

(No Model.)

W. FOGLER.
ROTARY ENGINE.

No. 471,816

Patented Mar. 29, 1892.

Fig. 4

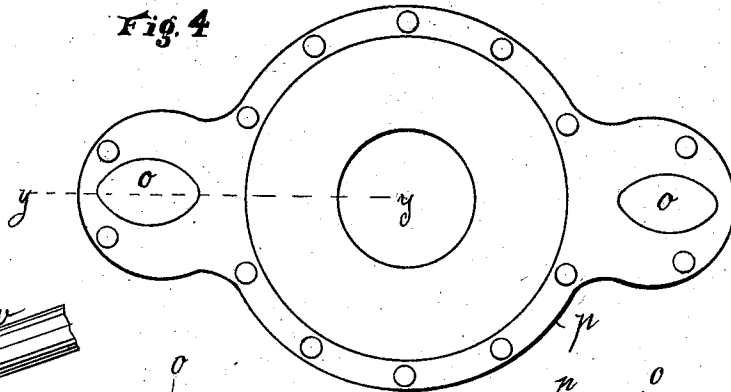


Fig. 6

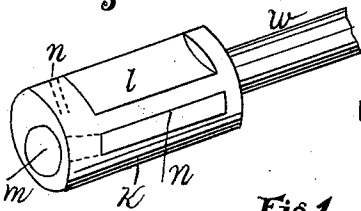


Fig. 1.

Fig. 5.

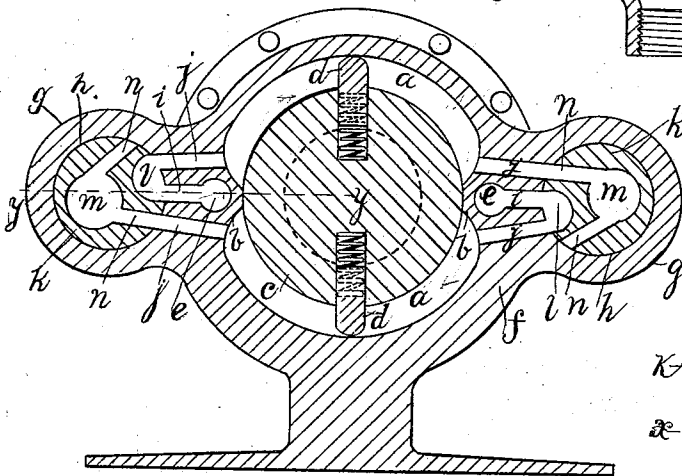


Fig. 2.

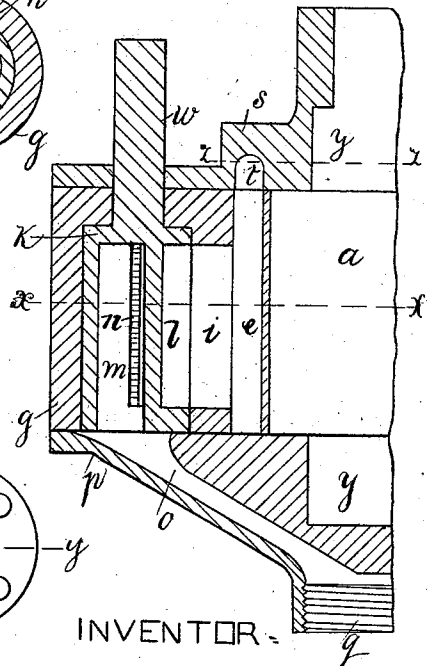
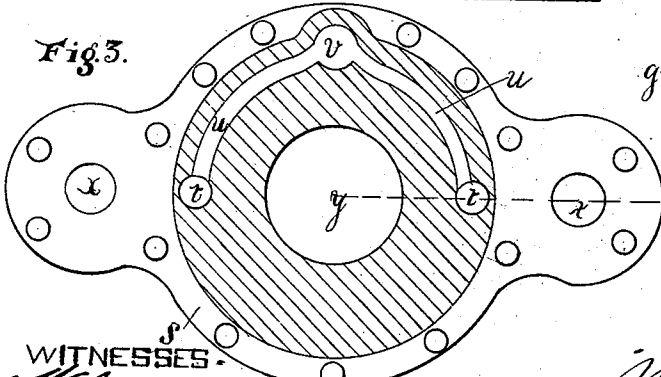


Fig. 3.



INVENTOR.

WITNESSES.

Wilfred B. Cull
O. J. Morgan

Wm. Fogler
By A. P. Thayer
attys

UNITED STATES PATENT OFFICE.

WILLIAM FOGLER, OF JERSEY CITY, NEW JERSEY, ASSIGNOR OF ONE-HALF
TO FRANK FOGLER, OF SAME PLACE.

