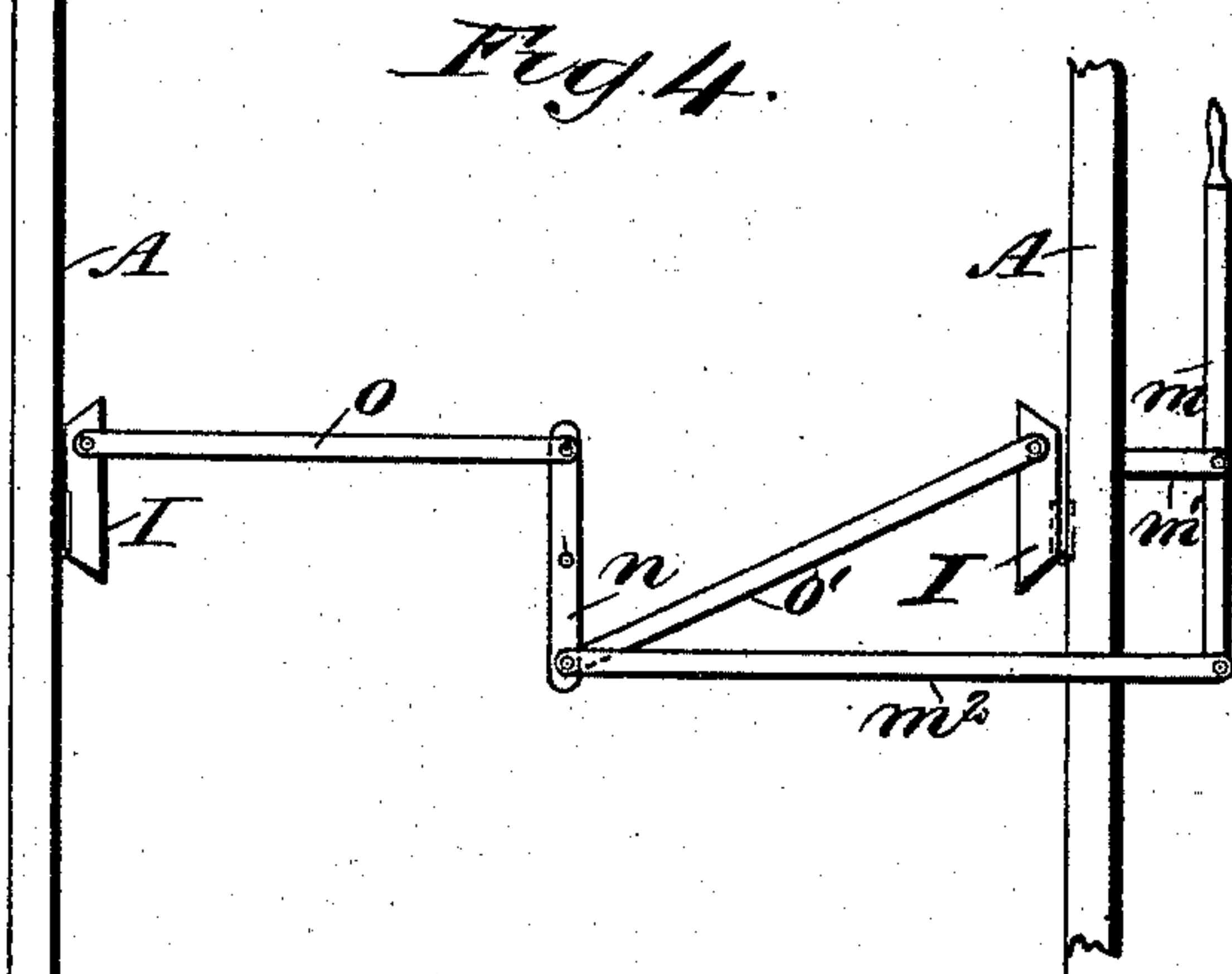
