

(No Model.)

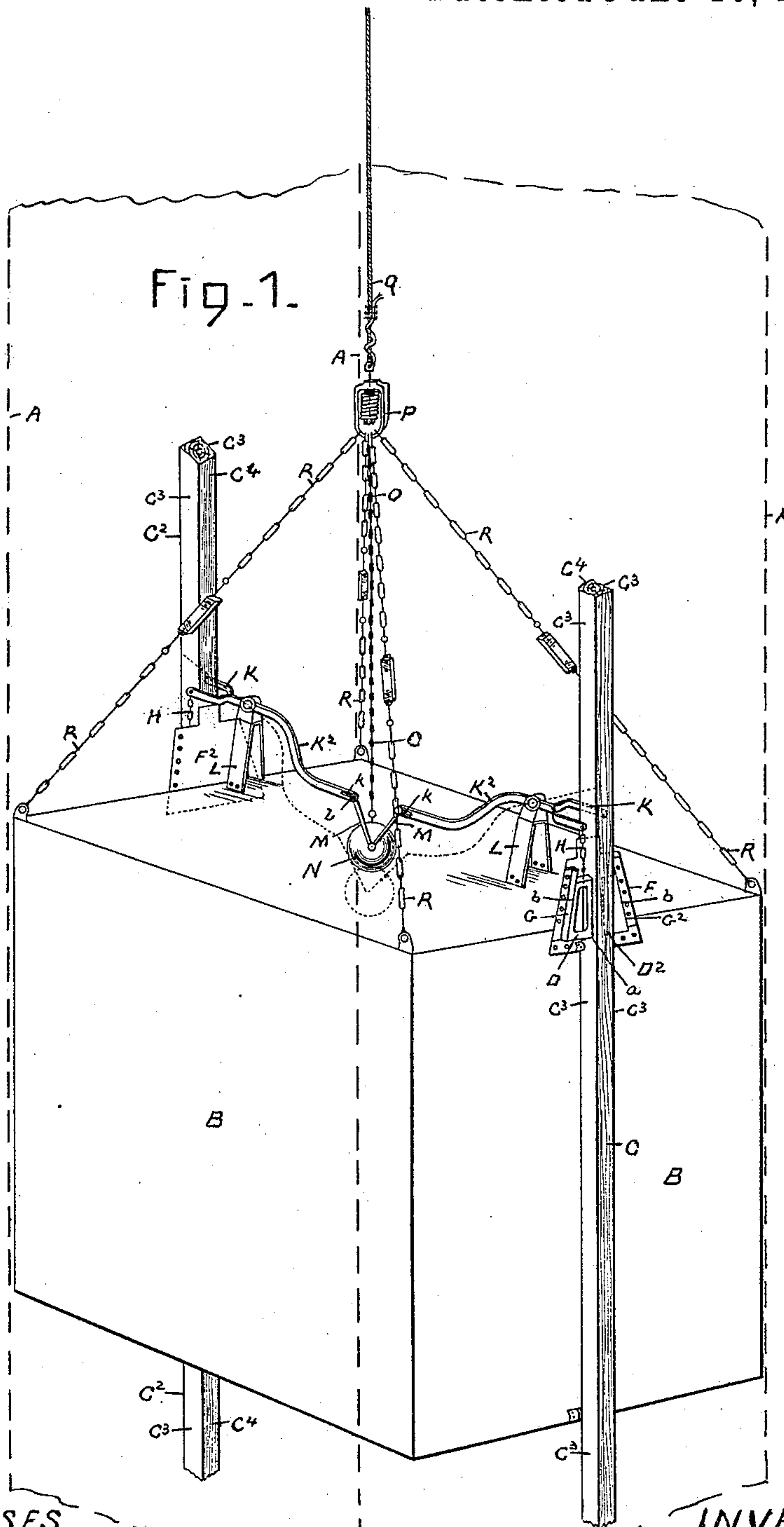
2 Sheets—Sheet 1.

F. HAUDEL.

SAFETY ATTACHMENT FOR ELEVATORS.

No. 430,017.

