(No Model.)

M. McNAMARA.

ELEVATOR SLIPPER.

No. 588,651. Patented Aug. 24, 1897.

FIG. 1.

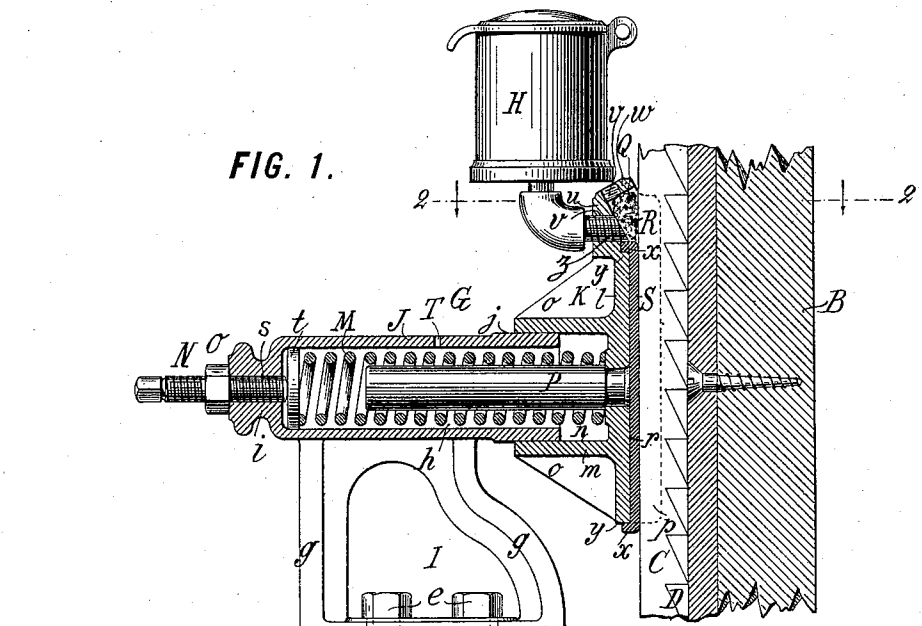
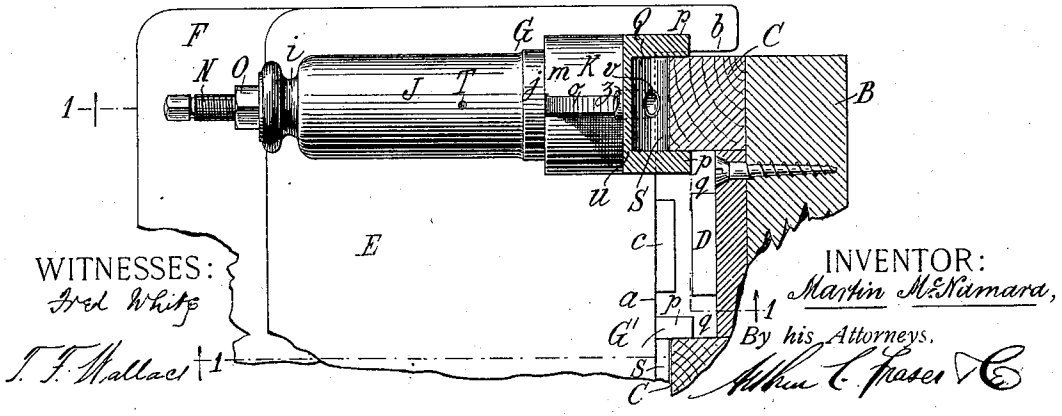


FIG. 2.



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UNITED STATES PATENT OFFICE.

MARTIN MCNAMARA, OF NEW YORK, N. Y., ASSIGNOR OF ONE-HALF TO EDWARD KELLY, OF SAME PLACE.

ELEVATOR-SLIPPER.

SPECIFICATION forming part of Letters Patent No. 588,651, dated August 24, 1897.

Application filed January 23, 1897. Serial No. 620,439. (No model.)