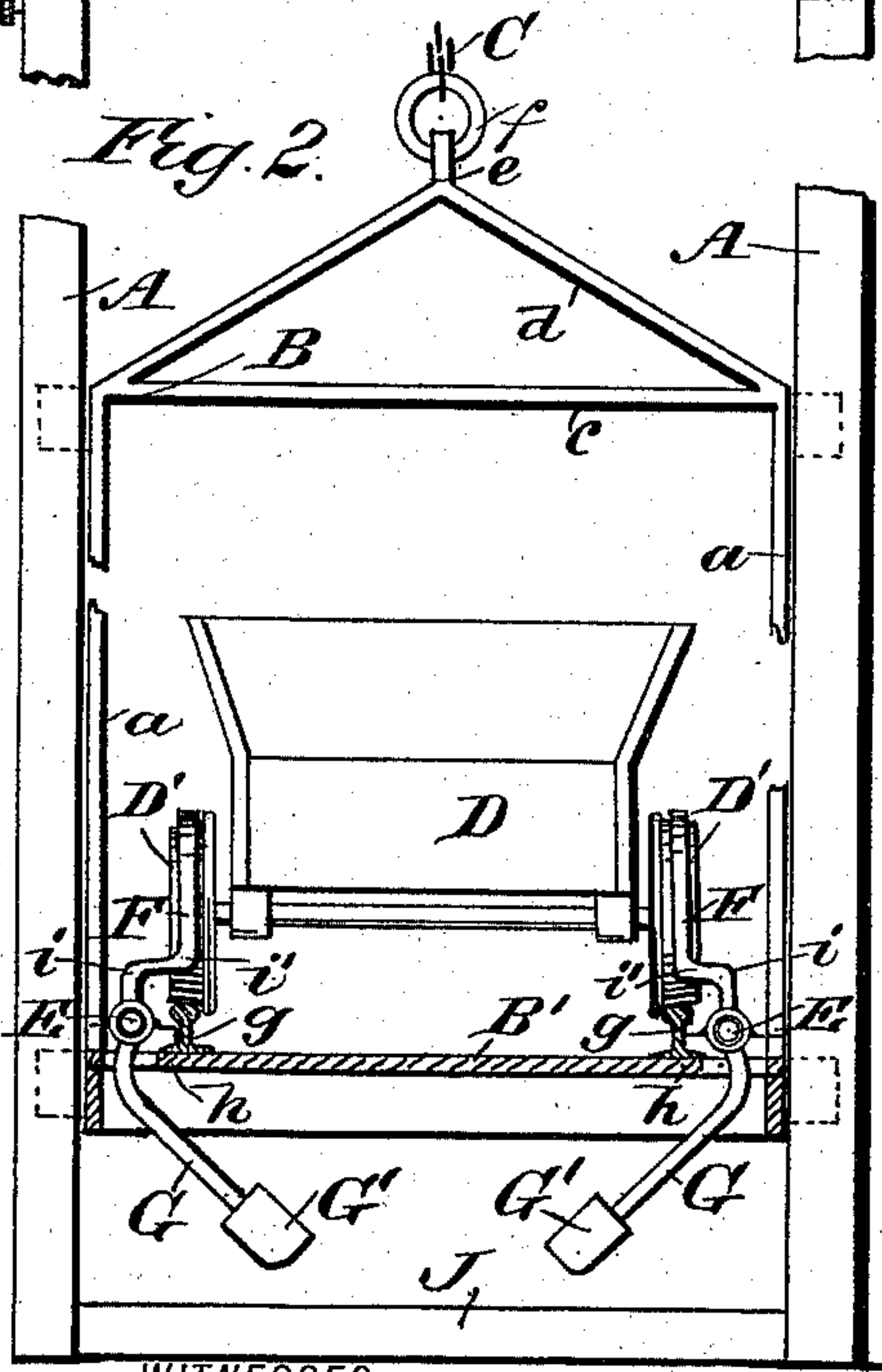
