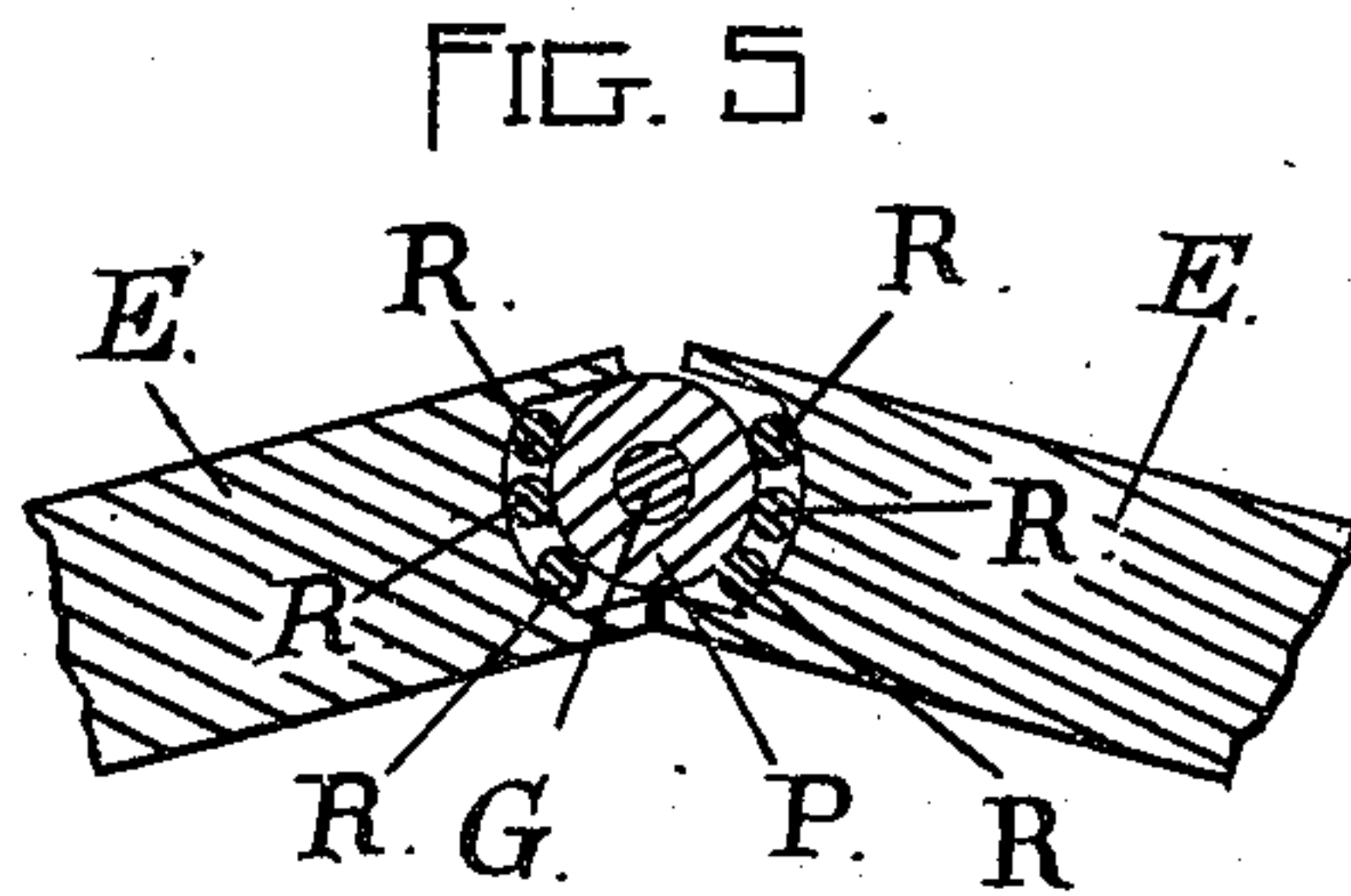
