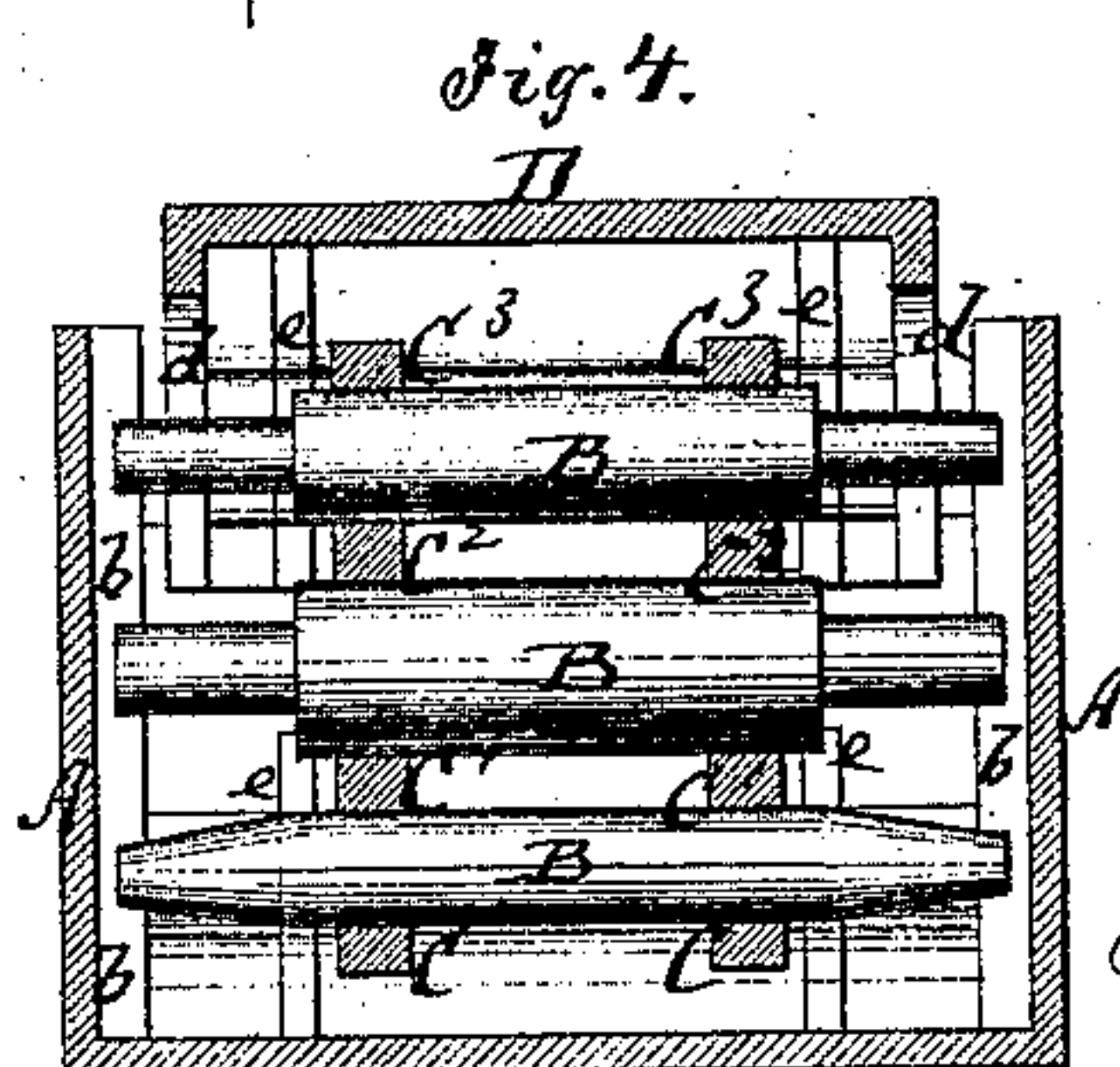
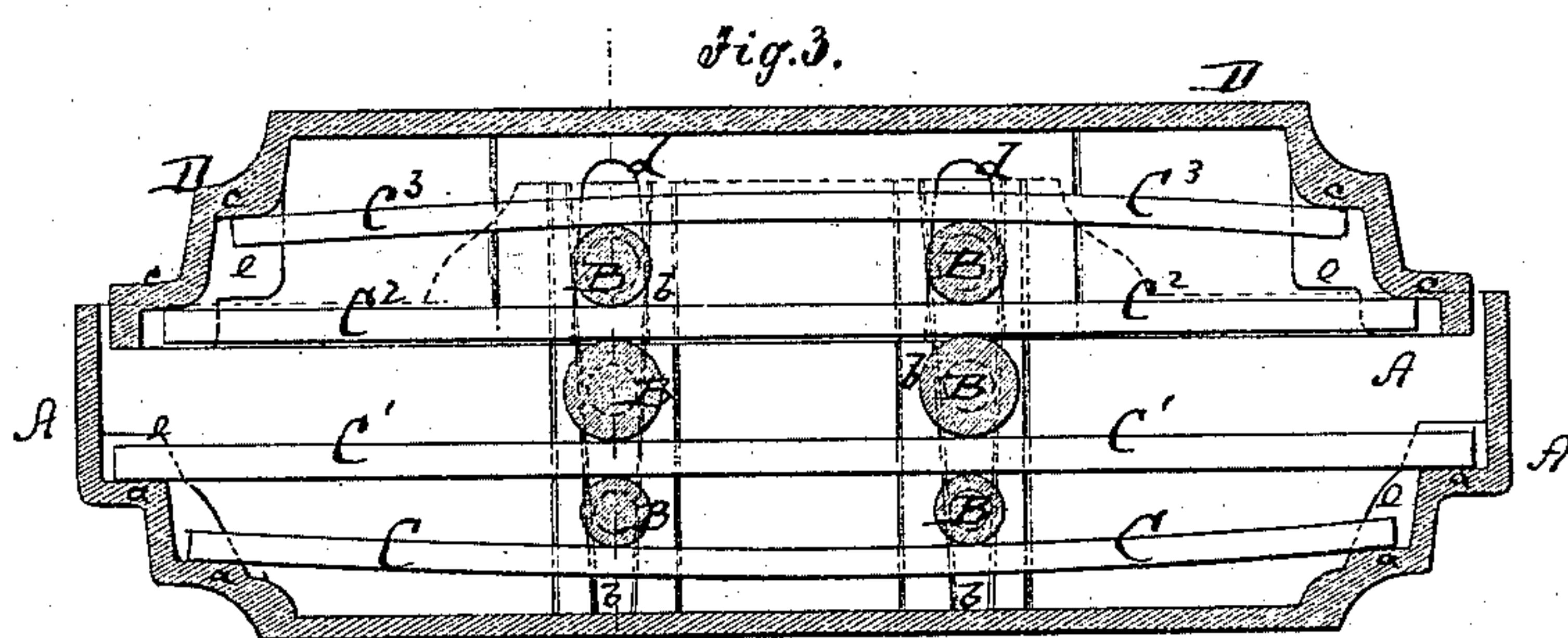
