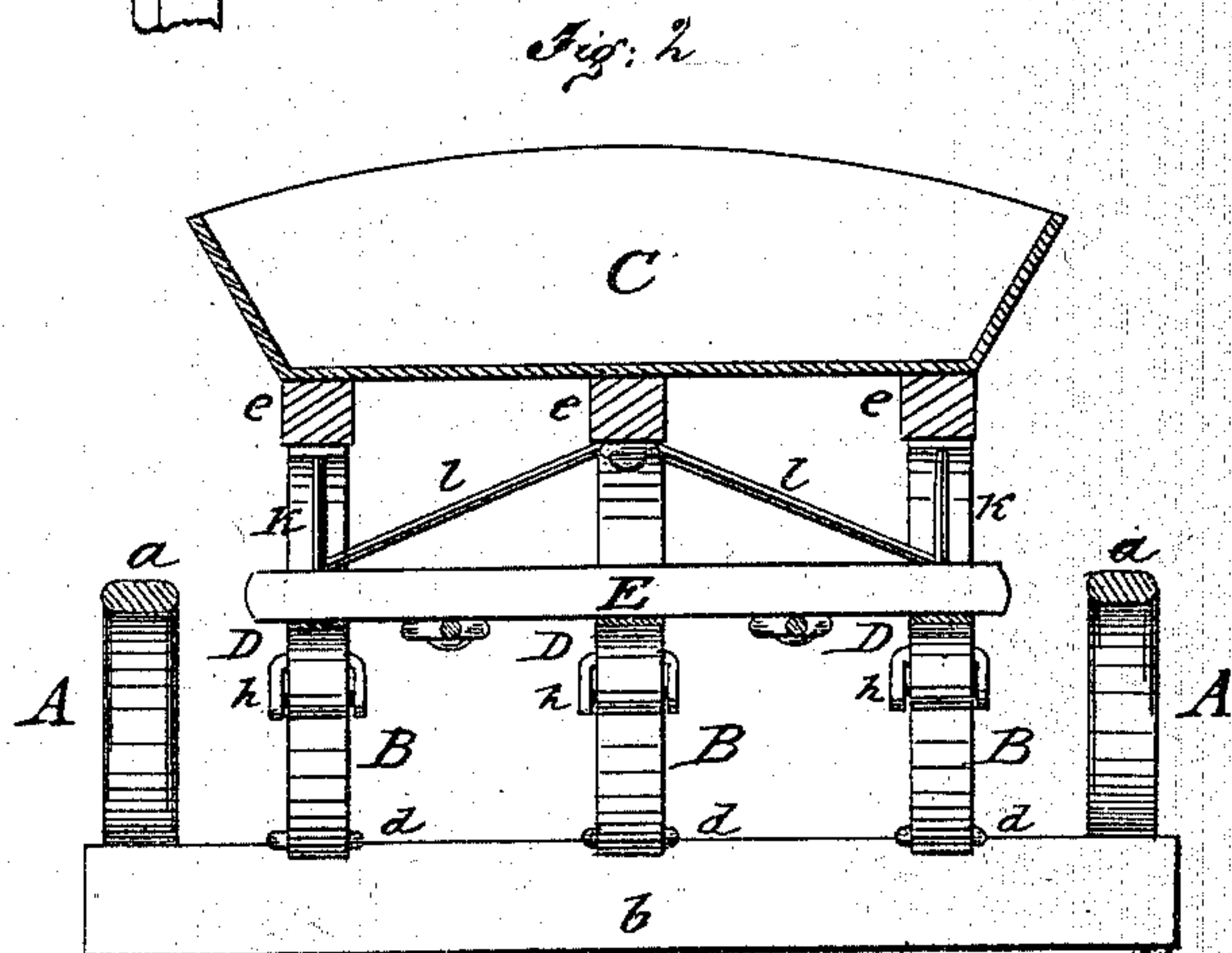
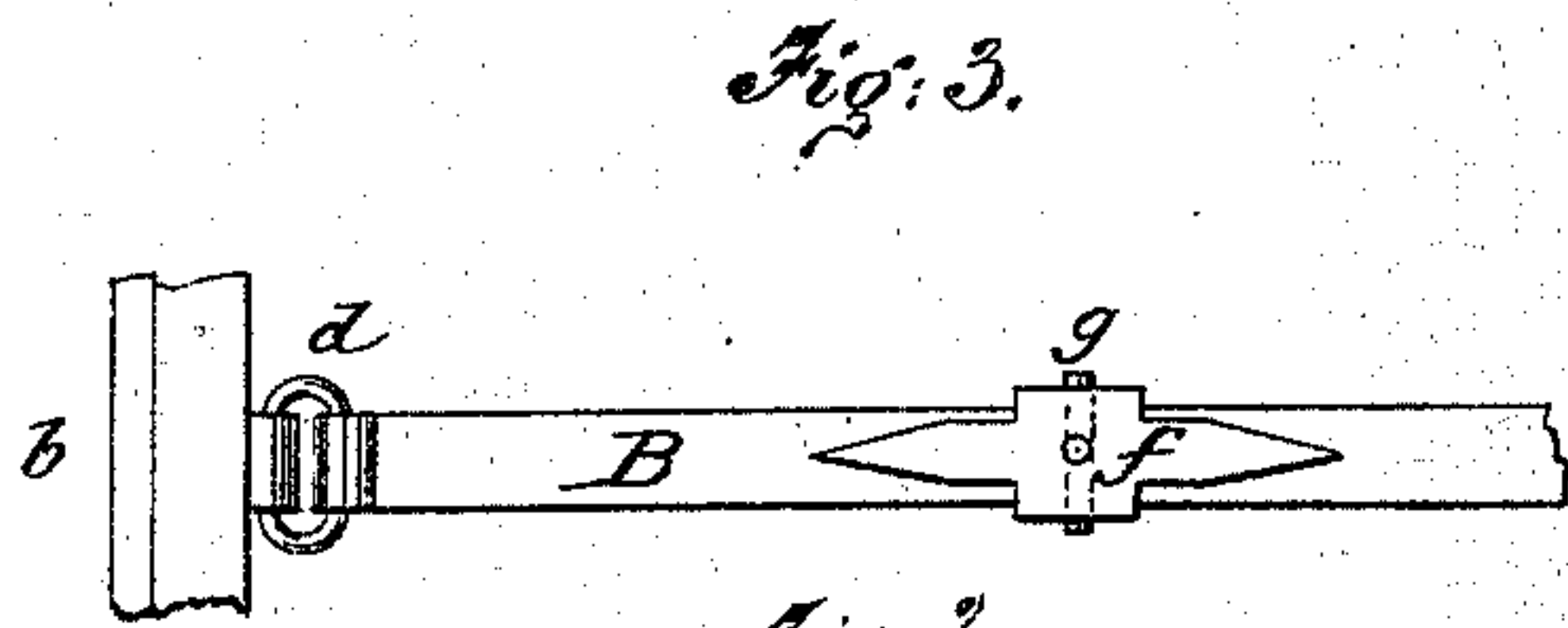
