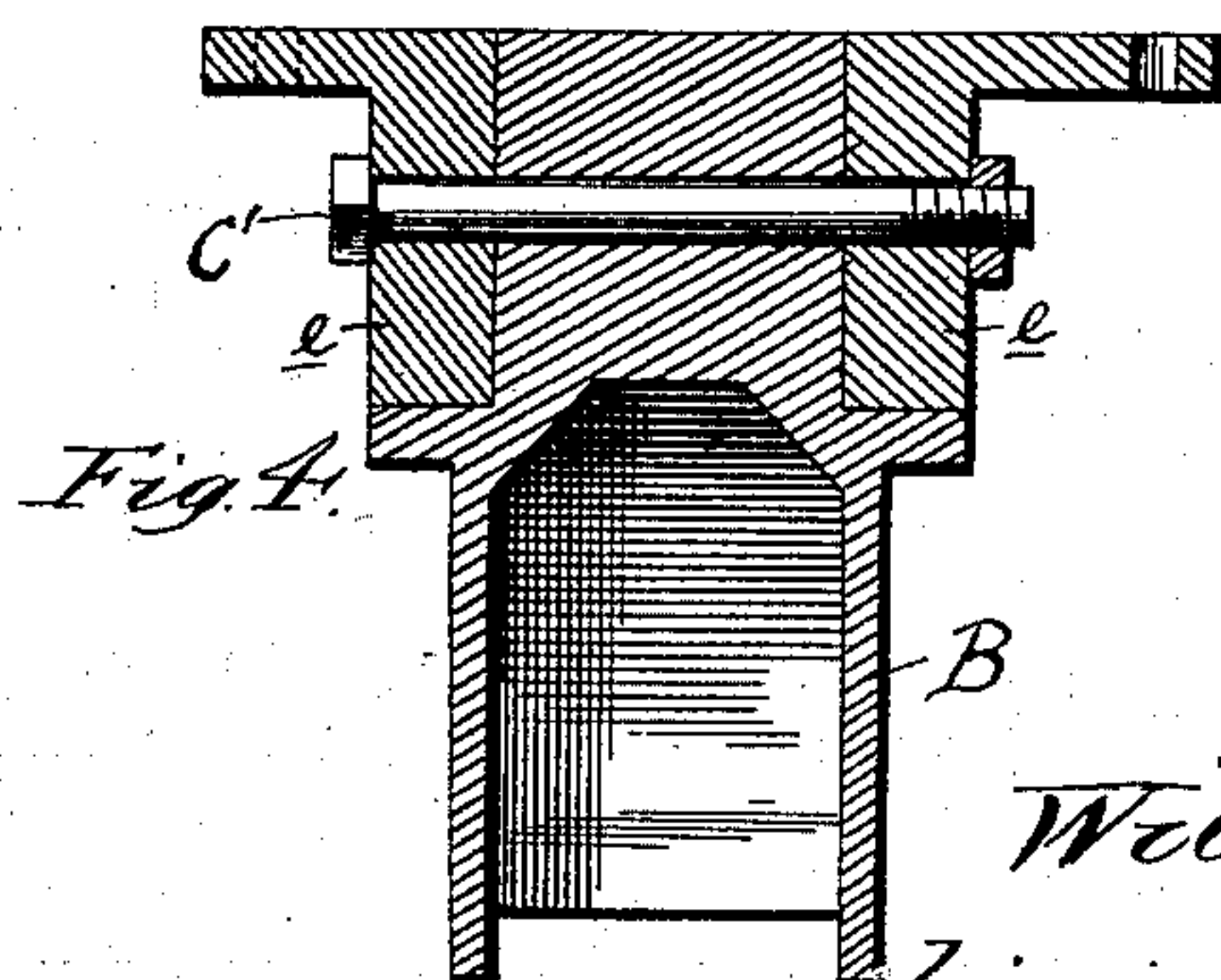
