

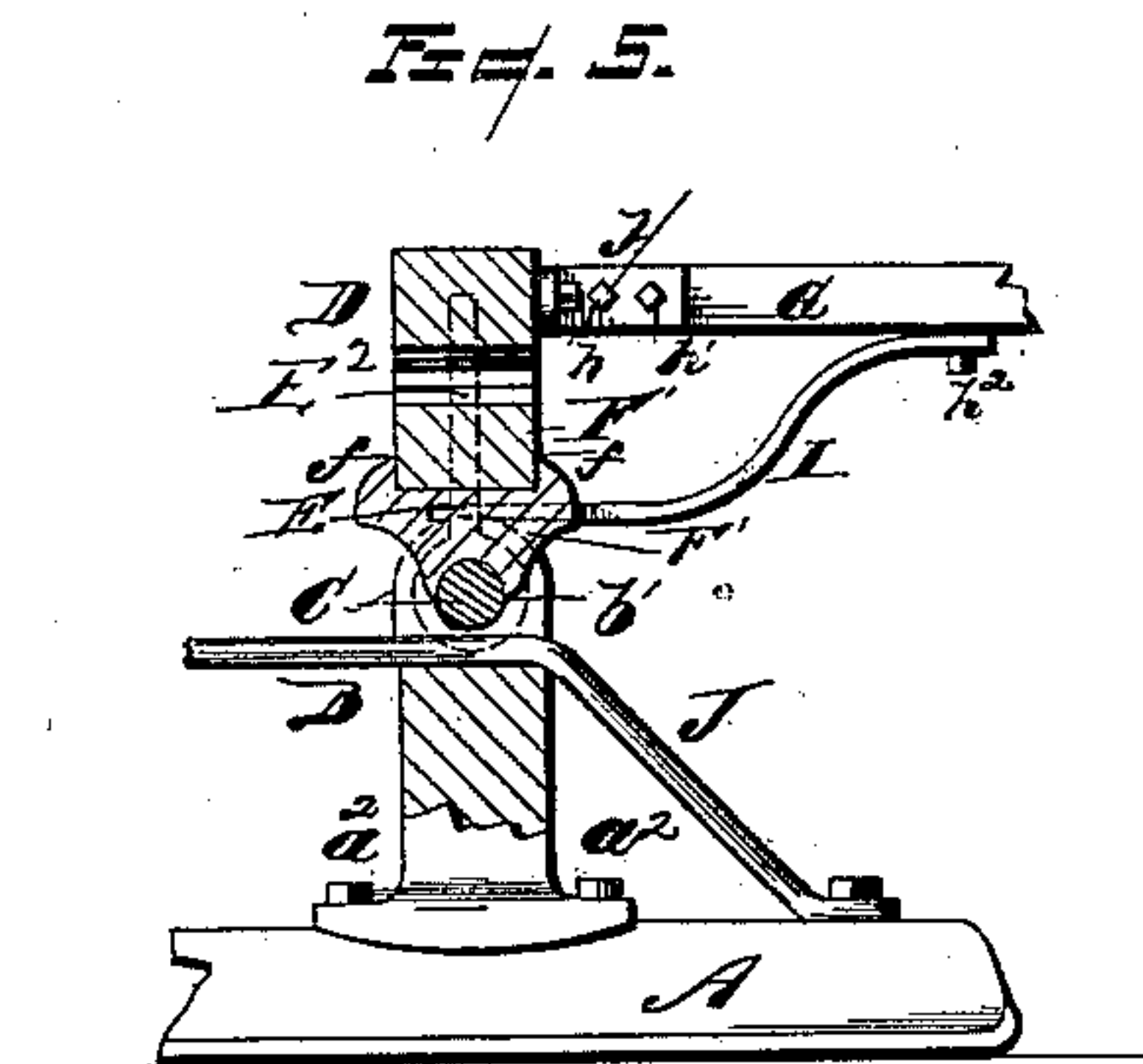
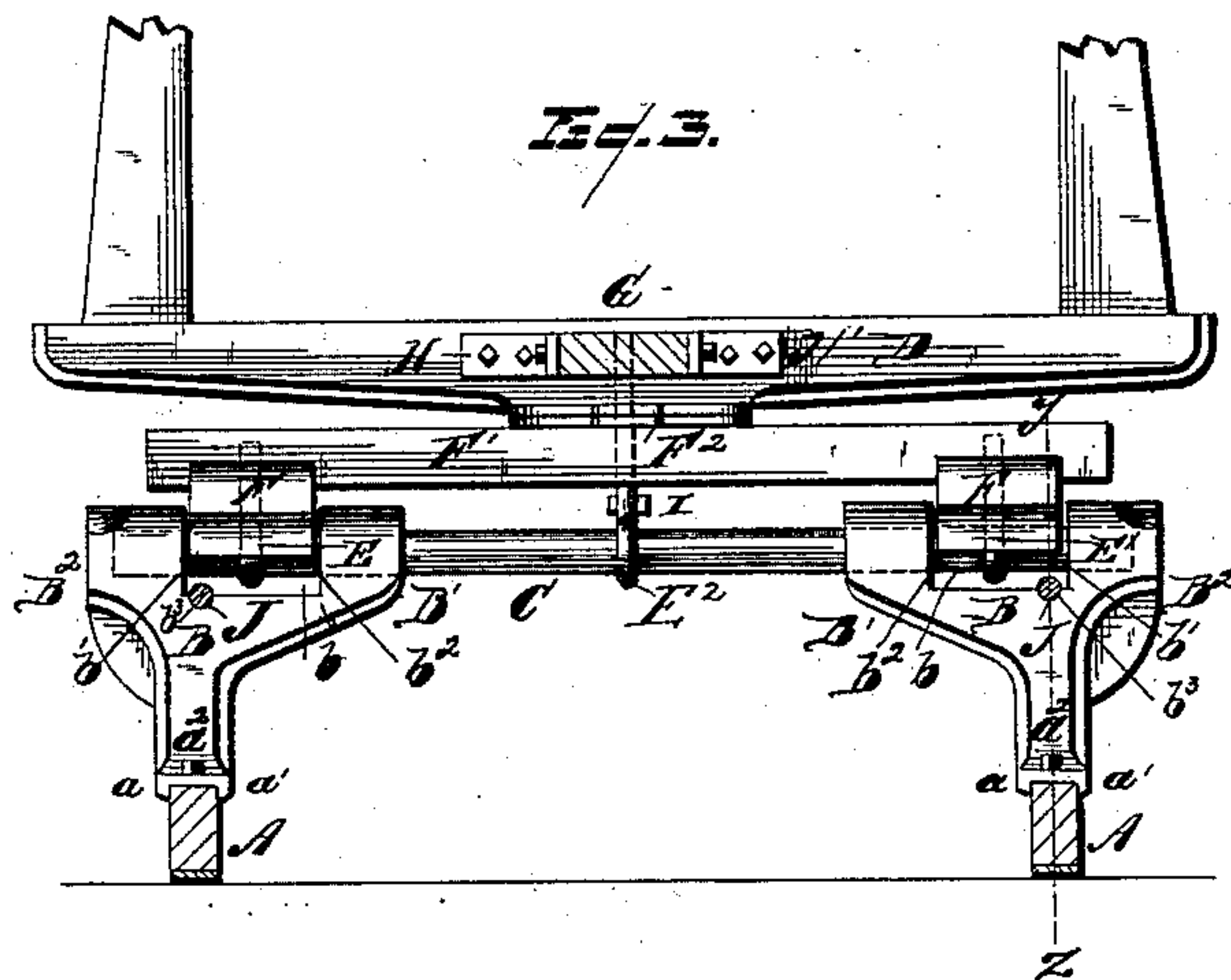
