

(No Model.)

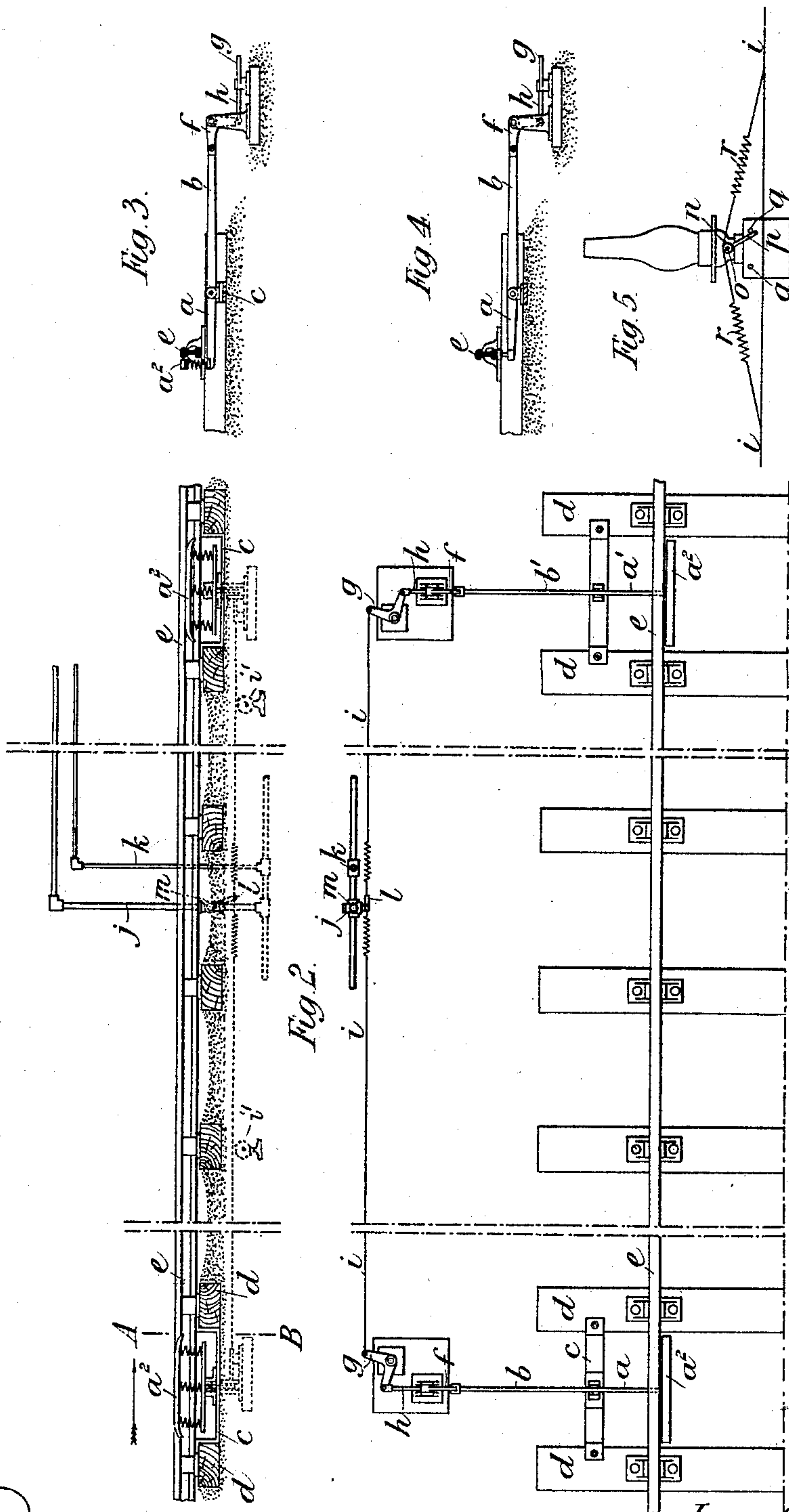
2 Sheets—Sheet 1.

J. ST. CLAIR.

DEVICE FOR LIGHTING AND EXTINGUISHING LIGHTS IN RAILWAY
CARRIAGES, STATIONS, &c.

No. 395,760.

Patented Jan. 8, 1889.