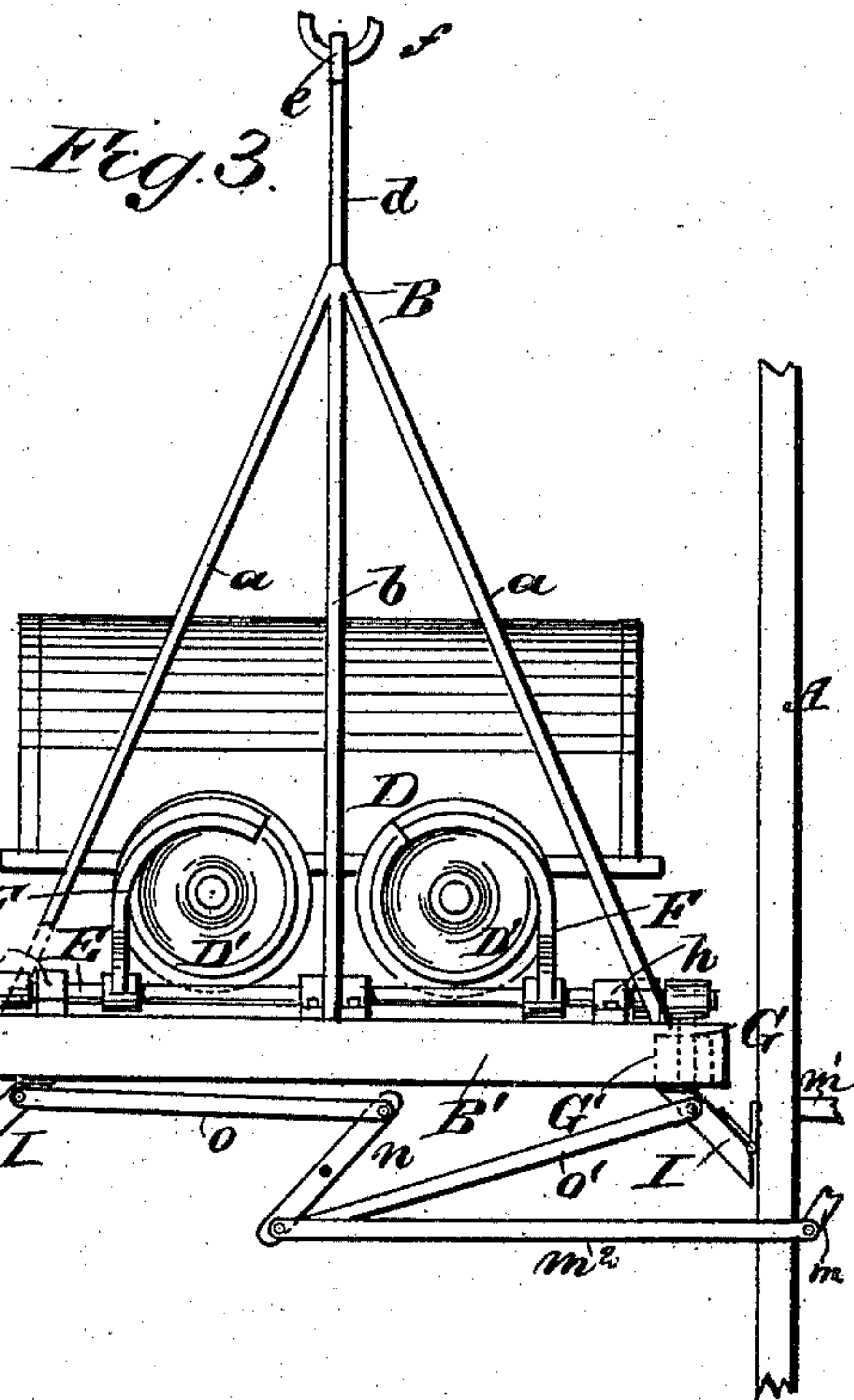
