J. L. Parker,

Rotary Steam Engine.

No. 2,495. Patented Mar. 18, 1842.

Fig 1.

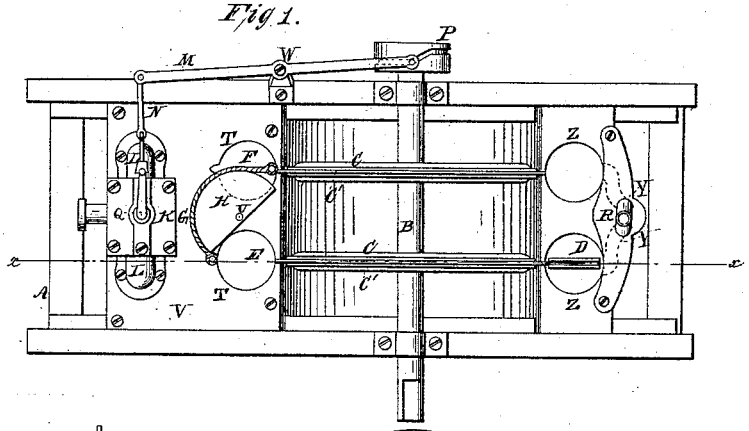


Fig 2.

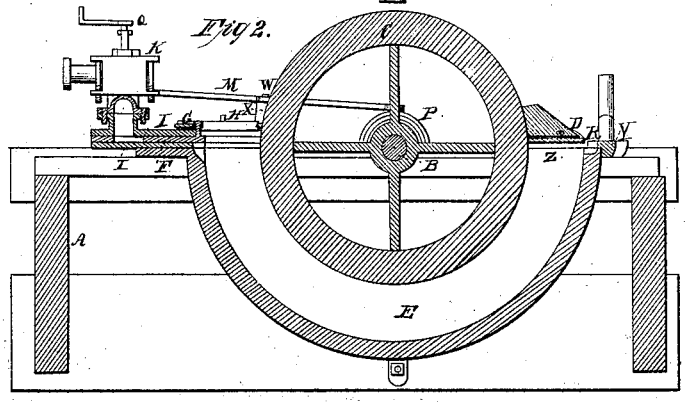
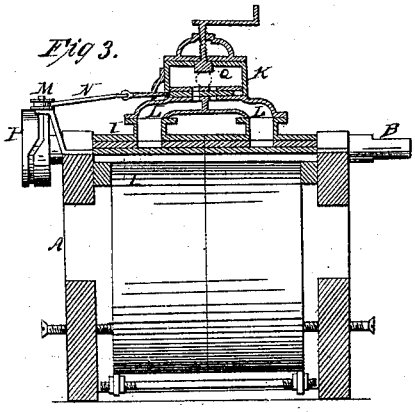


Fig 3.



UNITED STATES PATENT OFFICE.

JOSEPH I. PARKER, OF PLYMOUTH, OHIO.

ROTARY STEAM-ENGINE.

Specification of Letters Patent No. 2,495, dated March 18, 1842.

To all whom it may concern:

Be it known that I, JOSEPH I. PARKER, of Plymouth, in the county of Washington and State of Ohio, have invented a new and useful Improvement in Rotary Steam-Engines, which is described as follows, reference being had to the annexed drawings of the same, making part of this specification.

Figure 1 is a top view of the engine Fig. 2 is a vertical section through the center of one of the wheels and chambers on the dotted line *x x* of Fig. 1 Fig. 3 is a vertical section of the steam chest on the dotted line *o o* Fig 1.

Similar letters refer to corresponding parts.

A represents a frame for containing and supporting the several parts of the engine made of any convenient size strength and material.

