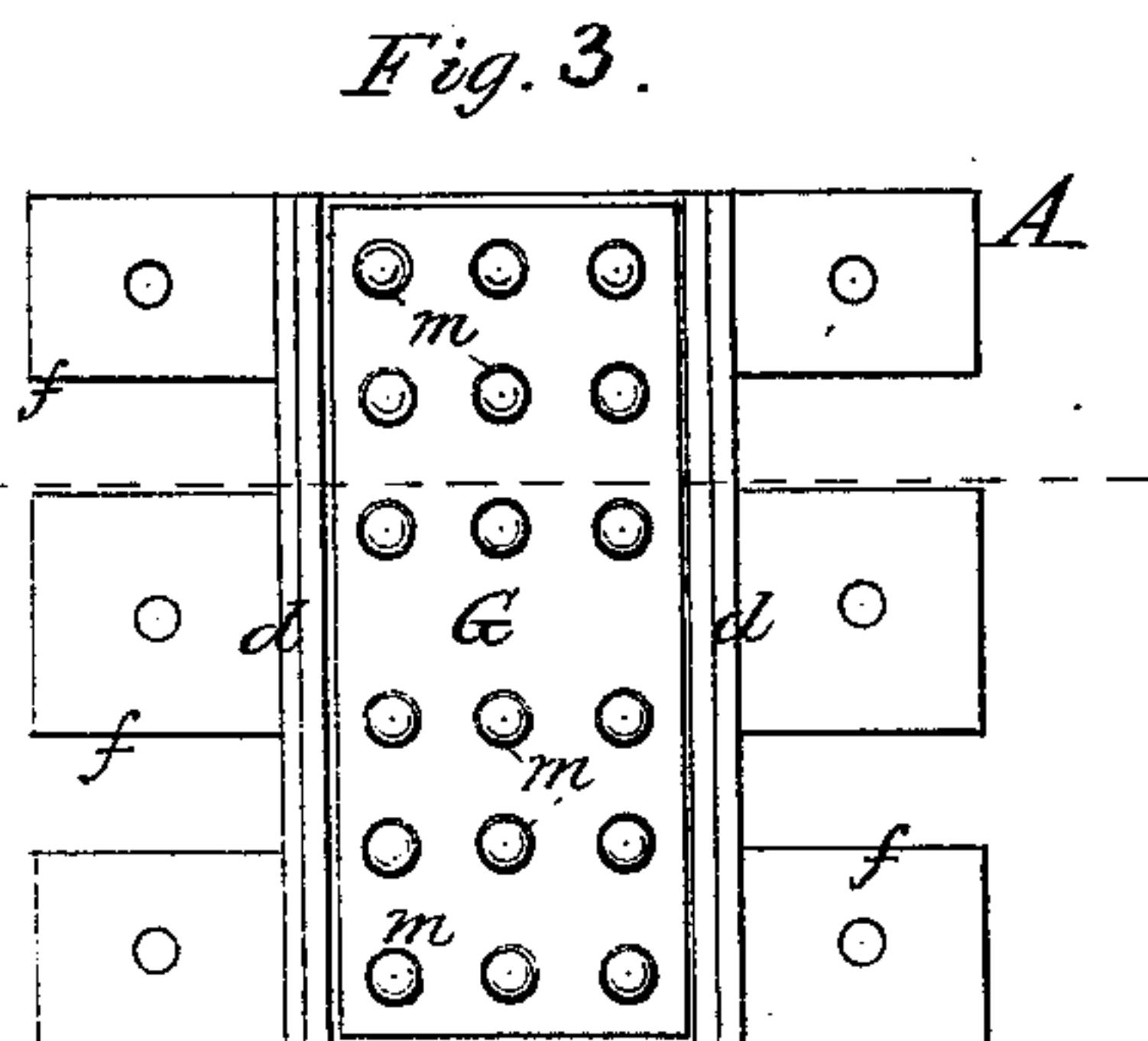
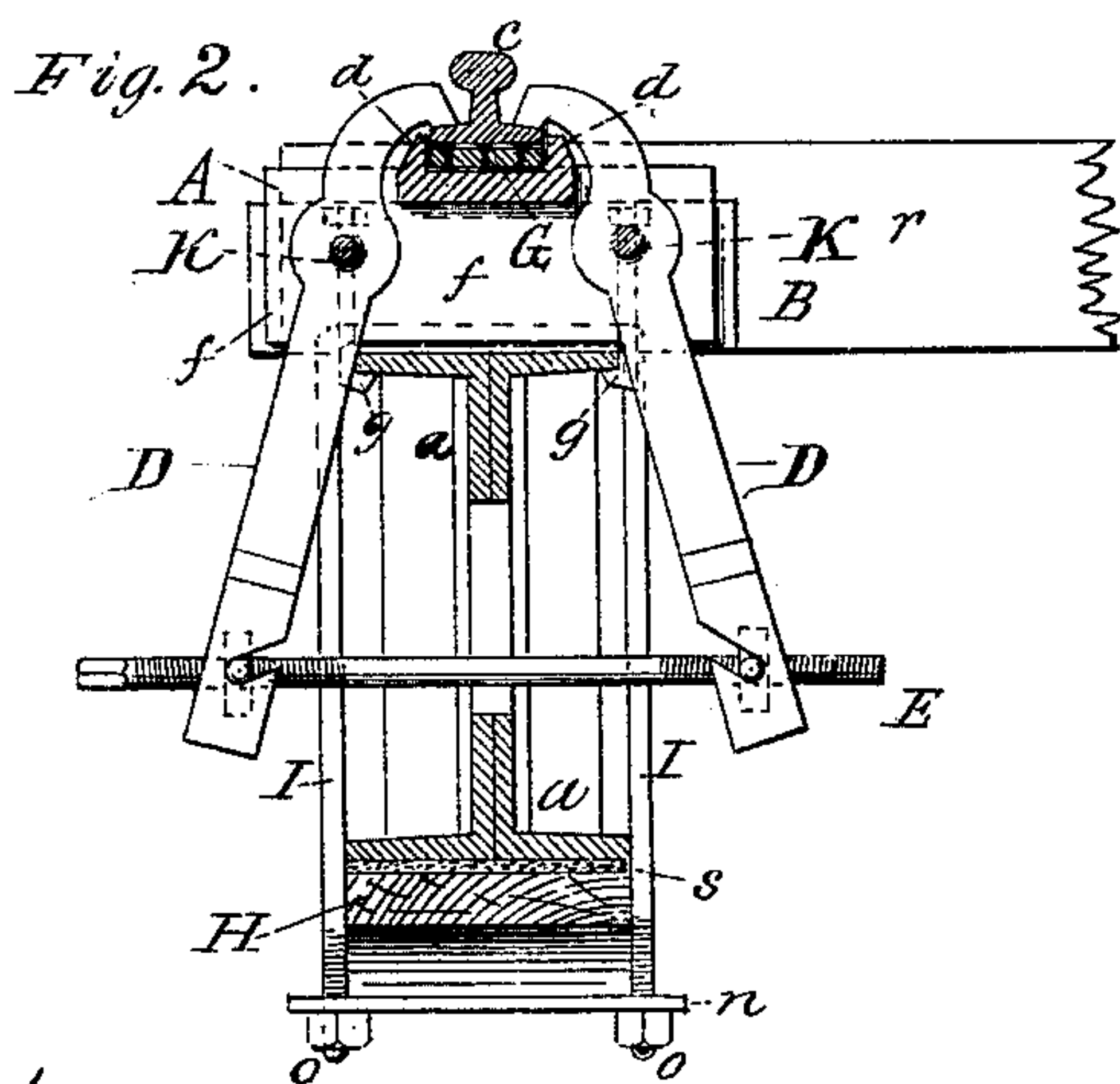