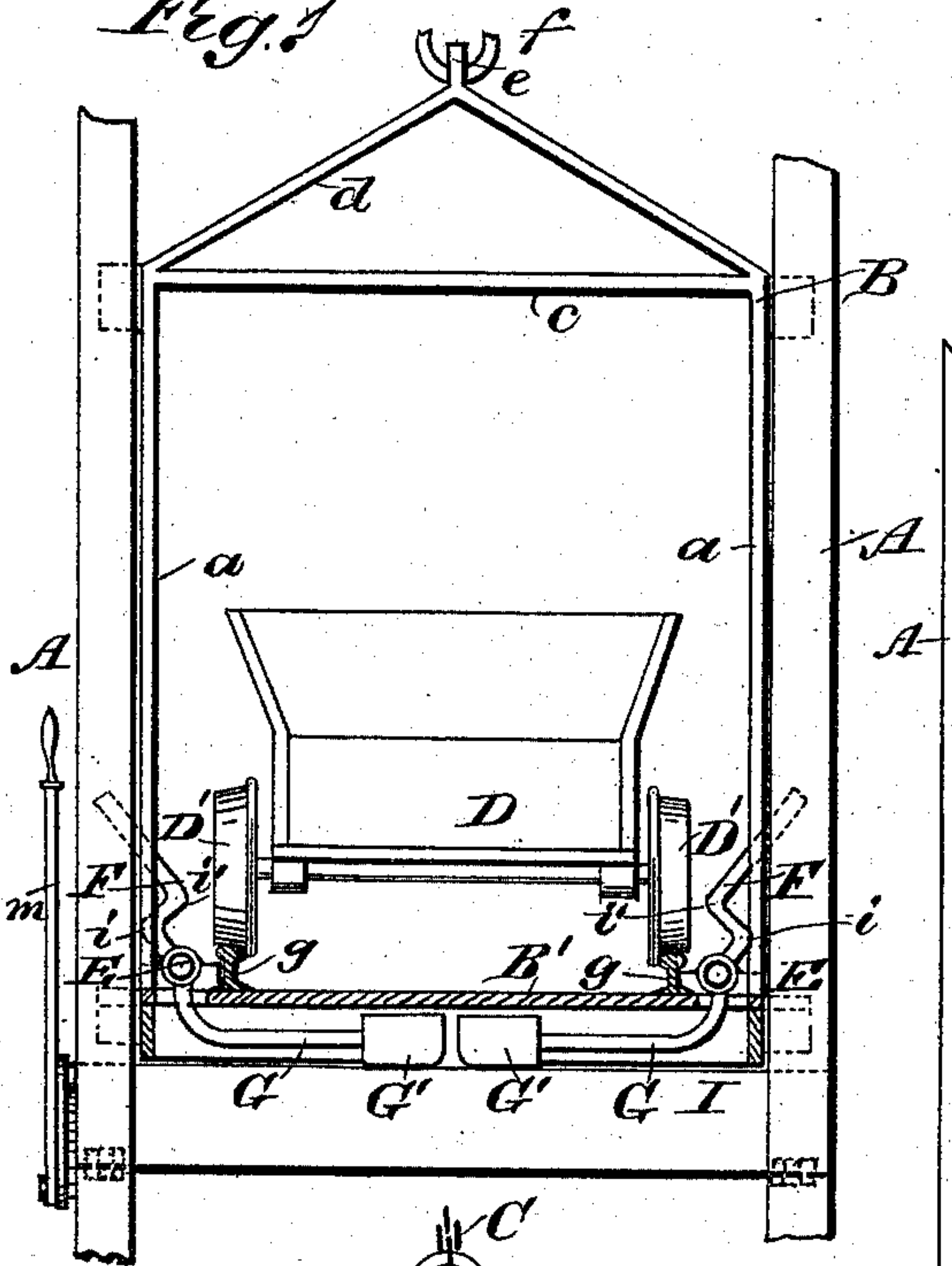