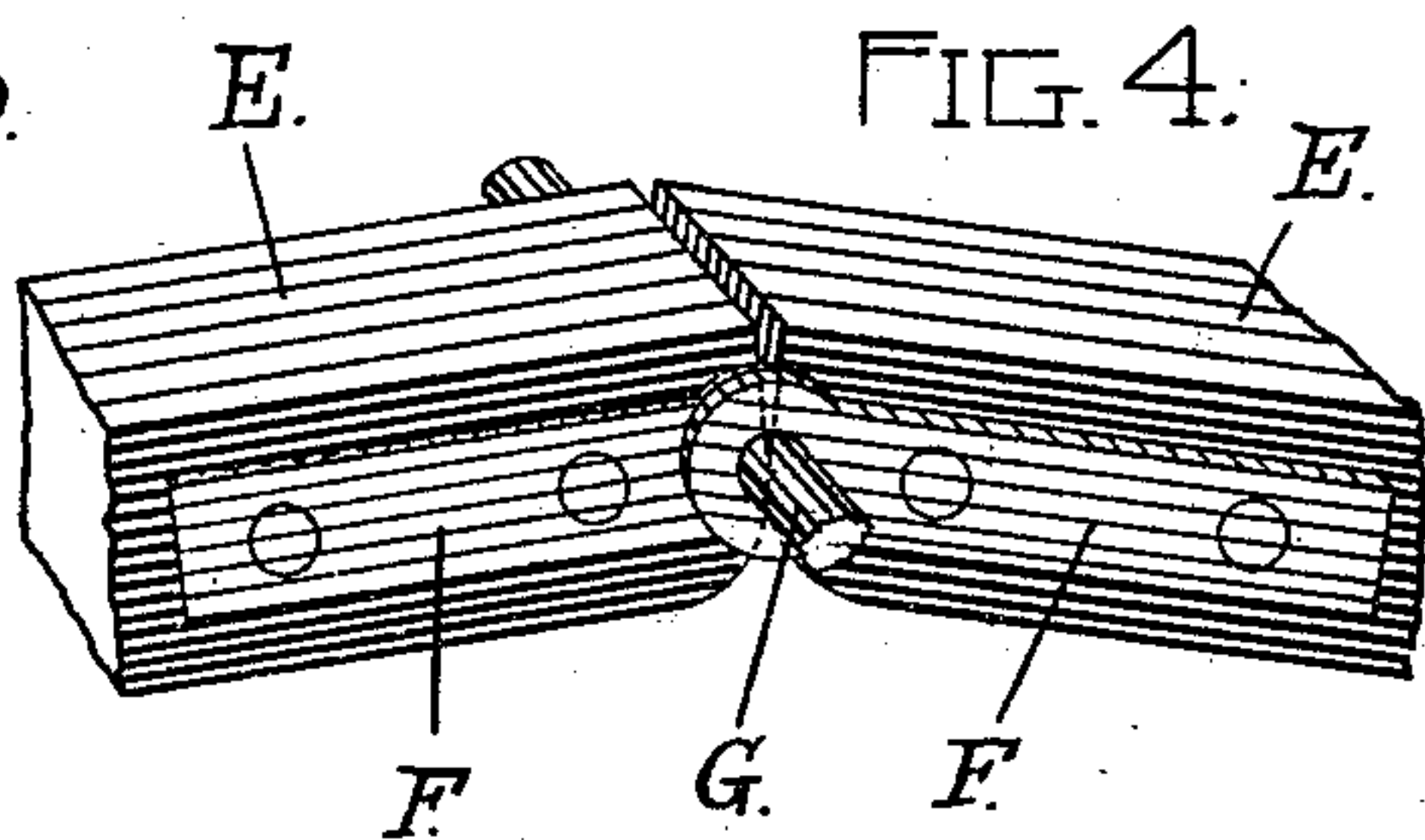
