

(No Model.)

2 Sheets—Sheet 1.

I. HARTIG.
LIGHTING GAS LAMPS.

No. 509,531.

Patented Nov. 28, 1893.

fig. 1

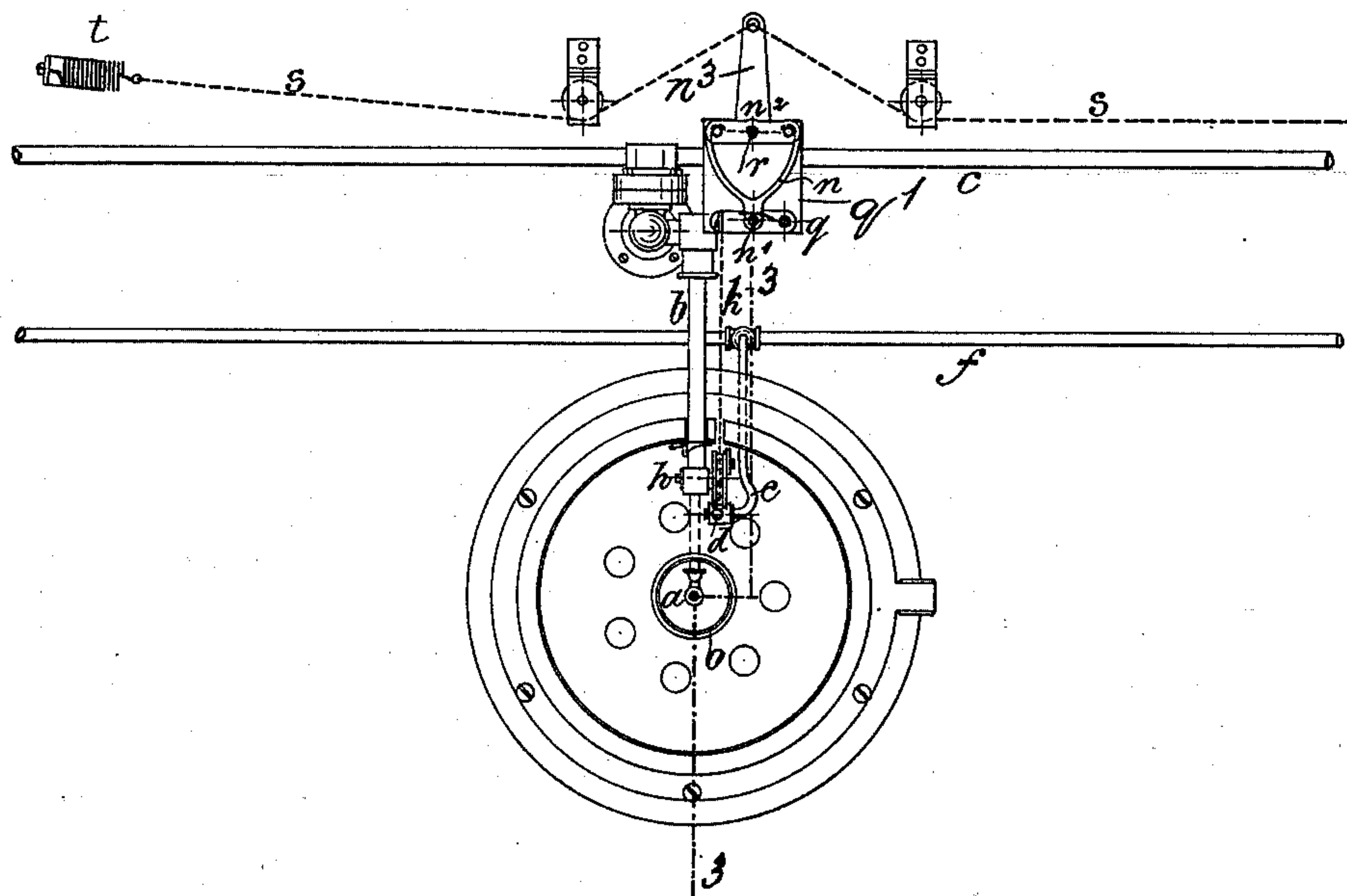
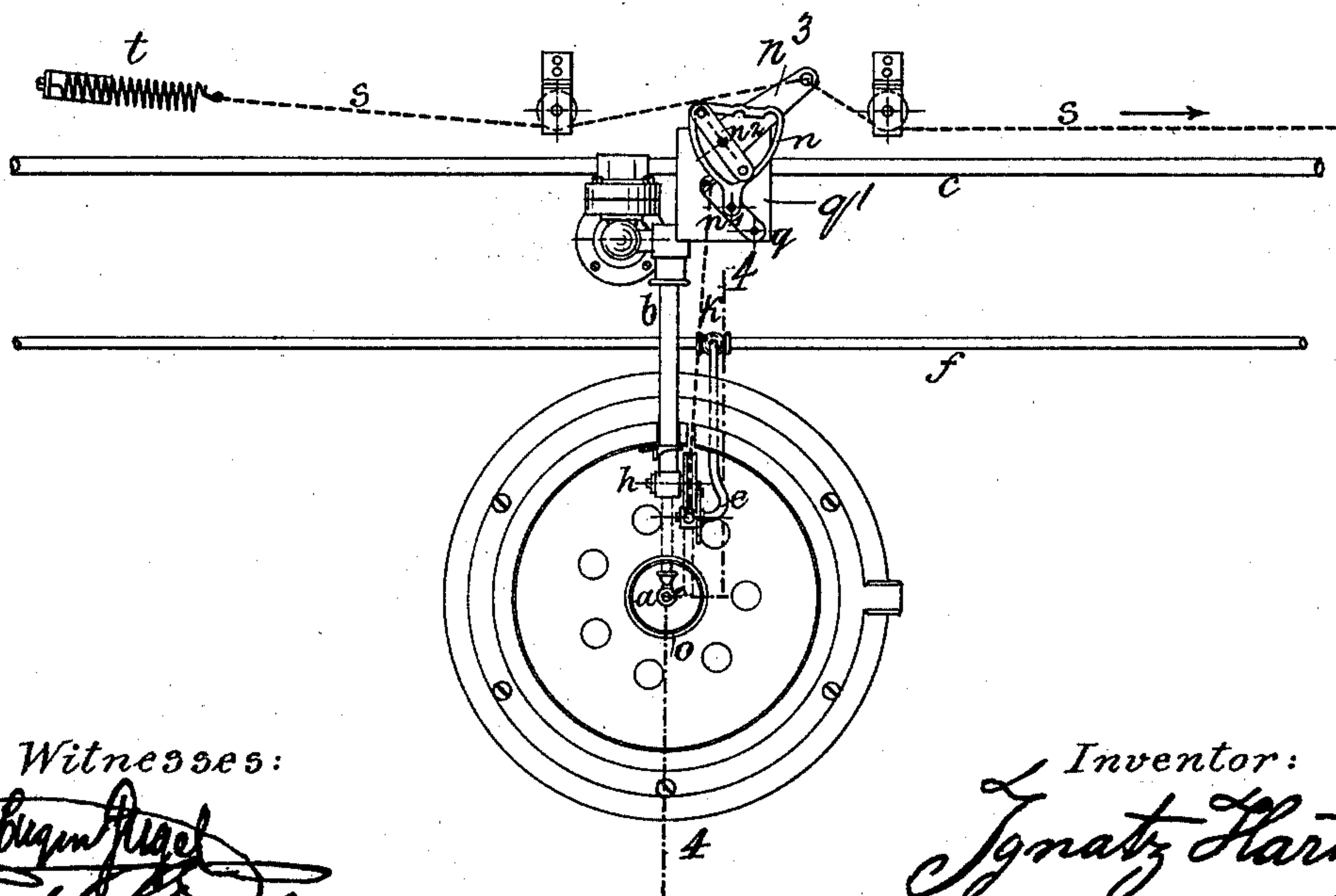