(No Model.)

I. BAILEY & L. FEGGER.
SAFETY KEEPER FOR MINING CARS.

No. 470,536.

Patented Mar. 8, 1892.



WITNESSES:

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UNITED STATES PATENT OFFICE.

INKERMAN BAILEY AND LOUIS FEGER, OF MADISONVILLE, KENTUCKY.

SAFETY-KEEPER FOR MINING-CARS.

SPECIFICATION forming part of Letters Patent No. 470,536, dated March 8, 1892.

Application filed November 2, 1891. Serial No. 410,644. (No model.)

To all whom it may concern:

Be it known that we, INKERMAN BAILEY and LOUIS FEGER, of Madisonville, in the county of Hopkins and State of Kentucky, have invented a new and useful Safety-Keeper for Mine-Cars, of which the following is a full, clear, and exact description.

This invention relates to an improved device for locking a mine-car upon the hoisting-cage automatically and releasing it at the top and bottom of the shaft, the invention consisting in the construction of parts and their combination, as is hereinafter described and claimed.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is an end elevation of a hoisting-cage, partly in section, resting at the top of a mine-shaft, shown broken, a car thereon, and the improved car-arresting device or keeper in place on the cage and adjusted to release the car. Fig. 2 is an end elevation of the hoisting-cage, shown broken and partly in section, suspended in the mine-shaft near the bottom, a mine-car thereon, and the improvement on the cage adjusted to lock the car thereon. Fig. 3 is a side view of the hoisting-cage, broken, at the top of a mine-shaft, a car on the cage, the improvement in position adjusted to release the car, and a releasing device on the side of the shaft below the cage; and Fig 4 is a detached side view of a device placed on one side of the mine-shaft near the top, which when manipulated projects braces below the mine-cage for the support of the latter and the release of the car arrester or keeper.

This improvement is adapted for use on mine-cages that are caused to travel vertically in a hollow shaft for the purpose of elevating the coal or other material mined at the bottom to the top of the shaft on cars that when brought to the surface are transferred from the hoisting-cage to a surface-track and moved to a point of discharge for their load or are dumped directly from the cage.

In the drawings, A represents the sides of a rectangular walled shaft, broken, a sufficient portion being shown to indicate the connection of the improvement therewith.

The cage B is skeleton in form and of ordinary construction, consisting of a stout platform B', made of timbers and planks, rectangular edgewise, and provided with metal hanger-bars *a*, that are connected with the four corners of the platform and converge in pairs on each side of the latter, joining an upright center bar *b*. The similar side frames thus produced have their upper ends joined together by a cross-bar *c* and a truss-bar *d*, that is arched, and at its center has an eye *e*, in which a coupling-ring *f* is inserted, the latter being the lower terminal of the hoisting-chain C, (shown broken,) but that extends to hoisting-gearing. (Not shown.)

On the cage-platform B' two parallel rails *g* are secured, whereon a mine-car D rests its wheels D' when placed on the cage.

Outside of the track-rails *g* two similar shafts E are rotatably supported in boxes *h*, parallel with the rails, and at proper points two keeper-arms F are secured upon each shaft, as shown in Fig. 3. The upper portions of the arms F are curved toward each other in pairs, and as they are separated from each other a proper distance these curved portions are adapted to bear loosely against the wheel-treads when the shafts E are rocked to effect such an adjustment. As shown in Figs. 1 and 2, bends are made at *i* and *i'* on each arm to cause their curved portions to align with the wheel-treads or peripheries.

At corresponding ends of the rock-shafts E a rock-arm G is secured on each shaft, which arms are bent at an obtuse angle toward each other near their ends that are attached to the shaft ends. The bodies of the arms, extending below the cage-platform B' a suitable length, have each a heavy weight G' secured on the end that hangs below the platform, which weights, by their gravity, throw the keeper-arms F toward the wheels D', when they are allowed to hang in the position shown in Fig. 2, which will lock a car on the platform B'.

