

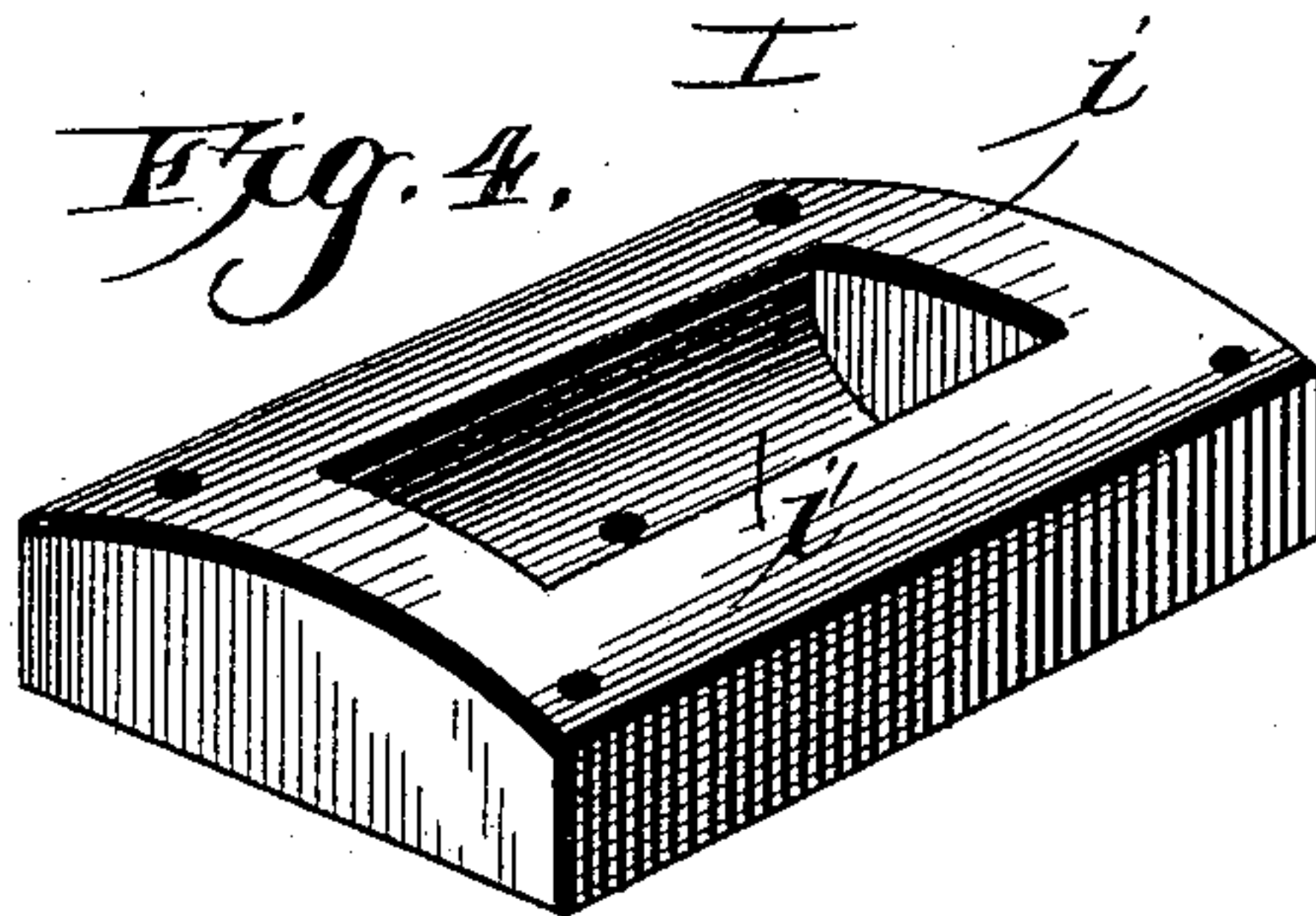
