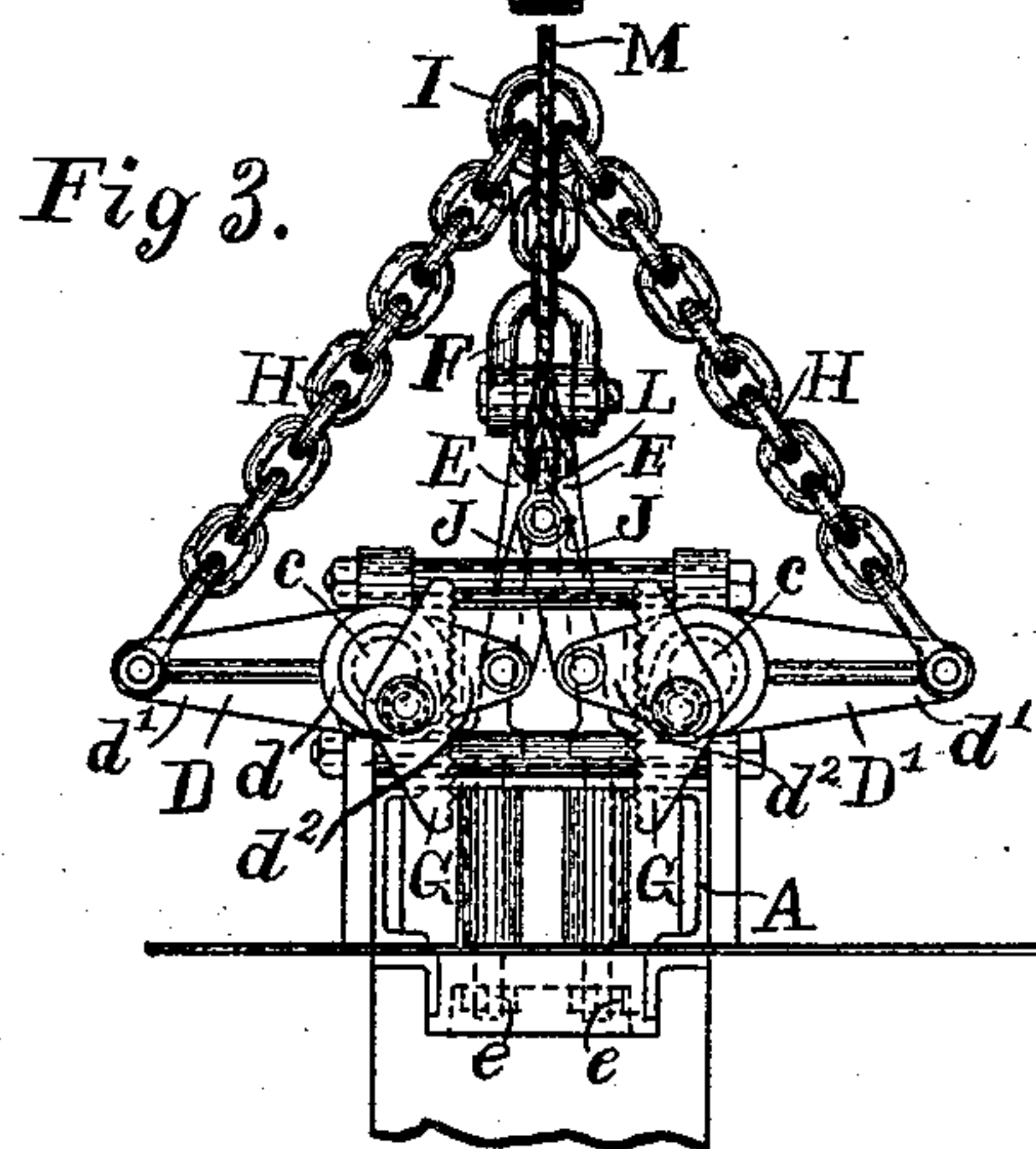