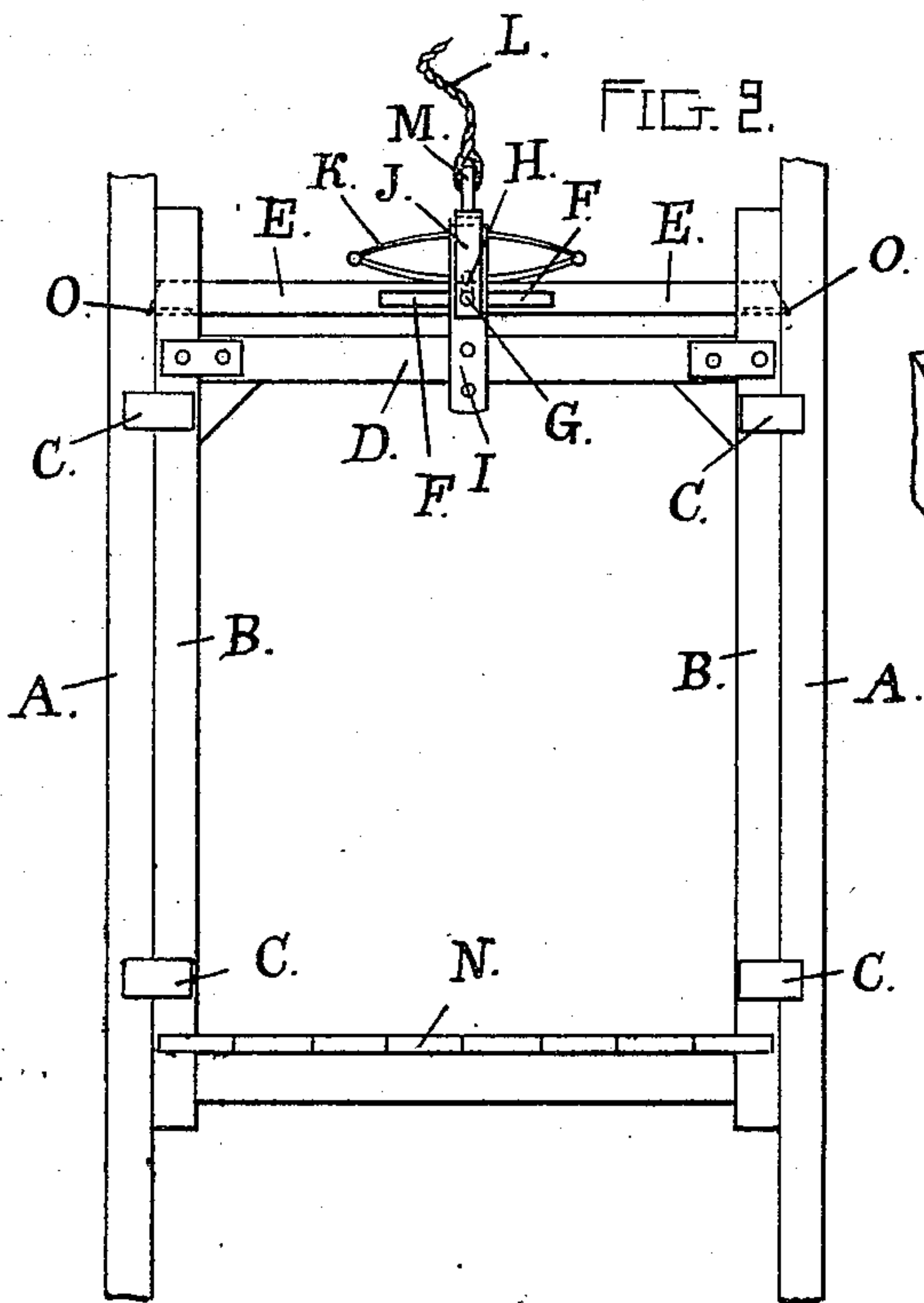
