

C. DEVOS.
ELEVATOR.

APPLICATION FILED SEPT. 6, 1907.

925,462.

Patented June 22, 1909.

2 SHEETS—SHEET 1.

Fig. 1.

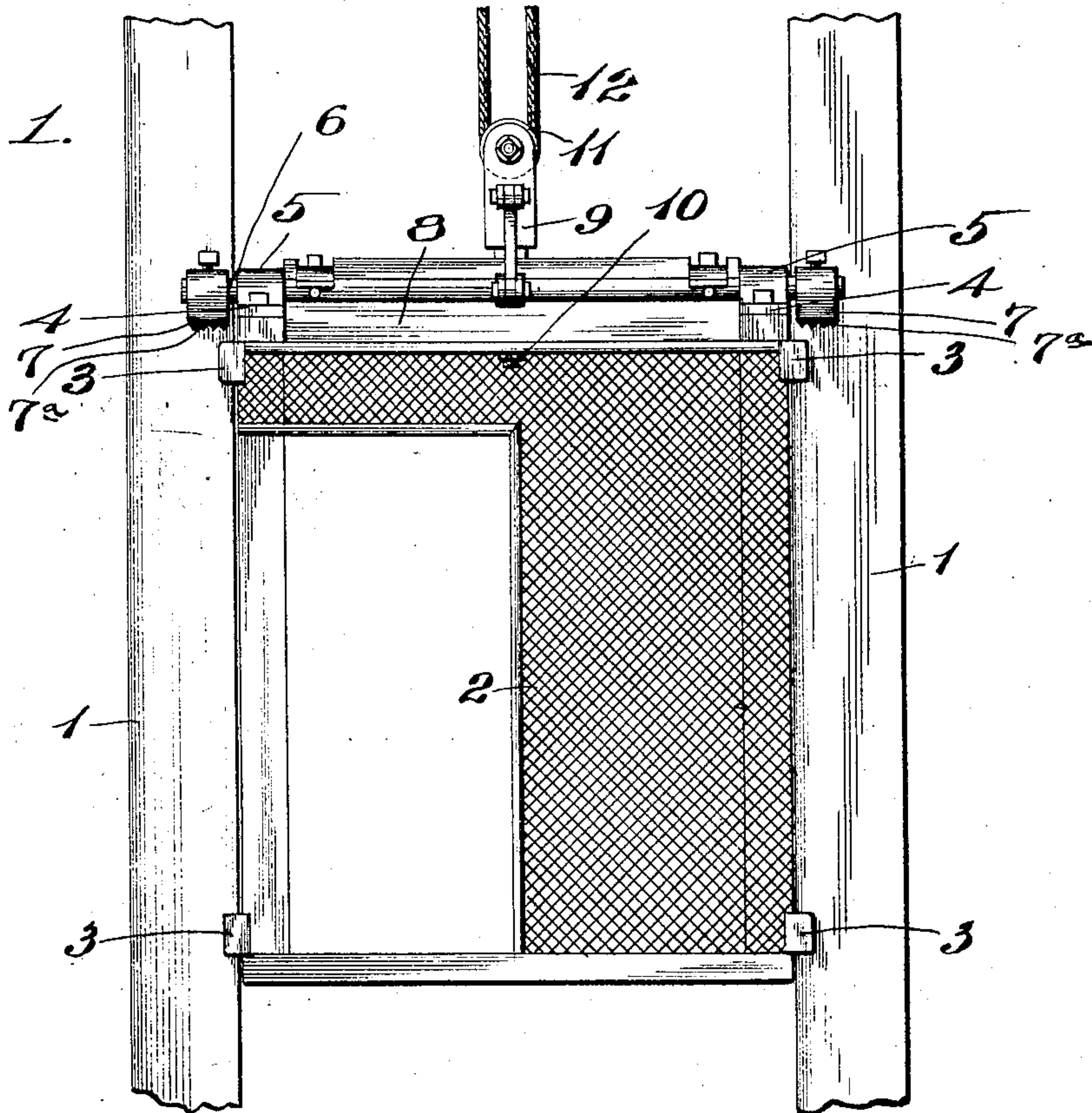