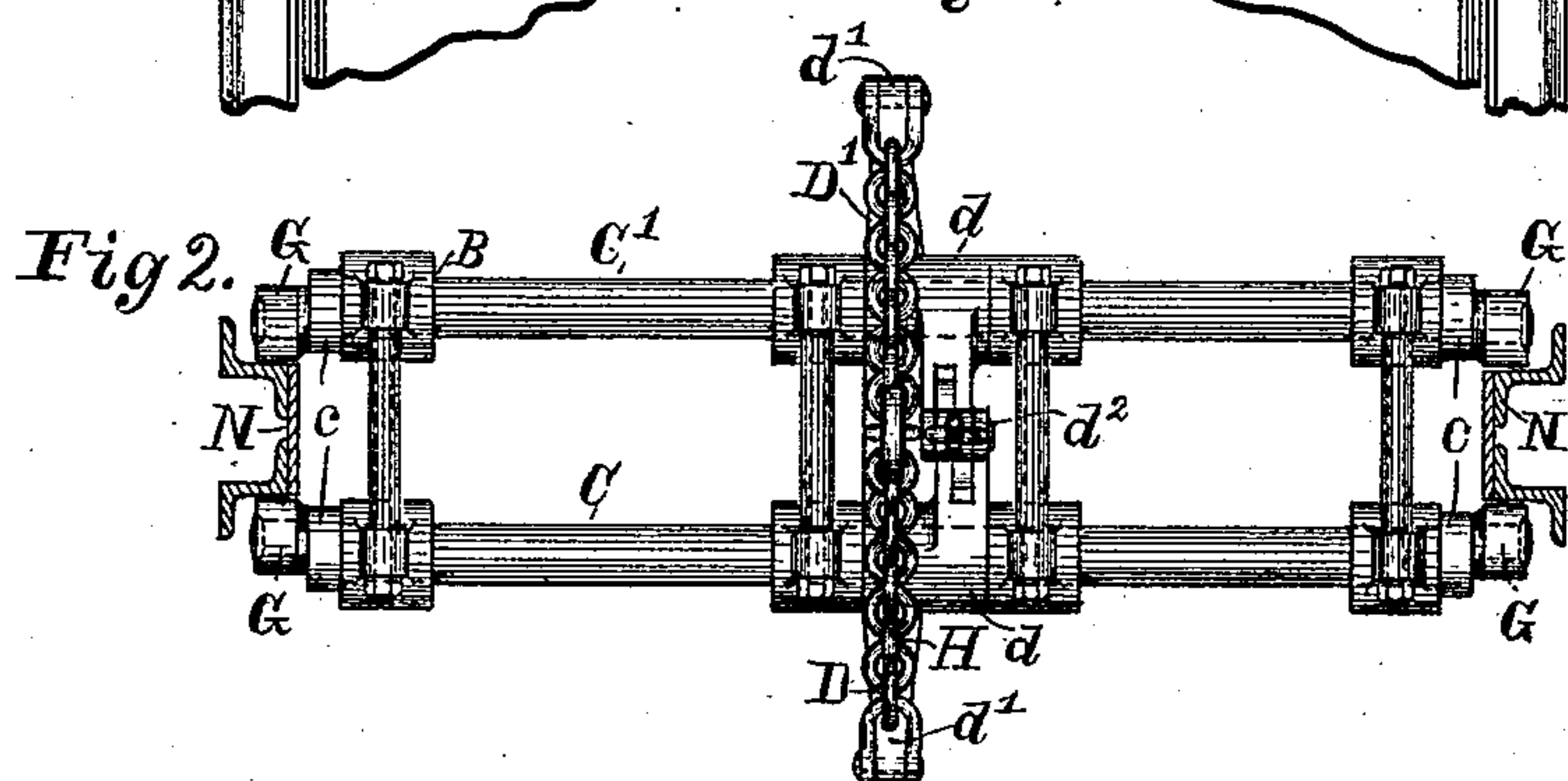