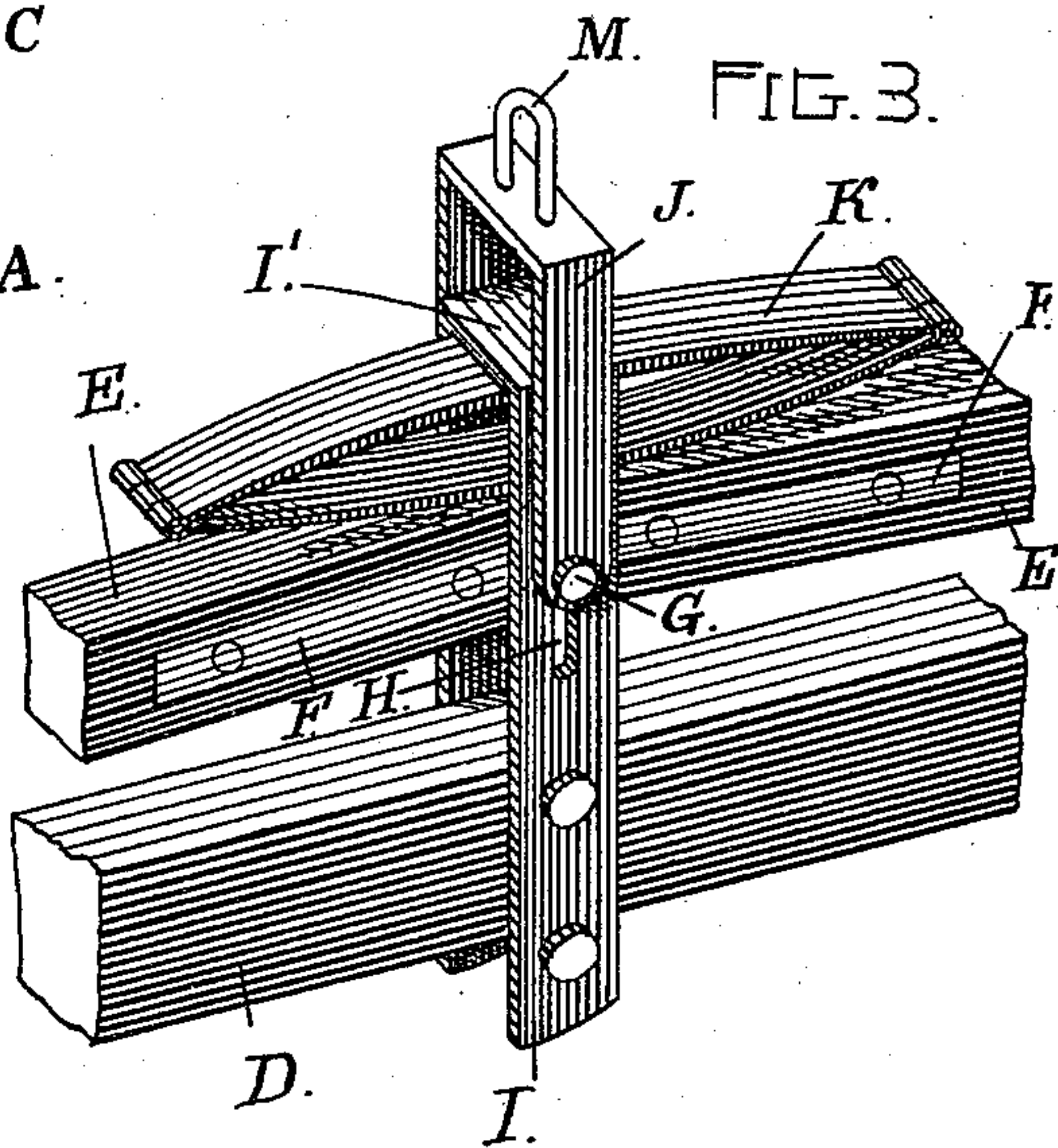
