

F. P. BUSIEL.
LUBRICATING DEVICE.
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1,056,399.

Patented Mar. 18, 1913.

2 SHEETS—SHEET 2.

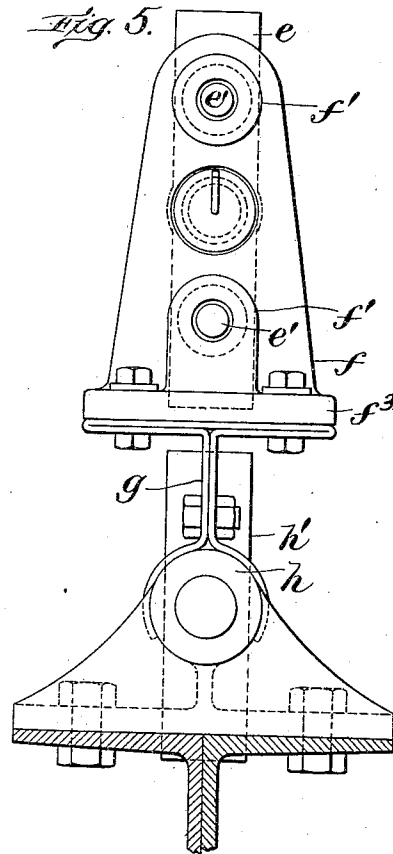
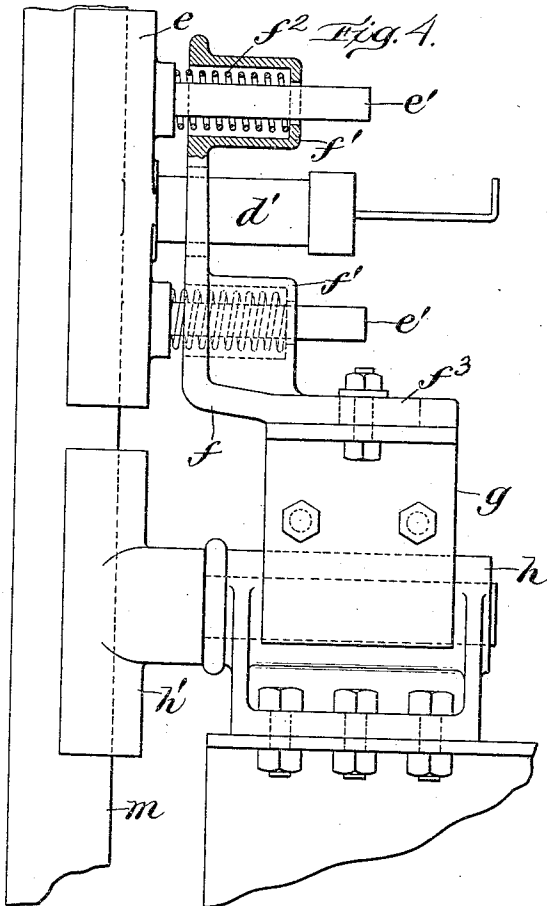
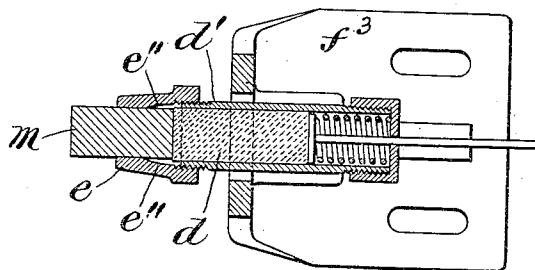


Fig. 6.



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UNITED STATES PATENT OFFICE.

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LUBRICATING DEVICE.

1,056,399.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, FRANK P. BUSIEL, citizen of the United States, and resident of Somerville, county of Middlesex, Massachusetts, have invented certain new and useful Improvements in Lubricating Devices, of which the following is a specification.

This invention relates to lubricating devices, and is particularly intended for the lubrication of guide rails for elevators, counterweights and other apparatus in which guide rails are employed.