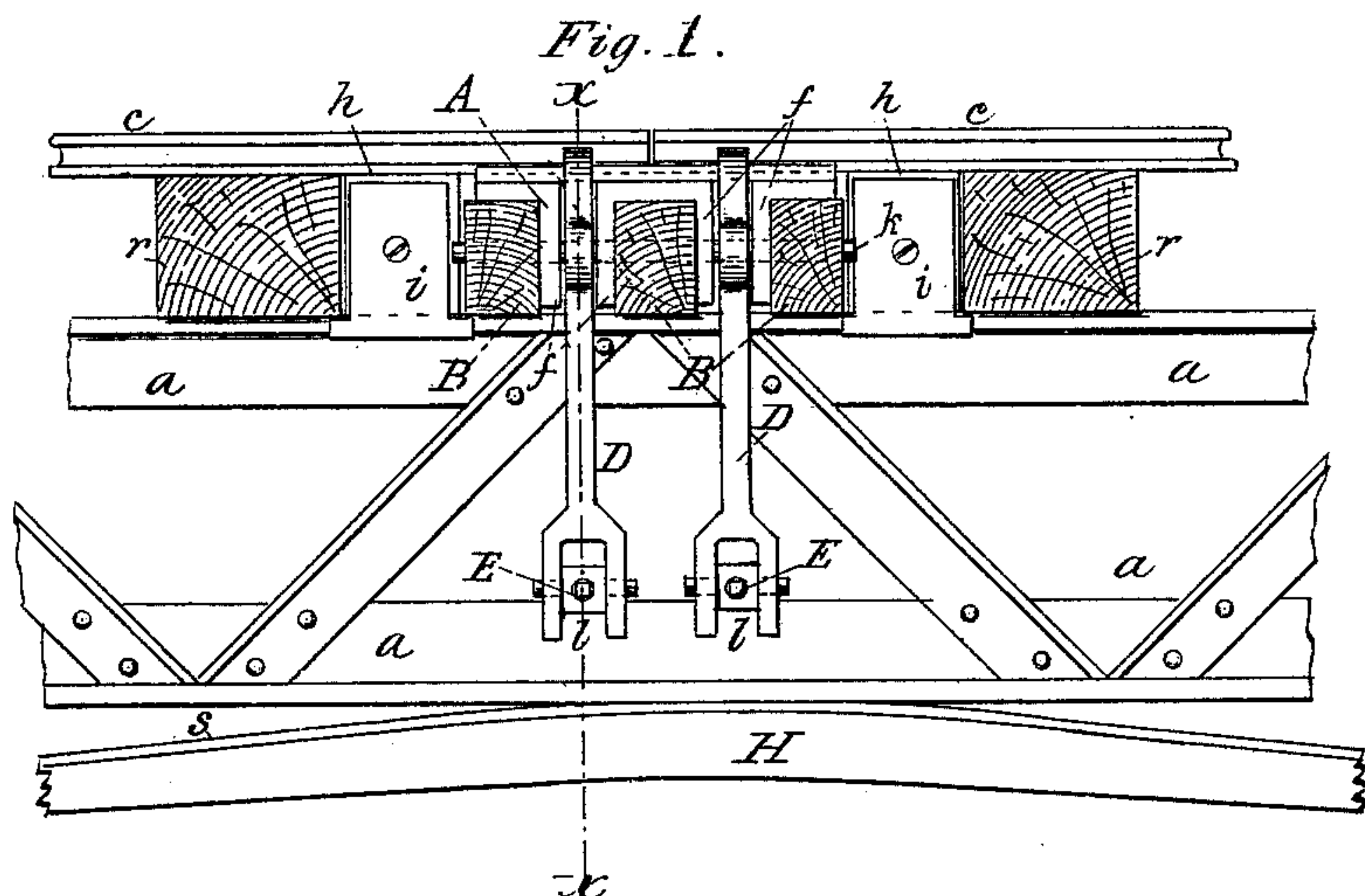