Patented June 10, 1890.



WITNESSES.

Frank Myrick
Marion E. Brown

INVENTOR.

Fred Haudel
by his Attorneys
Brown Bros.

(No Model.)

2 Sheets—Sheet 2.

F. HAUDEL.

SAFETY ATTACHMENT FOR ELEVATORS.

No. 430,017.

Patented June 10, 1890.

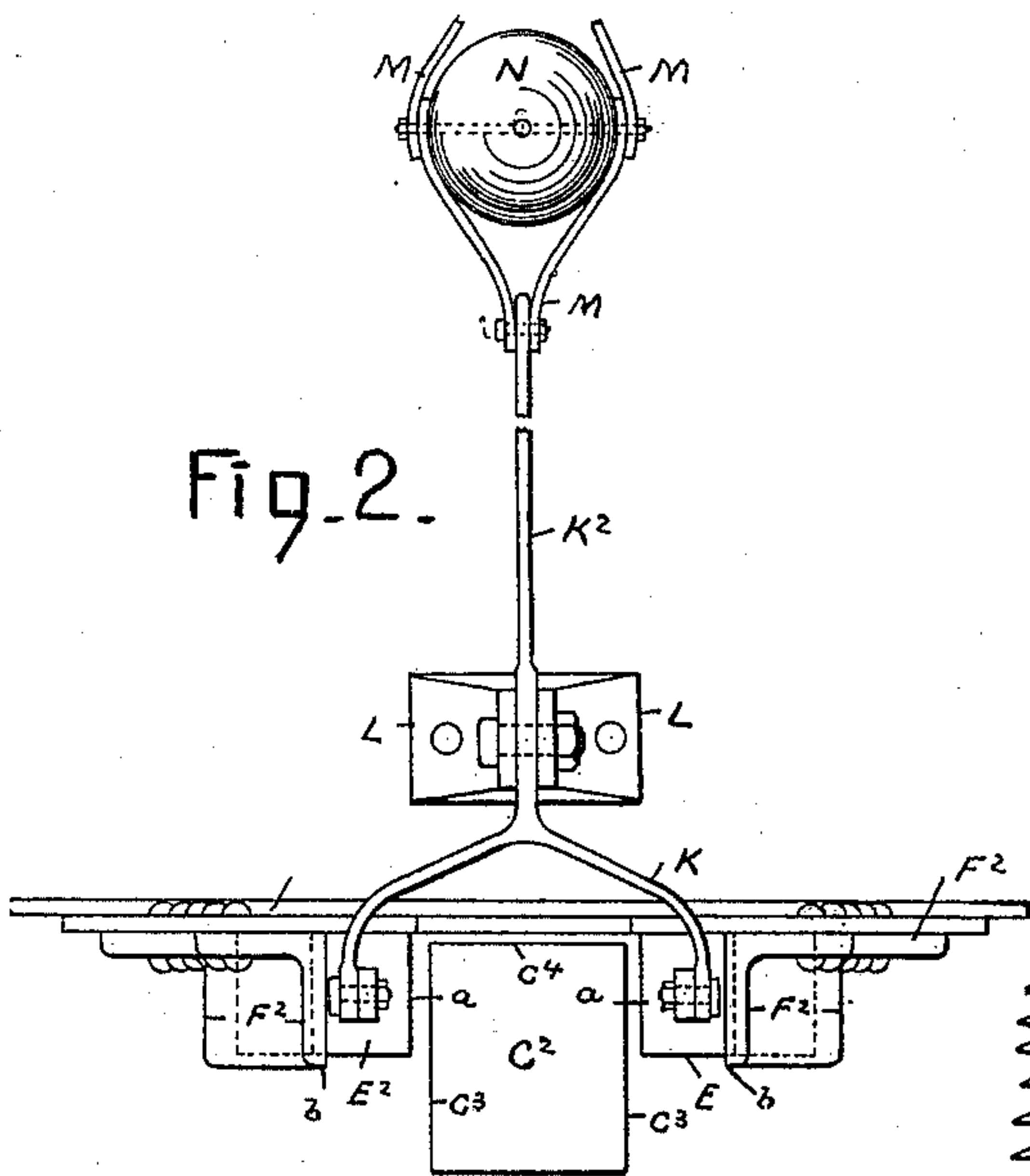


Fig. 2.

