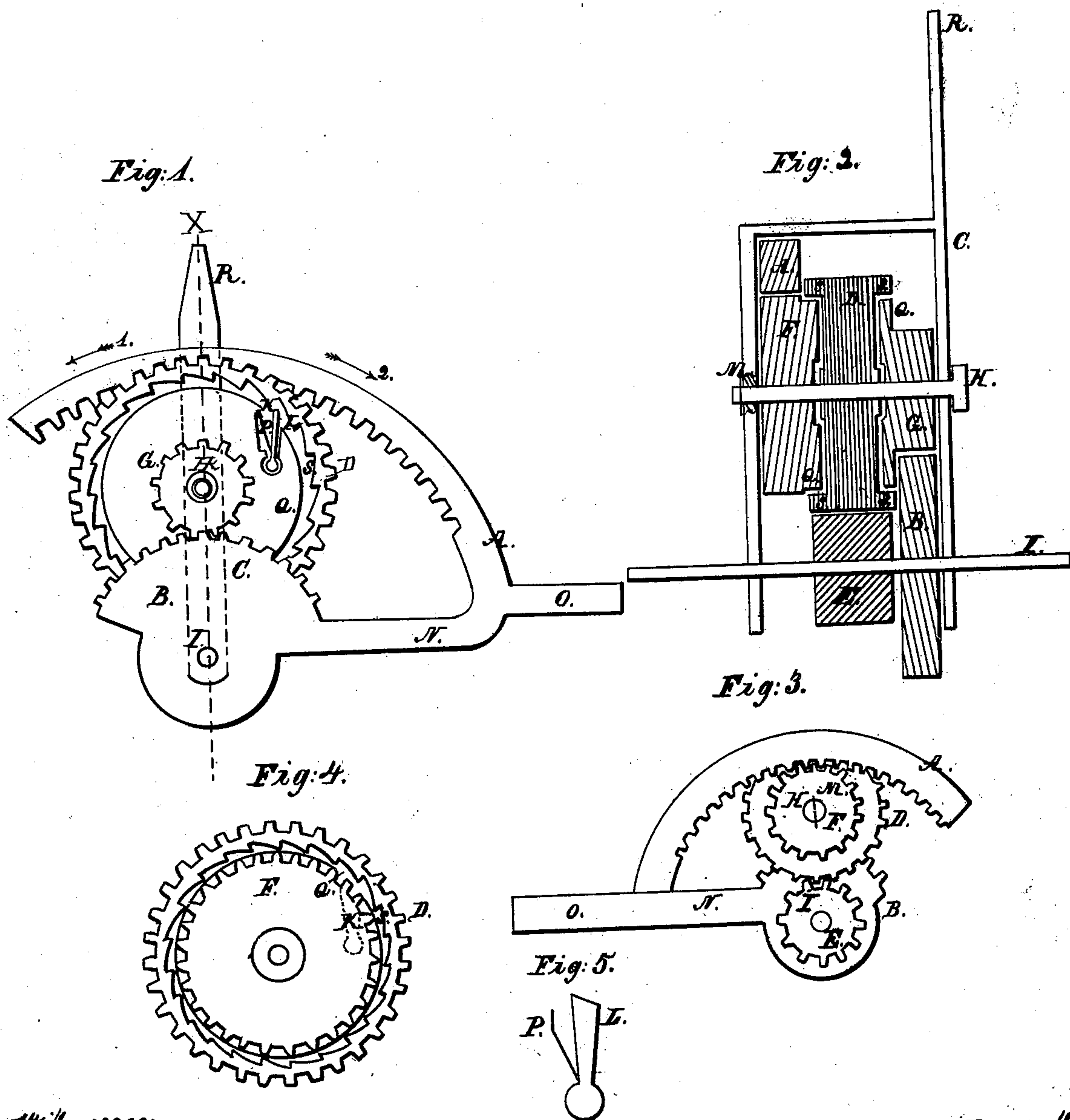


J. F. HARTMANN.
 CONVERTING RECIPROCATING INTO ROTARY MOTION.
 No. 102,260. Patented Apr. 26, 1870.



Witnesses:

Thos. A. Muelldale
Joe M. Stratton

Inventor

Joachim F. Hartmann.