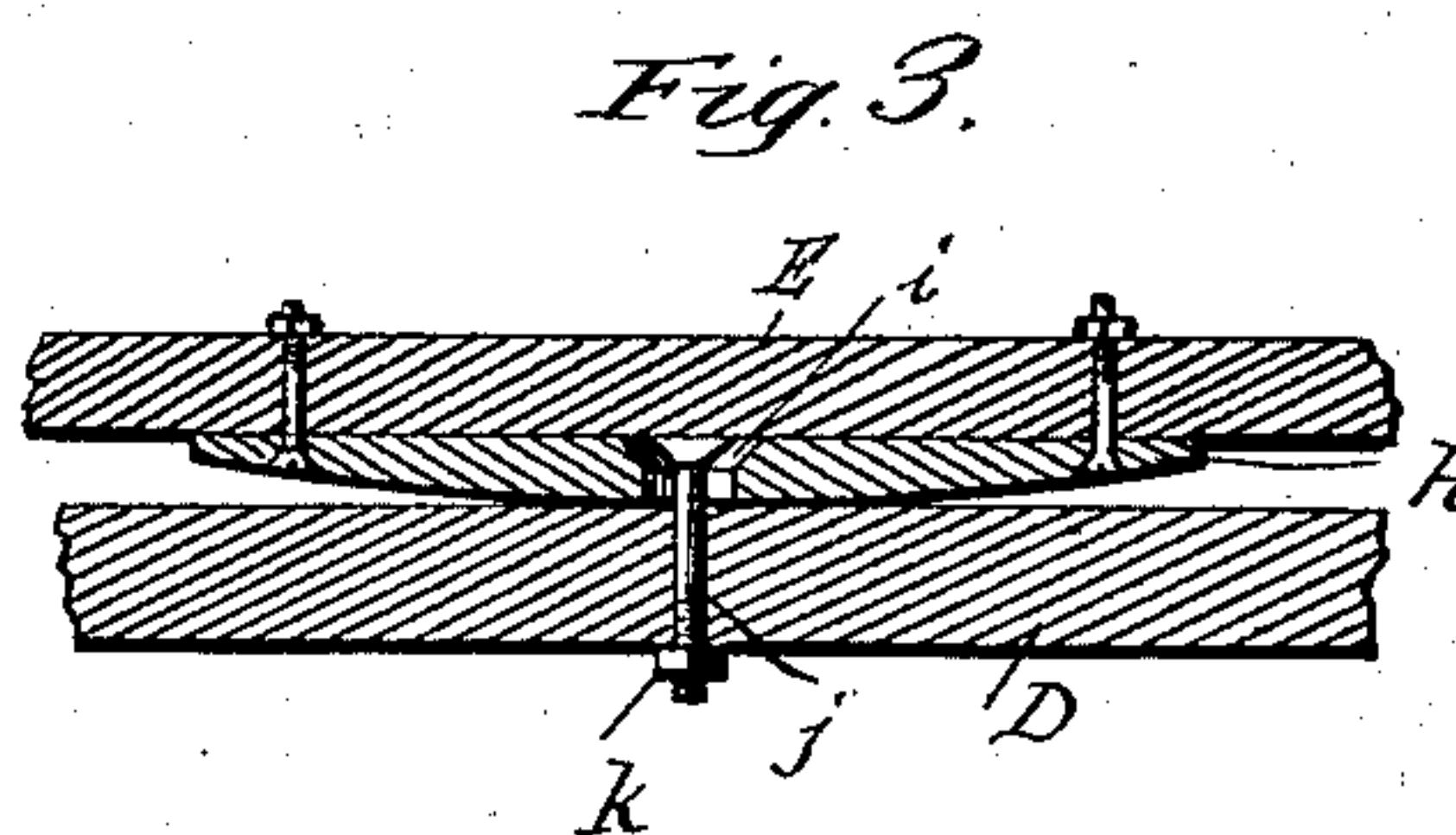
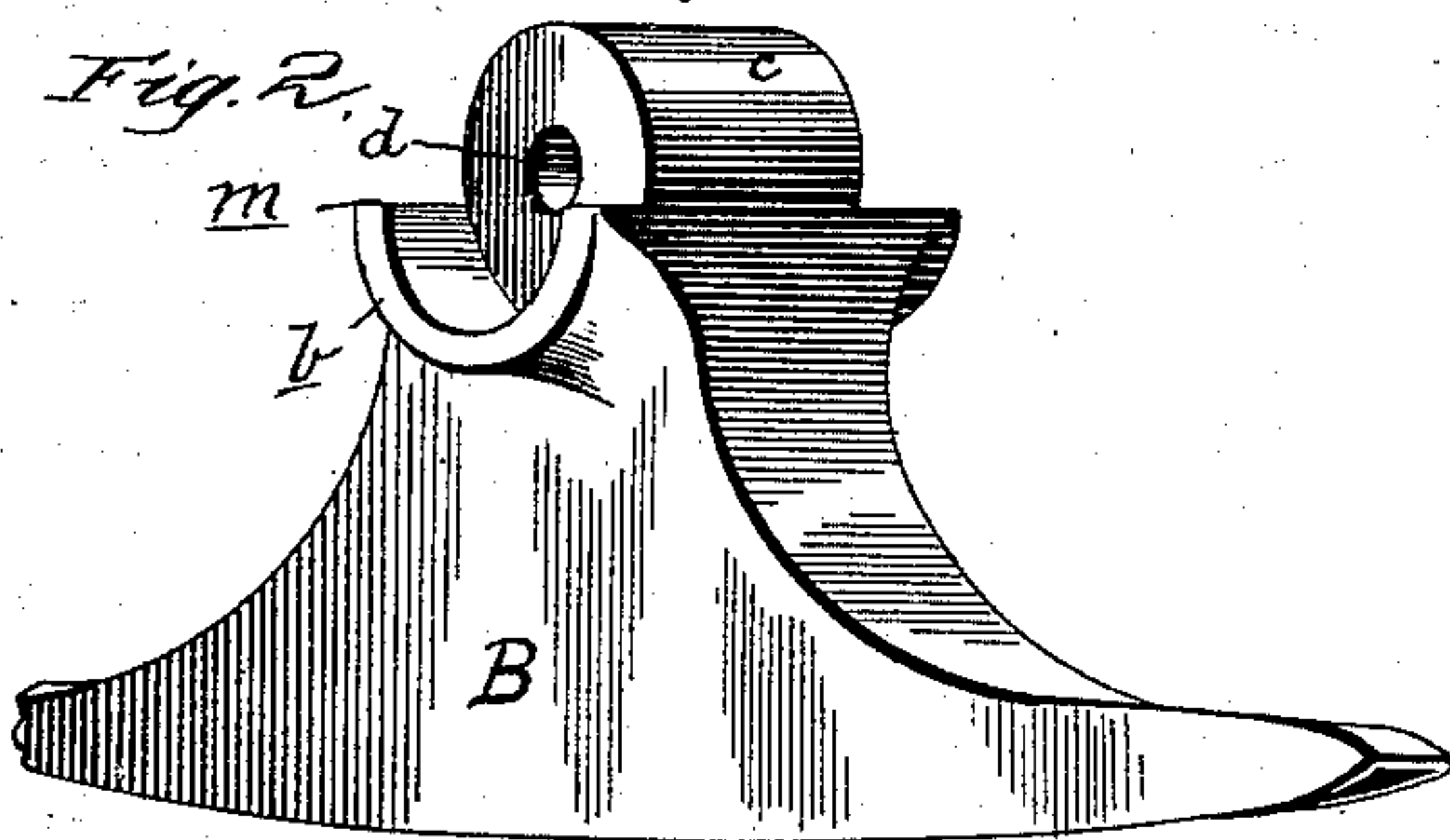