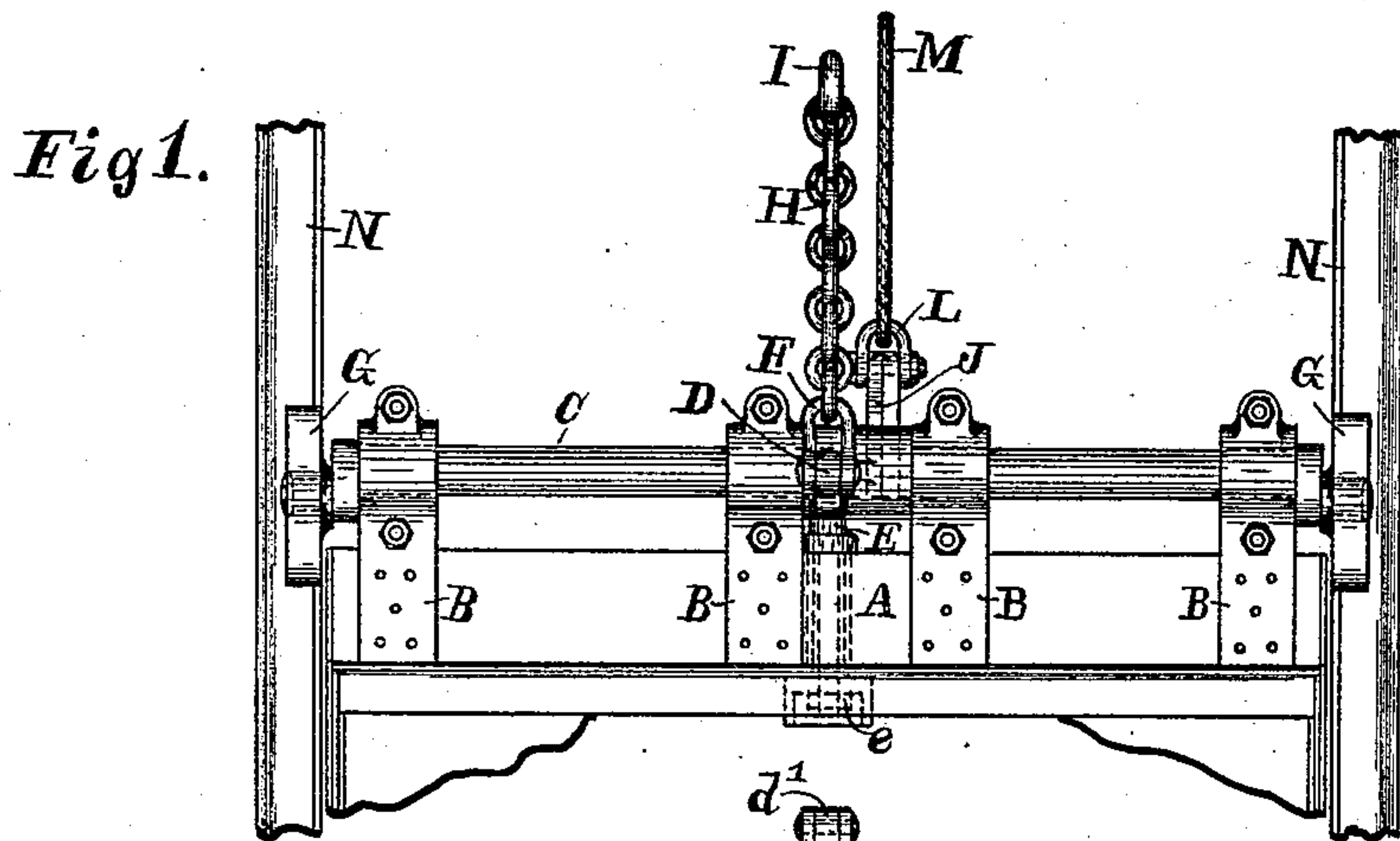