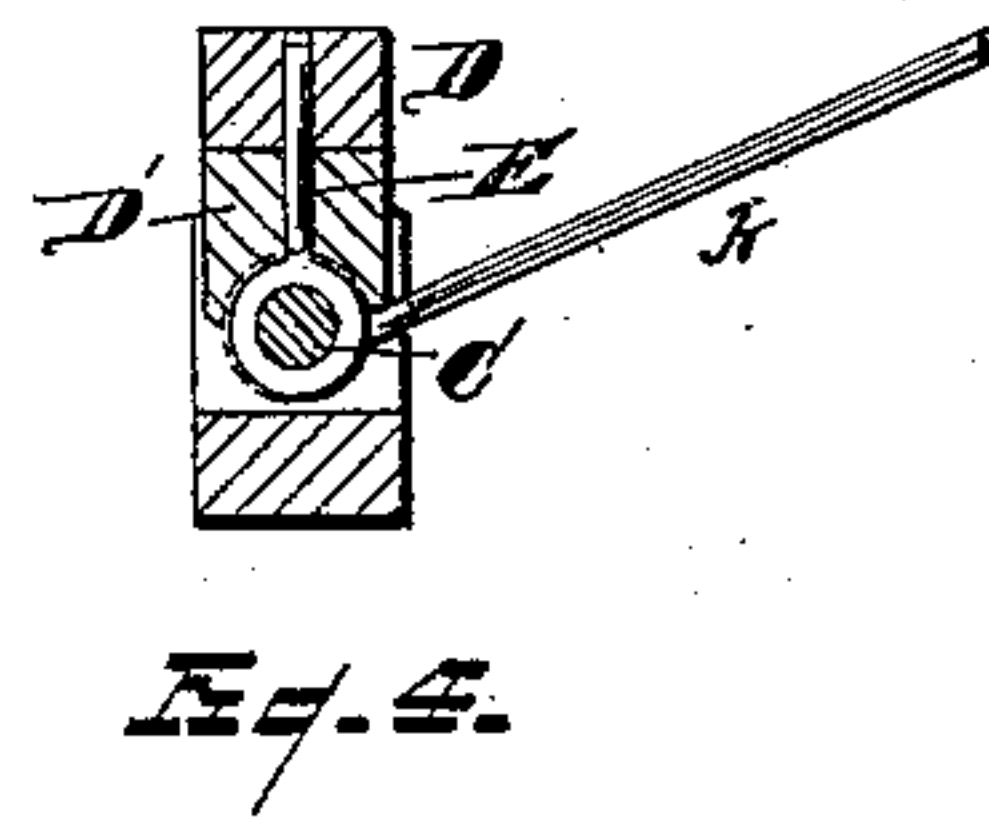
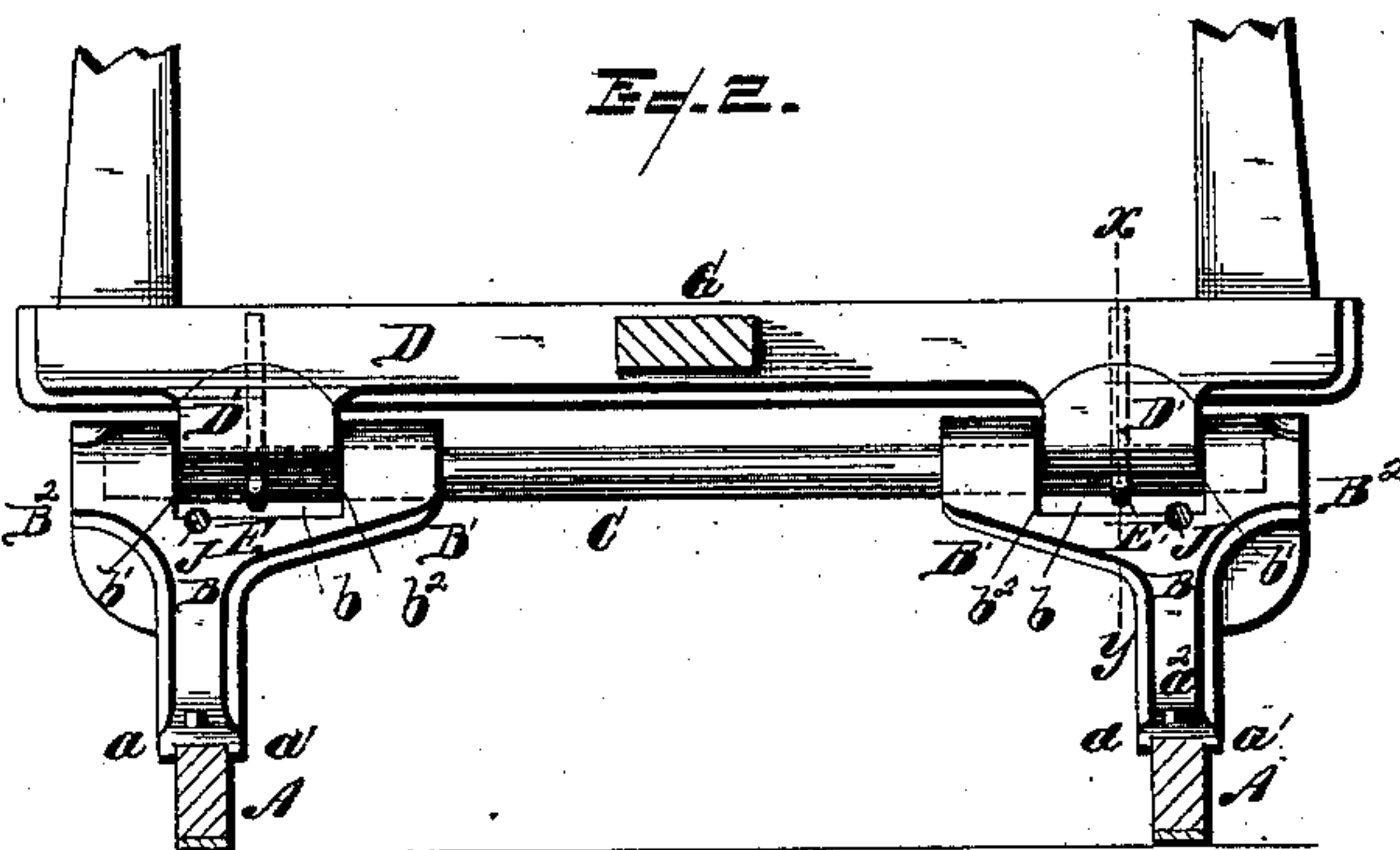
