

2 Sheets—Sheet 1.

AUTOMATIC GAS CUT-OFF FOR RAILWAY CARS, &c.

Patented June 30, 1896.

Fig. 1.

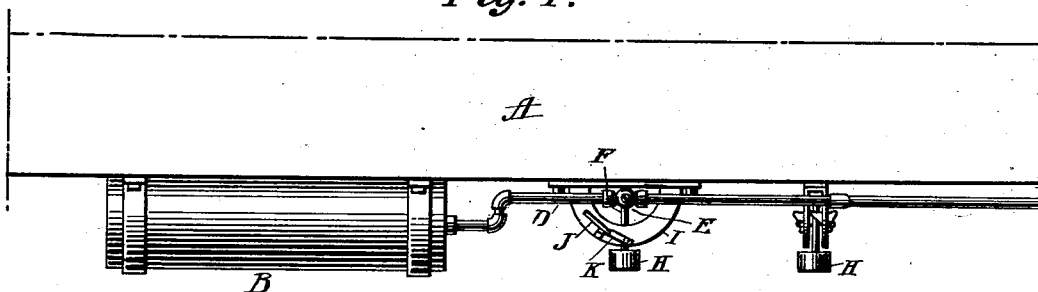


Fig. 2.

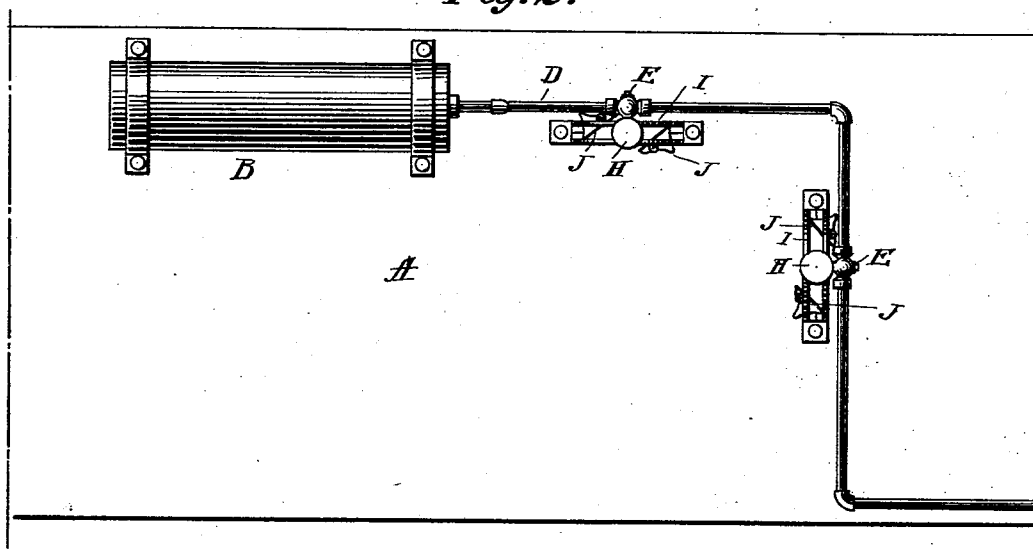
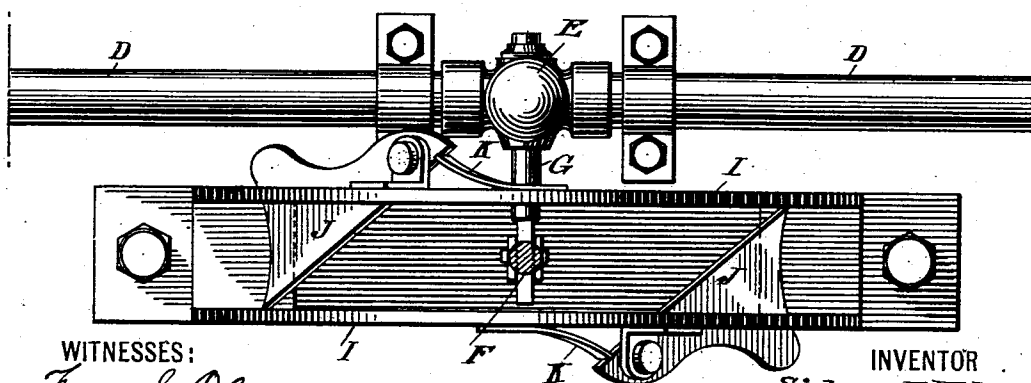


Fig. 3.



