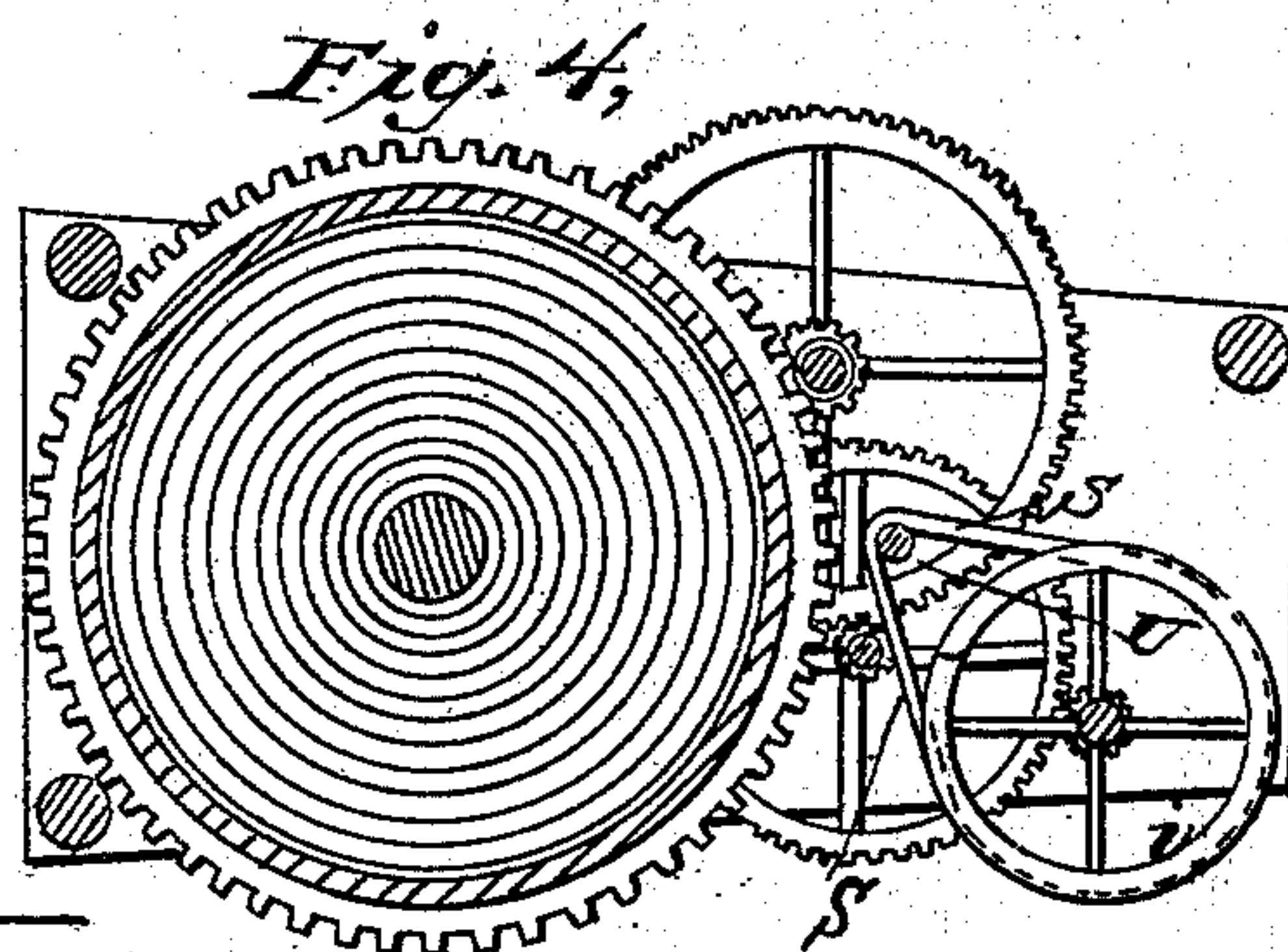