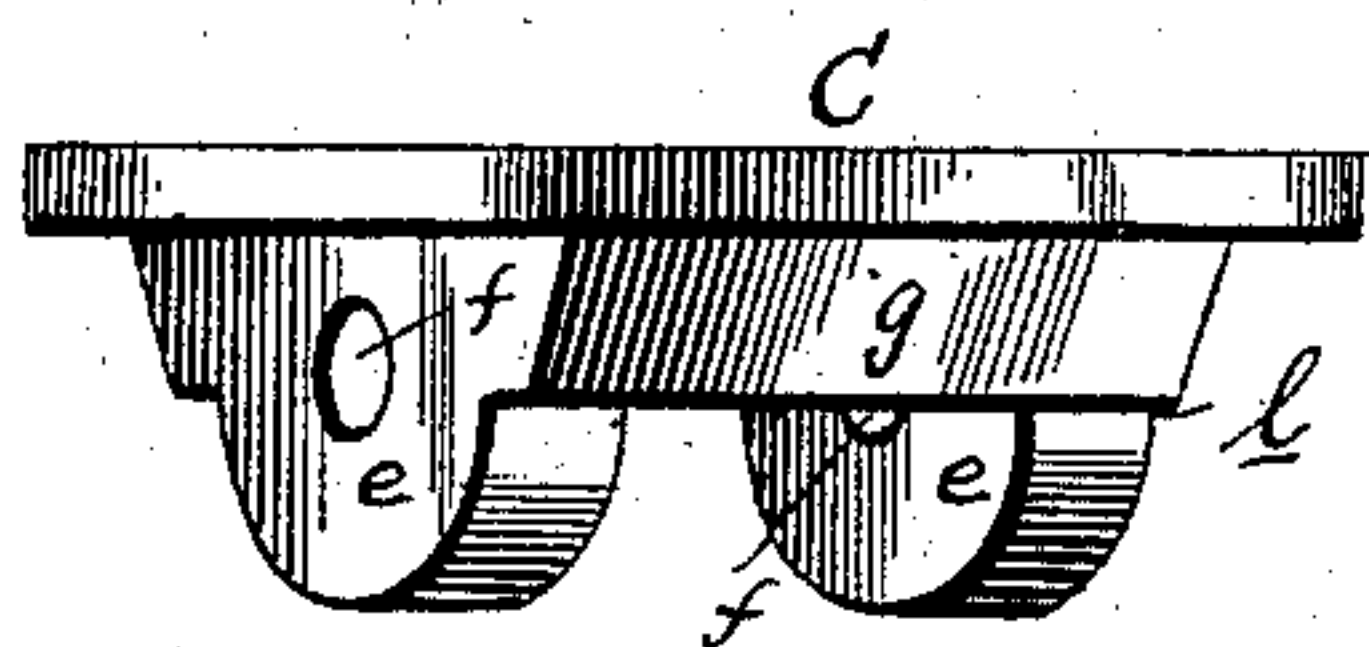