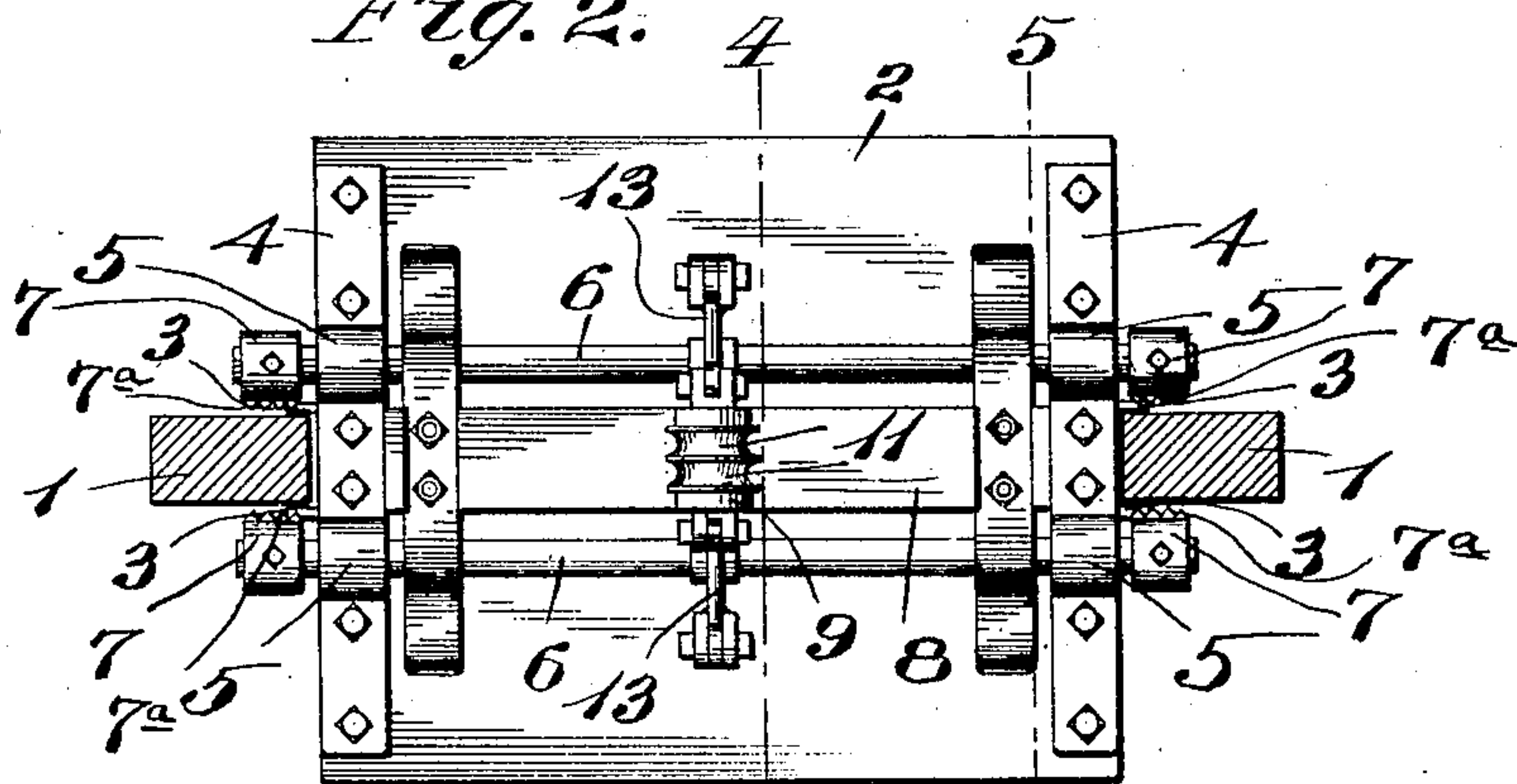


Fig. 2.



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2 SHEETS—SHEET 2.

Fig. 3.