fig. 2



Witnesses:

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Inventor:

Ignatz Hartig.

(No Model.)

2 Sheets—Sheet 2.

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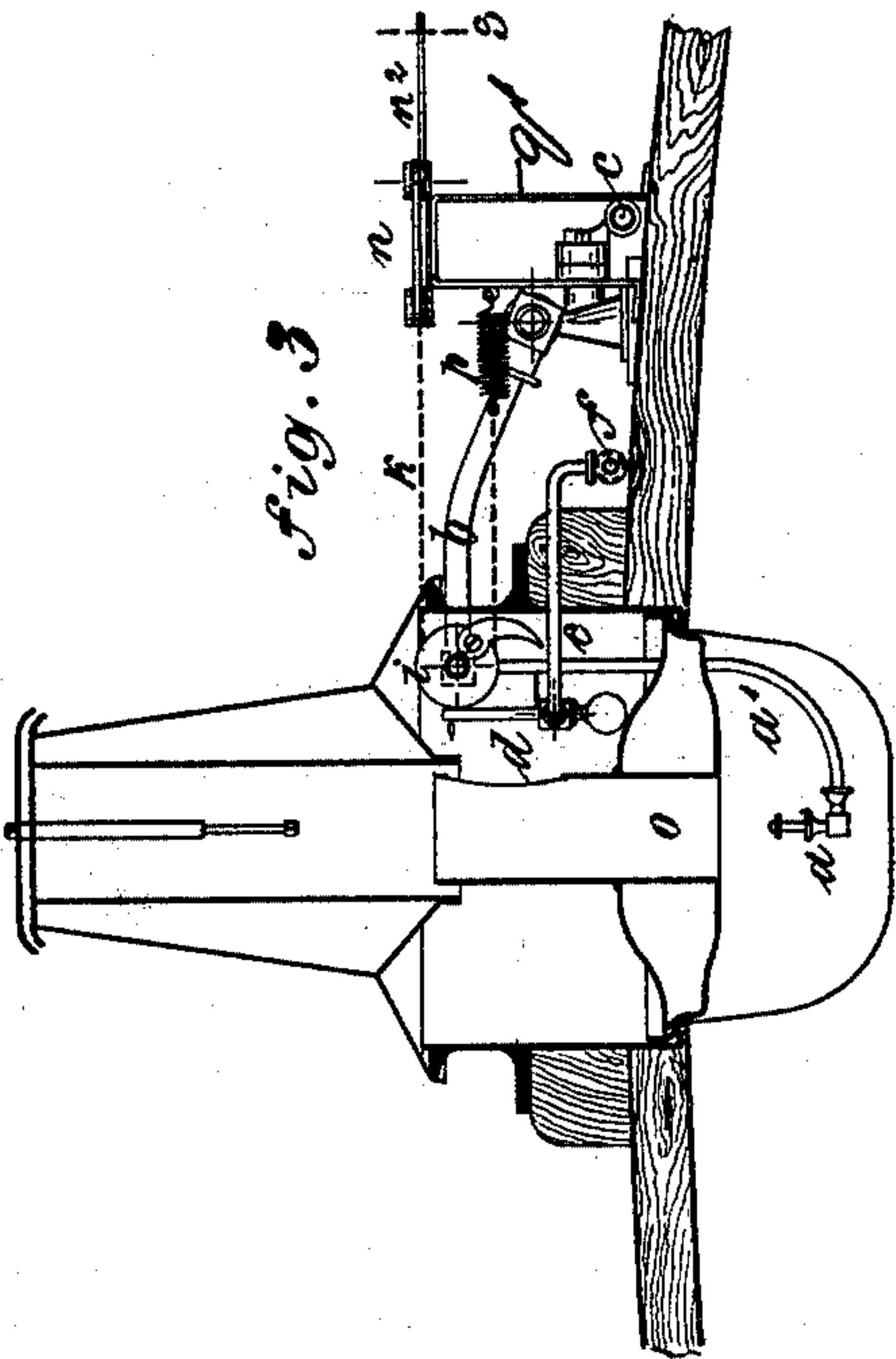