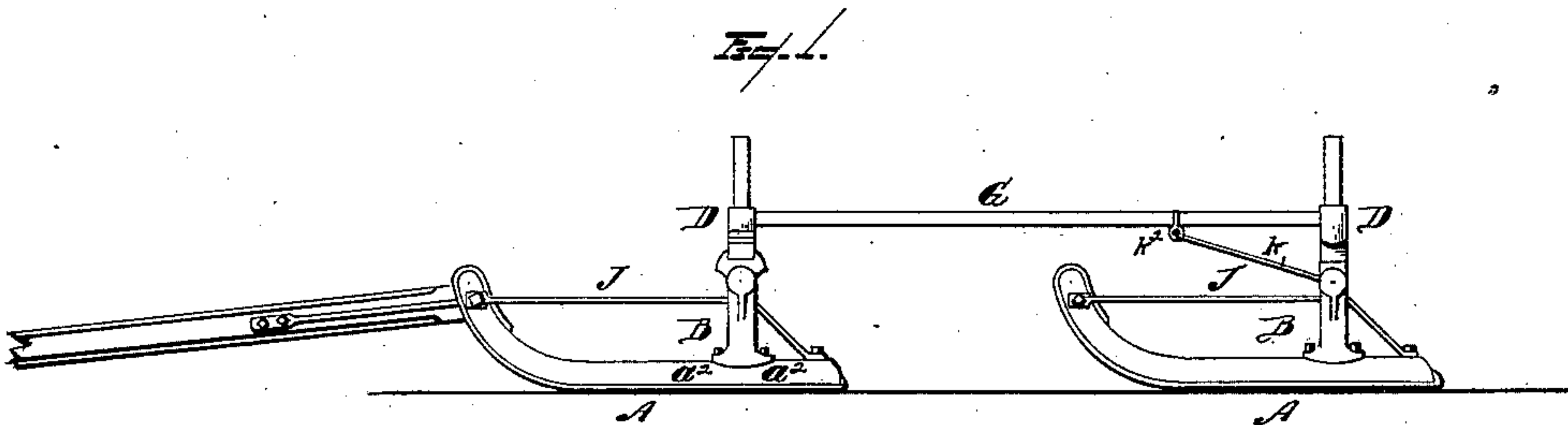
(No Model.)