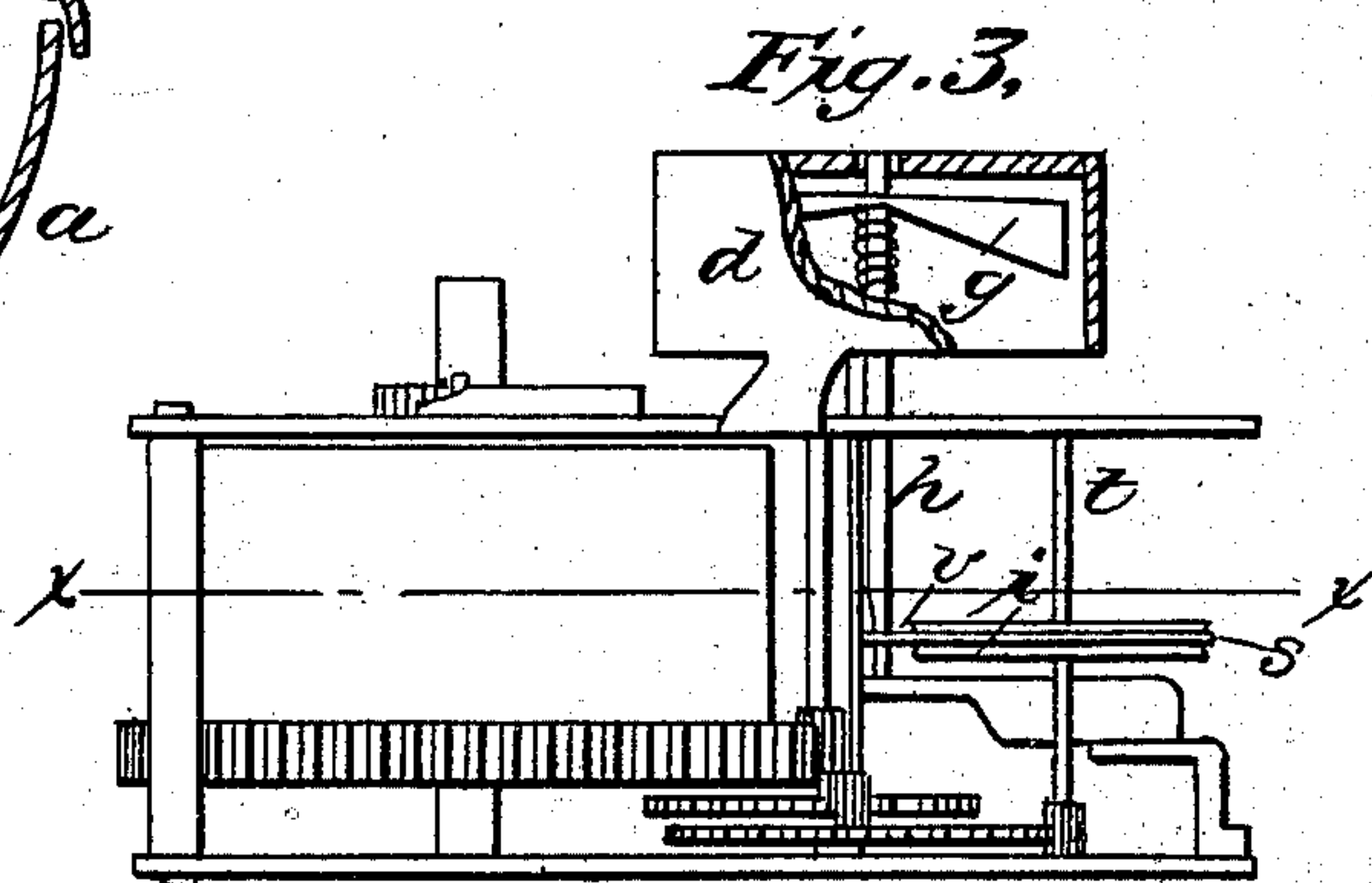
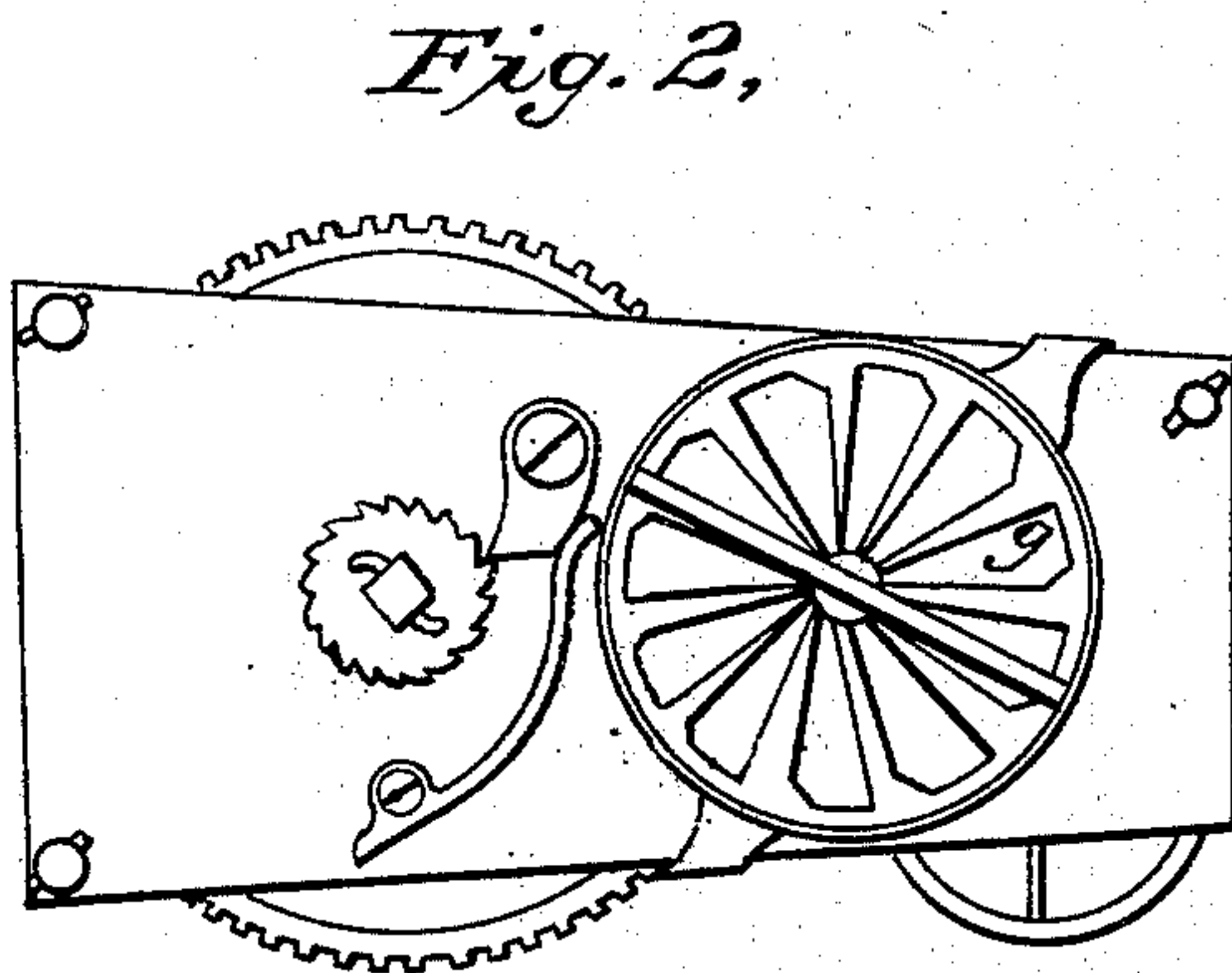