It is the object of the invention to provide a simple and convenient device of this class which shall maintain perfect lubrication of the rail at all times without wasting the lubricant and without scoring or unevenly wearing the rail or track against which it acts.

Generally speaking, the invention comprises a carrier in the form of a shoe, which is so attached to the traveling or moving member running on the guide rail, such as an elevator car, as to accommodate itself perfectly to the swaying, tilting and lateral movement of the car, without disturbing the equal distribution of pressure and the proper application of the lubricant.

To this end the invention comprises a bracket adapted to be detachably secured to the car or other moving part, upon which is mounted a shoe having engagement with the guide rail to be lubricated, said shoe being normally pressed with a yielding pressure against the guide rail while remaining free to tip laterally or longitudinally as well as in a plane parallel to the guide rail.

In the accompanying drawings I have illustrated two simple forms of embodying my aforesaid invention, in which—

Figure 1 is a side elevation of the device attached to the counterweight of an elevator; Fig. 2 is a front elevation looking toward the guide rail; Fig. 3 is a horizontal central section on the line 3—3 of Fig. 1; and Figs. 4, 5, and 6 are similar views showing a modified construction and arrangement embodying the same principle.

According to the form of my invention embodied in Fig. 1, I provide an angle

bracket *a* whose horizontal arm is slotted to receive the fastening bolt *a'*, by which it is attached to the counterweight slide, so that it may be adjustable toward or away from the guide rail *m*. The vertical arm *a²* of the bracket *a* is provided with horizontal slots as shown at *a³*, to receive clamping screws which detachably hold the spring arm *b* to the bracket while permitting the adjustment of the spring arm laterally thereon.

The upper end of the spring arm *b* is bent to form a loop or elongated eye *b²*, through which is passed a pivot bolt *c'* carried in lugs or ears *c²* projecting from the guide shoe *c*. It will be observed that the spring arm *b* is made substantially narrower than the supporting portion of the bolt *c'*, said bolt being as shown in dotted lines much smaller than the bore of the eye *b²*, so as to permit the shoe to have a considerable play in all directions. In this way the shoe can freely accommodate itself to the guide rail in spite of the lateral movement of the counterweights or car by which the guide is supported. At the same time the parts are so proportioned and adjusted that the arm *b* normally exerts a substantial pressure, which is transmitted through the pivot bolt *c'* to the shoe to keep the interior of the shoe in close contact with the guide rail. The pivotal joint between the spring arm and the lubricating shoe *c* permits the shoe to always remain in parallelism with the rail, in spite of any tipping or tilting of the car away from the rail or toward it and thus prevents the scoring or roughening of the rail itself, which might result from such movements of the car, if the joint were a rigid one.

The lubricant is preferably in the form of a solid candle *d* of suitable lubricating material, which is placed in a tubular holder *d'* which is inserted by a screw threaded connection into the end of the aperture formed at *c³* in the lubricating shoe *c*. This aperture in the lubricating shoe at the entering end is slightly larger than the width of the rail, so that the lubricant may spread over the lateral faces of the guide rail.

The candle is preferably made slightly wider than the rail, so as to facilitate this spreading of the lubricant.

The candle d is fed forward by a plunger d^2 which is under pressure of a compressed coiled spring d^3 . The follower or plunger is provided with a guide shank d^4 terminating in a hook d^5 at its rearward end, the pin serving both as a guide to maintain the parallelism of the plunger and also to indicate how much of the candle still remains available, without the necessity of removing the screw threaded cap d^6 which covers the rear end of the two.