E. A. OVENSHERE.

SLEIGH.

No. 358,407.

Patented Feb. 22, 1887.



WITNESSES

Samuel C. Thomas.  
N. S. Wright.

INVENTOR

Elijah A. Ovenshere.  
By W. W. Leggett,  
Attorney



# UNITED STATES PATENT OFFICE.

ELIJAH A. OVENSHERE, OF LANSING, ASSIGNOR, BY MESNE ASSIGNMENTS,  
OF ONE-HALF TO CYRUS T. CRANDALL, OF CRYSTAL FALLS, MICH.

## SLEIGH.

SPECIFICATION forming part of Letters Patent No. 358,407, dated February 22, 1887.

Application filed November 4, 1886. Serial No. 2:8,605. (No model.)

*To all whom it may concern:*

Be it known that I, ELIJAH A. OVENSHERE, of Lansing, county of Ingham, State of Michigan, have invented a new and useful Improvement in Sleighs; and I declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to certain new and useful improvements in sleighs, and more especially in that class known as "bob-sleds," and has for its object the general construction, combination, and arrangement of devices and appliances, as hereinafter specified, and more particularly pointed out in the claims.

In the drawings, Figure 1 is a side elevation of a device illustrating my invention. Fig. 2 is a vertical section of the rear set of bobs embodying my invention as applied thereto; Fig. 3, a vertical section of the front set of bobs; Fig. 4, a vertical section along the line  $x y$ , Fig. 2, showing the construction of the end of the bolster and plate; and Fig. 5, a similar section along the line  $y z$ , Fig. 3.

