

C. R. OTIS.
Guides for Elevators.

No. 134.698.

Patented Jan. 7, 1873.

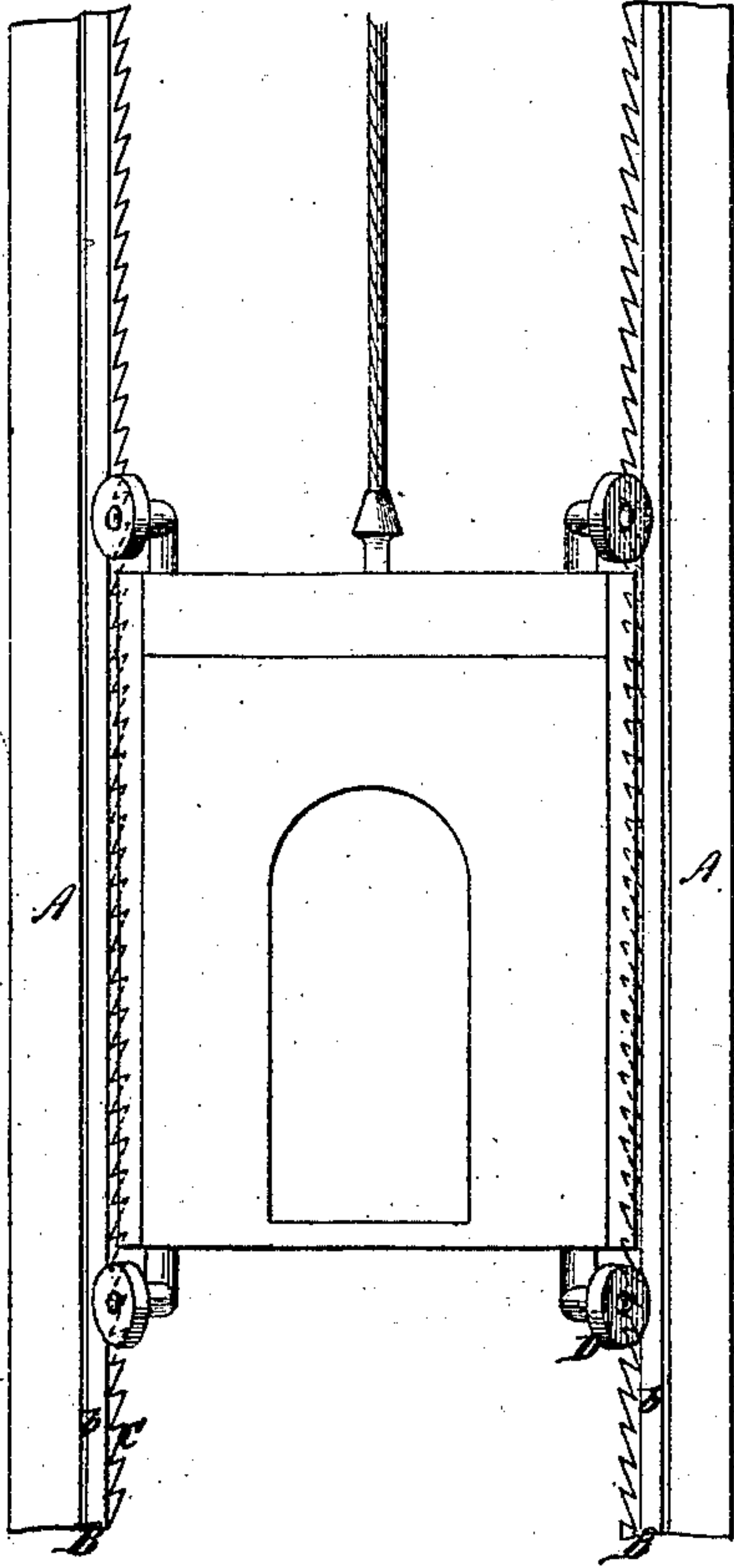


Fig: 1

