

Sheet 1.
2 Sheets.

R. K. Huntoon.
Steam Engine Governor.
N^o 71761 *Patented Dec. 3, 1867.*

Fig. 1.

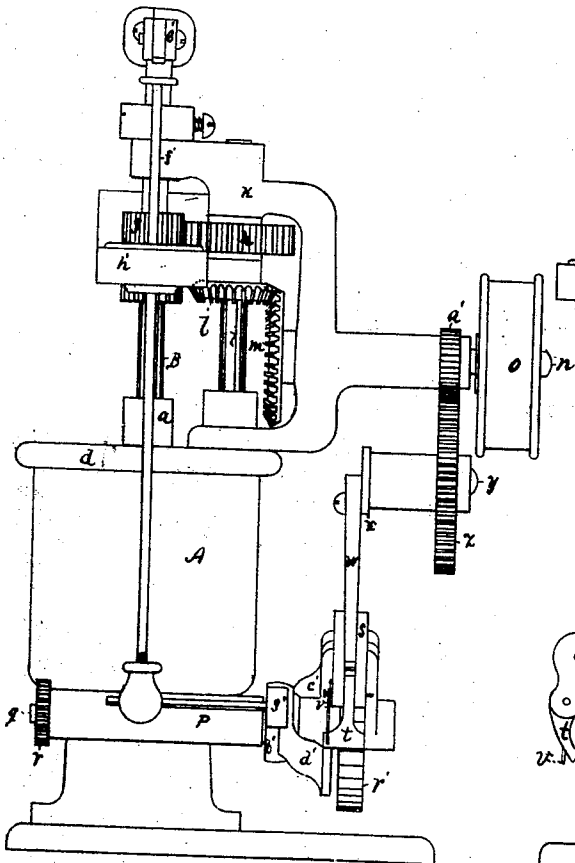
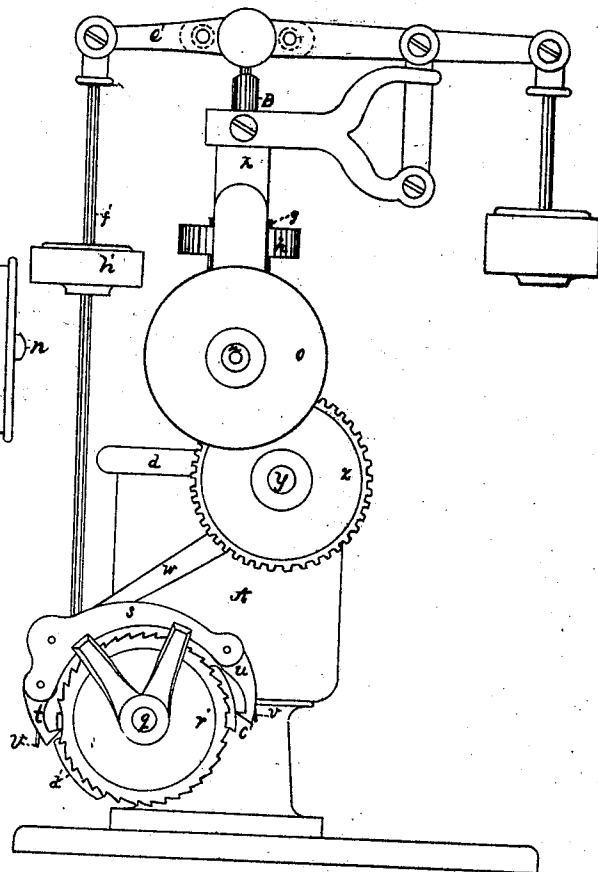


Fig. 2.

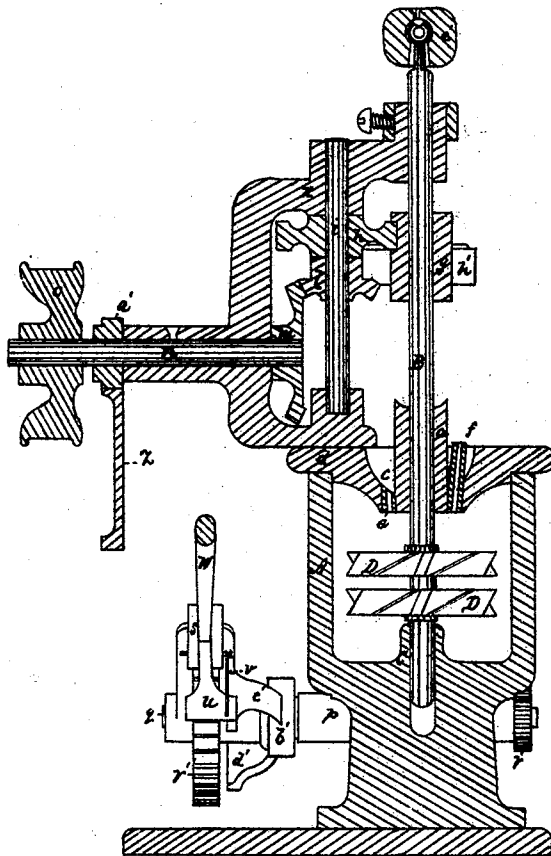


Witnesses
Samuel H. Piper.
Geo. H. Andrews

Inventor
Reuben K. Huntoon
by his attorney
R. H. Cady

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Fig. 3.



Witnesses.
Samuel N. Piper.
Geo. H. Andrews

Inventor.
Reuben K. Huntoon
by his attorney
R. H. Brady

United States Patent Office.