Witnesses:
Wm. H. Norton
Frank A. Mattingly

Inventor:
John St. Clair
by John F. Halsted & Son
His Attys.

(No Model.)

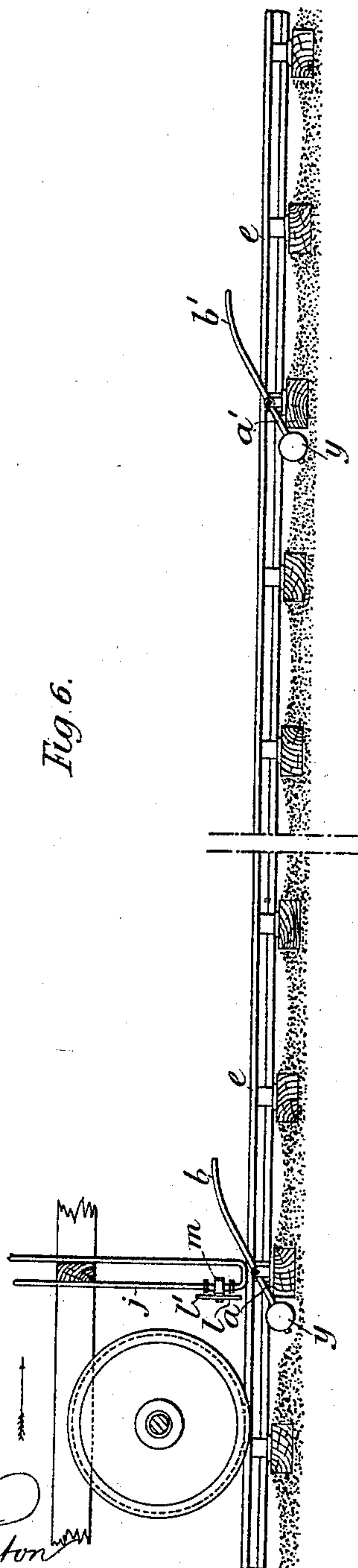
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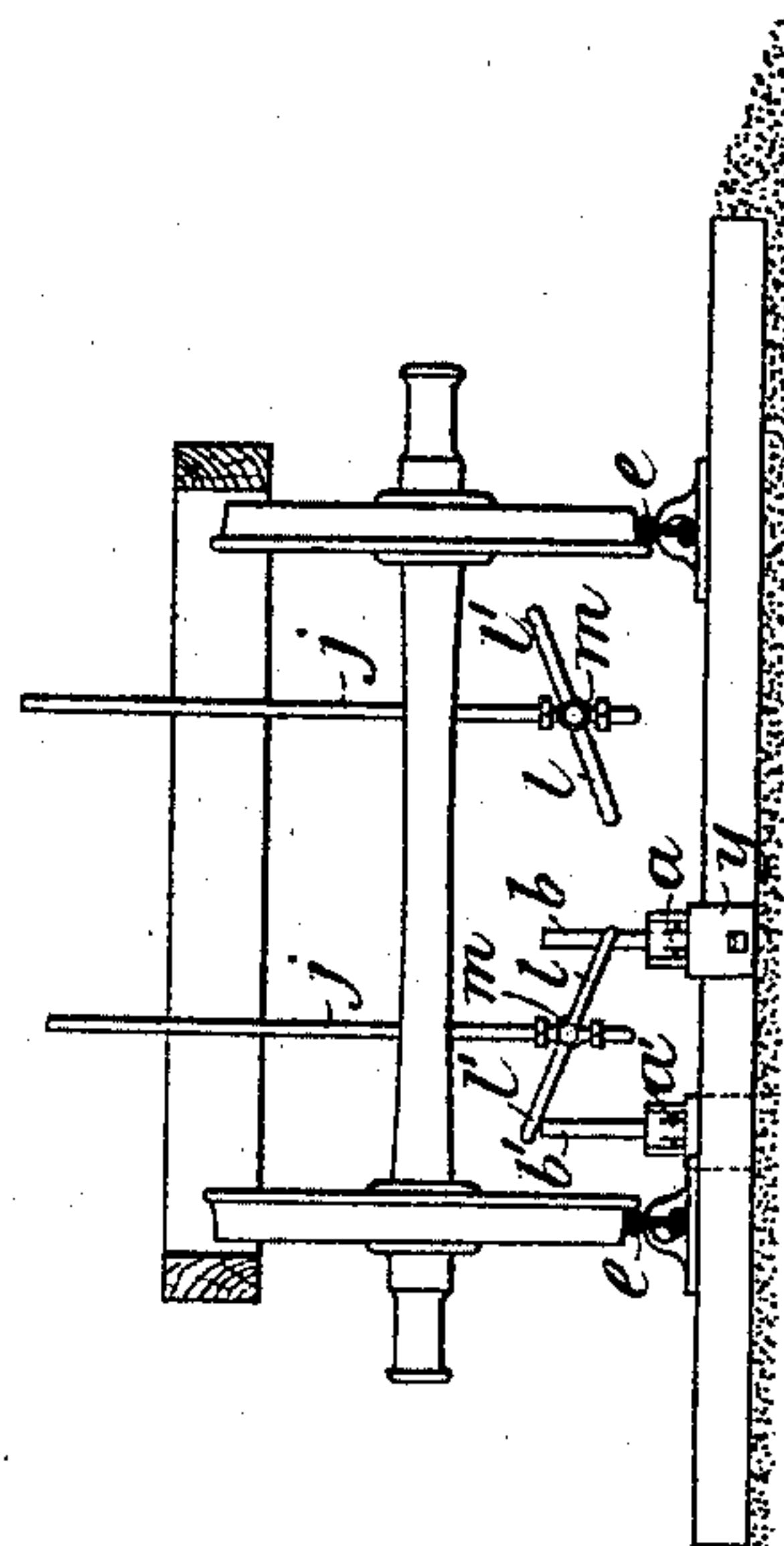
No. 395,760.

