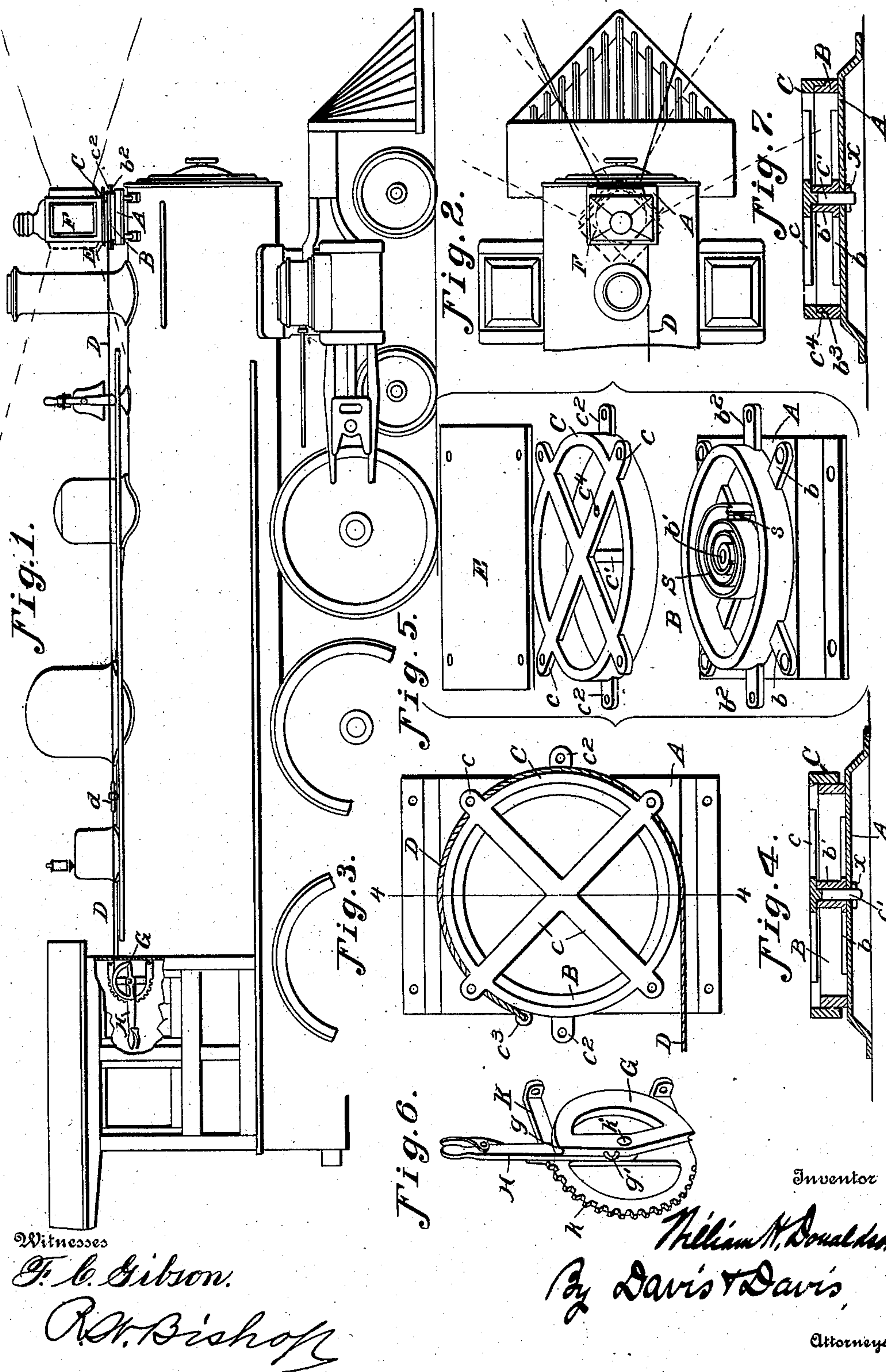


No. 854,876.

PATENTED MAY 28, 1907.

W. H. DONALDSON.
HEADLIGHT FOR LOCOMOTIVES.

APPLICATION FILED AUG. 4, 1906.



UNITED STATES PATENT OFFICE.

WILLIAM H. DONALDSON, OF JOLIET, ILLINOIS.

HEADLIGHT FOR LOCOMOTIVES.

No. 854,876.

Specification of Letters Patent.

Patented May 28, 1907.

Application filed August 4, 1906. Serial No. 329,243.

To all whom it may concern:

Be it known that I, WILLIAM H. DONALDSON, a citizen of the United States of America, and a resident of Joliet, county of Will,
5 State of Illinois, have invented certain new and useful Improvements in Headlights for Locomotives, of which the following is a full and clear specification, reference being had to the accompanying drawings.