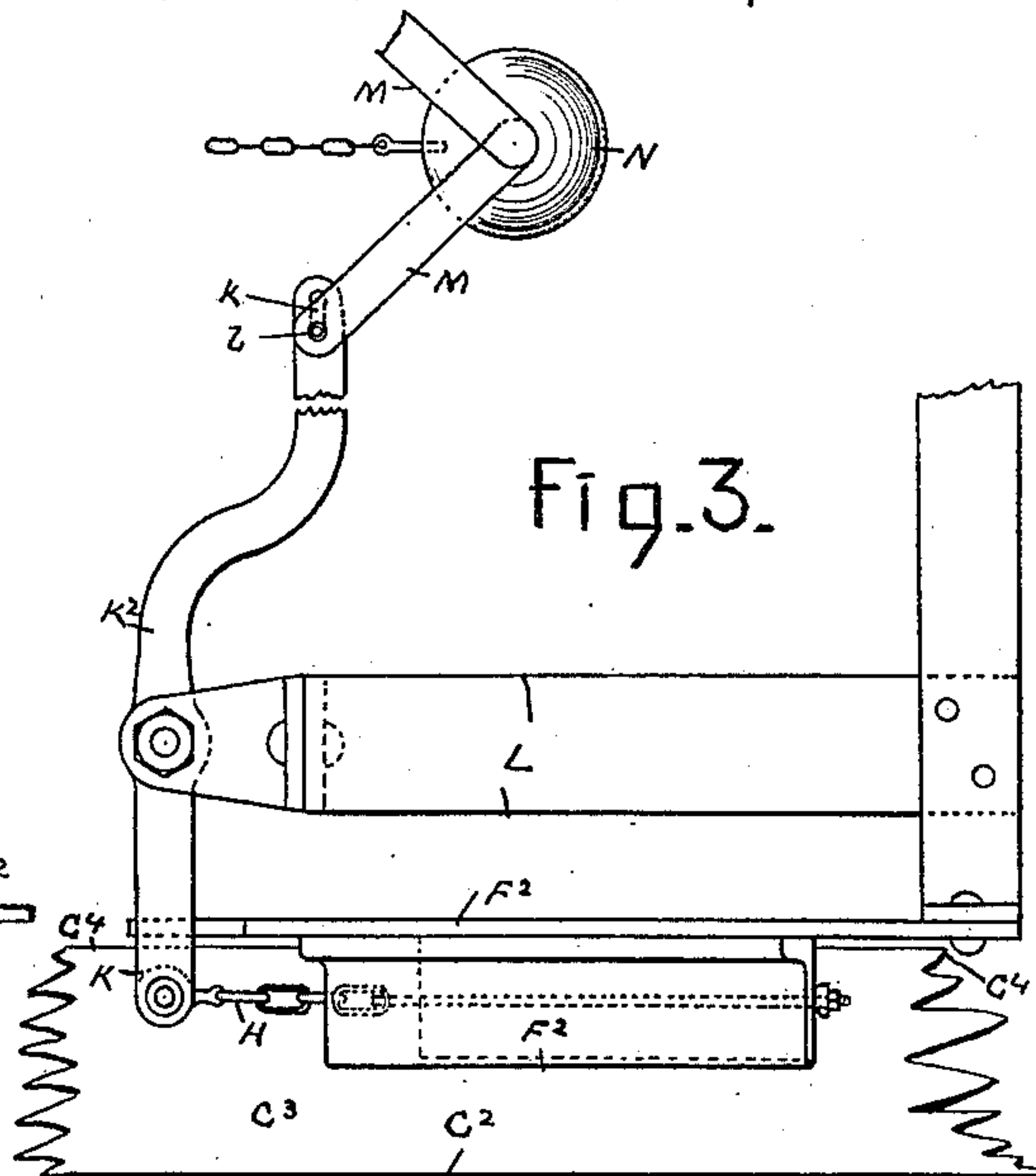


Fig. 3.