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AUTOMATIC GAS CUT-OFF FOR RAILWAY CARS, &c.

No. 563,111.

Patented June 30, 1896.

Fig. 4.

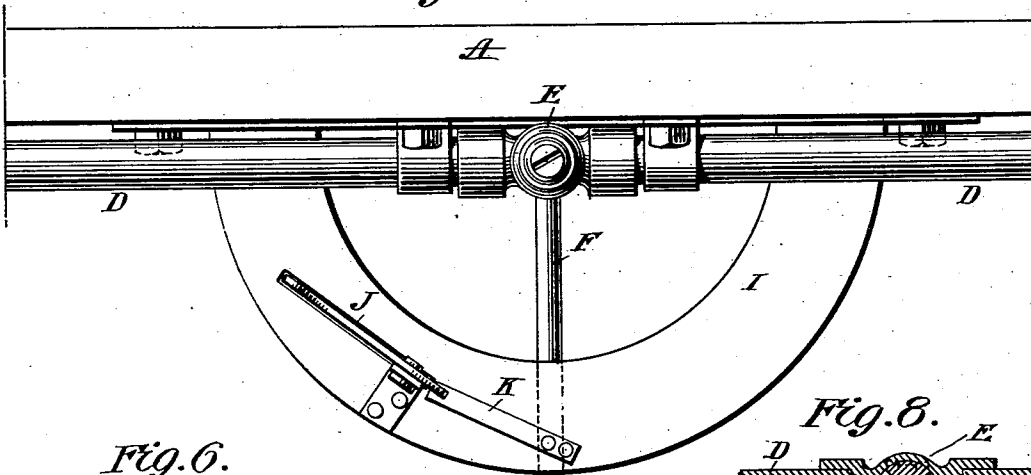


Fig. 6.

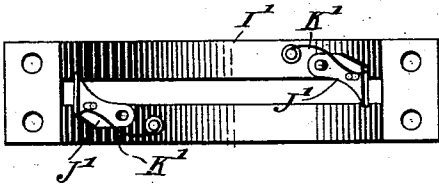


Fig. 8.

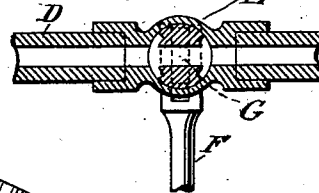


Fig. 7.

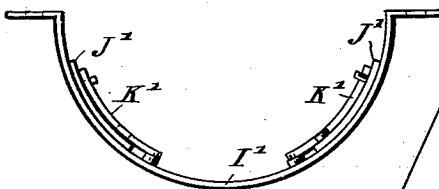
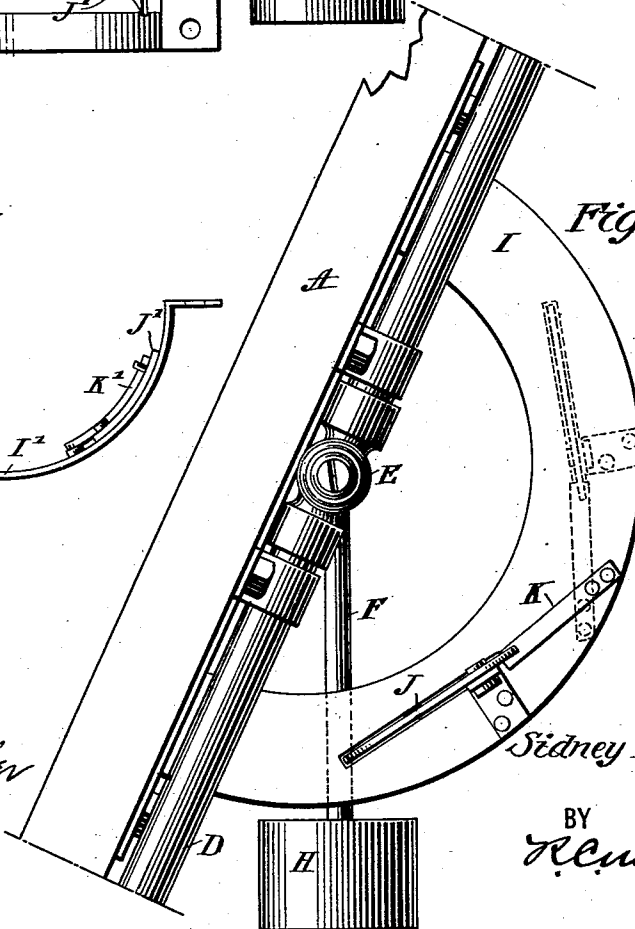