To all whom it may concern:

Be it known that I, MARTIN MCNAMARA, a citizen of the United States, residing in the city, county, and State of New York, have invented certain new and useful Improvements in Elevator-Slippers, of which the following is a specification.

This invention relates to slippers or steadiers for preventing rattling or vibration of elevator-cars and the like during their movements in an elevator-well.

The invention provides an automatic spring elevator-slipper, adapted for attachment to an elevator for engaging the guide-ways of the well and provides certain structural features of improvement, all of which will be hereinafter fully set forth with reference to the accompanying drawings, in which—

Figure 1 is a fragmentary vertical section of an elevator-well and the top and bottom beams of an elevator-car, showing my improved slipper as adapted for the top and bottom of the car, the slippers being shown partly in elevation and partly in axial section; and Fig. 2 is a fragmentary cross-section of the well, showing the upper slipper in plan and partly in section. Fig. 1 is cut approximately on the line 1 1 of Fig. 2, and Fig. 2 on the line 2 2 of Fig. 1.

Referring to the drawings, let A indicate an elevator-well; B, the vertical guiding-beams thereof; C, the guiding-tracks on these beams; D, the safety-rack between these tracks; E, the top beam of an elevator-car; F, the bottom beam of the car; G, the top slipper; G′, the bottom slipper, and H a lubricator.

In elevator-wells two or more vertical guide-beams B are usually placed at the corners or sides of the well for carrying the customary rack D and the guiding-track C, the latter being generally placed on each side of the rack. The top beam E and bottom beam F or other part of the car is generally notched or forked at *a* to fit over the track C, having fingers *b* at the outer sides of these tracks which loosely fit the latter for affording a general guidance for the car. One of these parts of the elevator usually carries the safety-catch *c* opposite to and for engaging the safety-rack D in case of a too-rapid descent. With such construction it is found desirable to suppress any rattling or vibration incident to the necessarily loose fit between the car and the guides. I attain this object by means of my improved slipper, which is preferably employed for engaging the guiding-tracks both above and below the car, and is slightly differentiated in construction to adapt it for the position at which it is to be employed.

Referring to the drawings I will now describe in detail the preferred form of my improved slipper as adapted for use at the top of the car, as shown in the upper part of Fig. 1 and in Fig. 2. In this construction the slipper comprises a hollow frame or bracket I, having a bottom or fastening plate *d*, bearing against the top beam or plate E of the elevator and adjustably secured thereto by bolts *e*, traversing an elongated slot *f* in the plate, from the ends of which plate legs *g* rise to a suitable distance, which legs carry on their outer ends a tubular arm J, having a cylindrical socket *h* in its interior opening at its outer end toward the guide B and closed at its inner end by a wall *i*. Externally the arm J has a smooth and preferably cylindrical sliding surface or head *j* at its outer end, which head receives and carries the shoe K of the slipper. This shoe consists of a vertical plate *l*, having an integral inwardly-extending flange *m*, having a smooth internal socket *n* of like size and dimensions to the head *j* of the bracket and fitting over and sliding on this head, so that the shoe is movably carried from the bracket by this engagement. The outer end of the head *j* and the inner end of the flange *m* are sufficiently extended to overlap in their engagement to an extent suitable for the proper support of the shoe from the bracket. Ribs *o* between the plate *l* and flange *m* afford sufficient reinforce to prevent fracture of the shoe. The outer leg *g* of the bracket I is curved inwardly as it approaches the arm J to provide room for the inward movement of the shoe on the arm.

The shoe K is suitably adapted to engage the track C, preferably having a vertically grooved or recessed outer face receiving the track, the latter being embraced at both sides

by projecting wings or flanges p, extending outwardly from the sides of the plate l. The flange p at the inner side of the track may project into the recess q at the side of the rack D. The flanges p prevent any lateral vibration of the car, while the surface r, engaging the front face of the track, prevents vibration of the car toward the latter.