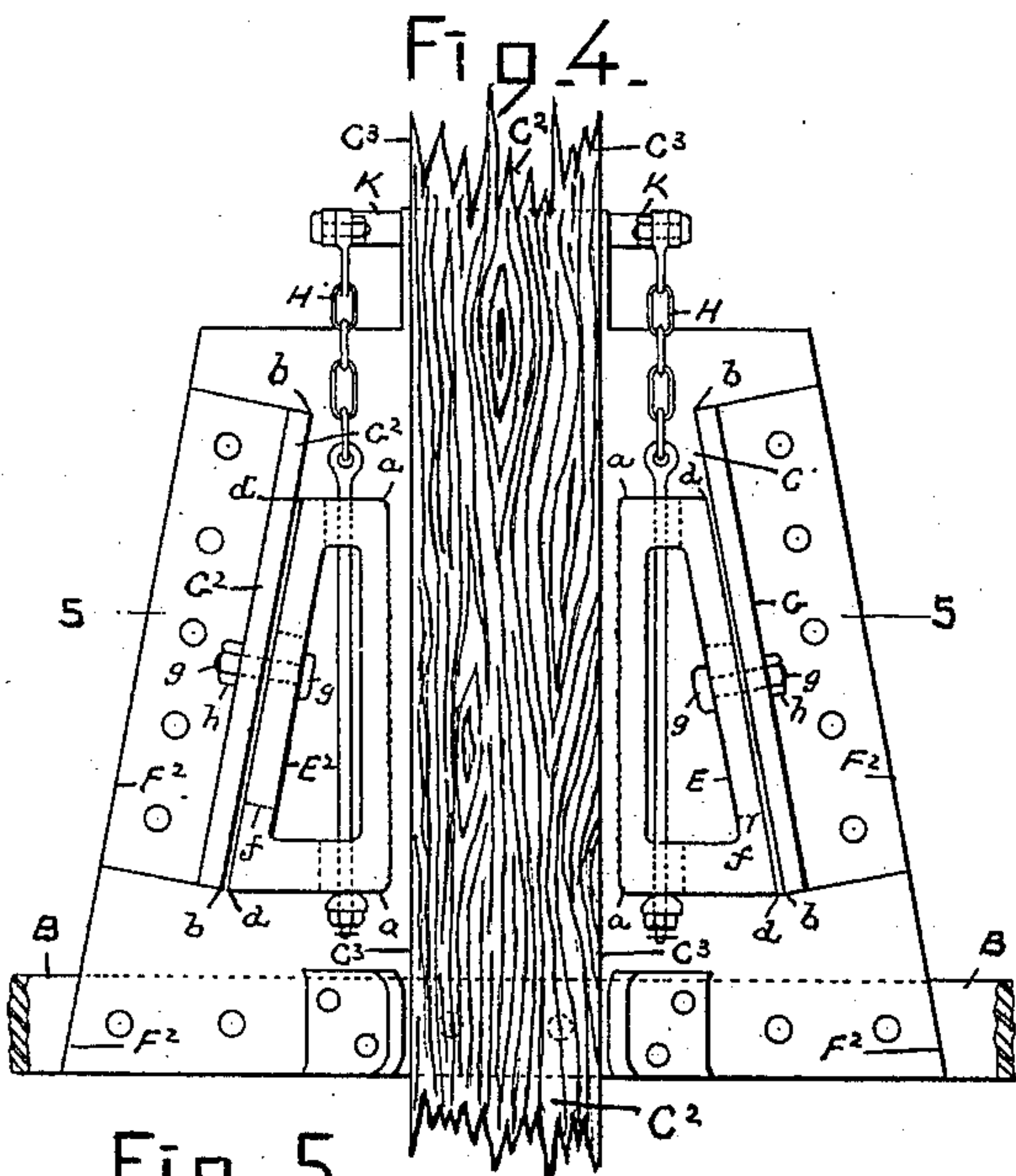


Fig. 4.

