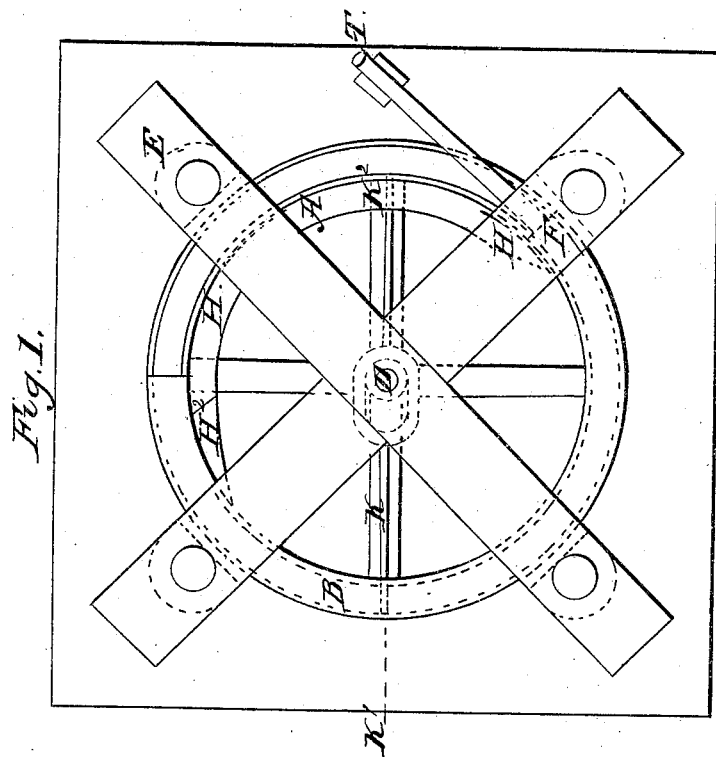
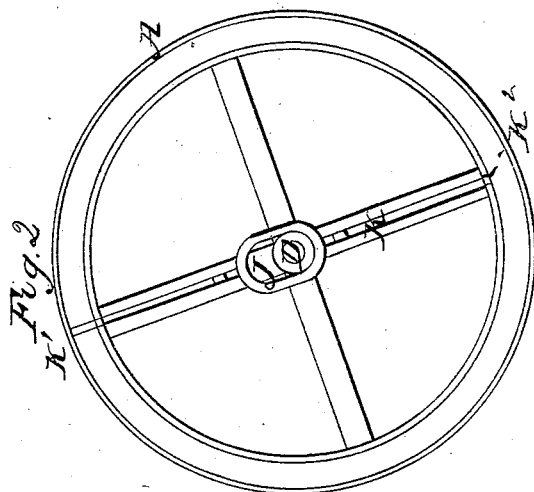


H. Smith,
Rotary Steam Engine.
N^o 2,128. Patented June 11 1841.



UNITED STATES PATENT OFFICE.

HEMON SMITH, OF SUNBURY, OHIO.

MANNER OF CONSTRUCTING ROTARY STEAM-ENGINES.

Specification of Letters Patent No. 2,128, dated June 11, 1841.

To all whom it may concern:

Be it known that I, HEMON SMITH, of Sunbury, in the county of Delaware and State of Ohio, have invented a new and useful Rotary Steam-Engine, which is described as follows, reference being had to the annexed drawings of the same, making part of this specification.

Figure 1 is a plan of the machine. Fig. 2 is a top view of the steam wheel and valve or piston. Fig. 3 is a side elevation of the sliding piston showing the shoulders and the depression in the center.

Similar letters refer to corresponding parts.

The hollow rimmed revolving steam wheel A and the stationary cap B placed over the wheel A being made like those in other rotary steam engines and well understood by engine makers need not therefore be particularly described. No claim is made either to these—to the frame E—or to the regulating screws.

The improvement is principally in the horizontally sliding double piston K and the manner of working it. The said double sliding piston is made in the following manner. It consists of a plate of metal K in its length a little more than the inner diameter of the wheel, having an oblong slot T in its center running lengthwise to allow it to slide backward and forward over the perpendicular shaft D of the wheel. Its outer extremities are made to pass through oblong apertures in the rim of the steam wheel leading from the inner circumference to the circular trough, channel, or groove in the wheel under the cap, called the steam chamber, for the purpose of closing and opening said chamber when required; said oblong openings being made in the inner circumference of the wheel on the line of the diameter—the one opposite to the other and packed at the sides to render the joints steam tight. Shoulders K^1 K^2 must be formed on the double valve to come in contact with a cam H on the fixed cap B for the purpose of causing it to slide and perform its office.

The cam H before mentioned is a semi-circular concentric segment with inclined plane ends and fixed in a horizontal position to the cap. The inclined plane ends are marked H^1 H^2 , and are designed for the purpose of allowing the shoulder of the double piston at one end to pass over it easily in order to withdraw this end of the piston from the steam chamber leaving it open and simultaneously to cause the opposite end of the piston to enter and close the chamber and receive the action of the steam. The mode of having the space between the two inclined ends or planes solid in the manner of a concentric segment of a circle prevents the shoulder of the piston being thrown back into said space and the consequent derangement of the piston &c., and escape of the steam.

At one end of the cap there is a fixed head which fills the steam chamber so as to act as a stop or head F for the steam to press against in acting on the piston. The steam induction tube T passes through this permanent head.

The engine is packed in the usual manner.

The operation is as follows: The steam is admitted through the tube T—acts against the end K^1 of the double piston between it and the stop F and drives the wheel and piston around until the shoulder K^1 passes up and over the cam H^2 , when the piston is instantly withdrawn from the chamber and simultaneous with said movement the other end K^2 of the piston is forced into the chamber beyond the head or stop to receive a charge of steam in like manner.

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

The peculiar form and construction of the double piston K moving over the shaft D in combination with the semicircular cam H outside the steam chamber as described for changing the position of the pistons as the wheel revolves.

HEMON SMITH.

Witnesses:

WM. P. ELLIOT,
E. MAHER.