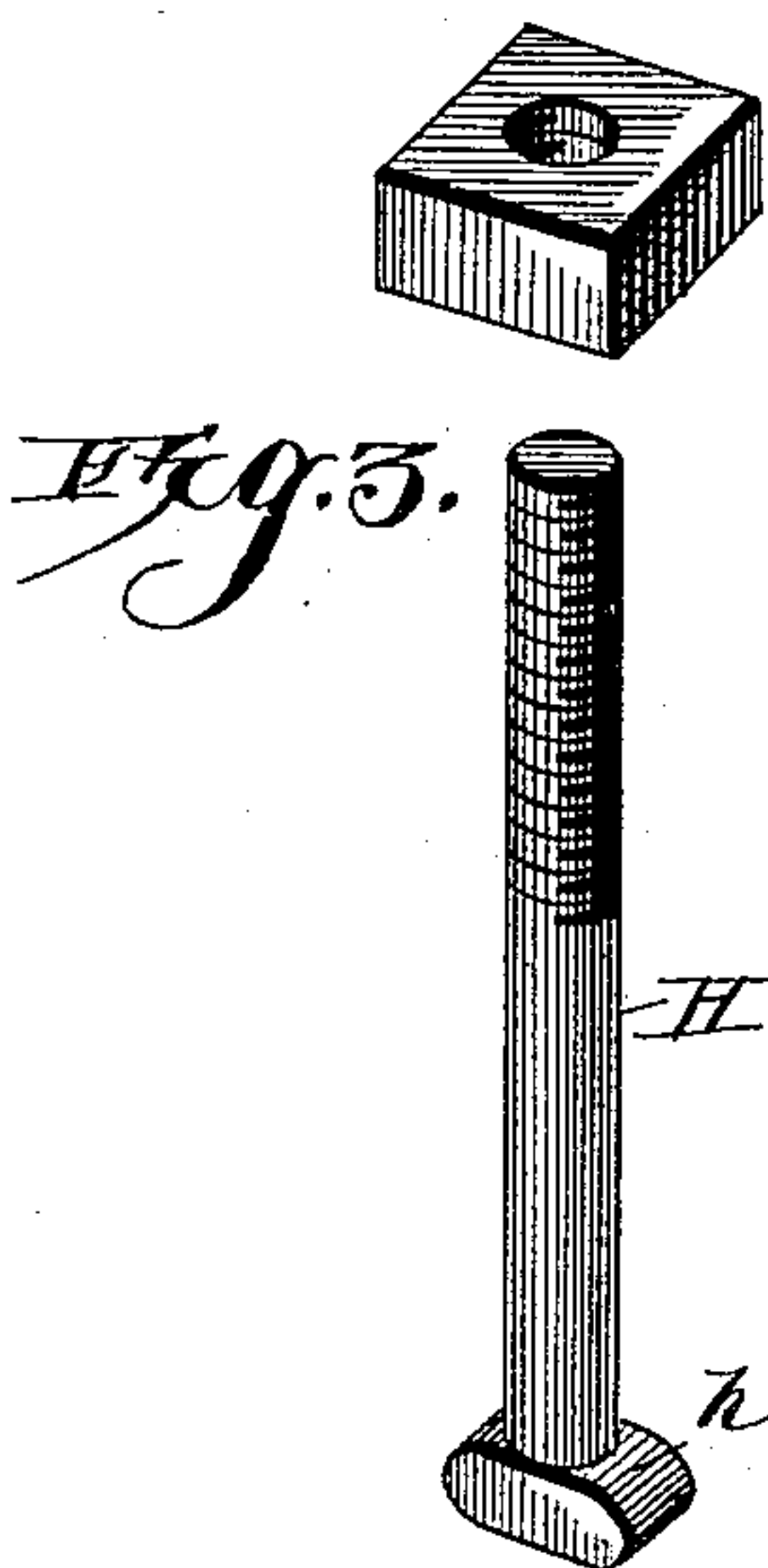