Fig. 3

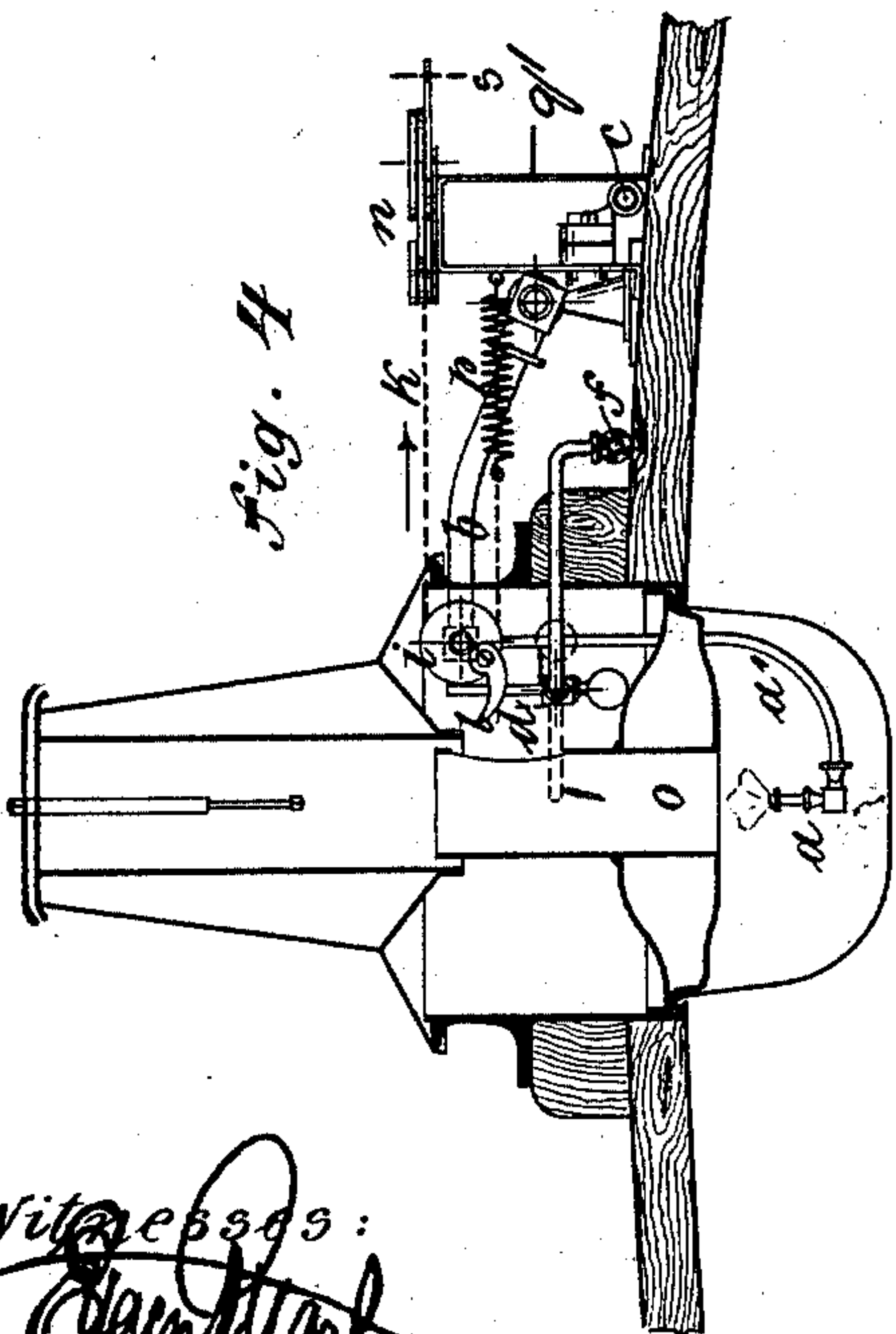


Fig. 4

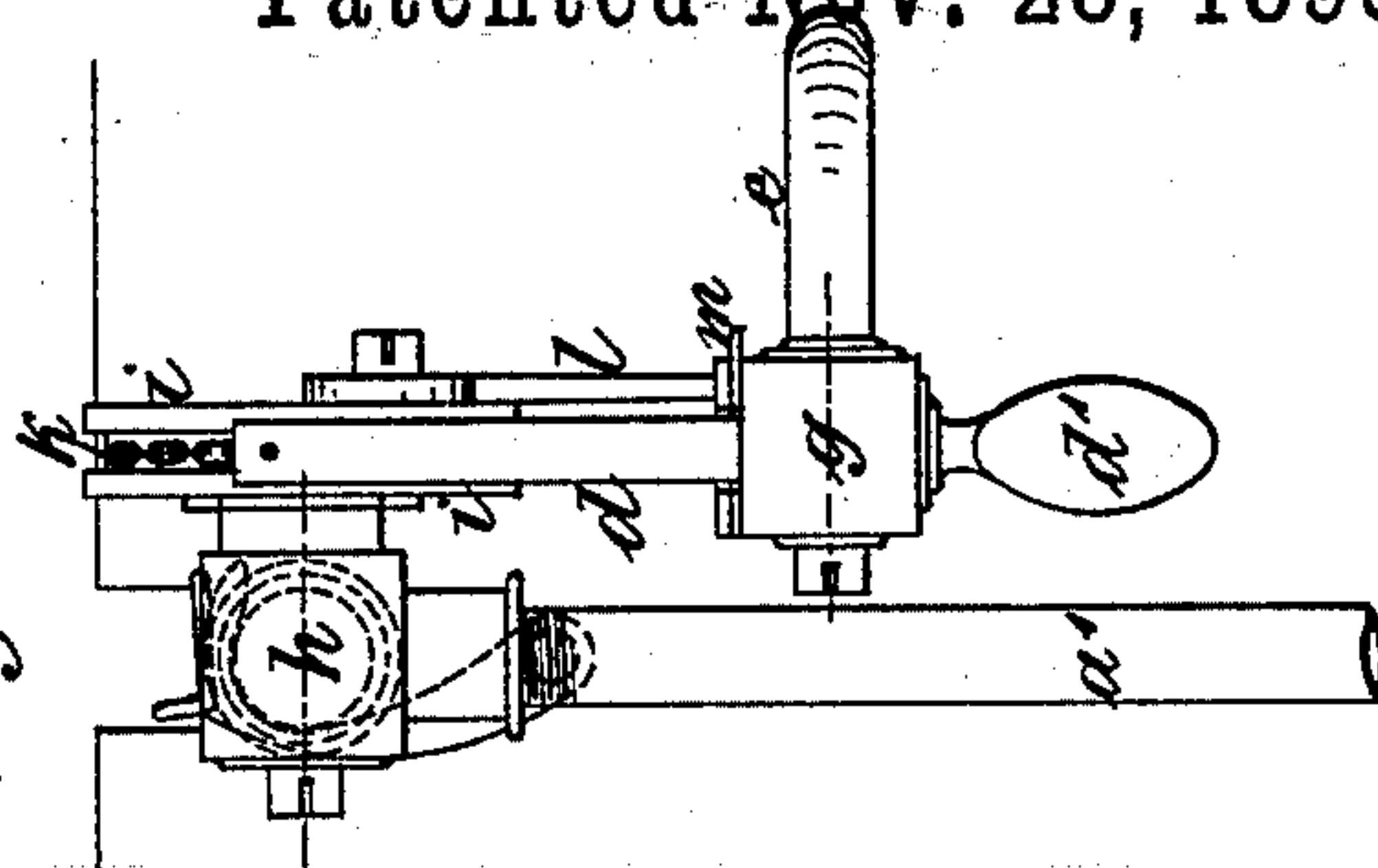


Fig. 6

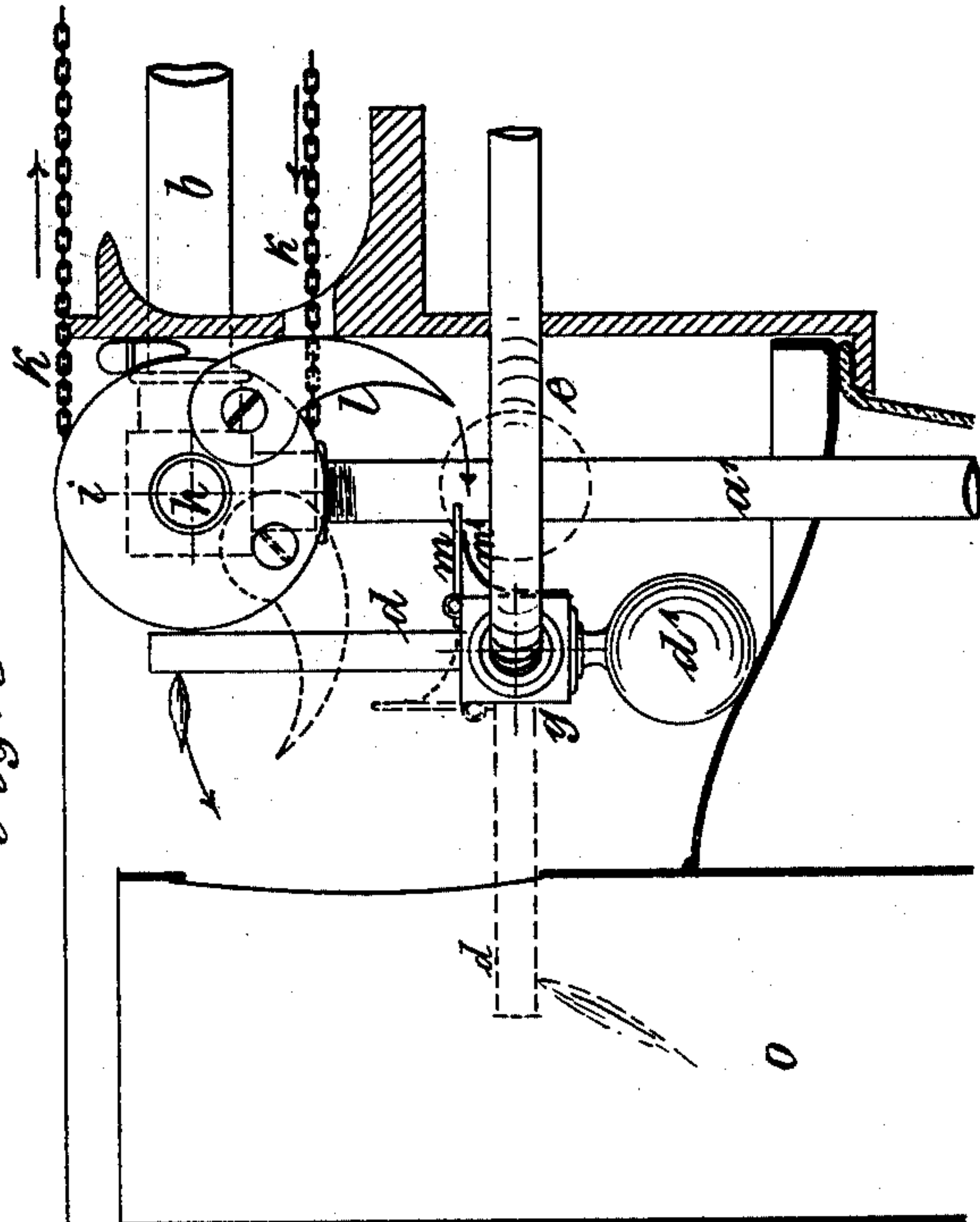


Fig. 5

Witness:
[Signature]
[Signature]

Inventor:
Ignatz Hartig

UNITED STATES PATENT OFFICE.

IGNATZ HARTIG, OF MUNICH, GERMANY.

LIGHTING GAS-LAMPS.

SPECIFICATION forming part of Letters Patent No. 509,531, dated November 28, 1893.

Application filed June 8, 1893. Serial No. 476,968. (No model.)

To all whom it may concern:

Be it known that I, IGNATZ HARTIG, a subject of the German Emperor, and a resident of Munich, Bavaria, Germany, have invented certain new and useful Improvements in Lighting Gas-Lamps, of which the following is a specification.

The purpose of the present invention is to provide means by which a series of gas lamps such as the lamps of a railway train may be lighted when desired, and also extinguished, all by one movement for the one or other purpose, and without the necessity of entering any carriage or compartment or of mounting upon the roof of any carriage, the same being moreover equally applicable for action whether the train is in movement or at a standstill.