Patented Jan. 8, 1889.



Witnesses
Will Norton
Frank G. Matthews

Fig. 7.



Inventor:
John H. Blair.
by John A. Maister & Son
his Attys

UNITED STATES PATENT OFFICE.

JOHN ST. CLAIR, OF NEWTON STEWART, COUNTY OF WIGTOWN, SCOTLAND.

DEVICE FOR LIGHTING AND EXTINGUISHING LIGHTS IN RAILWAY CARRIAGES, STATIONS, &c.

SPECIFICATION forming part of Letters Patent No. 395,760, dated January 8, 1889.

Application filed March 21, 1887. Serial No. 231,714. (No model.)

To all whom it may concern:

Be it known that I, JOHN ST. CLAIR, a subject of the Queen of Great Britain, residing at Newton Stewart, in the county of Wigtown, Scotland, have invented new and useful Improvements in Devices for Lighting and Extinguishing Lights in Railway Carriages, Stations, &c., of which the following is a specification.

The invention consists in special means for using the train itself as the motive power to automatically light up its carriages, or any station, tunnel, or other place where lights are required for the reception of the train, and to automatically turn down or extinguish such lights on the train emerging from such places. For this purpose the engine itself, by means of its own weight or momentum, is made to operate suitable apparatus, which lights up the place into which it is entering, and when it has reached a suitable distance beyond that place by a similar arrangement it lowers or altogether extinguishes the lighting of the place; and in order to enable the invention to be fully understood I will proceed to describe, by reference to the accompanying drawings, several suitable arrangements for carrying it into practice.

Figure 1 represents a central longitudinal section of part of a permanent way, illustrating, by way of example, an arrangement for regulating or lighting and extinguishing lights in railway-stations, tunnels, and the like, according to my invention, where gas is employed as the lighting medium. Fig. 2 is a plan of Fig. 1, and Fig. 3 is a section on line A B of Fig. 1; Fig. 4, a means for operating the devices by the agency of the rail. Fig. 5 shows an oil-lamp whose wick may be raised and lowered by the train. Fig. 6 shows my devices for lighting and controlling the light carried by the cars or carriages. Fig. 7 is a transverse or end view of the same.