Near the top of the mine-shaft A similar transverse braces I are hinged to opposite sides of the shaft-walls. These braces are strong timber pieces beveled on their edges, so that when they incline from the walls they are hinged upon the edges below the hinges and will abut upon the vertical shaft-walls and

support the braces inclined inwardly and upwardly, with their free beveled edges in the same horizontal plane, as shown in Fig. 3.

When the braces I are projected from the opposite side walls of the shaft A, their free upper edges will form a seat for the cage-platform B' to support it in the same plane with a railroad-bed at the top of the shaft, so that the track-rails on the platform will align with said railroad, and thus permit the transferring of a car on the cage to the railroad. (Not shown.)

A sufficient space is afforded between the ends of the platform B' and the sides of the shaft A, whereon the brace-pieces I are hinged, to allow the cage B to pass the braces when they are folded upwardly against the shaft-walls, as indicated in Fig. 4, a brace-shifting mechanism being provided, which is shown in Figs. 3 and 4, and is constructed as follows: There is an upright lever *m*, pivoted on a post *m'*, that projects from the upright wall-timbers of the cage near the ground-surface, the lower end of which lever is pivoted to a connecting-bar *m*², that is jointed at its opposite end to the lower end of an upright rocking bar *n*, which is centrally pivoted upon a side wall of the mine-shaft A, that is removed in the drawings to show the parts being described. On the upper end of the rocking bar *n* one end of a link-bar *o* is pivotally secured, the other end of which bar is pivoted upon the end of one of the braces I near its free top edge, said brace being the one farthest removed from the upright lever *m*. On the lower end of the rocking bar *n* a link-bar *o'* is loosely secured by one end, its opposite end having a pivotal attachment upon the end of the brace I that is nearest to the lever *m*. It will be seen that when the lever *m* is adjusted in an upright position, as represented in Fig. 4, the braces I will be folded against the sides A of the mine-shaft, so as to allow the cage B to descend in the shaft, and in case the cage has been elevated with a loaded car on it, so as to pass above the braces I, an outward vibration of the lever *m* of sufficient degree will throw these braces into an inclined position, ready to receive the cage-platform on their top edges.

From the relative position given to the rock-arms G these arms will impinge on the upper edge of the brace I that is nearest to the lever

m if the cage B is raised above the braces I, and said braces are inclined, as has been explained, so that the lowering of the cage will cause the normally-pendent arms G and weights G' on the same to be thrown upwardly, as indicated by dotted lines in Fig. 3, and thus automatically vibrate the keeper-arms F away from the car-wheels D', so as to release the car D.

When the cage B is lowered and approaches the bottom of the mine-shaft A, the weights G' on the rock-shafts G will strike upon a level cross-beam J at the foot of the vertical shaft, which will cause the pendent arms to be rocked toward the platform B' and cause an outward movement of the keepers F from the wheels D', thereby permitting the car to be transferred from the cage to a track in the mine for reloading.

While it is preferred to employ two rock-shafts G and attached keeper-arms and pendent rock-arms, as has been described, it is evident that one rock-shaft and the attachments mentioned will act measurably well to retain a car on the cage B. Hence we do not wish to confine the scope of our claims to the use of two sets of keepers and actuating mechanism for the same.

Having thus fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. A device for holding cars on mine-cages, consisting of a shaft mounted to rock on the platform of the cage, keeper-arms mounted on the ends of said shaft, and a pendent weighted rock-arm secured on said shaft and adapted to rock the keepers into an upright position, substantially as described.

2. The combination, with a mine-cage, of a shaft mounted to rock on the platform of the cage, keeper-arms secured on said rock-shaft and adapted when swung into an upright position to bear on the wheels of a car on said platform, a pendent weighted rock-arm on the end of the rock-shaft, and a device in the mine-shaft adapted to rock said arm when the cage is lowered upon it, substantially as described.

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Witnesses:

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