This invention depends principally upon the employment of an unstretchable chain passing along the roofs of the carriages of the train and connected at intervals to lever mechanism so that by pulling on this chain the various mechanisms are operated and cause the gas to be turned on in each lamp and small continuously burning pilot flames to be brought into position to light the main flames and to afterward resume their places. The chain, maintained against the action of a counterspring, when released will be drawn back by the said spring and will extinguish the main flames of the lamps by cutting off the gas supply thereto.

In the annexed drawings Figure 1 is a plan view of the mechanism attached to one of the lamps. Fig. 2 is a similar view of the same parts in the position occupied when the main lamp is lighted. Fig. 3 is a cross section on line 3, 3, Fig. 1, and Fig. 4 a cross section on line 4, 4 Fig. 2. Figs. 5 and 6 are elevations of the mechanism connected with the pilot flame and gas supply cocks on a larger scale.

In each lamp is the main gas burner *a* supplied through pipe *a'* from the gas cock *h* to which the pipe *b* leads from the gas supply main *c*. On the spigot of the cock *h* is the pulley *i* around the grooved periphery of which a chain *k* passes. The one end of this chain *k* is connected to a spring *p* supported by a pillar or otherwise fixed immovably in position; the other end of the chain passes to a lever *n'* (Fig. 1) to the end of which it is connected. On the side of the pulley *i* is a

fixed projecting finger *l* and in the path of this finger *l* is a tongue *m* upon the pilot burner *d*. The pilot burner *d* rocks upon the spigot end of a gas supply pipe *e* so that this connection forms a gas cock *g* for control of the supply of gas to the pilot flame. The main *f* supplies the pipes *e*. The pilot burner *d* carries a weight *d'* which tends always to keep the said burner in a vertical position as shown in full lines in Fig. 5 or to return it to this position after it has been tilted as shown in dotted lines in this figure. The tongue *m* is supported by the spring *m'* which suffers the tongue to give way to the return of the finger *l*.