R. & H. J. HALLORAN.
Railways.

No. 218,261.

Patented Aug. 5, 1879.



Attest:

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UNITED STATES PATENT OFFICE.

RICHARD HALLORAN AND HENRY J. HALLORAN, OF NEW YORK, N. Y.

IMPROVEMENT IN RAILWAYS.

Specification forming part of Letters Patent No. **218,261**, dated August 5, 1879; application filed February 7, 1879.

To all whom it may concern:

Be it known that we, RICHARD HALLORAN and HENRY J. HALLORAN, both of the city, county, and State of New York, have invented certain new and useful Improvements in Railway-Chairs, of which the following is a specification.

Our invention is mainly designed to support the rails of elevated railways in such manner as will firmly hold the rail without the use of spikes, and will reduce the noise by preventing the vibration of the rail and the issuance of sound therefrom.

Figure 1 of the annexed drawings presents a fragmentary side elevation of a portion of a girder, &c., of an elevated-railway structure, showing the rail-chair, the fastening-dogs, &c.; and Fig. 2 is a cross-section thereof on line *x x*, Fig. 1. Fig. 3 is a plan view of the chair removed, with the cushion shown in position therein.

In the drawings, *a a* indicate the spanning-girders of the structure; *r r*, the ties, and *c c* the rails.

The chief features of our invention relate to the mode of supporting, cushioning, and fastening the rails on the girders.