10 The object of this invention is to provide simple means whereby the headlight or lantern may be swang about laterally in the manner of a searchlight, the adjustment of the headlight being obtained by means lo-
15 cated in the cab where it will be convenient for the engineer.

Thus constructing the headlight renders it advantageous in a number of important re-
spects. In approaching a curve the engi-
20 neer may by throwing the light to the right or left see the curve before running upon it and thus be enabled to slow down his train if the curve be sharp enough to require it. If
25 the country be mountainous and there be danger of a landslide or rocks falling upon the roadbed, the engineer may carefully in-
spect the track ahead whatever be its con-
formation. If the track follow a stream and
30 there is danger of a washout or there is a bridge ahead that it is desirable to see before
crossing, the engineer will be enabled to keep
a careful lookout and govern himself accord-
ingly, bringing the train to a stop or slowing
it down as occasion may require.

35 The lantern is so constructed that it may be turned at least about 95° to the right or 95° to the left, which enables the light to be
darkened by simply turning it so that it
faces to one side or the other, but it may be
40 turned 180° to the left or to the right if de-
sired.

The rules of all railroads of any magnitude
require that the headlight be hooded or
darkened when the locomotive is standing on
45 a side-track waiting for a train to pass, the
object of this being to avoid confusing the
engineer on the approaching train. This is
now generally accomplished by the engineer
or fireman walking forward and placing a
50 cover over the front of the lantern and then
after the train is passed to go forward again
and remove the cover. With my device the
hooding can be done instantly and effectually
by the engineer without leaving his cab.

55 A further advantage is that a passing
train may inspect a train at a station or on a

side-track and obtain the number of the loco-
motive and other information regarding it
without slowing down, whereas with the
headlights as now universally employed it is
60 necessary for the passing train to slow down
its speed materially and even then some-
times pass in doubt.

This invention is also highly useful on yard
engines employed for switching cars back
65 and forth in the yards, in that the engineer
can by throwing the light to the right or to
the left while passing up and down the yard
inspect the cars and thus locate a large num-
ber of the cars and relieve the yard-men of
70 the necessity of walking back and forth in
the yards and inspecting the cars with hand
lanterns.

Again my construction greatly facilitates
lighting the lantern while a wind is blowing
75 as the lantern can be turned with its back to
the wind and thus form a shield and permit
the lamp to be lighted without trouble,
whereas with the stationary headlights now
universally employed it is a matter of great
80 difficulty to light the lamps while a strong
wind is blowing. The invention has further
important advantages which will suggest
themselves to persons experienced in railway
matters.

85 In the annexed drawing: Figure 1 is a side
elevation of a locomotive showing my im-
provements applied thereto; Fig. 2 a plan
view of the forward portion of the same; Fig.
3 a plan view of the support with the head-
90 light proper and its base plate removed; Fig.
4 a vertical section on the line 4—4 of Fig. 3;
Fig. 5 a perspective view of the headlight sup-
port, the parts thereof being vertically sepa-
rated to better show the construction and
95 arrangement thereof; and Fig. 6 a detail per-
spective view of the controlling and locking
device in the cab. Fig. 7 is a view similar
to Fig. 4 showing a slight modification.

Referring to the drawing by reference-let-
100 ters, A designates a sheet metal base plate
which is adapted to be bolted down to the
usual bracket in front of the smokestack,
and B is a circular casing or ring adapted to
be fastened down upon the base A, the fas-
105 tening means in the present instance con-
sisting of crossed bars *b* whose ends project
beyond the casing and are bolted down to the
base plate.

Rising from the bars *b* where they cross in
110 the center of the casing is a vertical sleeve *b'*,
and extending down through this sleeve is a

journal pin c' which depends from the center of an upper casing or ring C, which fits down on the outside of the casing B. The pin c' is prevented from rising out of the sleeve bearing by means of a lock pin x , and this pin c' is carried by a pair of crossed bars c which extend across and are fastened to the casing C, the ends of these bars projecting beyond the casing to serve as ears for bolting the casing to a plate E, which covers the upper side of the casing and affords a base or platform to which the lantern F is securely bolted.

As thus constructed the lantern is mounted on a vertical axis which permits it to be turned freely both to the right and to the left. Within the casing formed by the telescoping rings or casings B and C, is confined a suitable spring whose normal tendency is to swing the lantern around toward the left so that if left free to rotate it will face backwardly. One end of this spring S is attached to the sleeve b' and the other, outer end is attached to the casing C through the medium of a projection s and a hole c^4 formed in one of the crossed bars c . Any other form of spring may be employed if desired, as is obvious.