It will be obvious that if any pull is given to the chain *k* in the direction of the arrows in Fig. 5, the pulley *i* will be revolved. The first result of this movement is to commence to gradually open the gas cock *h* and supply gas to the main burner *a*. The finger *l* in its movement meets the tongue *m* and lifts the latter thus tilting the pilot burner *d* into a horizontal position as shown in dotted lines (Fig. 5) whereby also the gas supply to this burner, previously at a minimum, is gradually increased as the burner *d* is directed downward within the chimney *o* above the burner *a*. The gas issuing from the main burner *a* is thus lighted and will continue to burn so long as the supply continues, that is to say, so long as the pull is continued on the chain *k*. The finger *l* having attained the position shown in dotted lines in Fig. 5 moves out of the path of the tongue *m* which thus is enabled to return to its previous position together with the pilot burner *d* under influence of weight *d'*. When the pull on the chain *k* is released the spring *p* returns the chain to its first place, the pulley *i* revolves in the contrary direction and the cock *h* is closed thus extinguishing the main burner *a*. The spring *m'* permits the tongue *m* to give way for return passage of the finger *l* as previously mentioned.

As in the coupling up of carriages to form a train sometimes the one end, sometimes the other end of a carriage will come first, it is important to be able to operate this mechanism equally by a pull from either end of the carriage so that when all are coupled together the pull may be in one direction only. For this purpose the following device may be

used: The lever n before referred to, to which the chain k is attached at one end, is pivoted at the other end at q to a suitable base or frame such as q' . On this frame is pivoted centrally at r a lever n^2 which has a perpendicular arm n^3 to the end of which the chain s , which passes along the roofs of all the carriages, is attached. The lever n^2 lies within a triangular yoke n , the apex of which is connected to the lever n' , and the lever n^2 engages with one end in one of the angles at the base of this yoke and with the other end in the other angle at the base of the yoke. Thus whichever way the lever arm n^3 is drawn laterally from its mean position, one of the arms of the lever n^2 draws outward the yoke n (see Fig. 3) and with it the lever n' and chain k .

For the coupling up of these mechanisms there are provided suitable lengths of chain s and at each end of each carriage a spring t . Nevertheless only the free end of the coupled up chains s which is over the end of the last carriage is attached to the spring t found there, the other springs being left idle. The chain s suitably coupled up leads from the last carriage to the other end of the train, to the locomotive or to the guard's brake van or otherwise where it may be attached to a lever with a retaining ratchet or any other device by which it may be pulled and held from returning to its previous position until released.

I claim as my invention—

1. The combination with a chain s of a chain k , a mechanism for transferring the pull of said chain s in either direction to chain k , a

gas cock controlled by chain k and adapted to supply gas to the main burner of a lamp, and a pilot burner adapted to be moved, by action of said chain k , temporarily into the chimney of said lamp for lighting the same.

2. The combination with the main burner of a gas cock thereto, a pulley wheel on the plug of said gas cock, a chain passing over said pulley wheel, a rotary mounted pilot burner and a finger on said pulley wheel adapted to revolve said burner substantially as and for the purpose set forth.

3. The combination with a chain k adapted to turn on a gas cock and move a pilot burner for the purpose described, of a lever n' , a yoke n connected thereto, a balance lever n^2 adapted to draw said yoke when rocked in either direction, an arm n^3 to said lever n^2 and a chain s substantially as described.

4. In a train of railroad carriages the combination in each gas lamp of a main burner, a gas cock thereto, a movable pilot burner, a chain k adapted to control the main gas cock and the said pilot burner, a chain s connected to operate all the chains k , a spring t adapted to tension the chain s and mechanism for pulling and holding the chain s against tension of the spring t substantially as and for the purpose set forth.

In witness whereof I have signed this specification in presence of two witnesses.

IGNATZ HARTIG.

Witnesses:

EUGEN GUGEL,
M. GUGEL.