To afford a yielding resistance to the vibrations of the car toward the track and to compensate for imperfections in the construction of the latter and give a yielding instead of a rigid fit for the shoe against the track, I provide a spring or other suitable elastic provision M between the bracket and shoe, preferably inclosing this spring within the confined chamber formed by the sockets h and n of these parts, so that the combined depth of these sockets, less the extent of their overlap, can be used, and a relatively long spring with its corresponding advantage of great elasticity can be employed. To adjust the tension of the spring, I prefer to tap a screw-threaded hole s in the wall i of the bracket, into which hole is screwed an adjusting-screw N, which may be locked by a set-nut O, which screw acts against the spring through a sliding disk t.

For additional strength and guidance and to facilitate assembling of parts I prefer to provide a pin P within the spring M, which pin is preferably riveted to the shoe K through a hole in the plate l thereof and extends well toward the inner end of the socket h in the bracket, substantially fitting the interior of the spring M. This pin prevents displacement of the spring and limits its adjustment, as well as serving as a positive stop to inward movement of the shoe when the plate t is adjusted outward to a sufficient distance.

For lubrication between the shoe and track I prefer to provide the shoe with an oil well or pocket Q, which is preferably formed as a recess in the upper part of its outer face, closed at rear by a wall u, which inclines outwardly, and at top by an inclined wall w, both walls having preferably screw-threaded holes v passing through them, by means of which a lubricator or a tallow-cup H can be connected for supplying lubrication to the pocket. The pocket is preferably filled with waste R.

To provide a suitable bearing-surface and to provide for its renewal when worn, I prefer to employ a separate wearing-plate S for the shoe, which may be of any suitable material and construction. That shown is provided with inwardly-extending flanges x at top and bottom, which flanges embrace the shoulders y in the outer face of the wall l. The end of the pipe z leading to the pocket Q may be extended above the upper flange x to assist in retaining the wearing-plate in place.

An oil and vent hole T may be provided in the arm J for lubricating the parts. Lubrication supplied here will be retained within the chamber formed by the two cup-shaped sockets, so that there will be slight leakage, if any at all.

The lower slipper G′ is substantially identical with the upper slipper and bears the same letters of reference for its several parts, with the exception of those parts materially differing in construction, which are the shoe K′, which is here extended inwardly to meet the bracket I, which it is generally necessary to locate farther from the track C below than above the car. The shoe here has no oil-pocket and terminates with its top and bottom flanges y, which are of like separation to those of the shoe K, so that a plate S may be used for either slipper. The pin P is here surrounded by a collar U and an extension-collar V, in order that the same length of spring M may be used. The socket n' is here only dressed at its inner end.

I prefer to dispose the upper slipper to embrace one track C and the lower slipper to embrace the other track C of a vertical guide B, thus equalizing the wear. This is shown in Fig. 2. It is not essential that this should be the case.

In operation the slippers will steady the car, preventing any lateral vibration transversely of the axis of the arm J and elastically resisting vibration longitudinally of this arm. The tension of the spring will be just sufficient to suitably restrain tendency to the latter vibration. Thus the shoe will readily yield to irregularities in construction, while not affording too great a frictional resistance to the motion of the car through the well. When the shoe is slightly rotative, as shown, it can oscillate around the axis of the arm J to the slight extent necessary to compensate for imperfections in the alinement of the sides of the track, so that no binding need occur from this cause.

What I claim is—

1. In elevator-slippers and the like, the combination with a shoe for preventing vibration of a car, having a bearing-face for directly engaging and sliding on the guide-track of an elevator-well, and movable toward and from and immovable laterally of said track, of a bracket adjustable toward and from said track, movably carrying said shoe, means pressing said shoe toward said track, and an adjustable connection for fastening said bracket to an elevator-car.

2. In elevator-slippers and the like, the combination with a shoe for preventing vibration of a car, having a bearing-face for directly engaging and sliding on the track of an elevator-well, and movable in direction toward and from the track and immovable laterally of said direction, of a bracket adapted to be fixed to an elevator-car, having a lateral portion at right angles to such track, said lateral portion movably carrying said shoe, and a spring between said bracket and shoe holding the latter toward said track.