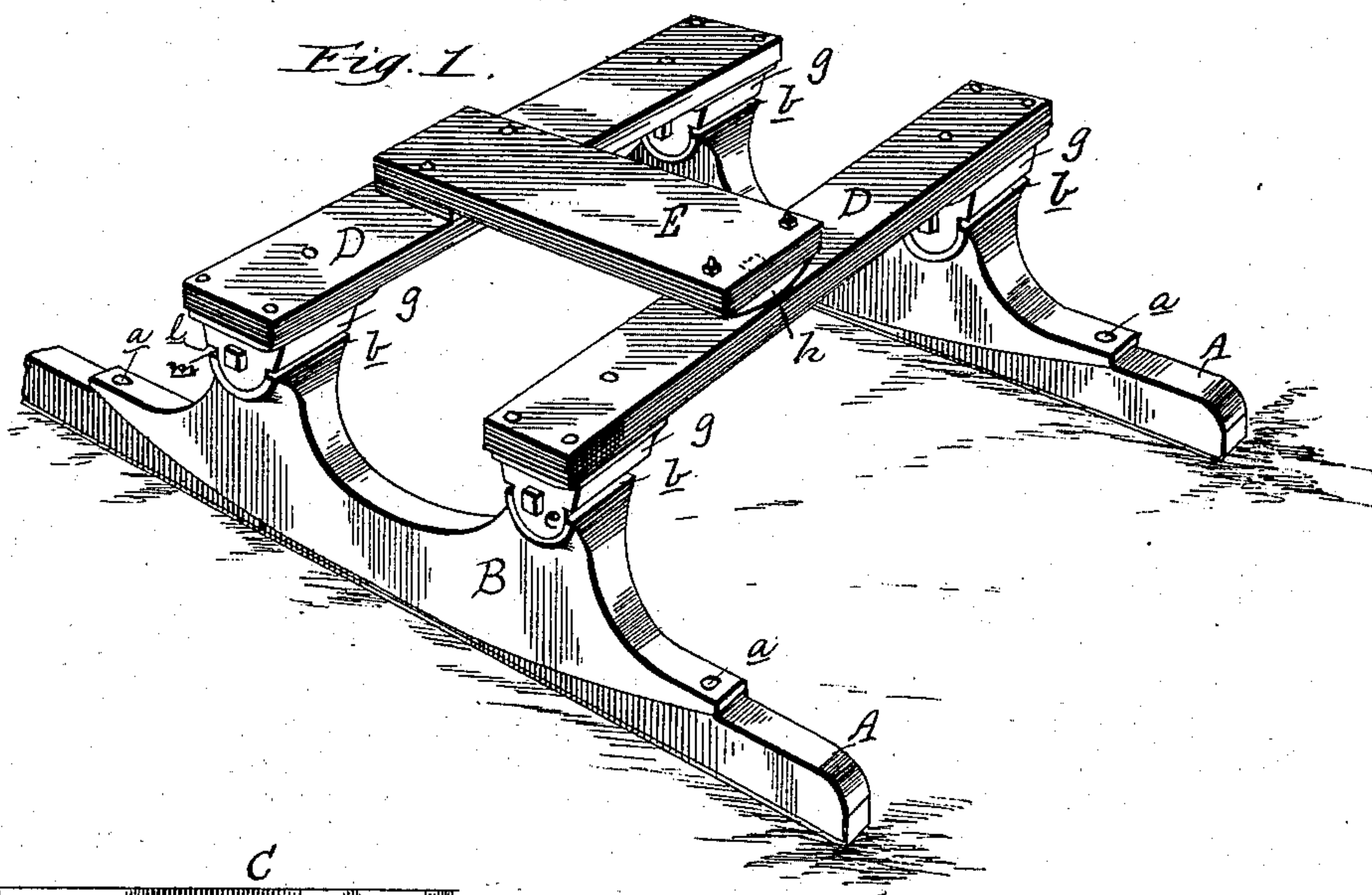