The form of the invention illustrated in Figs. 4, 5 and 6 shows a somewhat different mode of mounting the lubricating shoe while still securing the advantages incident to the invention. In this case the lubricating shoe e is provided with two rearwardly projecting plungers e' which pass through enlarged sockets f' formed in the bracket f . In these enlarged sockets f' are placed compressed coiled springs f^2 which serve to yieldingly press against the upper and the lower ends of the guide shoe, to keep it in parallelism with the track or guide rail m . The sockets are sufficiently large to allow substantial lateral and vertical play, so that the guide shoe is not disturbed from its parallel position by the rocking, swaying or tilting of the car in any direction. The bracket f is provided with a horizontal slotted shank f^2 , so that it may be adjustably secured to the flanged clamping members g by which it is detachably connected to the upper portion of the car. In this case the clamp g is detachably fastened to the bracket h which carries the guide shoe h' of the car. The lubricating shoe e has at its middle portion an aperture c'' similar to the aperture c^3 , and carries a lubricating tube d' in which is mounted the candle d , the plunger spring and guide having the same construction as already described.

It will be observed that in both forms of the invention, the lubricating shoe itself is mounted to have complete flexibility of movement relative to the car or traveling member by which it is carried, and yet is constantly under a spring pressure which carries its entire effective length in parallel contact with the guide which it is intended to lubricate. Moreover, the means for attaching the lubricating shoe to the car in each case, permitting complete adjustment toward and away from the rail, as well as in a lateral direction by fastening means that are entirely accessible and easy to manipulate. The lubricating material itself is fed by a very light pressure, so as to keep its forward end always in contact with the guide rail, opportunity being given for the

material to spread over the lateral faces of the rail. By this construction and arrangement it is impossible for the movement of the car or traveling member in any direction to cause the lubricating shoe to gouge, score or roughen the guide rail.

What I claim is:

1. The combination with a guide rail and its traveling member, of a hollow shoe embracing the front and side faces of the guide rail, means for supporting and yieldingly pressing said shoe against the front face of said rail while allowing the shoe to accommodate itself to the swaying and tilting movements of the traveling member to preserve the parallelism between the lubricating faces of the shoe and the faces of the guide rail, the shoe being perforated intermediate of its ends, and an automatically-feeding candle-holder mounted therein to support and press the candle through the shoe against the rail, substantially as described.

2. The combination with the guide rail and traveling member of a spring arm fastened to the traveling member, a lubricating shoe pivotally connected with said spring arm by which it is supported and pressed against said guide rail, a candle holder carried by said shoe, and means for pressing the candle therein against the guide rail with a yielding pressure independent of the pressure of the spring arm, substantially as described.

3. A lubricating attachment for elevators embracing an elongated spring arm adapted to be detachably secured to an elevator car, said arm being formed at its free end with a bearing to receive and pivotally support a portion of a lubricating shoe, said lubricating shoe being formed to engage the guide rail and being provided with an aperture to permit a lubricating candle to be pressed directly against the guide rail, a candle-holding tube mounted in opposition to said aperture, and a spring pressed plunger mounted in said tube to feed the candle through the aperture in the shoe, substantially as described.

4. A lubricating attachment for elevators embracing in its construction a lubricating shoe formed to engage the guide rail of an elevator, said shoe being provided intermediate of its ends with a transverse pivot bolt, a spring arm formed to pivotally receive and support said pivot bolt and to press the lubricating shoe against the guide rail with a yielding pressure, said spring arm being adjustable forward and back and also laterally in relation to the guide rail, a lubricating feed tube carried by said shoe and adapted to receive and feed a lubricating candle against the guide rail, substantially as described.

5 5. An attachment for lubricating guide rails, of elevators embracing in its construction a guide shoe longitudinally grooved to fit over a guide rail, means for holding a lubricating candle and progressively feeding it through the shoe against the guide rail, a spring arm detachably and adjustably secured to the elevator car, and having at its free end a pivotal joint with the guide shoe, said pivotal joint being ar- 10 ranged to permit both pivotal and lateral movement, substantially as described.

In witness whereof, I have subscribed the above specification.

FRANK P. BUSIEL.

In the presence of—

GEORGE A. ROCKWELL,
GEO. N. GODDARD.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."