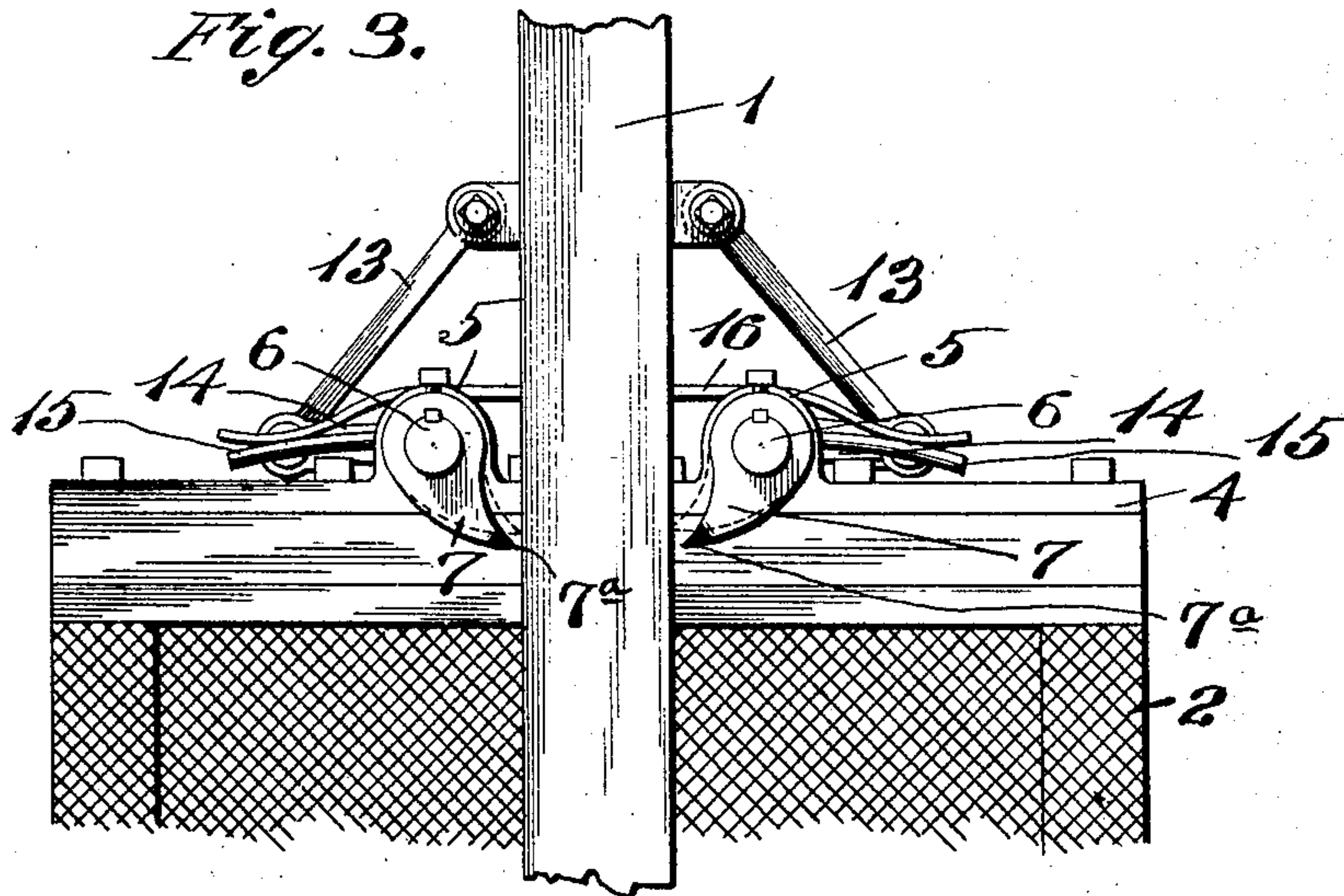


Fig. 4.