(No Model.)

W. J. BLACKINTON
BOB SLED.

No. 406,560.

Patented July 9, 1889.



28 Wyndham St
C. H. Bond.
C. H. Bond.

Inventor
Will J. Blackinton

By his Attorney

Amherst
Chas. T. Fowler

UNITED STATES PATENT OFFICE.

WILL J. BLACKINTON, OF OTTER LAKE, MICHIGAN.

BOB-SLED.

SPECIFICATION forming part of Letters Patent No. 406,560, dated July 9, 1889.

Application filed April 12, 1889. Serial No. 306,961. (No model.)

To all whom it may concern:

Be it known that I, WILL J. BLACKINTON, a citizen of the United States, residing at Otter Lake, in the county of Lapeer and State of Michigan, have invented certain new and useful Improvements in Bob-Sleds; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

This invention relates to certain new and useful improvements in bob-sleds, and the novelty resides in the peculiarities of construction and the combinations, arrangement, and adaptation of parts, all as more fully hereinafter described, shown in the drawings, and then particularly pointed out in the appended claims.

The invention is clearly illustrated in the accompanying drawings, which, with the letters of reference marked thereon, form a part of this specification, and in which—

Figure 1 is a perspective view of a portion of a sled provided with my improvements. Fig. 2 is an enlarged perspective of the knuckle with the parts thereof shown detached. Fig. 3 is a sectional detail which will be more particularly hereinafter referred to. Fig. 4 is a vertical cross-section through the knuckle on an enlarged scale.

Referring now to the details of the drawings by letter, A designates the runners, which may be of any approved form and material.

B is a casting formed hollow, as shown, and at its lower portion adapted to fit over the runner, to which it is secured by means of suitable screws or bolts *a*. This casting may be formed with either one or two of my improved knuckles, there being two shown in Fig. 1. It has at its upper end a semicircular bearing or seat *b*, from which rises the circular block or rib *c*, provided transversely with a hole *d*. This block does not extend the full length of the bearing or seat *b*, but terminates at a short distance from the outer ends thereof to leave room to receive the ears or lugs *e*, formed on the under face of the wearing-plate C, there being a space between the ears to receive the block *c*, and the said ears being provided with transverse holes *f*,

as shown. Ribs *g* unite the ears or lugs *e*, as shown more clearly in Fig. 2, and when the parts are in position these ribs *g* serve as a boxing for the block *c*.

In practice the plate C is placed over the casting B with the ears embracing the block of the casting, and a transverse bolt C' placed through the coincident holes in the ears and in the block, which bolt or pin serves as a pivot for the knuckle and on which the parts may turn.

To the plates C are secured in any suitable manner the transverse timbers D, which are connected together by the longitudinal piece E, which is firmly attached at one end to one of said timbers, and at the other end pivotally connected in the following manner: *h* is a rocking plate attached to the longitudinal timber by means of suitable screws or bolts, and provided with a hole *i*, in which is seated the head of the bolt *j*, which bolt passes through the transverse timber and has upon its end a nut *k*, the head of the bolt being so arranged that it can readily assume different positions, but cannot be displaced.

Shoulders *l*, formed on the underside of the ribs *g*, abut against shoulders *m* on the top of the casting, and serve to limit the movement of the parts.

Importance is attached to the fact that the front bob is provided with two sets of knuckles. The principal trouble with bob-sleds having single knuckles on the front bob is that if the team starts suddenly when the front bob is turned sidewise it is almost sure to upset the load. By the use of the double knuckles this is avoided.

What I claim as new is—

1. In a sled, the combination, with the casting formed with semicircular bearing and circular block in said bearing, of the wearing-plate formed with ears embracing said block, and with the ribs *g* connecting said ears, substantially as shown and described, and for the purpose specified.

2. In a sled, the hollow casting B, formed with semicircular bearing at its upper end and with circular block in said bearing, with a space at each end thereof, combined with the wearing-plate formed with depending ears and ribs *g* connecting the same, and the trans-

verse bolt pivotally connecting said ears and block together, substantially as shown and described.

3. In a sled, the combination, with the runners provided with the knuckles and the transverse timbers secured to portions of said knuckles, of the longitudinal timber, the rocking plate on the under side thereof at one end, and the loosely-working bolt securing the said
10 end of the longitudinal timber to one of the

transverse timbers, substantially as shown and described.

It testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

WILL J. BLACKINTON.

Witnesses:

S. O. SHERMAN,
H. A. MACK.