A indicates the chair on which the meeting ends of the rails are supported, and which embodies novel features. The face of the chair is formed with the usual projecting lips *d d*, between which the rail is socketed. The chair is sufficiently long to nearly extend from one tie to the other, as shown, and it is formed at each side with vertical slots or jaws, and with downwardly-extending flanges *f f*, forming the sides of the slots, which embrace or straddle short timbers *B B*, which cross the girders and support the chair, as shown in Figs. 1 and 2. These timbers are a little lower than the ties, as shown, so as to support the top of the chair on about a level with the top of the ties, and they are preferably secured to the girders by claw-headed bolts *g g*, Fig. 2, the nutted ends of which are recessed into the top of the timbers *B B*. The rail is further supported between the ends of the chair and the sides of the ties by blocks *h h*, of equal width with the girders, and which are secured in position by the plates *i i*, fastened to each side of the block, as shown in Fig. 1.

It will now be seen that this arrangement of the chair *A*, the timbers *B B*, and the blocks *h h*, with the ties, furnishes a continuously-solid support to the rails, thus leaving no part thereof free to unobstructedly vibrate, while such vibrations as may occur are absorbed and deadened by this continuous support, which, as may be observed, entirely fills the space between the ties, and thus prevents the issuance of sound from the rails.

In the slots between the flanges *f f* of the chair, and on each side of the rail, the clamping dogs or levers *D D* are pivoted on a bolt, *k*, which extends through the flanges *f f* and through the timbers *B B*, as shown in Figs. 1 and 2. The short arms of these levers are curved over, and bear upon the top of the base of the rails, near the joint or meeting ends thereof, as shown, while their long arms, which extend downward between the timbers *B B*, are connected by a right and left threaded screw-rod, *E*, which works in nuts *l l*, that are swiveled, but incapable of turning in the forked ends of the long arms of the levers, as shown in Figs. 1 and 2. One end of the screw-rod is squared to receive a wrench, by which the rod may be turned to separate the long arms of the levers, and thus powerfully clamp the rail in fixed position, as will be readily understood. This clamping or fastening device forms another feature of our invention, and, as will be observed, while it enables the rail to be held with great firmness, it yet admits of its removal when required with great readiness.

It will also be seen that the described supporting and fastening devices are of such construction that they may be applied to the existing structures without interfering with the running of the trains, as the parts may all be inserted in position from the side and under the rails. It is designed to have one pair of these clamp-levers at each end of the rails, as shown, and one pair at the middle to hold the rail centrally, the central clamps having broader jaws to obtain a more extended bearing on the rail. It is also designed to insert short timbers between the ties and under the rails at all points where the chairs *A* and timbers *B B* are not used to form the continuous support to the rail.

We prefer to employ in connection with the

chair a solidly-supporting and sound-deadening cushion, G, placed between the face of the chair and the base of the rails, as shown in Figs. 2 and 3. This cushion lies in the socket of the chair, as shown, and is formed of tough leather, studded with a number of strong metal rivets, *m m*, which extend entirely through the same, and protrude slightly from each surface, as shown. These rivets, as will be understood from Fig. 2, form a solid support between the base of the rail and the face of the chair, while the comparatively soft material in which they are embedded effectually absorbs any vibrations that may originate from the tremor of the rail, and prevents their development into noise. Another advantage of this metal-studded cushion is, that by having the rivets a little higher at one end of the cushion than at the other, any inequalities in the height of the two rails may be counteracted, and the meeting ends of the rails thus brought to a true level on the screwing down of the clamps. The rivets of the cushion are preferably of soft steel, and the material in which they are embedded is preferably leather; but strong felt, vulcanized rubber, or vulcanized fiber may also be used. This cushion, however, we do not claim in this application,

but reserve it for the subject of a future application.

What we claim as our invention is—

1. A rail-fastening clamp or chair formed of the combination, with a supporting-chair, of the pivoted clamp-levers *D D*, having their clamping ends arranged to bear downwardly upon the base of the rail, to hold the rail to the face of the chair, with the connecting screw-rod *E* and swiveled nuts *l l*, substantially as shown and described.

2. The combination, in an elevated-railway structure, of the rail-supporting chair *A*, the timbers *B B*, and blocks *h h*, arranged to fill the space between the ties, substantially as shown and described.

3. The combination of the chair *A*, formed with the downward flanges *f f*, with the supporting-timbers *B B*, embraced by the said flanges, and the clamp levers or dogs *D D*, pivoted between the said flanges and timbers, substantially as shown and described.

RICHARD HALLORAN.
HENRY J. HALLORAN.

Witnesses:

RICHARD M. LURLE,
W. W. HORTON.