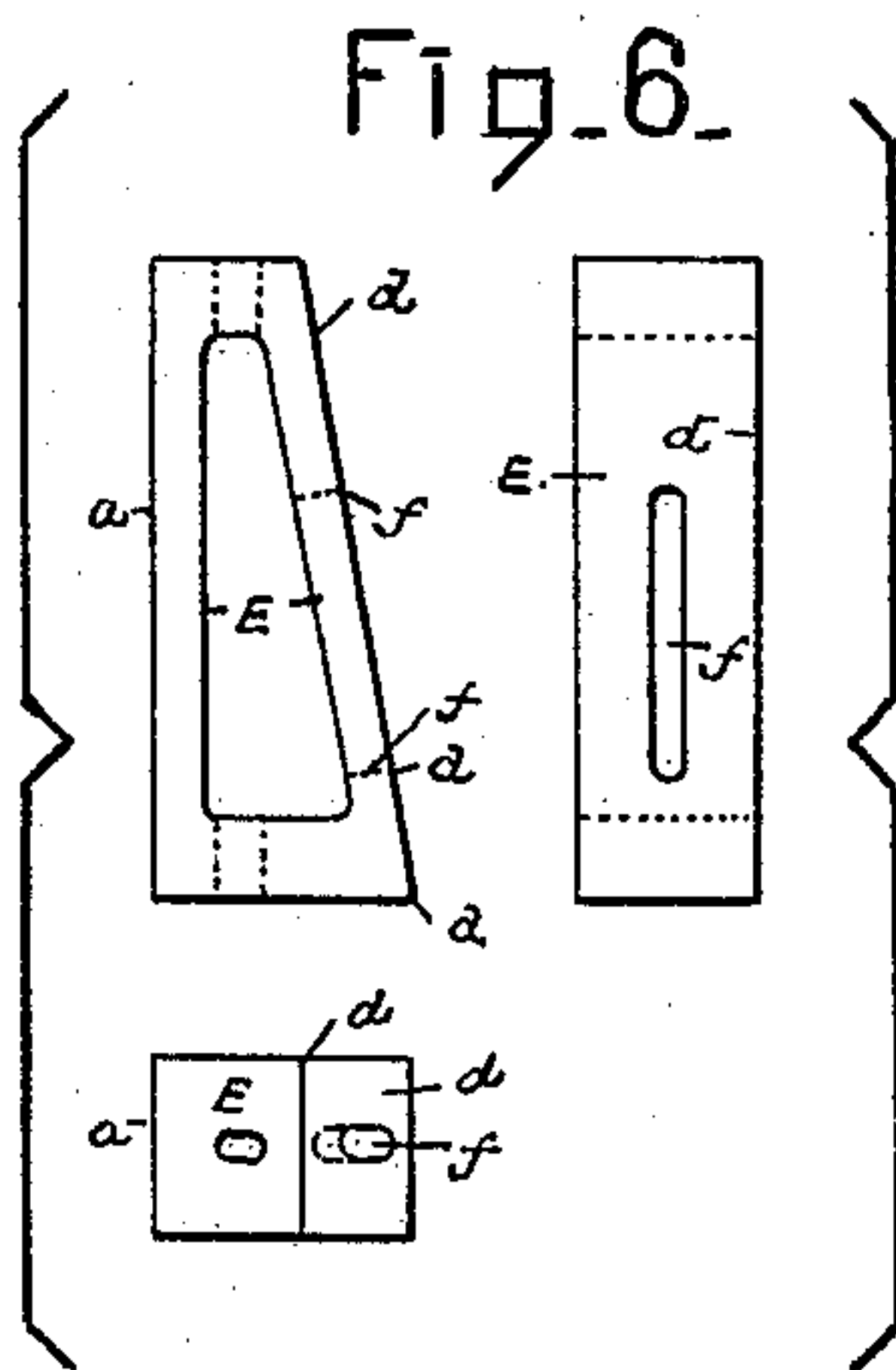