(No Model.)

E. W. NAYLOR.
SAFETY DEVICE FOR ELEVATORS.

No. 471,825.

Patented Mar. 29, 1892.



WITNESSES.

Frank. Miller.

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ERNEST W. NAYLOR, OF CLEVELAND, OHIO.

SAFETY DEVICE FOR ELEVATORS.

SPECIFICATION forming part of Letters Patent No. 471,825, dated March 29, 1892.

Application filed July 20, 1891. Serial No. 400,040. (No model.)

To all whom it may concern:

Be it known that I, ERNEST W. NAYLOR, a subject of the Queen of Great Britain, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Elevator Safety Devices, of which the following is a specification.

My invention relates to the class of devices which are intended to prevent the fall of an elevator-cage if the hoisting-cables should break or for any other reason become inoperative.

The invention will be readily understood from the following description, taken in connection with the accompanying drawings, and the construction and combinations of parts which constitute the invention are pointed out definitely in the claims.

In the drawings, Figure 1 is a front elevation of the upper part of an elevator-cage to which my invention is applied. Fig. 2 is a plan view of the invention, and Fig. 3 is a side elevation of the upper part of an elevator-cage provided with said invention.

Referring now to the parts by letters, A represents the top cross-beam of the cage.

B B represent plates, which are securely bolted to said beam in two rows, one row on each side thereof. In the upper ends of the plates B B are formed the bearings for the two shafts C C', which extend the entire width of the cage parallel to the cross-beam.

D D represent levers, near the center of which is a sleeve d , through which the shaft C passes and to which it is rigidly secured by a key or other suitable means. The two arms d' d^2 extend from the sleeve in opposite directions and in different vertical planes. A similar lever D' is secured in like manner to the shaft C'.

E E represent the hoisting-rods, which pass vertically through the beam A, where they are held by the nuts $e e$. The upper ends of these rods bend toward each other and are connected with a shackle F.

H H represent two chains, which are connected at their upper ends with the shackle and at their lower ends with the outer arms d' d' of the levers D D'. The hoisting-cable I is connected with the shackle F. The weight of the cage is normally lifted through the hoisting-rods E E, and the connection of the arms d' d' with the hoisting-cable, which is always taut, prevents any rocking of the

shafts C C' in the direction which would move the outer arms d' d' of the levers D D' downward.

The inner arms d^2 d^2 are connected with the lower ends of the links J J and the upper ends of the links J J are united by the shackle L, to which the counterweight-cable M is secured.

On the ends of each of the shafts C C' is a crank-arm c , and to each of these crank-arms is pivoted a shoe G. These eccentric-shoes G G lie on opposite sides of the stationary vertical guides N. So long as the hoisting-cable remains taut the shoes move freely up and down alongside of the guides; but when the hoisting-cable becomes loose, either by breaking or through any defect in the hoisting-machinery, the weight of the cage is shifted to the counterweight-cable M. This causes the shafts C C' to rock and the eccentrically-pivoted shoes to impinge against and firmly grasp the guides. The downward movement of the cage, after the shoes have once engaged with the guides, draws said shoes into closer contact with the guides, increasing the friction between them and preventing any considerable fall of the cage.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination of an elevator-cage, its hoisting-cable and counterweight-cable with two transverse shafts journaled on said cage, levers rigidly secured to and extended on both sides of each shaft, eccentric-shoes on the ends of said shafts adapted to grasp the stationary vertical guides, and suitable connections between the outer ends of said levers and the hoisting-cable and between their inner ends and the counterweight-cable.

2. The combination of an elevator-cage, its hoisting-cable and counterweight-cable with two transverse shafts journaled on said cage, crank-arms on both ends of said shafts, shoes pivoted to said crank-arms, levers secured to and extended on both sides of each shaft, and suitable connections between the outer ends of said levers and the hoisting-cable and between the inner ends of said levers and the counterweight-cable, substantially as and for the purpose specified.

ERNEST W. NAYLOR.

Witnesses:

E. L. THURSTON,
ALBERT H. BATES.