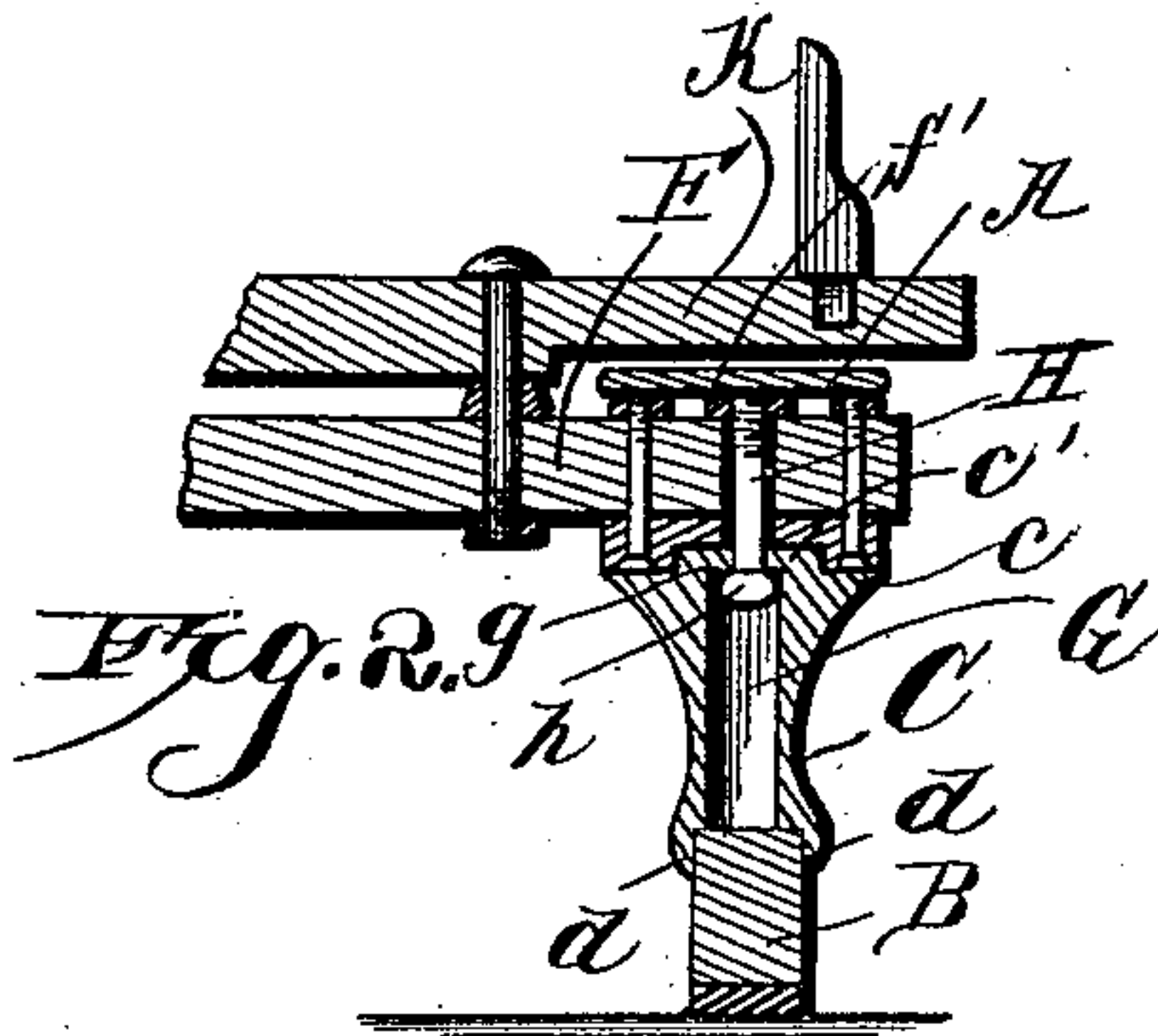