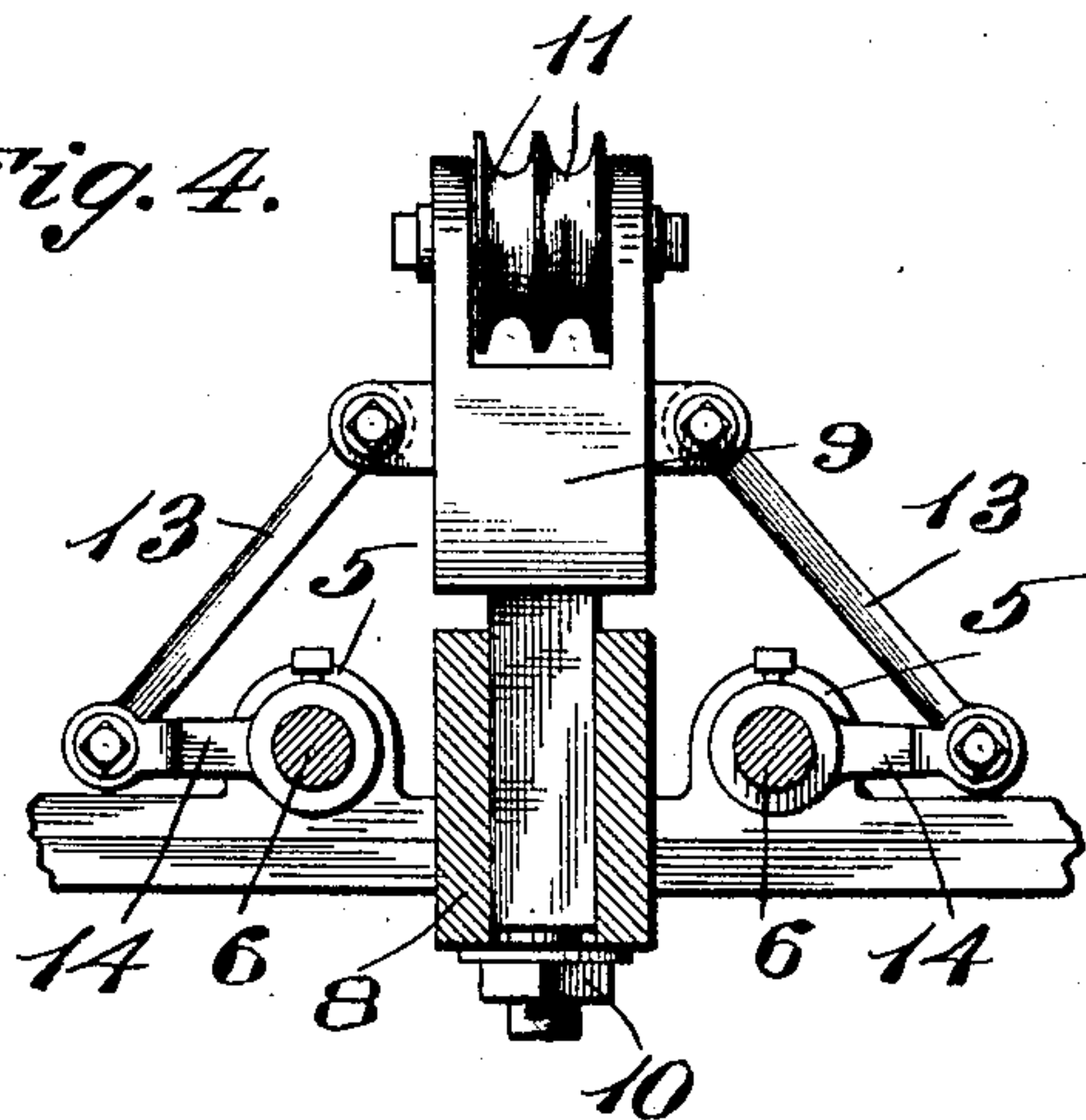