B is a horizontal transverse revolving shaft turning in boxes on the top of the frame on which shaft are two wheels or disks *c c*, having on the periphery of each a circular or other shaped head D which is driven by the steam through a semicircular steam chamber E of corresponding shape in its cross section to that of the said head the piston of each wheel performing a part of its revolution out of the chamber. The head or piston D is a circular plate made to fit the steam chamber E: it is attached and secured to the disk or steam wheel D in the following manner. On the face of the piston are two flanges or ears between which is introduced an arm of a thin circular plate, the flanges being fastened to the arm by rivets or other means. The circular plate is secured to the disk by a flat circular rim between which and the disk the plate is secured by screw bolts passing through the disk, plate and rim.

The steam chambers may extend more or less than half around the circumference of the wheel. They should correspond in number with the wheels which may be one, two, three, or more in number, said steam chambers are secured in the frame by screw bolts or by any convenient and suitable means; they are slit on the sides next the wheels through to the chambers to admit the aforesaid thin circular plate *c'* of each wheel: the slit or groove in which said circular plate revolves being packed in the usual manner with metallic or other packing. The induction ends T of the steam chambers are closed and opened alternately by horizontal sliding valves F connected together by a chain G passing over the surface of a segment grooved wheel H turning on a vertical pin U inserted into the middle of the plate V between the two steam chambers so that as one of the two valves is driven out the other is drawn in by the connecting chain.

The sliding valves F are plain rectangular plates having vertical pins inserted into them near the front side thereof to which one end of the chain of the segment wheel is fastened for drawing it back from the steam chambers. These valves slide horizontally in a chamber formed by two plates I, I, arranged horizontally on the top of the frame; the portion next the wheels immediately over the induction ends T of the steam-chamber being perforated with circular apertures and slits corresponding with those in the steam chamber and having the depression or cavity forming the valve chamber made in the upper or lower plate—the joints being packed in the usual manner.

The steam chest K (which is made in the usual manner) is arranged over the aforesaid valve chamber communicating therewith at the rear ends by branch pipes L L— the sliding valve for letting on and shutting off the steam alternately from one wheel to the other being moved by a horizontal vibrating lever M turning on a pivot W as its fulcrum inserted into the head of a post X on one side of the frame said pivot passing through the lever about the center thereof—one end of said lever being connected by a rod N to the sliding valve, while the other end has a cog projecting down therefrom into an eccentric groove formed in the periphery of a hub or small wheel P on the shaft of the steam wheels C. The stop valve Q is arranged on the top of the steam chest. The escape tubes Y represented by dotted lines are formed in a plate R bolted to the top of the steam chamber E at the rear or eduction ends Z so as not to interfere with the pistons and communicating with the chambers near the eduction ends and with a condenser of any suitable form and construction.

These tubes and condenser may be omitted and the steam suffered to escape into the air.

The operation of this rotary engine is as follows. One of the pistons D of the wheel

C having entered the steam chamber E and the steam let on and against the back of the sliding valve F corresponding with the chamber E is instantly driven out by the steam pressing against the back of the same and made to close the mouth of the chamber E the steam entering the chamber below the valve F and acting between it and the piston which later is driven round in the chamber causing the wheel at the same time to turn and giving motion to the shaft B and when the piston reaches the outlet of the chamber the steam escapes into the air or into a condenser and is condensed while simultaneously with this movement the piston of the second wheel enters the other chamber and is acted on in the same manner—the steam driving its piston out as before described which at the same time draws back the first mentioned piston F by the connecting chain A to admit the first mentioned piston for a new stroke and thus a continued rotary motion is kept up in the wheels and shaft. When the engine is to be stopped the stop valve is turned which shuts off the steam.

What I claim as my invention and which I desire to secure by Letters Patent is—

The mode of combining the sliding valves and steam chambers the former being so arranged that when driven out they shall form heads for the steam to act against in operating the pistons; and also the mode of combining the valves of the two chambers by means of the chain and segment described so that when one is forced out by the steam the opposite valve shall be pressed in as herein set forth.

Plymouth, Ohio, 19th February A. D. 1842.

JOSEPH I. PARKER.

Witnesses:
URIAH BAILEY,
WILLIAM HODGIN.