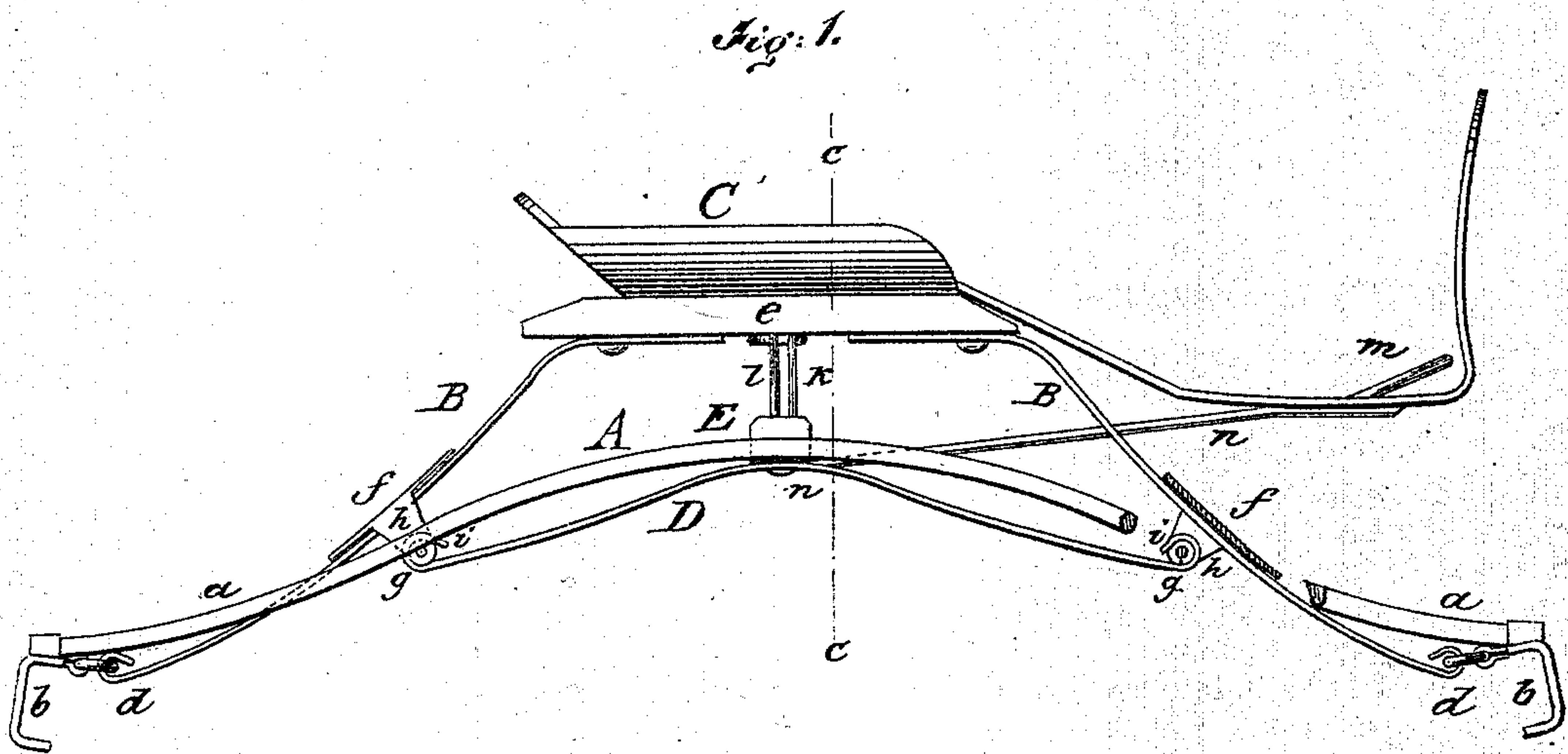


