J. D. Akin,

Rotary Steam Engine.

No. 1,519. Patented Mar. 19, 1840.

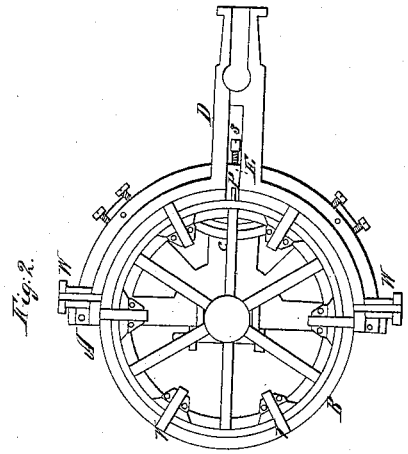

Fig. 2.

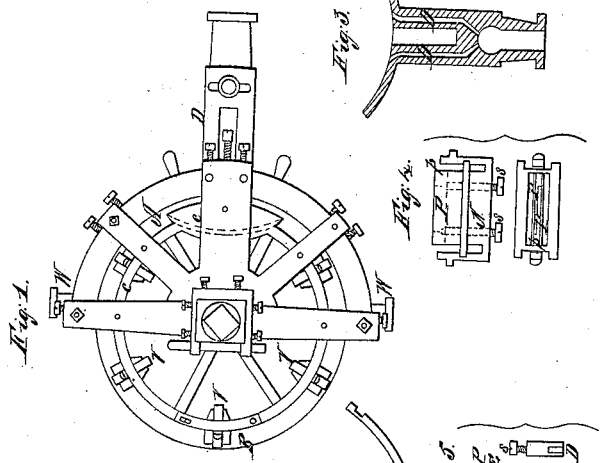

Fig. 1.

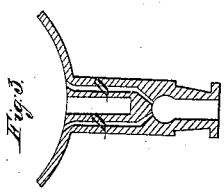

Fig. 3.

Fig. 4.

Fig. 8.

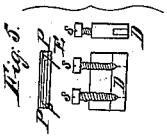

Fig. 5.

Fig. 7.

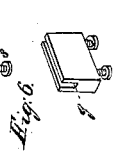

Fig. 6.

UNITED STATES PATENT OFFICE.

JNO. D. AKIN, OF COLUMBUS, PENNSYLVANIA.

MODE OF PACKING ROTARY ENGINES.

Specification of Letters Patent No. 1,519, dated March 19, 1840.

To all whom it may concern:

Be it known that I, JOHN D. AKIN, of Columbus, in the county of Warren and State of Pennsylvania, have invented a new and useful Improvement in the Rotary Steam-Engine, which is described as follows, reference being had to the annexed drawings of the same, making part of this specification.

The nature of my invention consists in so constructiong the packing as to render the engine steam tight.

To enable others skilled in the art of making engines to make and use my said improvement, I will proceed to describe its construction and operation.

Figure 1 is a side elevation of the engine. Fig. 2 is a section of ditto. Fig. 3, section showing the steam tubes. Fig. 4 one of the valves and metallic sliding packing. Fig. 5 steam cylinder head and metallic packing plates and the screws for moving the same. Fig. 6 perspective view of the steam cylinder head. Fig. 7 perspective view of the packing plates. Fig. 8 curved follower for pressing the hemp packing upon the flanges of the wheel.

Similar letters in the figures refer to similar parts.

The steam chamber A, the revolving steam wheel B, the stationary guide wheel C, and the steam tubes D are made like those in other engines of this character.

W W represent the escape tubes.

The parts improved are the steam chamber head and the sliding valves.

The steam chamber head E is constructed in the following manner. It consists of a rectangular block of metal grooved on the side toward the steam wheel as seen at *g* in Fig. 6, *g* being the groove, in which groove is placed a halved metallic packing, or a packing made in two parts P P, each part made exactly alike, with a shoulder or projection *p* in which is formed a semiconical countersink *i*, which comes opposite a similar countersink; in the end of the other half of the packing so that when the parts of the packing are put together a conical countersink is formed to admit a screw *s* with a conical point which passes through the aforesaid steam head, which screw being turned to the right crowds the conical point into said countersink between the shoulder of one part and the small end of the other part and forces the two parts of the packing to slide over each other, one part to the right and the other part to the left, crowding the ends on which the shoulders are formed against the sides of the steam chamber, thus rendering the joints perfectly steam tight, while the packing, owing to the conical shape of the screw, has a simultaneous movement outward or toward the steam wheel against which it is crowded, thus rendering the joints between the steam wheel and steam head perfectly tight.

There are two countersinks and two screws to each pair of packing plates, and as both are formed alike, it will be only necessary to describe one of them; they are both operated in the same manner and act simultaneously causing the packing to move in three directions at the same time—namely to the right, left, and toward the cylinder.

The valves V are all packed in a similar manner to that above described.

What I claim as my invention, and desire to secure by Letters Patent, consists in—

The before described mode of packing the steam head and sliding valves of the rotary steam engine by means of the countersunk halved plates and conical screws arranged and operating in the manner herein set forth.

JOHN D. AKIN.

Witnesses:

WM. P. ELLIOT,

EDMUND MAHER.