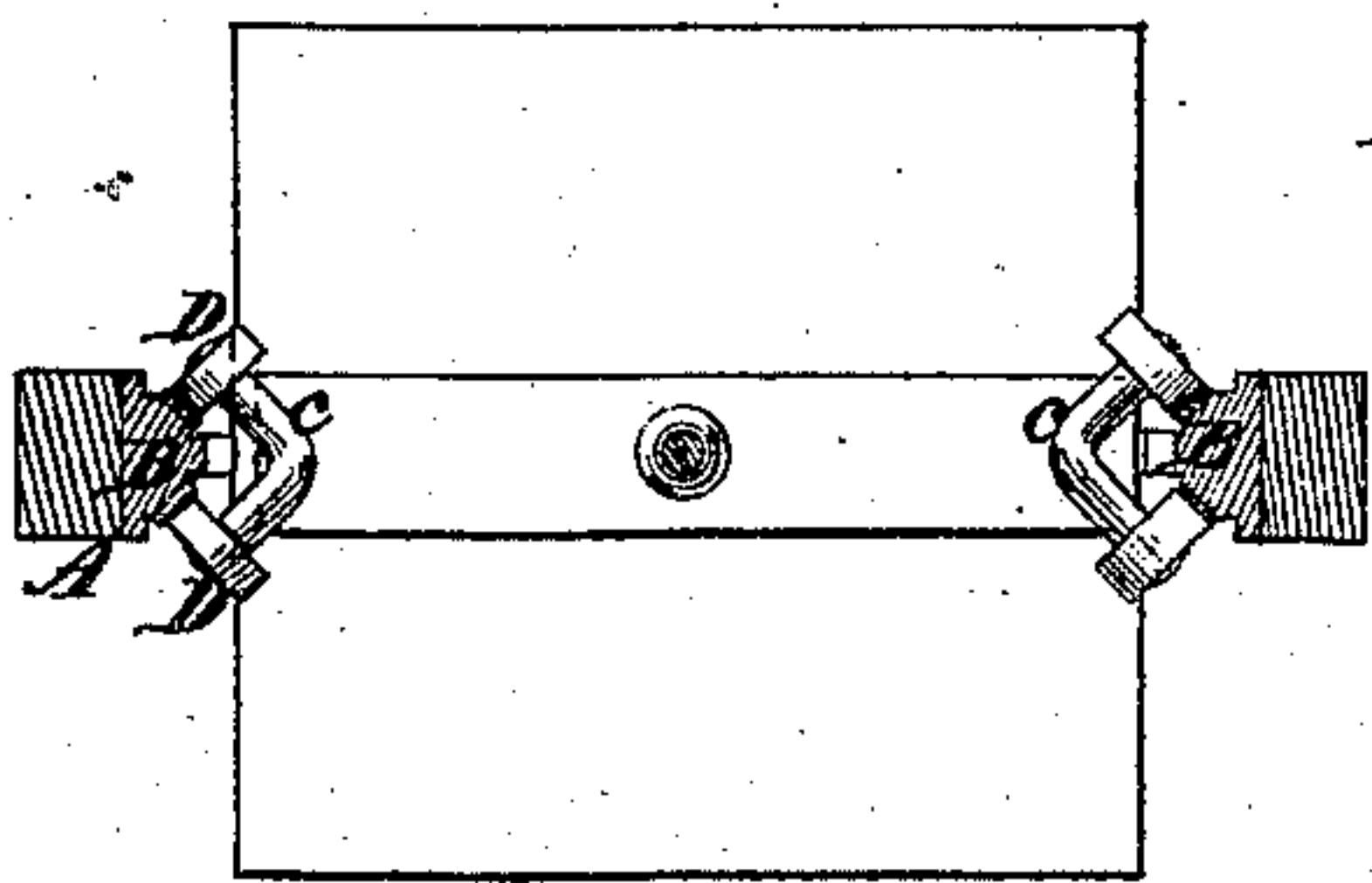


Fig: 2

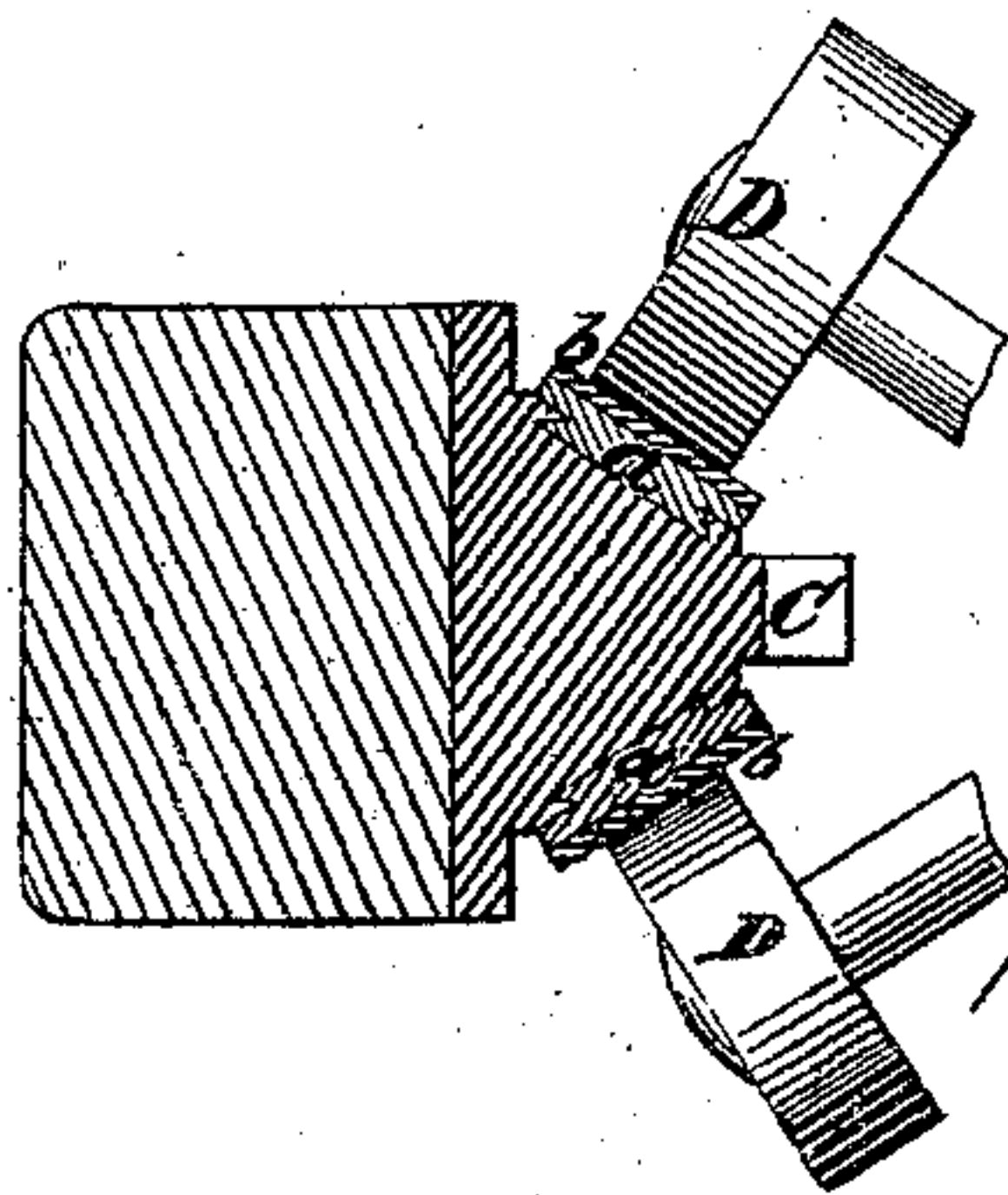


Fig: 3

Witnesses:
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UNITED STATES PATENT OFFICE.

CHARLES R. OTIS, OF YONKERS, NEW YORK.

IMPROVEMENT IN GUIDES FOR ELEVATORS.