I carry out my invention as follows: A in the drawings represents the runners, which may be of any desired construction.

B represents my improved knees. These knees are each preferably constructed of an integral casting, flanged at the base to engage over the sides of the runner, as shown at  $a a'$ .

$a^2$  represents bolts whereby the knees are secured upon the runners.

B' is an inner extension of the knee, and B<sup>2</sup> the outward extension of the knee.

The top of the knee is recessed, as shown at  $b$ , between the inner and outer extremities of the parts B' and B<sup>2</sup>. Said extremities are constructed with orifices, as shown at  $b'$  and  $b^2$ , respectively.

C represents an axle sleeved into the said orifices of two adjacent knees upon opposite runners, so as to have a rotatable connection therewith.

D represents a bolster. The bolster is provided upon the rear set of bobs with bolster-bearings D', preferably of cast metal, adapted to enter the recesses  $b$  and fit somewhat closely

in between the adjacent portions of the extremities B' and B<sup>2</sup> of the knees, so as to prevent the runners from having a loose motion laterally. These bearings are also preferably curved upon their lower surfaces, as shown in Fig. 4, to rest upon the adjacent portions of the axle.

E and E' represent eyebolts, having their respective eyes encircling the axle toward its extremities and between the extremities B' and B<sup>2</sup> of the knees, said bolts passing upward and engaging the bolster-bearings D' upon the rear set of bobs and the sand-board plate F and sand-board F' upon the forward set of bobs.

E<sup>2</sup> represents a king-bolt encircling the axle intermediate of the adjacent knees, and engaging the sand-board and bolster of the front set of bobs.

G is the reach, which may be mortised into the rear bolster. The forward bolster is provided with angle-irons H H', between which the reach is located and with which it is bolted, as shown at  $h h'$ .

I is a metallic strap or bar, preferably engaging the king-bolt E<sup>2</sup> between the axle and the sand-board, and connected at its opposite end with the reach, as shown at  $h^2$ . Thus a firm engagement of the reach is effected between the reach and the bolster and with the king-bolt below the sand-board. It is evident that by this construction each set of runners may pass over any unevenness and be tilted at any angle without changing the horizontal position of the bolster, the axle rotating in the knees, as already described. These axles I design to make of ordinary gas-piping, which is both light and economical, while at the same time it affords all the strength desired.

J represents braces extending from the forward end of the respective runners over the respective knees and engaging the rear portion of the respective runners. The knees are preferably constructed with lugs or recesses, as shown at  $b^3$ , to engage said braces. Constructed and arranged in this manner, the braces answer, also, as a rave or fender.

The sand-board plate F is constructed analogous to the bolster-bearings D', but, in addition, with upwardly-extended flanges  $f$ , to engage the sand-board, as shown in Fig. 5.



F<sup>2</sup> represents bolster-plates located between the sand-board and bolster.

K represents a brace-rod, preferably encircling the ends of the rear axle, and extended forward and engaged with the reach intermediate of its ends by an eyebolt, K<sup>2</sup>. This method of bracing causes a direct draft upon each of the runners.

What I claim is—

- 10 1. The combination, with a sleigh-runner, of a knee, an axle having a rotatable engagement therewith, a bolster engaged with said axle, an intervening bolster-plate, and a king-bolt, substantially as described.
- 15 2. The combination, with a sleigh-runner, of a knee recessed at the top, an axle rotatably engaged with said knee, a bolster-plate engaged in said recess, a bolster located above said plate, and a connecting-bolt engaging said
- 20 axle-plate and bolster, substantially as described.
3. The combination, with a pair of sleigh-

knees, of an axle rotatably engaged therewith, sand-board plates and a sand-board engaged with each end of said axle, and a bolster 25 mounted on said sand-board and connected with the axle by a king-bolt, substantially as and in the manner described.

4. The combination, with a sleigh-runner, of a metallic knee and a brace, J, engaged 30 with the ends of the runner and with said knee, in the manner described, and forming a rave or finger, substantially as described.

5. The combination, with a sleigh-knee, of an axle rotatably engaged therewith, a sand- 35 board, and bolster rotatably engaged upon said axle by a connecting-eyebolt, substantially as described.

In testimony whereof I sign this specification in the presence of two witnesses.

ELIJAH A. OVENSHERE.

Witnesses:

N. S. WRIGHT,

M. B. O'DOHERTY.