REUBEN K. HUNTOON, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO HIMSELF AND CHARLES S. LYNCH, OF SAME PLACE.

Letters Patent No. 71,761, dated December 3, 1867.

IMPROVEMENT IN STEAM-ENGINE GOVERNORS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL PERSONS TO WHOM THESE PRESENTS SHALL COME:

Be it known that I, REUBEN K. HUNTOON, of Boston, in the county of Suffolk, and State of Massachusetts, have made a new and useful Invention having Reference to Governors for Engines; and do hereby declare the same to be fully described in the following specification, and represented in the accompanying drawings, of which—

Figure 1 is a front elevation, and

Figure 2 a side view of a governor provided with my invention.

Figure 3 is a vertical section of the governor.

In such drawings, A is a close cistern or vase, having a shaft, B, extending down into it axially, and provided with a screw-propeller, D, which is within the vessel. The said shaft is supported at its foot in a tubular bearing, C, arranged on and so as to project upward from the bottom of the said cistern. The shaft passes through a box, *a*, which rises from the lower part of a cup or cavity, *c*, formed in the cap *d* of the cistern, in manner as represented. There is a hole, *e*, leading from the bottom of the cavity *c* into the cistern, and there is also a pipe, *f*, opening out of the cistern, and extended up within the cavity, or near the top thereof. The purpose of the oil-receiver or cavity *c*, its eduction-hole *e*, and pipe *f*, is to return to the cistern any oil which may be thrown out of the box *a*. When oil is so ejected it will run into the cavity or cup *c*, but were it not for the air-pipe, such oil would not readily find its way through the hole *e* and into the cistern. It is intended for the cistern to be filled or supplied with oil or a liquid. By putting the shaft and the screw-propeller in rapid revolution, they will be caused to rise within the oil. On the shaft of the governor is a long spur-gear, *g*, which engages with a spur-gear, *h*, fixed on another shaft, *i*, arranged within a frame or bracket, *k*, which is affixed to the top or cap of the cistern. A bevel-pinion, *l*, carried by the shaft *i*, engages with a bevel-gear, *m*, affixed on a shaft, *n*, on which is a driving-pulley, *o*. The engine to which the governor is to be applied, is to put the shaft *n* in revolution by means of an endless belt, working on the pulley *o*. Extending through and supported by a bearing, *p*, affixed to the cistern, is a shaft, *q*, on one end of which a gear, *r*, is attached. This gear is intended to actuate or aid in actuating or moving a valve arranged in the pipe, for supplying steam to the cylinder of the engine. On the other end of the said shaft *q* is a ratchet, *r'*. The teeth of one half of the periphery of this ratchet are arranged to stand in directions opposite to those of the other half thereof, the same being as shown in fig. 2. A sectoral frame, *s*, arranged so as to turn on the shaft *q*, and its bearing *p*, carries two draw-pawls, *t* *u*, which are to operate on opposite sides of the periphery of the ratchet *r'*, each being pressed toward the periphery by a spring, *v*. A mechanism for imparting to the frame *s* a reciprocating rotary motion is combined with such frame. It consists of a connecting-rod, *w*, applied to the wrist of a crank, *x*, fixed to a shaft *y*, which receives rotary motion by means of gears *z* and *a'*, one of which is fixed on it, and the other on the driving-shaft. Furthermore, there is on the bearing *p* a rocker-frame, *b'*, which turns freely on the said bearing, and is provided with two cams or lifters *c'* *d'*, such cams being so arranged that when the rocker-frame is in vibration, they may be brought alternately against the draw-pawls, so as to throw them out of action with the ratchet. The rocker-frame *b'* receives its motion from the governor by means of a lever, *e'*, a connecting-rod, *f'*, a weight, *h'*, and a crank, *g'*, the whole being arranged as represented in the drawings. As the propeller of the governor may rise, it will force up the lever *e'*, and cause the rocker-frame to be moved in one direction. So when the propeller may fall within its cistern, the weight *h'* will depress the lever and cause the rocker-frame to be moved in the other direction.

Now, as the sectoral frame, with its draw-pawls, is put in a constant reciprocating rotary motion whenever either of the draw-pawls may be suffered to come in contact with the ratchet, such pawl will cause such ratchet and its shaft to revolve. Consequently, as the movements of the rocker-frame with its cams will cause one or the other of the pawls to come into action with the ratchet, it will be seen that the movement of the ratchet either way, and the extent of such, will be controlled and effected by the combined operations of the sectoral frame and its pawls, and the rocker-frame and its cams, and the governor.

I make no claim to anything described in the United States Patent, No. 62,853, in which a ball-governor is shown, in combination with a ratchet, a system of pawls, and weighted lever-shoes. As I employ a governor different from a ball-governor, my invention or improvement rests in part on the peculiar mode of applying my

said governor to operate the rocker-frame and its cams or lifters, combined with the ratchet and its sectional frame and pawls. This I accomplish by means of the lever *e'*, the rod *f'*, and weight *h'*. Therefore—

I claim the arrangement and combination of the lever *e'*, rod *f'* and weight *h'*, with the shaft B, its propeller or propellers D, the vessel A, the ratchet *r'*, sectional frame *s*, the pawls *t u*, the rocker-frame *b'*, and its cams or lifters *c' d'*, such ratchet being applied to a shaft, *d*, and the whole being substantially as specified.

I also claim the combination and arrangement of the oil-receiver *c*, its eduction-hole *e*, and air-pipe *f*, with the governor as described.

REUBEN K. HUNTOON.

Witnesses:

R. H. EDDY,

F. P. HALE, Jr.