3. The improved elevator-slipper, compris-

ing a bracket having a tubular arm, and adapted to be connected to an elevator-car, in combination with a shoe for retarding vibration of the car, having a hard bearing-face for engaging and sliding on the track of an elevator-well, and carried by said arm and sliding axially thereof toward and from the track, and immovable laterally of the axis of said arm, and a spring within said arm for forcing said shoe outwardly thereof toward such track.

4. For elevator-slippers, a bracket adapted to be fastened to an elevator-car and having a cylindrical arm, in combination with a shoe for retarding vibration of the car, having a hard surface for bearing against the guiding-track of an elevator-well, said shoe embracing said arm, sliding thereon toward and from the track, immovable laterally of the axis of the arm and having an oscillatory movement around such axis, and a spring reacting against said shoe and bracket, resisting movement of the former away from the track, substantially as and for the purpose set forth.

5. The improved elevator-slipper, comprising a bracket I, adapted to be fixed to a car, and having a tubular arm J, having an outer head *j* and an inner socket *h*, in combination with a shoe K for closely fitting and engaging the track of an elevator-well and retarding vibration of a car, having a socket *n* fitting over and sliding on said head *j*, and a spring M inclosed within said sockets and reacting against said shoe and bracket for forcing the shoe toward the track, said shoe held by said bracket rigidly against movement laterally of said arm.

6. For elevator-slippers, a bracket I, adapted to be fixed to a car, and having a hollow arm J, in combination with a shoe K having a surface for directly engaging the track of an elevator-well, movably carried by said bracket, a spring M in said hollow arm and reacting against said shoe, and means for adjusting said spring, said shoe held by said bracket rigidly against movement laterally of said arm.

7. For elevator-slippers, a bracket I, adapted to be carried by a car, in combination with a shoe K for preventing vibration of the car, having a surface for forcibly engaging an elevator-track, carried by and sliding on said bracket, having a pin P projecting into the bracket, and a spring M between the shoe and bracket surrounding said pin and forcing the shoe outwardly from the bracket, said shoe held by said bracket rigidly against movement laterally of said arm.

8. For elevator-slippers and the like, a shoe K for preventing vibration of a car, closely fitting and sliding on the guiding-track of an elevator-well, said shoe movable toward and from the track in one direction and immovable angularly of such direction, having a lubricating-pocket Q in its upper part, means for movably carrying said shoe on an elevator-car, and means resisting movement of said shoe.

9. The improved elevator-slipper comprising the bracket I having plate *d*, legs *g*, slot *f*, arm J and socket *h*, in combination with a shoe K carried by said arm, having shoulders *y* and flanges *p*, a spring between said shoe and bracket, and a separable wearing-plate S carried by said shoe between said flanges and having flanges *x* engaging said shoulders.

10. The combination for an elevator-steadier, of a shoe for preventing vibration of an elevator-car, having a bearing-face for directly and forcibly engaging and sliding along the guiding-track of an elevator-well, movable in one direction toward and from such track and immovable laterally of such direction, a member movably carrying said shoe, means for fixing said member to an elevator-car, and a spring resisting movement of said shoe relatively to said member away from such track.

11. The combination for an elevator-steadier, of a shoe for preventing vibration of an elevator-car, having a bearing-face for directly and forcibly engaging and sliding along the guiding-track of an elevator-well, a member carrying said shoe, means for fixing said member to an elevator-car, a connection between said shoe and member permitting movement of said shoe in direction toward and from such track and preventing its movement laterally of such direction, and a spring reacting against said shoe and resisting its movement away from such track.

12. The combination for an elevator-steadier, of a shoe for preventing vibration of an elevator-car, having a bearing-face for directly and forcibly embracing, engaging and sliding along the guiding-track of an elevator-well, a member carrying said shoe, and holding it in engagement with the track, means for fixing said member to an elevator-car, and a connection between said shoe and member permitting oscillatory movement of said shoe on an axis perpendicular to the direction of said track.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

MARTIN McNAMARA.

Witnesses:
GEORGE H. FRASER,
THOMAS I. WALLACE.