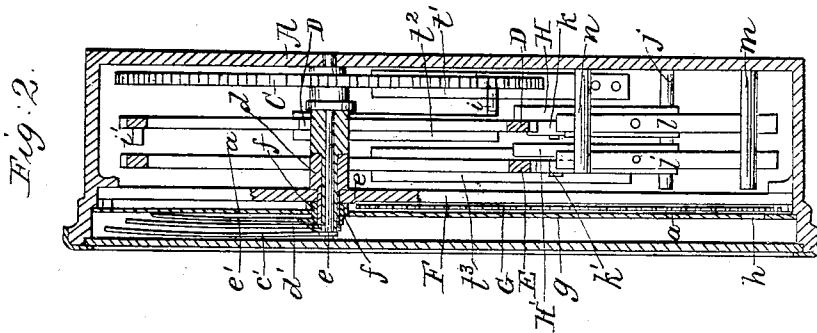
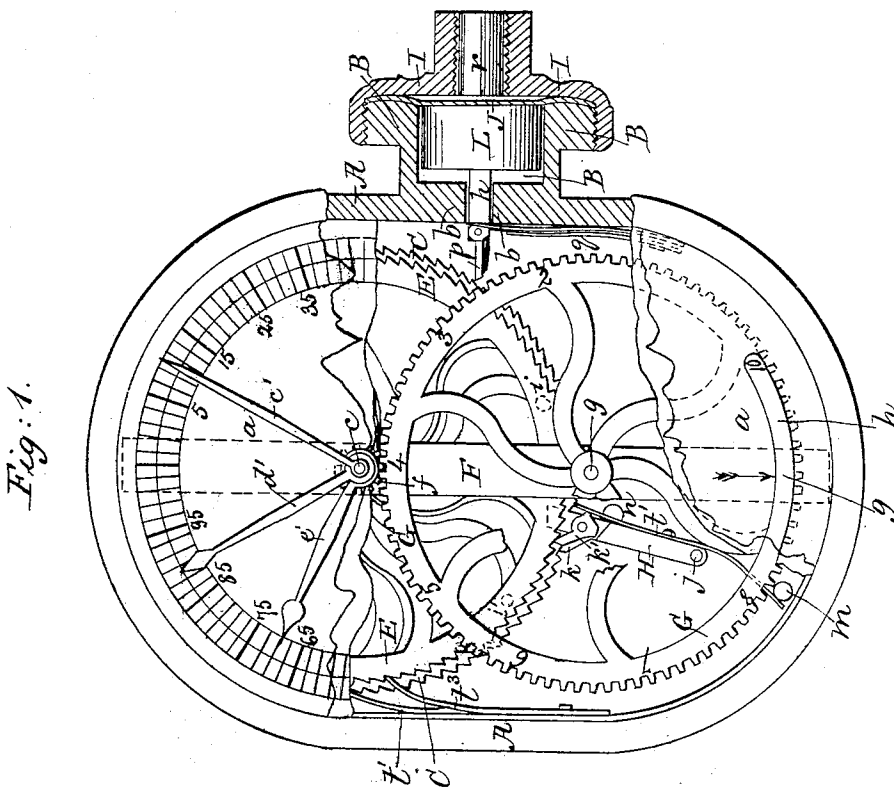


Steam Engine Register.

Patented Feb. 26, 1861.



Witnesses

J. W. Coombs
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UNITED STATES PATENT OFFICE.

P. L. WEIMER, OF LEBANON, PENNSYLVANIA, ASSIGNOR TO HIMSELF, J. A. WEIMER,
AND L. E. WEIMER, OF SAME PLACE.

REGISTERING APPARATUS FOR STEAM-ENGINES.

Specification of Letters Patent No. 31,582, dated February 26, 1861.

To all whom it may concern:

Be it known that I, PETER L. WEIMER, of Lebanon, in the county of Lebanon and State of Pennsylvania, have invented a new and Improved Engine-Register; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a front view of the register partly in section. Fig. 2 is a vertical section of the same, at right angles to Fig. 1.

Similar letters of reference indicate corresponding parts in both figures.

My improved register consists of a box containing a train of indicating wheels, the first of which is actuated by a pawl or dog carried or moved by a piston or diaphragm, which is arranged in a cylinder or chamber provided at one side of the box, and which is to be acted upon to operate the said pawl or dog at every stroke of the engine in one direction by steam admitted to the said cylinder or chamber from one end of the engine cylinder.