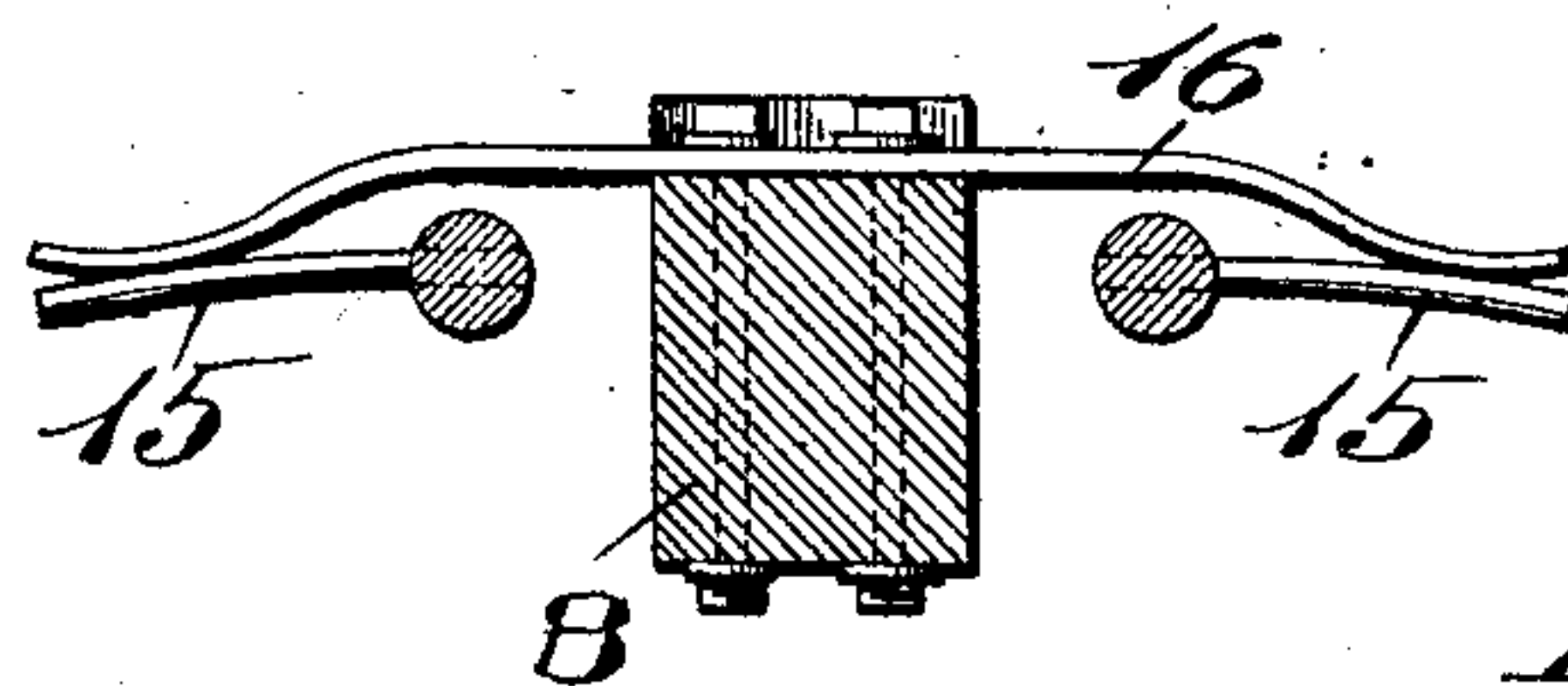