Fig. 5.



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AUTOMATIC GAS CUT-OFF FOR RAILWAY-CARS, &c.

SPECIFICATION forming part of Letters Patent No. 563,111, dated June 30, 1896.

Application filed January 13, 1896. Serial No. 575,248. (No model.)

To all whom it may concern:

Be it known that I, SIDNEY F. WILCOX, a citizen of the United States, residing at New York, in the county and State of New York, have invented certain new and useful Improvements in Automatic Cut-Offs, of which the following is a full, clear, and exact specification.

My invention relates to an improvement in automatic cut-offs particularly adapted for use in connection with gas-pipes; and it consists in the mechanical construction hereinafter fully set forth and described.

The object of my invention is to provide an automatic cut-off for gas-pipes which will, in a certain event hereinafter referred to, automatically shut off the gas from the supply-reservoir. In recent years it has been common to provide railway-carriages and other vehicles with gas-lamps in place of oil-lamps, and in that event a supply reservoir or holder is carried by the car, and by means of a pipe leading therefrom the gas has been conveyed to burners located at suitable intervals within the car. Numerous instances have occurred where the car has been tipped over and the light put out by reason of the severe jar occasioned thereby. In such an event the necessity of providing a means for cutting off the flow of gas from the reservoir is apparent. Otherwise the gas continuing to escape from the burners would soon fill the car and ignite by coming in contact with a flame, instantly spreading the same and endangering the lives of the occupants of the car, and making escape therefrom quite impossible. By the use of my invention this impending danger is obviated, and the safety of the occupants of the car is materially increased.

My invention is illustrated by the accompanying drawings, in which—

Figure 1 is a side elevation of a portion of the car, illustrating the gas-holder carried underneath the same and showing my improved cut-off in position for operation. Fig. 2 is a view of the under side of the car, illustrating a plan of the parts shown in Fig. 1. Fig. 3 is an enlarged plan view of the under side of my improved cut-off. Fig. 4 is a side elevation of the parts shown in Fig. 3. Fig. 5 is a similar view, the position of the parts being

changed, the cut-off in the said figure being illustrated in position to check the flow of gas through the pipe. Fig. 6 is a plan view of a modified detail of my invention. Fig. 7 is a side elevation of the detail shown in Fig. 6; and Fig. 8 is a longitudinal section through the center of a gas-pipe and valve, revealing the preferable construction of the latter.

Similar letters refer to similar parts in all the figures.

A is the body of a car.

B is a gas reservoir or holder. D is a pipe leading therefrom and communicating with the burners contained within the car. E is a valve located at any suitable point in said pipe D and automatically operated in the manner hereinafter described. One or more of these valves may be provided if desirable.

F is a lever, by preference pivotally connected to the key G of the valve E for the purpose hereinafter described. H is a weight carried by the lower end of said lever F. When the lever F is at substantially right angles to the line of pipe D, the valve is open and gas is permitted to flow freely there-through. When the lever is in substantially the position indicated in Fig. 5 with respect to the line of pipe, the valve E operates to shut off the gas by closing the conduit.

It is obvious that should the car tip or roll over onto its side the weight H would cause the lever F to swing so far out of the perpendicular with respect to the bottom of the car as to turn the valve and cut off the flow of gas. Should the car roll entirely over, it is obviously essential that suitable means should be provided to prevent the renewed flow of gas. I therefore provide, by preference, suitable latch-engaging devices to prevent the lever F from swinging into the perpendicular position with respect to the bottom of the car after the same has once shut off the supply of gas.