To enable others to make and use my invention I will proceed to describe its construction and operation.

A is the box, containing the wheel-work, made of cast-iron or other metal, of a form suitable for the purpose, having in front a dial *a*, and having at one side an opening *b*, communicating with the cylindrical chamber B, which is cast with it.

C, D, and E, are three ratchet wheels of similar or nearly similar size each, having one hundred teeth. C, is fast on a horizontal spindle *c*, which runs through the box and carries an index *c'*. D, is fitted to turn upon the said spindle *c*, and carries an index *d'*. E is fitted to turn upon a tubular extension *d*, of the hub of D, and carries an index *e'*. The spindle *c*, has a bearing in the back of the box, and the hub of the wheel E, is furnished with a journal to work in a bearing in a fixed bar F, arranged within the box. The three indices C', D', E', point to three concentric graduated circles on the dial *a*, the graduation of the outer one of said circles representing units up to one hundred (100), that of the middle one hundreds up to ten thousand (10,000) and that of the inner one tens of thousands up to one million (1,000,000). The tube *e*, of the wheel

E, has secured to it a pinion *f*, of ten teeth, and this pinion gears with a spur wheel G, of one hundred teeth, that is fitted to rotate on a fixed stud *g*, secured in the bar F. This spur wheel has its outer face divided into ten equal parts, and is marked at its points of division from 1 to 10, such numbers representing millions and being exhibited through a slot *h*, in the lower part of the dial *a*.

The ratchet wheel C, carries a pin *i*, which once in each revolution of the said wheel comes into operation on a lever H, working on a fixed fulcrum *j*, and carrying a pawl *k*, which by the action of the pin *i*, upon the said lever is caused to move the wheel D, a distance equal to one tooth. The said lever has secured to it a spring *l*, which by its action against a fixed stop *m*, is made to draw it back against a fixed stop *n*, and so draw back the pawl *k*, over a tooth of the wheel D, after the pin *i*, has ceased to act upon the lever. The wheel D, carries a pin *i'*, like *i*, operating in a similar manner on a lever H', like H, carrying a pawl *k'*, like *k*, operating upon the ratchet wheel E, said lever being controlled by a spring *l'*, like *l*, and resting against the fixed stop *m*, when not in operation. The springs *l*, *l'*, control the pawls as well as their levers. *t'*, *t''*, *t'''*, are spring stop pawls to prevent the ratchet wheels from turning too far, or turning the wrong way.

The chamber B, is bored horizontally for the reception of a loosely fitting piston L, which carries a rod *h*, passing through the before mentioned hole *b*, into the box A, within which it has secured to it a spring pawl *p*, which acts upon the first or unit ratchet wheel C. A spring *q*, is applied within the box A, to act upon the rod *h*, to force the piston away from the box B, and draw back the pawl from the teeth of the wheel C. The outer end of the chamber is covered by an india-rubber diaphragm J, whose margin is secured by a metal cap I, which screws on to the end of the chamber, and this cap is provided with a nozzle *r*, to which there is to be connected the pipe from one end of the engine cylinder.

Every time steam is admitted to that end of the engine cylinder with which the nozzle *r*, is connected the steam presses upon the flexible diaphragm J, and through it upon the piston L, and so forces the said

piston toward the box A, and makes the pawl *p*, move the ratchet one tooth, the chamber only being long enough to permit the piston to move as far as is necessary for this purpose. When the steam exhausts, the spring *q*, forces back the piston and its pawl *p*.

This register is capable of more convenient application than those which are actuated by some moving part of the engine, as it is only necessary to drill a hole in the cylinder and make the connection by a piece of pipe of suitable length to adapt it to any engine, whatever its form or size; while in those which are actuated by a moving part of the engine some special arrangement of mechanism is necessary to adapt it to each particular form or pattern or size of engine.

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

An engine register composed of a box containing a system of wheel-work with dial and indices, having attached to it a cylinder or chamber B, which contains a piston L, and diaphragm J, or their equivalent, carrying a pawl *p*, suitably applied to act upon the first wheel of the series within the box; the whole so combined, substantially as herein described, that the connection of the chamber by a pipe with the engine cylinder is all that is required to set the register in operation.

PETER L. WEIMER.

Witnesses:

GEORGE STRICKLER,
JOHN J. SHIRK.