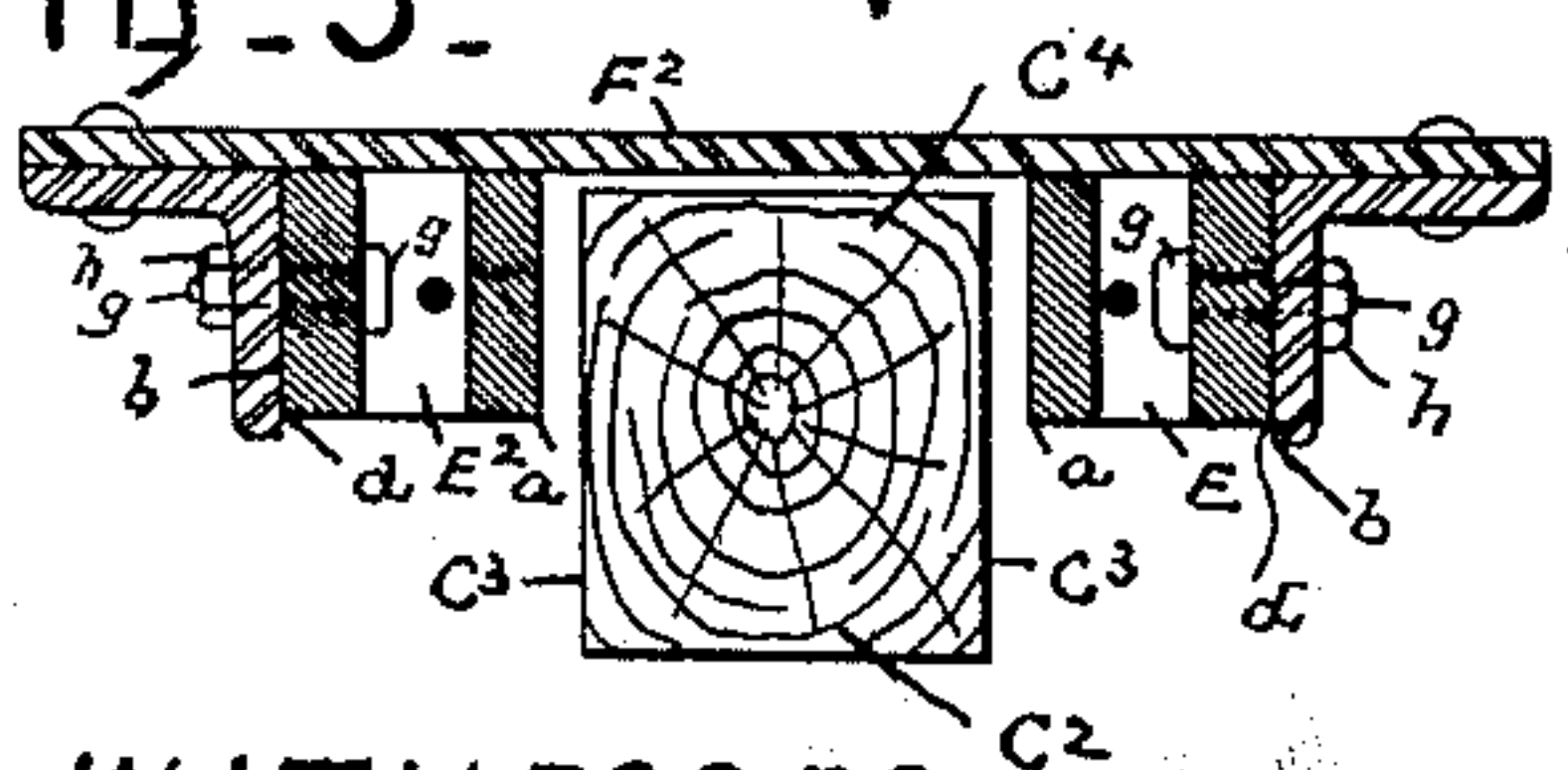