Fig. 5.



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UNITED STATES PATENT OFFICE.

CHARLES DEVOS, OF EAST ST. LOUIS, ILLINOIS.

ELEVATOR.

No. 925,462.

Specification of Letters Patent.

Patented June 22, 1909.

Application filed September 6, 1907. Serial No. 391,706.

To all whom it may concern:

Be it known that I, CHARLES DEVOS, a citizen of the United States, and resident of East St. Louis, Illinois, have invented certain new and useful Improvements in Elevators, of which the following is a specification containing a full, clear, and exact description, reference being had to the accompanying drawings, forming a part thereof.

My invention relates generally to improvements in elevators, and more particularly to a safety device for elevators, which device is automatically thrown into action whenever the hoisting cables of the elevator break, thereby instantly stopping the elevator cage and preventing accidents due to the dropping of a cage to the bottom of the shaft.

To the above purposes, my invention consists in certain novel features of construction and arrangement of parts, which will be hereinafter more fully set forth, pointed out in the claim, and illustrated in the accompanying drawings, in which:—

Figure 1 is a front elevation of an elevator cage equipped with my improved safety device; Fig. 2 is a plan view of an elevator cage constructed in accordance with my invention; Fig. 3 is a side elevation of the upper portion of the cage, and showing the gripping devices of the safety device; Fig. 4 is an enlarged transverse section taken on the line 4—4 of Fig. 2; Fig. 5 is an enlarged transverse section taken on the line 5—5 of Fig. 2.

Referring by numerals to the accompanying drawings:—1 designates the upright timbers or guides which are arranged on opposite sides of the shaft or hatchway, which guides are preferably constructed of wood; and arranged for operation between said guides is the elevator cage 2, provided on its sides with ears 3, which bear on the side faces of the guides 1 while the elevator is in operation.

Fixed on top of the cage, at the sides thereof, are plates 4, in which are formed the aligned pairs of journal bearings 5, and arranged in said bearings are the parallel rock shafts 6, the ends of which project beyond the sides of the elevator cage 2, adjacent the guides 1, and fixed on said projecting ends by means of set screws and projecting downwardly therefrom are wedge shaped adjustable and removable gripping members 7, the lower ends of which are pointed and provided with teeth 7^a.

Fixed to the top of the cage 2 and ar-

ranged transversely thereon, between the plates 4, is a timber 8; and arranged for vertical movement through the opening in the center of said timber is the lower portion of a vertically disposed bar 9, on the lower end of which is fixed a nut 10, and the upper end of said bar being provided with a pair of pulleys 11, around which pass the hoisting cables 12. Pivotally connected to the opposite sides of the upper portion of this bar 9 are the upper ends of links 13, the lower ends of which are pivotally connected to the outer ends of arms 14, the inner ends of which are rigidly fixed in any suitable manner to the central portions of the rock shafts 6.

Fixed in each shaft, adjacent the plates 4, are the outwardly projecting arms 15, and fixed on top of the timber 8 are leaf springs 16, the free outer ends of which are bent downward and bear immediately upon the outer ends of the arms 15.

While the elevator is in use, the bar 9 is maintained at its upper limit of movement relative the timber 8 by reason of the weight of the cage suspended from the cables 12 which pass around the pulleys 11, and by reason of the connecting links and arms 13 and 14, the rock shafts 6 are held in such positions as that the lower ends of the gripping members are held away from the side faces of the guides 1; and, while so held, the arms 15 bear against the under side of the springs 16.

Should the hoisting cables 12 break, the upper pull on the bar 9 is relieved, and the gravity thereof, together with the pressure of the ends of the springs 16 against the arms 15 causes said bar 9 to move downward; and by reason of the connecting links 13 and arms 14, the shafts 6 are rotated in such a manner as to cause the pointed lower ends of the gripping members 7 to engage the opposite side faces of the upright guides 1; and, as soon as this action takes place, the cage is supported and held against further downward movement.

A safety attachment for elevators constructed in accordance with the foregoing description is simple, inexpensive, comprises a minimum number of parts, and can be easily applied to all forms of elevators or hoists utilizing cables, and the device is instantly and automatically thrown into operation wherever the hoisting cable is broken.

I claim—

The combination with a pair of vertically

disposed guides and an elevator cage arranged for operation between said guides, of a timber transversely arranged on top of the elevator cage, bearings fixed on top of the cage on opposite sides of the timber, a pair of rock shafts mounted in said bearings, adjustable gripping members mounted on the ends of the shafts adjacent the side faces of the guides, which gripping members are curved and wedge shaped and removable from the rock shafts, means for securing said gripping members in the desired adjustment on said shafts, a plurality of outwardly projecting arms carried by each shaft between the bearings, flat springs fixed to the timber and

bearing on the outer ends of said arms from above, a block arranged for vertical movement through the center of the transverse timber and to which block the elevator cables are connected, links pivotally connected to the block, and arms fixed to the shafts, the outer ends of which arms are pivotally connected to the lower ends of the links.

In testimony whereof, I have signed my name to this specification, in presence of two subscribing witnesses.

CHARLES DEVOS.

Witnesses:

M. P. SMITH,
E. L. WALLACE.