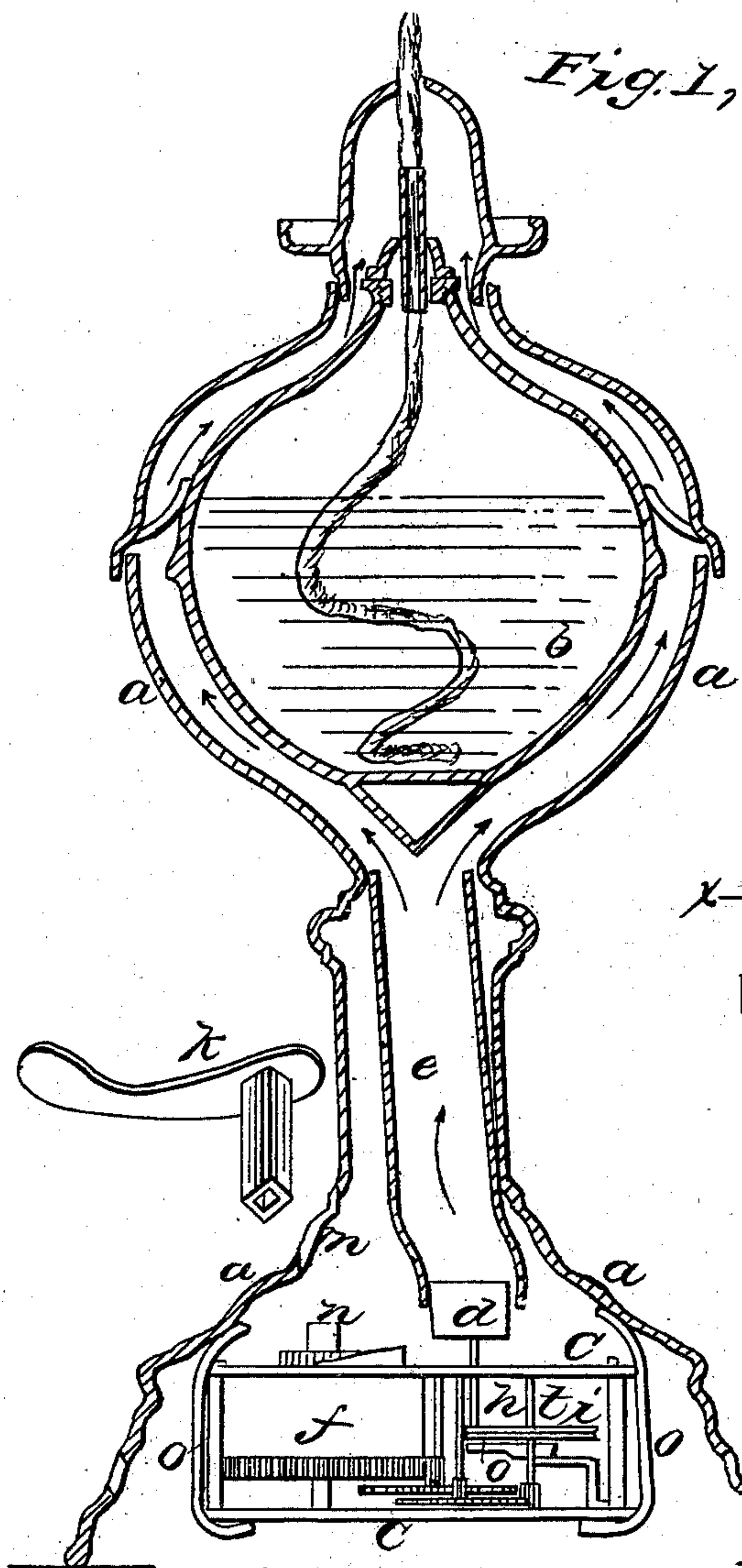