T. MURGATROYD.
Carriage Springs.

No. 139,325.

Patented May 27, 1873.



Witnesses:

Chas. Nida.
Sedgwick

Inventor:

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UNITED STATES PATENT OFFICE.

THOMAS MURGATROYD, OF HIAWATHA, KANSAS.

IMPROVEMENT IN CARRIAGE-SPRINGS.

Specification forming part of Letters Patent No. **139,325**, dated May 27, 1873; application filed February 15, 1873.

To all whom it may concern:

Be it known that I, THOMAS MURGATROYD, of Hiawatha, in the county of Brown and State of Kansas, have invented a new and useful Improvement in Carriage-Springs, of which the following is a specification:

Figure 1 is a side view of my invention, partly in section. Fig. 2 is a vertical transverse section, on the line C C, Fig. 1. Fig. 3 is a detail top view of the buckle, which connects the mainspring with the horizontal brace-spring.

Similar letters of reference indicate corresponding parts.

The invention consists in improved means for re-enforcing carriage-springs, as hereinafter described, and pointed out in the claims.

In the drawing, A represents the frame of the carriage, which is composed of two longitudinal curved rods, *a*, of wrought-iron or other material, and laterally connected by metallic cross-pieces, *b*. The mainsprings B, consisting of three or more pairs, are placed longitudinally between the parallel rods *a*, and connected with the cross-pieces *b* by loops and links *d*. Every pair of springs B is screwed or otherwise applied to wooden seat-rests *e*, on which the body C of the wagon-rests. For the purpose of strengthening and stiffening mainsprings B every corresponding pair is connected about half way between the links *d* and rests *e* by horizontal brace-springs, D, which are applied to the mainsprings B by means of buckles *f* and pins *g*. The buckles *f*, Figs. 1 and 3, are firmly fastened to the mainsprings in such a manner that the larger

part of the same is placed on the upper side of the springs B, and perforated ears *h* are bent under at right angles downward for the reception of links or pins *g*. Into the latter are linked the brace-springs D by means of upturned loop-like bends *i*. Resting centrally on the brace-springs D, and fastened to them is the cross-piece E, of wood or other material, which furnishes, by means of vertical rods K, applied to the outer seat-rests *e*, additional supports to the body of the carriage, and by brace-rods *l*, to the middle rest-piece of the same. The foot-rest *m* of the body of the carriage is furthermore braced by two or more metal rods, *n*, which are applied by screws or otherwise to the lower side of cross-piece E, and are adjustable thereon.

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

1. A horizontal brace-spring, D, applied to and between each pair of mainsprings, B B, for the purpose described.

2. The means for connecting the brace-springs D and the mainsprings B, consisting of the buckles *f* *h*, pins *g*, and bends *i*, as set forth.

3. The brace-spring D, cross-piece E, vertical rods K, brace-rods *l*, and rests *e*, combined with springs B B, as and for the purpose specified.

THOMAS MURGATROYD.

Witnesses:

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