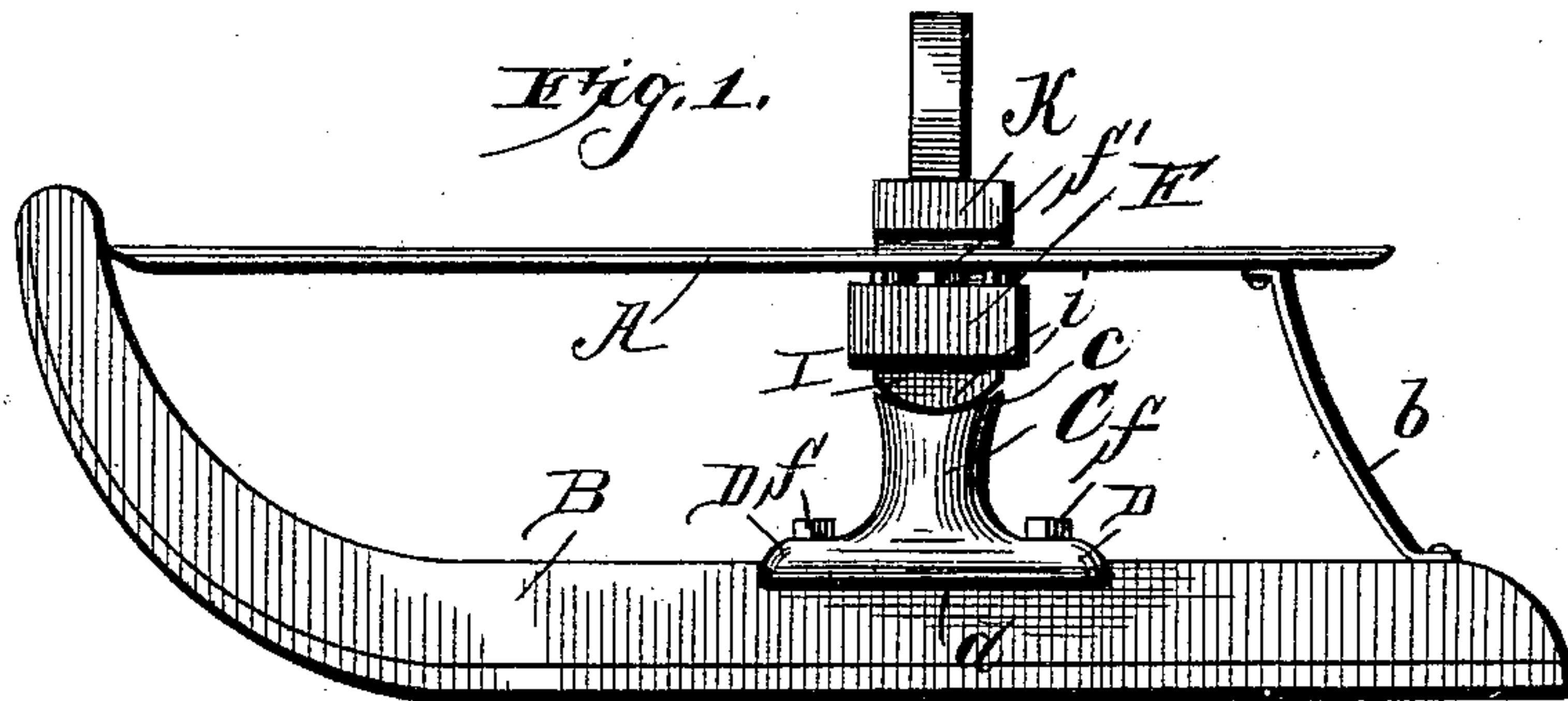
(No Model.)