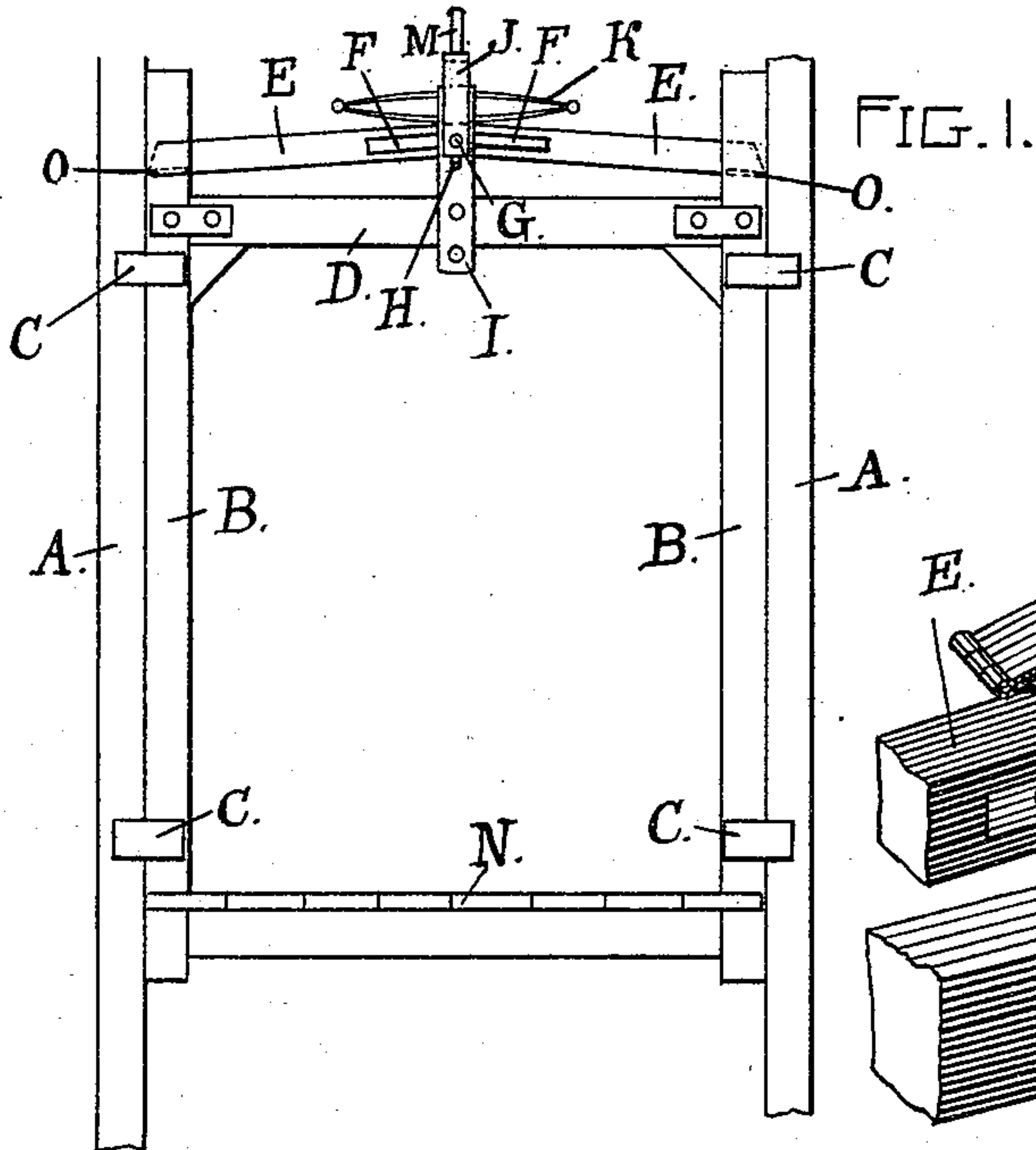