W. H. SANGSTER.

Lamp.

No. 60,068.

Patented Nov. 27, 1866.



Witnesses:

John R. Linn  
Frank J. Bond

Inventor:

William H. Sangster



# United States Patent Office.

## IMPROVEMENT IN LAMPS.

WILLIAM H. SANGSTER, OF CHICAGO, ILLINOIS.\*

Letters Patent No. 60,068, dated November 27, 1866.

### SPECIFICATION.

Be it known that I, WILLIAM H. SANGSTER, of the city of Chicago, in the county of Cook, and State of Illinois, have invented a new and useful Improvement in Lamps, Lanterns, and Chandeliers; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification.

The nature and object of my invention are to produce an improved lamp, lantern, or chandelier, in which kerosene oil is burned, which will produce a clear, white flame, free from smoke, and without the use of a chimney. A leading item of expense in the use of kerosene oil for illuminating purposes is the chimney. This improvement does away with this expense.

Figure 1 represents a plane elevation of my improvement applied to a lamp.

Figure 2 represents a top view of the mechanism employed.

Figure 3 represents a side view of the mechanism with a portion of the cylinder removed in which is placed the blower.

Figure 4 is a top view of the mechanism taken through the line *x x*, fig. 3.

Similar letters of reference refer to similar parts in the different figures.