Specification forming part of Letters Patent No. 134,698, dated January 7, 1873.

To all whom it may concern:

Be it known that I, CHARLES R. OTIS, of Yonkers, in the county of Westchester and State of New York, have invented a new and useful Improvement in Guides for Elevators; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing making a portion of this specification, in which—

Figure 1 is a side view of an apparatus constructed according to my invention; Fig. 2 is an inverted plan view of the same; and Fig. 3 is a horizontal sectional view, on an enlarged scale, of one portion of the same.

Similar letters of reference indicate corresponding parts in all the figures.

This invention is designed to facilitate the noiseless operation of the vertically-moving car in that class of elevators ordinarily used in hotels, warehouses, &c., and to insure much greater durability and more nearly perfect operation than has hitherto been found practicable with means hitherto devised for the purpose. It consists in the combination of fixed guides, having soft or elastic surfaces, with metal or other guide rollers or slides carried by the car, whereby the desired objects are effectually secured.

To enable others to understand the construction and operation of my invention, I will proceed to describe it with reference to the drawing.

A A are the usual uprights, arranged in appropriate relation to the car, and extending from top to bottom of the hatchway at opposite sides thereof, and each having fixed thereto a guide-rail, B, with its two lateral surfaces at the usual or any preferred angle to each other, and with the ratchet C, between the outer edges of the same. In each of the lateral surfaces is formed a longitudinal dovetail groove, into which is dovetailed a strip, *a*, of wood, to the outer side of which is glued, cemented, or otherwise secured, a strip, *b*, of leather, the same constituting the outer or guide surface of that side or portion of the rail. Any material giving a like soft or elastic surface may be applied instead of the leather. D D are the guide-rollers, which I generally make of metal, but which may be

of other material. These are arranged at top and bottom of the car, in pairs, each pair above and below working astride of one of the rails in such wise that one of the guide-rollers shall traverse one of the guide-surfaces just described, while the other roller of such pair traverses the other of said surfaces. The attachment of these rollers to the car may be by means of the short axles *c*, applied as indicated in Figs. 2 and 3, or in any other usual or suitable way. The car is raised and lowered by the hoisting-rope D, in the ordinary manner.

The guide-rollers, working, in the vertical movement of the car, upon the soft or elastic surfaces provided upon the guide-rails, will be practically noiseless in their operation, any inequalities in the relative positions of the rollers and surfaces being nullified or compensated for by the yielding nature of the leather. Furthermore, as in the entire descent or ascent, as the case may be, of the car, each guide-roller comes in contact but once with any given portion of the guide-surface on which it runs, the maximum of durability is obtained; whereas were the rollers made with elastic circumferential surfaces working against hard or unyielding guide-surfaces, the revolution of the rollers would bring every part of the elastic surface several times in contact with the hard or unyielding surface during each vertical movement of the car, and consequently the integrity of the elastic surfaces would be more quickly destroyed.

The leather or other substance *b* may be secured directly to the iron guides or ways without the intervention of the wooden strips *a*; or it may be placed on guide-posts made of wood, iron, or other material, and the rollers or slides attached to the car may be brought to bear directly upon the soft guiding-surfaces so placed without the use of a special rail secured to the guide-posts proper. Furthermore, any number of uprights having the leather or other soft or elastic facing may be used, and the same be differently arranged in the hoistway for correspondingly-disposed rollers or slides carried by the car to work against, and such uprights or guides be altogether independent of the posts which carry the safety racks or ratchets; or the soft or elastic guide-surfaces,

instead of being applied to uprights or guide-posts, may be applied to strips otherwise arranged, or to the walled-in sides of the hoist-way.

I do not claim the use of guide-rollers, either of hard or soft material, attached to the car or platform of an elevator.

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

The combination, with the car and guides

of an elevator, of guide-surfaces of leather or other soft or elastic material, and guide-rollers or slides operating in connection therewith, substantially as herein set forth, for the purpose specified.

CHAS. R. OTIS.

Witnesses:

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