In this arrangement the stroke of the flange of one of the wheels of the engine, by coming upon a spring-bar, a^2 , bears down the shorter arm, a , of a lever, $a b$, pivoted on a bent bar, c , supported by the sleepers d , so that the lever preserves its relative position to the rail e unchanged, notwithstanding any settlement of the same. The longer arm, b , of the lever

at the side of the railway operates, by means of two bell-cranks, f and g , connected by a short rod, h , a wire or wire rope, i , which runs along (or under) the ground on pulleys i' , and on reaching the larger of two gas-pipes, j and k , which supply the station or tunnel, opens it by a lever, l , and cock m , as shown, or by a screw-down gas-valve, or otherwise, the smaller pipe, k , which supplies a permanent low light, so placed as to light the main burners, being entirely unaffected thereby. The same gas-cock, l , (or valve,) is similarly connected in the opposite direction with a similar lever, $a' b'$, placed below the rail e at a suitable distance beyond the station or tunnel, which lever $a' b'$ on being moved by the engine, as aforesaid, pulls the lever l (or valve) so as to shut the gas-cock m , and by the same motion pulls the lever $a b$ into position to be again acted on by the next train. In the same way the lever $a b$ acts on the lever $a' b'$ by their mutual and opposite connection with the gas apparatus, the same arrangement of parts moving by the same motion both the gas apparatus and the corresponding lever of the other end. Instead of the lever being operated by the flange of the engine-wheel, it may be arranged so as to be depressed by the weight of the engine inflecting the rail e , the under side of which bears on the ends a and a' of the levers $a b$ and $a' b'$ for this purpose, as illustrated in the sectional view at Fig. 4. The same motion both ways may be made to turn down or light up oil or other lamps.

Fig. 5 represents an elevation of an oil-lamp having the wires $i i$ adapted to operate its raising and lowering device. A hollow cylinder, n , is provided on the usual raising and lowering spindle, o , the wires $i i$ or bands at the ends of the same being attached to and wound around the cylinder n , which is provided with suitable means whereby it can be fixed to the spindle o when the latter is to be operated by the wires, and disconnected therefrom when required to set the wick of the lamp. p is a projection on the cylinder n , the said projection coming against stops $q q$ on the lamp-body, for the purpose of limiting the extent to which the wick shall be raised and lowered, the wires $i i$ being formed at $r r$ into spiral springs, which will allow the wires to

yield to the check produced by the stops *q q*.

Fig. 6 is a similar view to Fig. 1, but illustrating my improvements adapted for regulating or lighting and extinguishing the gas-lamps in or on railway-carriages for lighting up tunnels or supplementing the light in railway-stations or the like. Fig. 7 is a transverse section of Fig. 6. In this arrangement the levers *a b* and *a' b'* are pivoted in a suitable position near the inner side of one of the rails *e*, as shown, and the arrangement of cranks and wires is dispensed with. The levers *a b* and *a' b'* are inclined upward in the direction in which the trains are running, and come in contact, respectively, with the arms *l* and *l'* of a double lever on the gas-cock *m* of a pipe, *j*, depending from each carriage and connecting the lamp or lamps with the main gas-pipe. In this manner as the train enters the station, tunnel, or the like the gas will be turned on by the lever *a b*, and as the train leaves the said station, tunnel, or the like the gas will be lowered or turned off by the lever *a' b'*. The levers are provided with weights *y y* for bringing them back, after having operated the gas-cock of one carriage, into proper position to operate that of the next carriage. I would observe that it is advisable to use two pipes *j* (with their cocks and levers) for each carriage, as shown in Fig. 7, so as to allow of

the apparatus being operated in case the position of the carriages upon the lines should be reversed.

It will be obvious that the carriages can be lighted both internally and externally by employing a second set of gas-pipes with cocks and levers, and a second set of levers placed in such a position between or outside the rails as not to interfere with the levers *l l' l l'* of the gas-cocks *m m*, hereinbefore described, and shown in the drawings.

I claim—

1. In combination with the levers *b b'* and connections arranged to be actuated by a passing train, the pipes *j j k*, levers *l l'*, and devices connected with levers *b b'* and serving to turn the gas off, as set forth.

2. In combination with the levers *b b'* and connections arranged to be actuated by a passing train, the wires *i i*, having crank-connections, as described, with said levers, pipes *j k*, lever *l*, and cock *m*, the combination being and operating substantially as set forth.

JOHN ST. CLAIR.

Witnesses:

WM. MACKIL,
Of Wigtown, Scotland, teacher.
PETER HALLIDAY,
Of Wigtown, Scotland, watch-maker.