I I are guides, by preference provided on each side of the lever F. These guides are secured to the bottom of the car in any desirable manner. As the pendulous weight H is oscillated, the lever-arm F moves between said guides I I. J J are suitable latches normally projecting into the path of said lever-arm, said latches being pivotally connected

to and supported by said guides I I. The side or edge of each latch J adjacent to the lever F presents an inclined surface, so that when the lever-arm presses against the same the latch is pressed back, permitting the lever to pass. As soon as the lever has passed the latch the latter resumes its normal position and the return-passage of the lever F is prevented by the presentation of a barrier across its path, the said barrier being the rear side or edge of the latch J, which stands at substantially right angles across the space between said guides I. K K are springs operating said latches J J to cause them to normally stand in the position above indicated and as shown throughout the drawings.

When a pivotal connection between the lever F and the key G is provided, the said connection should only permit the said lever to swing in an arc at substantially right angles to the arc represented by the plane determined by the guides I. One advantage of providing this pivotal connection between the valve-key and the lever F is that, should the guides I I not be placed in the exact line of the arc in which the lever moves, the pivotal connection will permit the lever to laterally adjust itself to a degree sufficient to prevent the same from binding with either of the side guides I. The valve E, as shown in section in Fig. 8, is by preference cut away slightly on each side of the opening passing through the same, so that the slight oscillation of the lever-arm will not affect the even flow of the gas through the pipe-line.

Figs. 6 and 7 illustrate a modified construction of the guides on each side of the lever F. In these figures I' I' are the guides formed of sheet metal of suitable length and breadth, and provided with a slot through which the lever F moves. J' J' are latches pivotally connected to the said guides I' I' and pressed by suitable springs K' K'.

It is apparent that in carrying out my invention some changes in the particular construction shown and described may be made, and I would therefore have it understood that I do not limit myself to the specific form shown, but hold myself at liberty to make such changes as are fairly within the spirit and scope of my invention.

In utilizing my invention it is obvious that one or more of the automatic cut-offs may be provided in the pipe-line. In Fig. 2 the said pipe-line is provided with a right angle, and on each side of the angle a cut-off is fitted, so that, no matter which way the car may pitch, which may be either forward over the end of a trestle or sidewise down an embankment, one or both of the cut-offs will operate to prevent the further flow of the gas.

Having thus described my invention, what

I claim, and desire to secure by Letters Patent, is—

1. An automatic cut-off for railway-cars and other vehicles comprising a valve located in the pipe-line at a suitable point between the gas reservoir or holder and the burners, a lever connected to said valve and extending substantially at right angles to its axis of rotation, a pendulous weight carried at the free end of said lever, the passage through the valve registering with the passage through the pipe-line when the said lever is substantially perpendicular with respect to the bottom of the car, and latches located in the plane of the arc in which the lever is adapted to swing, at suitable points to engage and retain said lever when the valve has been operated to close the passage through the pipe-line.

2. An automatic cut-off for railway-cars and other vehicles comprising a valve located in the pipe-line at a suitable point between the gas reservoir or holder and the burners, a lever pivotally connected to said valve and extending substantially at right angles to its axis of rotation, a pendulous weight carried at the free end of said lever, the passage through the valve registering with the passage through the pipe-line when the said lever is substantially perpendicular with respect to the bottom of the car, and latches located in the plane of the arc in which the lever is adapted to swing, at suitable points to engage and retain said lever when the valve has been operated to close the passage through the pipe-line, and guides I I carrying said latches.

3. An automatic gas cut-off for railway-cars and other vehicles comprising a valve located in the pipe-line at a suitable point between the gas reservoir or holder and the burners, a lever pivotally connected to said valve and extending at substantially right angles to its axis of rotation, a pendulous weight carried at the free end of said lever, the passage through said valve registering with the passage through the pipe-line when the said lever is substantially perpendicular with respect to the bottom of the car, the sides of said valves adjacent to said passage being cut away to afford slightly-enlarged openings for the purpose described, and latches spring-pressed and normally standing in the path of the pendulous rod or lever and at suitable points to engage and retain said lever when the valve is in position to close the passage through the pipe-lines, substantially as described.

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Witnesses:

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