F. C. KLIPSTEIN.

SLEIGH.

No. 397,728.

Patented Feb. 12, 1889.



Witnesses.

Henry E. Dieterich
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By *his* Attorneys

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UNITED STATES PATENT OFFICE.

FREDERICK C. KLIPSTEIN, OF LELAND, WISCONSIN.

SLEIGH.

SPECIFICATION forming part of Letters Patent No. 397,728, dated February 12, 1889.

Application filed November 7, 1888. Serial No. 290,201. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK C. KLIPSTEIN, a citizen of the United States, residing at Leland, in the county of Sauk and State of Wisconsin, have invented new and useful Improvements in Sleighs, of which the following is a specification.

The invention relates to improvements in sleighs, and more particularly to the knees that connect the runners to the sleigh-body or the beam or sills thereof; and it consists in the construction and novel combination of parts hereinafter described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended.

Figure 1 of the drawings represents a side view of a part of the body of a sleigh having a knee attached that embodies the invention. Fig. 2 represents a central vertical transverse section of the knee. Fig. 3 represents a view of the bolt and nut detached. Fig. 4 represents a perspective view of the rocking block detached.

Referring to the drawings by letter, A designates the rave of a sleigh, and B the runner, which is curved upward at its front end and attached to the front end of the rave, and is connected thereto at its rear end by the brace *b*.

C designates a hollow vertical standard having its upper end, *c*, concave transversely to the sleigh and provided with a central transverse rounded rib, *c'*. The lower end of the standard is provided with the horizontal longitudinal arms D, having on their edges the depending flanges *d*, which fit upon the sides of the runner B, and the runner is secured to the lower sides of the said arms by bolts and nuts *f*. The recess G of the standard has an extended and flat upper end, *g*, for the reception of the head *h* of the bolt H, the shank of which passes out of the opening in the upper end of the standard and through an opening in the transverse beam F, being engaged thereabove by a nut, *f'*, as shown.

I represents a rocking block secured by suitable bolts and nuts, as shown, to the lower side of the beam, between the same and the upper end of the standard, and perforated centrally for the passage of the shank of the bolt H. The convexity of the lower face, *i*, of the rocking block is rather more than the concavity of

the upper end of the knee upon which it rests, and it is provided with a transverse recess, *i'*, which fits upon the rib *c'* of the standard.

It will be seen that the rave passes over the beam, but is not secured thereto, and therefore it does not interfere with the rocking movement of the beam.

The bolster K is bolted or swiveled on the upper side of the beam, above or out of contact with the rave.

It will be evident from the above description that the runner is bolted firmly to the lower end of the standard, that the latter is bolted to the beam, and that while the rib *c'* and recess *i'* hold the standard and rocking block closely together in their proper relative positions they are capable of a rocking movement forward and backward, which enables the runner to follow the irregularities of the surface over which it travels.

It will be seen that free movement of the runner is here gained without undue looseness of the parts.

Having thus described the invention, I claim—

1. In a sleigh-knee, the standard secured at its lower end to the runner and having a concavity in its upper end, combined with the rocking block secured to the beam and having a rounded under side bearing in the concavity of the standard, the convexity of the block being more abrupt than the concavity of the standard, whereby the block is allowed a free rocking motion, substantially as specified.

2. In a sleigh-knee, the standard secured at its lower end to the runner and provided with a concavity in its upper end, in which is arranged a transverse rounded rib, *c'*, combined with the rocking block secured to the beam and provided with a convex under side fitting loosely in the concavity and a rounded transverse recess, *i'*, fitting upon the said rib, substantially as specified.

3. In a sleigh-knee, the combination of the hollow standard C, secured at its lower end to the runner and provided at its upper end with a concavity and a rib, *c'*, the rocking block I, secured to the beam of the sleigh and having a lower convex surface and a recess, *i'*, fitting on the transverse rib, and the bolt H, with its

head fitting in the bore of the standard and its shank extending through vertically-aligned perforations in the upper end of the standard, the rocking block, and the beam, and engaged
5 by a suitable bolt, substantially as specified.

4. In a sleigh, the combination, with the beam and runner, of the standard provided at its upper end with a concavity and at its lower end with the arms D, having depending flanges
10 *d* at their sides which engage the runner, the rocking block secured to the beam and having a convex under surface bearing in the concavity of the standard, and the bolt II, fitting loosely in registering perforations in the stand-
15 ard, the rocking block, and the beam, substantially as specified.

5. In a sleigh, the combination of the runner, the rave secured at its front end to the runner and connected thereto at its rear end
20 by the brace *b*, the hollow standard secured at

its lower end to the runner and provided at its upper end with a concavity intersected by a transverse rib, the beam arranged under the rave, the rocking block bolted to the under side of the beam and having a convex under
25 surface intersected by a transverse recess fitting over the rib on the standard, the bolt II, passing through registering perforations in the upper end of the standard, the rocking block, and the beam, and the bolster swiveled
30 on the upper side of the beam above the rave, substantially as specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

FREDERICK C. KLIPSTEIN.

Witnesses:

THOMAS BAKER,
HATTIE HAND.