ROTARY ENGINE.

SPECIFICATION forming part of Letters Patent No. 471,816, dated March 29, 1892.

Application filed June 5, 1891. Serial No. 395,215. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM FOGLER, a citizen of the United States, and a resident of Jersey City, in the county of Hudson and State of New Jersey, have invented new and useful Improvements in Rotary Engines, of which the following is a specification.

My invention relates to improvements in rotary engines; and it consists in an improved contrivance of the ports and valves for simpler and cheaper construction, as hereinafter fully described, reference being made to the accompanying drawings, in which—

Figure 1 is a transverse section of my improved engine on line *x x*, Fig. 2. Fig. 2 is a horizontal section of part of the same on line *y y*, Figs. 1, 2, and 4. Fig. 3 is partly a sectional elevation on line *z z* of Fig. 2, and partly a side elevation of the cover through which steam enters the engine. Fig. 4 is an inside elevation of the cover through which steam is exhausted. Fig. 5 is a horizontal section of said cover, and Fig. 6 is a perspective view of the valve.

In this example I represent a double-acting engine having two concentric steamways *a*, separated by two abutments *b*, between which is a rotating hub *c*, in which are radially-sliding pistons *d*; but I may construct it differently in these respects and may make it either single or double acting. Coincident with each abutment radially and at a suitable distance outward I core a hole *e*, partly or entirely through the rim *f* of the case in casting it, for the steam-inlet, and outside thereof and in a radially-projecting boss *g* of said rim I also core a cylindrical valve-chamber *h* with a port *i*, communicating with said steam-inlet *e*, and other ports *j*, communicating with the steamways, respectively, said valve-chamber preferably extending from one side nearly but not quite through said rim, its full size, the rest being bored in smaller size and concentrically for the stem of the valve; but it may be extended entirely through the rim, same as steam-inlet *e*. In this chamber, duly reamed out true, I arrange the cylindrical valve *k*, having the cavity *l* of the ordinary slide D-valve for opening communication between port *i* and either of the ports *j*, and cutting off the other according to which way the engine is to run, and back of said cavity hav-

ing the exhaust-chamber *m* with ports *n* communicating therewith and adapted to respectively register with one of ports *j* when the other of ports *j* registers with cavity *l*. The exhaust-chamber communicates through the end of the valve with the exhaust-passage *o* in the cover *p*, said end being flush with the side of the case to which the cover is bolted, so as to make a tight joint. In this case of the double-acting engine having two exhaust-passages *o* they are arranged diagonally to meet in the one central outlet *q* for both, but in a single-acting engine the passage *o* would preferably be directly through the side of the case. On the other side steam enters inlet-passage *e* through the case *s* at *t*, which is the terminal of a cored passage *u* in the cover, leading from the pipe connection *v*, from which another cored branch *u* extends to the corresponding inlet *e* of the other side in the double-acting engine; but in the case of the single-acting engine the steam-pipe will preferably be connected directly at *t*. In practice the valve-stems *w* will have suitable handles by which to shift them, and in the case of the double-acting engine they will be coupled to one lever suitably for shifting both together. The inlet-passages *e* need only in practice be made to extend out through one side of the rim of the case for admitting the steam, but it favors setting the core in the mold to have it so that it makes the passage entirely through, and as the cover *p* effectually closes the opening on that side it is not objectionable.

It will be seen that all the fitting required for the valve is the reaming of the valve-chamber and turning of the valve to fit the bore thereof and to fit the cover at one end and the end of the valve-chamber at the other end of the valve, or at both ends, according as the valve extends entirely through the rim or not, it being unnecessary to bore the hole for the valve-stem true, although it is preferable to do so, for it may be cored if desired. The covers are recessed at *y* for corresponding pivot-extensions of the rotary-hub.

I claim—

In a rotary engine, the combination, with the rim of the case, having the steam-inlet *e* extending through one side and traversing said rim from side to side, or nearly so, outward of the abutment radially, and the simi-

larly-arranged cylindrical valve-seat *h*, located outward of said passage radially and communicating therewith by the port *i*, and also communicating with the steamways each
5 side of the abutment by the ports *j*, respectively, of the cylindrical valve *k*, having the steam-cavity *l*, the longitudinal exhaust-chamber *m*, discharging through one end of it, and the lateral ports *n*, communicating with said
10 exhaust-chamber and registering with one of the ports *j*, respectively, when the other com-

municates with cavity *l* and port *i*, said valve also having a stem for working it, extending from its other end, substantially as described.

In testimony that I claim the foregoing as
15 my invention I have signed my name, in presence of two witnesses, this 27th day of April, 1891.

WILLIAM FOGLER.

Witnesses:

W. J. MORGAN,
W. B. EARLL.