*a a*, fig. 1, represent the exterior of an ordinary lamp. *b* is the oil pot around which passes the exterior, *a a*, of the lamp. At the upper part of the oil pot *b* any ordinary wick tube desired can be used. This oil pot is suspended within the exterior *a a* by any means that would suggest itself to any one skilled in the art of making lamps. I do not confine myself to the use of the exterior *a a*, as that is known and in use. Suitable and convenient tubes leading from the blower to the wick tube can be employed with the same effect, and by the use of these tubes I am able to use a glass oil pot, which is preferable to a metallic one. At the top of the exterior *a a* is placed a cone, extending above the wick tube, as shown in fig. 1. *c c* is a mechanism placed at the base of the lamp. The mechanism is composed of a coiled spring, located within the drum *f*, a series of cog or toothed wheels, and small pinions, also cogged or toothed, with two or more band-wheels and belts. *d* is a cylinder in which revolves the blower. *i* is a sheave located on the shaft *t*; around this sheave and the sheave *v*, on the shaft *h*, passes the belt *s*. *e* is a tube extending from the cylinder *d* up through the standard of the lamp to or near the oil pot *b*. *g* is the blower, located at one end of the shaft *h*. It will be seen that the mechanism *c c* resembles in many respects that used in the ordinary clock, with the addition of band-wheels and belts. The blower *g* is constructed with inclined fans, so that in its revolutions it forces the air upwards. *k*, fig. 1, is the key used in winding the spring. It is inserted through a hole, *m*, in the exterior of the lamp, and fits upon the end *n* of the shaft, to which is attached one end of the spring within the drum *f*. The mechanism *c c* is held to its proper place within the base of the lantern by means of the springs *o o*, and can be readily removed by unclasping the springs *o o*.

The operation of my invention is as follows: The spring within the drum *f* is wound up by means of the key *k*. Power is thus generated, which is exerted through the series of toothed or cog wheels and toothed or cogged pinions, and the band-wheels and belts upon the blower *g*. The tube *e*, being connected with the cylinder *d*, the air put in motion by means of the blower *g* is directly conducted to the flame around the oil pot *b*, thus forcing into the flame the requisite amount of oxygen to make a clear, bright, and incandescent flame, free from smoke, and without the use of a chimney. The tube *e* need not at all times pass up on the inside of the neck or standard of the lamp. The mechanism *c c* can be placed into a suitable base, upon which can be set any ordinary lamp. Surrounding the flame will be a solid cone with no perforations, as in the ordinary lamp. From the cylinder *d* of the mechanism to the cone surrounding the flame will extend a flexible tube, through which the air is forced by means of the blower *g* directly to the flame; and thus is secured a flame, clear, pure, and free from smoke, without the use of the chimney. I also use the mechanism *c c* in a lantern with the same effect. I properly place it in the base of a lantern with proper conduits leading from the cylinder of the blower to the flame, and produce a clear, perfect flame, free from smoke, and without the use of the chimney. The mechanism *c c* can also be used in chandeliers with the same result. I employ it in connection with this method of lighting by placing it in the centre of the chandelier, and from the cylinder *d* of the blower radiates a tube to each burner, which properly leads the air put in motion by the blower on to the flame, thus also securing a perfect and bright flame, free from smoke, and without the use of the chimney. I also use it in connection with chandeliers and similar lighting purposes by tubing the room or building I wish to light in the same

\* Assignor to James A. Cowles, of the same place.



way as though I were to use gas, and at the end of one tube, into which all the other tubes lead, I place the mechanism *c c*, properly connected with the cylinder *d* of the blower *g*. Thus I can light many rooms with kerosene light without the use of the chimney. It will be seen that I place the mechanism *c c* on one of its longest sides, while at the opposite side is placed the blower. By placing it in this way I am able to bring my lamp within a proper size, and when I use it in a lantern I can make the lower part of my lantern very short. In the use of the belts and band-wheels I am able to reduce the cost of the mechanism, and secure greater speed to the blower, by making the pinions smaller than can be used with cogs; and also the time the blower revolves, by once winding up the spring, is extended. I dispense with the use of the screw on the shaft, to which is attached the blower; thus the friction is greatly reduced between the blower and the other parts of the mechanism. I disclaim the mechanism as constructed in the patents heretofore granted to one Francis B. de Keravenan.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination of the sheave *i* on shaft *t*, the sheave *v* on shaft *h*, driven by the belt *s* that carries upon one end the blower *g*, with the within described mechanism that supplies the power for operating the blower when used in a lamp, lantern, or chandelier, in the manner and for the purpose herein set forth.
2. The placing of the mechanism *c c* on its side, substantially in the manner described.
3. Attaching the mechanism *c c* with a lamp, lantern, or chandelier, by means of the springs *o o*, substantially as described.

WILLIAM H. SANGSTER.

Witnesses:

JOHN BROWNE,  
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