Fig. 6.

Fig. 5.



WITNESSES.

Frank Myrick
Marion E. Brown.

INVENTOR.

Fred Haudel
by his Attorneys
Brown Bros.

UNITED STATES PATENT OFFICE.

FRED HAUDEL, OF BOSTON, MASSACHUSETTS.

SAFETY ATTACHMENT FOR ELEVATORS.

SPECIFICATION forming part of Letters Patent No. 430,017, dated June 10, 1890.

Application filed January 2, 1890. Serial No. 335,641. (No model.)

To all whom it may concern:

Be it known that I, FRED HAUDEL, a subject of His Majesty the Emperor of Germany, and a resident of the city of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Safety Attachments for Elevators, &c., of which the following is a full, clear, and exact description.

This invention in hoisting apparatus or elevators relates to appliances for preventing, because of accidental breaking of or other cause a slackening of the hoisting-rope, the then fall of the elevator carriage or platform.

This invention in substance consists in providing the elevator-well for its full height and at its opposite sides with rigid vertical posts or beams severally presenting on opposite sides of each vertical parallel bearing-faces in corresponding vertical planes, and in providing the elevator carriage or platform at its opposite sides and corresponding to those of the elevator-well at which said posts are located with, first, vertical wedge-shaped blocks, one for and opposite to and normally out of contact with each of said bearing-faces of the posts; second, vertical wedge-shaped guideways, one for each of said blocks and severally rigidly held on the carriage or platform; third, means confining each wedge-block to the wedge-bearing face therefor, while allowing it to move freely up and down on its guideway; fourth, chains attached to the upper end of and for suspending each block; fifth, two levers, one for each pair of the wedge-blocks and both held and separately fulcrumed on and projected at opposite sides of the elevator carriage or platform and shaped to embrace but not to bear against the opposite bearing-faces of said posts and having the chains of the two wedge-blocks belonging to said bearing-faces hung on it; sixth, link-arms pivoted one on the inner arm of each of said levers; seventh, a weight of ball or other suitable shape common and pivoted to the link-arms of both levers, and, eighth, a chain suspending said weight from the hoisting-rope of the elevator carriage or platform, all so that in the normal or taut condition of the hoisting-rope said wedge-blocks are out of bearing on or contact with said bearing-faces of the posts, and on a break-

ing or other accidental slackening of the hoisting-rope, the weight having the depending wedge-block then dropping, leaves the several wedge-blocks free by a fall of the elevator carriage or platform to come to a bearing on and thus to be firmly bound and held against the bearing-faces of the posts, arresting the carriage or platform and holding it secure against further fall.

In the drawings forming part of this specification, Figure 1 is a perspective view illustrating the appliances of this invention in their combination with posts on opposite sides of an elevator-well and with an elevator-carriage shown in blank. Figs. 2, 3, 4, 5, and 6 are, as will hereinafter appear, views in detail on an enlarged scale. Fig. 5 is a section on line 5 5, Fig. 4; and Fig. 3 is a side view, but with the parts thereof shown as horizontal in lieu of vertical, which is their proper position.

In the drawings, A, dotted lines, Fig. 1, represents a portion of a well for a hoisting apparatus or elevator, and neither it nor the elevator-carriage B to run therethrough constitutes any part of this invention, and both, except as to the particular features of this invention, may be of any ordinary or other well-known construction and arrangement of parts.

C C² are two uprights or posts at opposite sides of the elevator-well A and in a corresponding vertical plane. Only a portion of the full height of each post C C² is shown; but each post extends for the full height of the elevator-well, and it is rigidly fixed in its vertical position and projects into the elevator-well toward the corresponding adjacent side of the elevator-carriage B and presents opposite vertical side faces C³ C³, both parallel to each other and to the central vertical plane of the two posts, all as well known, and so that the elevator-carriage in running up and down passes between the inner faces C⁴ C⁴ of the posts and between the opposite sides of the elevator-well, which join the sides of the well having the posts C C².

D D² and E E² are two pairs of similar vertical blocks. Each block is located opposite a bearing-face C³ of each post, and each presents theretoward a vertical and paralleled edge or face a.