A suitable wire or other cord D is fastened at c^3 to the casing C and carried around the exterior of the same and then rearward to the cab where it is connected to suitable means for pulling it rearward and locking it in its adjusted positions. This rope or cord is provided with a turn-buckle at d whereby it may be kept taut. The device I employ for pulling the rope consists of a semi-circular sheave G provided in its periphery with a groove g and attached to a lever H, the lever and sheave being pivoted on a pin k' which is supported in a bracket K, this bracket being provided with a toothed semi-circular rack k which co-operates with a hand-controlled pawl or bolt carried by the lever H. The rope D is attached to the sheave G at g' and as the lever is pulled backward the rope falls in the groove g in the sheave, so that a direct rearward pull is exerted upon the rope irrespective of the position of the lever. In the drawing I have shown the bracket K fastened to the forward wall of the cab but it is obvious that it may be located in any other convenient position in the cab and that if it be so located that the pull-rope cannot pass directly to the groove in the sheave, one or more pulleys may be employed to deflect the rope to the desired point.

Projecting forwardly and rearwardly from both the outer part C of the casing and the inner part B thereof are flanges lettered respectively c^2 and b^2 , which bear upon each other and thereby serve to afford a broader bearing for the headlight when it is pointed directly forward. The object of this is to relieve the parts of undue strain when the locomotive is jarred in coupling up. These brac-

ing lugs are provided with corresponding holes which permit them to be used to lock the lantern against turning by simply passing down through the holes a nail or a piece of wire in case the rope D or any of the other parts become broken or deranged and it is therefore necessary to lock the lantern so that it shall point directly ahead until the parts are repaired. It will be observed that in case any of the parts except the spring become broken, the spring will instantly reverse the headlight so that the reflector shall throw the light backwardly, thus notifying the engineer that something is wrong.

It will be observed also that the construction I have devised is exceedingly simple and inexpensive and involves the employment of but a single connecting member between the headlight and the controlling mechanism in the cab.

In Fig. 7 the interfitting rings C and B are shown with their edges rabbeted or shouldered, which construction is probably preferable for the reason that the lower ring will directly support the upper ring.

Having thus explained the nature of the invention and described a way of constructing and using the same without attempting to define all the forms in which it may be embodied or all the modes of its use, I declare that what I claim is:—

1. In combination with a locomotive, of a headlight mounted thereon so as to swivel laterally, a spring normally tending to turn the headlight in one direction out of normal, and a connection controlled from the cab for adjusting the headlight laterally in the opposite direction against the action of the spring.

2. In combination with a locomotive, of a headlight journaled on the forward part thereof so as to swivel laterally, a spring normally tending to turn the headlight in one direction out of normal, a pull-rope extending from the headlight into the cab and arranged so that pulling on the rope swings the headlight against the action of its spring, and means in the cab for pulling and adjustably holding the rear end of the pull-rope against the pulling tendency of the spring.

3. In combination with a locomotive, of a swiveled headlight thereon, spring means tending to reverse the headlight, and a pull-rope extending from the headlight to the cab, a rack in the cab, a pivoted lever carrying a locking bolt adapted to engage into said rack, this lever carrying a grooved sheave or cam to which the rear end of the rope is attached, substantially as set forth.

4. In combination with a locomotive of a headlight and a support therefor, said support embodying a pair of interfitting rings or casings rotatably mounted one upon the other, a spring within the casing formed by these interfitting casings and tending to normally reverse the headlight, a pull-rope at-

tached to the outer ring or casing and extending forward to the cab, and means in the cab for pulling the rope and holding it in its adjusted positions.

5 5. In combination with a locomotive, of a headlight and support therefor, said support embodying a pair of interfitting rings or casings rotatably engaging each other, one being fastened to the locomotive and the other to
10 the bottom of the headlight and each casing being provided fore and aft with a lateral flange or lug provided with a hole, the ears or lugs carried by the upper ring lying upon the lugs carried by the lower ring, for the purpose
15 set forth, a spring within the casing formed by said interfitting rings and tending to normally reverse the headlight, and means controlled from the cab for adjusting the headlight against the action of its spring.

20 6. In combination with a locomotive, of a headlight and a pivotal support therefor, a depending drum adapted to rotate with the light, a spring inclosed in this drum and connected up so as to normally tend to reverse
25 the headlight, a pull-rope fastened to this

drum and wound around the same and extended rearwardly to the cab, and means in the cab for pulling the rope or paying it out and locking it, for the purpose set forth.

7. In combination with a locomotive, of a 30 headlight and support therefor, said support embodying a pair of rings or casings rotatably engaging each other, one being fastened to the locomotive and the other to the bottom of the headlight and each casing being 35 provided fore and aft with a lateral flange or lug, the flanges or lugs carried by the upper ring lying upon the lugs carried by the lower ring, for the purpose set forth, a spring within the casing formed by said rings and tending 40 to normally reverse the headlight, and means controlled from the cab for adjusting the headlight against the action of its spring.

In testimony whereof I hereunto affix my signature in the presence of two witnesses 45 this 28th day of July, 1906.

WILLIAM H. DONALDSON.

Witnesses:

JOHN T. WHITE,

MARGARET MORIARTY.