United States Patent Office.

JOACHIM F. HARTMANN, OF RICHMOND, INDIANA, ASSIGNOR TO HIMSELF AND WILLIAM MORNINGSTAVE, OF SAME PLACE.

Letters Patent No. 102,260, dated April 26, 1870.

IMPROVEMENT IN CONVERTING RECIPROCATING INTO ROTARY MOTION.

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

I, JOACHIM F. HARTMANN, of the city of Richmond, county of Wayne and State of Indiana, have invented certain Improvements in Machinery for Converting Reciprocating into Rotary Motion, of which the following is a specification:

Nature and objects of the Invention.

My invention relates to combining with two circular racks, which are stationary, certain cog-wheels, pinions, ratchets, and pawls, hereafter more fully explained, for the purpose of converting reciprocating into rotary motion.

Description of the Accompanying Drawings.

Figure 1 is a side view of my invention or machine.

Figure 2 is a transverse vertical section of my invention, shown as it appears when cut off at the line X.

Figure 3 is a side view of my invention, reversed, so as to show the opposite side from that seen in fig. 1.

Figure 4 represents a large pinion, with piece attached, which is provided with a socket for the pawl.

Figure 5 is the pawl.

General Description.

The same letters refer to corresponding parts in the several figures.

A is a segment of a circular rack.

B is a segment of a circle, toothed.

C is a frame, in which the journals of the shaft I turn, and in which the shaft H is secured, and on which the cog-wheels and pinions revolve (except the pinion E.)

D is a large cog-wheel, with the edge projecting on each side, on the inside of which there are ratchet-teeth on both sides, indicated by the letters S S, which may be made square if desired.

E is a cogged pinion.

F is a cog-wheel, gearing into the rack A.

G is a pinion, gearing into the segment B.

H is a shaft.

I is an arbor or shaft.

K is an aperture or socket cut in the flange Q to receive the pawl L, and in which the said pawl L operates, actuated by the spring P.

L is a pawl.

M is a pin.

N is a connection between the segment B and circle A.

O is a tail-piece, by which the apparatus may be secured to a block of wood, bench, or other object to which it is desired to attach it.

P is a spring that operates on the pawl L.

Q Q are flanges.

R is a lever or handle.

S S are ratchets.

1 and 2 are arrows.

Operation.

It will be seen that by moving the lever R in the direction indicated by the arrow 1, the top of the wheel D will revolve in the same direction, and, by moving the lever toward the arrow 2, the top of the wheel D will revolve toward arrow 1 also.

The said wheel D being actuated in the first instance (as above), by the cogs of pinion G rolling in the cogs of segment B, one of the pawls L catching in the ratchets S S in the wheel D, while the pawl L, on the opposite side of the wheel D, runs loose, and in the second instance (as above) the pinion F is actuated by cogs in the circle A, while the wheel D is turned by the pawl L in the direction first mentioned, so that the pinion E is turned in one direction while the lever is forced either way.

Construction.

The wheels and segments are made of cast-iron. The shafts or arbors are made of wrought iron, and the sizes of wheels and pinions proportioned so as to give the pinion E the same velocity at each vibration of the lever R.

I am aware that there are contrivances for converting reciprocating into rotary motion. I therefore do not claim converting reciprocating into rotary motion.

Claim.

I claim combining and arranging the wheel D, segment A, pinion F, pinion G, segment B, pinion E, ratchets S, pawl L, and spring P, in connection with frame C and shafts H and I, arranged and operated as above set forth.

Witnesses: JOACHIM F. HARTMANN.
THOS. A. DUGDALE,
JOE. M. STRATTON.