F F² are supports, one for the two blocks of each pair of blocks. Each support is secured to the upper end of the carriage B, and it has two separate vertical guideways G G², one for each block. Each guideway has an upward tapering or wedge-shaped edge *b*, corresponding to the upward taper or wedged shape of the edge or face *d* of the block opposite to its edge *a*, presented toward the post C or C², as stated. Each wedge-block has a slot *f* along its tapering edge, which receives a headed screw-bolt *g*, passing through the tapering wall of the guideway therefor, and set up by screwing a nut *h* thereon, the whole so that either wedge-block and the support containing the guideways for each pair are free to move lengthwise of each other without danger of accidental separation.

H are chains secured one to the upper end portion of each wedge-block. The chains H of each pair of blocks are hung from the forked end of one arm K of a common horizontal lever K K², which is fulcrumed on a standard L, held on the top, and has its other arm K² extended toward the central portion of the carriage. The forked arm K of each lever K K² embraces a post C or C² at but without contact with its opposite bearing-faces C³, and the opposite arm K² of the levers each has a slot *k* for a portion of its length to receive a pivot-pin *l* at one end of fork-shaped links or arms M, each of which at its other end and between its tines receives a weight N of ball or other suitable shape, having both links in unison pivoted thereto at points diametrically opposite each other.

O is a chain suspending the weight N from a stirrup-shaped loop P, in turn suspended from the hoisting-rope Q, and having the carriage B suspended from it at its several corners by separate chains R, suitably connected therefor. The several appliances of the elevator-carriage and the arrangement of the wedge-blocks relative to their guideways and to the bearing-faces C³ of the posts, together with the suspension of the weight N from the hoisting-rope Q, as described, are all such that with the hoisting-rope taut the chain suspending the weight is taut, and the weight, as also the wedge-blocks, are in their lowest positions and the blocks out of contact with the bearing-faces *a* of the posts. On a slackening of the hoisting-rope from its breakage or from other cause, the weight N and carriage B are free to fall, on which the wedge-blocks are raised because of the action of the common weight thereon through the levers K K², and the wedge-guideways G G² are lowered because of the fall of the carriage, and there- through, acting in co-operation, the wedge-blocks are not only brought to a bearing against the opposite side faces C³ of the posts, but also most firmly and rigidly bound and held thereto, the whole resulting in an arrest of

the carriage from and a firm and a secure hold thereof against further downward movement, all as is obvious without further explanation.

Obviously means of suspension of the weight wedge-blocks and elevator-carriage from the hoisting-rope other than chains may be used; but chains are efficient and serviceable for the purpose.

The weight N may be dispensed with and a coiled spring used in place thereof, it being only necessary that the spring should be secured at its opposite ends to the elevator-carriage and to the link-arms M of the levers, so that when the hoisting-rope and the chain-connection between the spring and said rope are taut the spring shall be at a tension in the direction of its length. A weight and coiled spring are well-known mechanical equivalents, and to apply the latter in substitution of the former to the appliances otherwise of this invention is within ordinary mechanical skill.

The elevator-carriage may be, as before stated, of any well-known construction, and a simple platform may be used suitably otherwise constructed and secured to its hoisting-rope and provided with the safety appliances of this invention.

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

A safety appliance for hoisting or elevating apparatus, consisting of the combination, with fixed posts at opposite sides of the elevator-well and each presenting opposite parallel vertical bearing-faces, and with an elevator carriage or platform and its hoisting-rope, of vertical wedge-blocks in pairs at opposite sides of the carriage and each presenting a vertical face toward a bearing-face of a post, wedge-guideways, one for each wedge-block and held on the carriage, means securing each block to its guideway and for the vertical movement of one on the other, chains, one for each wedge-block, levers, one for each pair of wedge-blocks and having the chains of the wedge-blocks suspended from one of their arms and each fulcrumed on the carriage or platform, links, one for and pivoted to the arm of each lever opposite to that from which the wedge-blocks are suspended, and a weight suspended and pivoted from said links and connected to the hoisting-rope, all substantially as described, for the purpose specified.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

FRED HAUDEL.

Witnesses:

ALBERT W. BROWN,
MARION E. BROWN.