(No Model.)

E. F. MOENNING.
SAFETY DEVICE FOR ELEVATORS.

No. 434,453.

Patented Aug. 19, 1890.



ATTEST.

John H. Redstone,
W. D. Parsons,

INVENTOR

Emil F. Moenning

UNITED STATES PATENT OFFICE.

EMIL F. MOENNING, OF SAN FRANCISCO, CALIFORNIA.

SAFETY DEVICE FOR ELEVATORS.

SPECIFICATION forming part of Letters Patent No. 434,453, dated August 19, 1890.

Application filed August 8, 1889. Serial No. 320,085. (No model.)

To all whom it may concern:

Be it known that I, EMIL F. MOENNING, a citizen of the United States, residing in the city and county of San Francisco and State of California, have invented a new and useful Safety Device for Elevators, of which the following is a specification.

My invention relates to improvements in safety devices for elevators, which will be understood by reference to the accompanying drawings, and the letters referring thereto.

Figure 1 is a front elevation showing my improvement attached to an elevator-cage, and the weight of the cage suspended by the operating-cable. Fig. 2 is a front elevation of the same as Fig. 1, but showing the elevator-hoisting rope broken off and the cage held by the catch bars or levers. Fig. 3 is a broken perspective view of the safety devices, enlarged to show the construction more clearly. Fig. 4 is a broken perspective view of the catch-levers and hinge; Fig. 5, a longitudinal sectional view of the parts shown in Fig. 4, showing the construction of the anti-friction-joint bearings.

The following is a description of the construction of my improved safety devices for elevators. I employ the guide-rails A, of the same construction as those commonly in use, and the cage-timbers B, and parts C, similar to those in other elevator-cages. I adopt any well-known elevator-cage. The upper cross supporting-timber D of the cage is of sufficient strength to support all the strain that the weight or concussion from the momentum of the cage is liable to impose upon it. I attach the clevis I firmly to the timber or beam D by means of suitable rivets or bolts. I connect the suspending-bail J with an anti-friction-joint bearing center by means of the hinge journals or pivots G, which pass through the slots H, thus allowing a free vertical movement of the journals G when required. I connect the catch-levers E with each other by means of the hinge-plates F, but so as to allow a perfect bearing upon the anti-friction-joint or center bearing. I place the elliptic spring K so that its top bearing is against the cross-piece formed by the top I' of the clevis I, which supports the weight of

the cage when the whole is being suspended by the cable L and the cage in use. I attach the cable L by means of the staple M.

R indicates rollers arranged around the cylinder P in the joint, and these rollers are sustained within the joint by the hinge-plates F, the adjacent ends of the catch-levers E being recessed, as shown, to form a seat for said rollers R.

The following is the operation of my improved safety device: The cable L being attached and the cage suspended, as in the case of other elevators, by means of suitable operating machinery for moving the cage up and down, the clevis I, connecting by means of the journals G with the central anti-friction joint, the lower bearing of the elliptic spring K is against the tops of the catch-levers E and bears the whole weight of the cage, the spring K yields and the levers E are drawn up and consequently in from all contact with the outer wall or sides of the elevator-guides. The spring K is so strong that it only yields sufficiently to withdraw the contact of the points O of the levers E when a pressure nearly equal to the weight of the empty elevator-cage is bearing up against the bottom of the same. Thus it will be seen that the catch-points O do not interfere with the free operation of the cage as long as the same is suspended by the cable. As soon as the cable breaks, the spring K throws the levers E down, and the catch-points O being thrown out catch into the guide-timbers A and the cage is instantly stopped by the points cutting into the same, thus preventing too abrupt concussion.

One of the important advantages of the combination of the spring K with the joint of the catch-levers E is seen in the fact that the anti-friction center bearing prevents all cramping, such as might occur were an ordinary joint employed, and rust or inadequate lubrication cause a sticking and uncertain action.

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

1. In elevator catch-springs, the catch-levers E, with hinges F, and anti-friction center bear-

ing-cylinders P, having the journals G and rollers R, in combination with the clevis I, having the slot H, and the bail J, having the staple M, constructed and operated substantially as and for the purposes set forth.

2. In a safety device for elevators, the combination, with the clevis having its side walls slotted, of the suspending-bail, the catch-levers hinged at their inner ends, the rod G,

connecting the ends of said levers and also the suspending-bail with the clevis, and the spring interposed between the upper side of the catch-levers and the top wall of the clevis, substantially as specified.

EMIL F. MOENNING.

Witnesses:

J. H. REDSTONE,

W. D. PARSON.