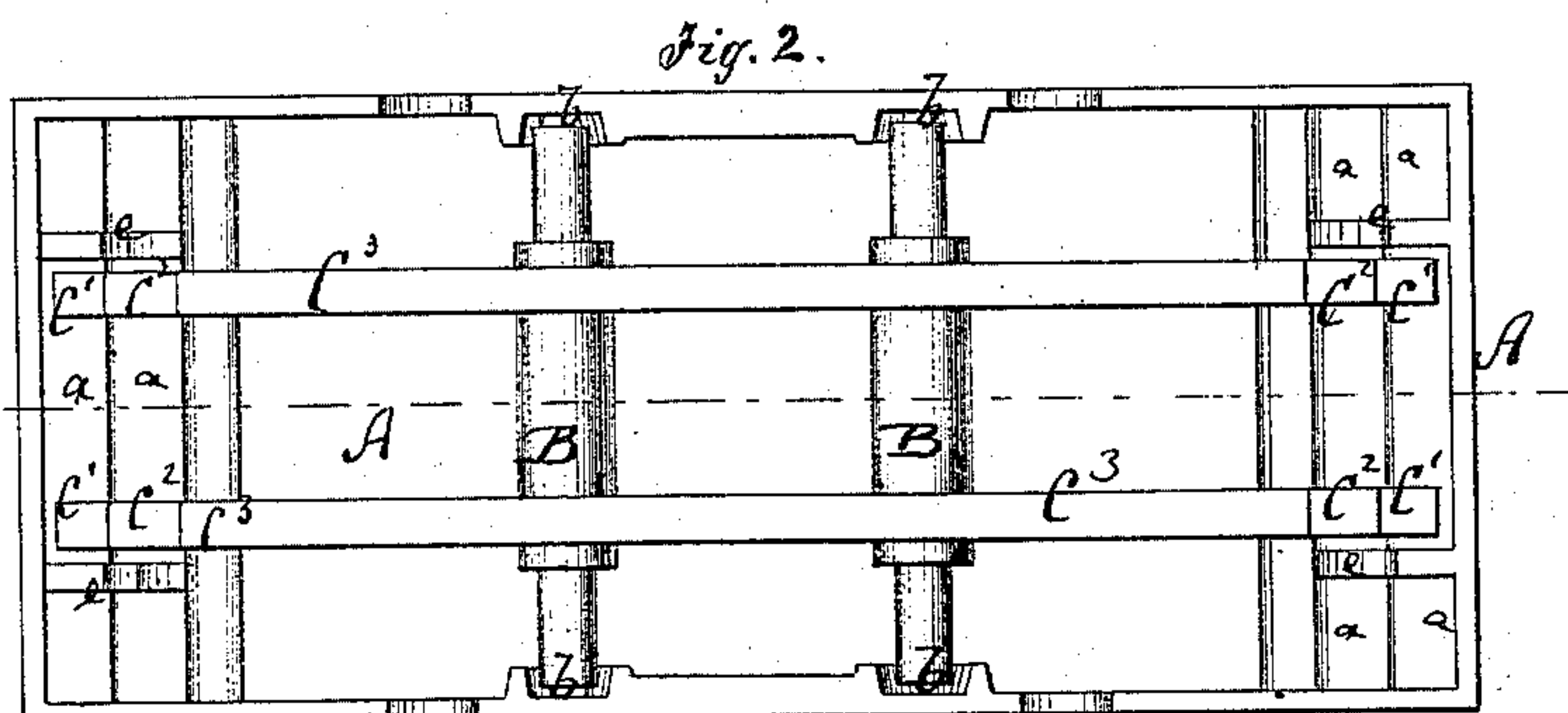
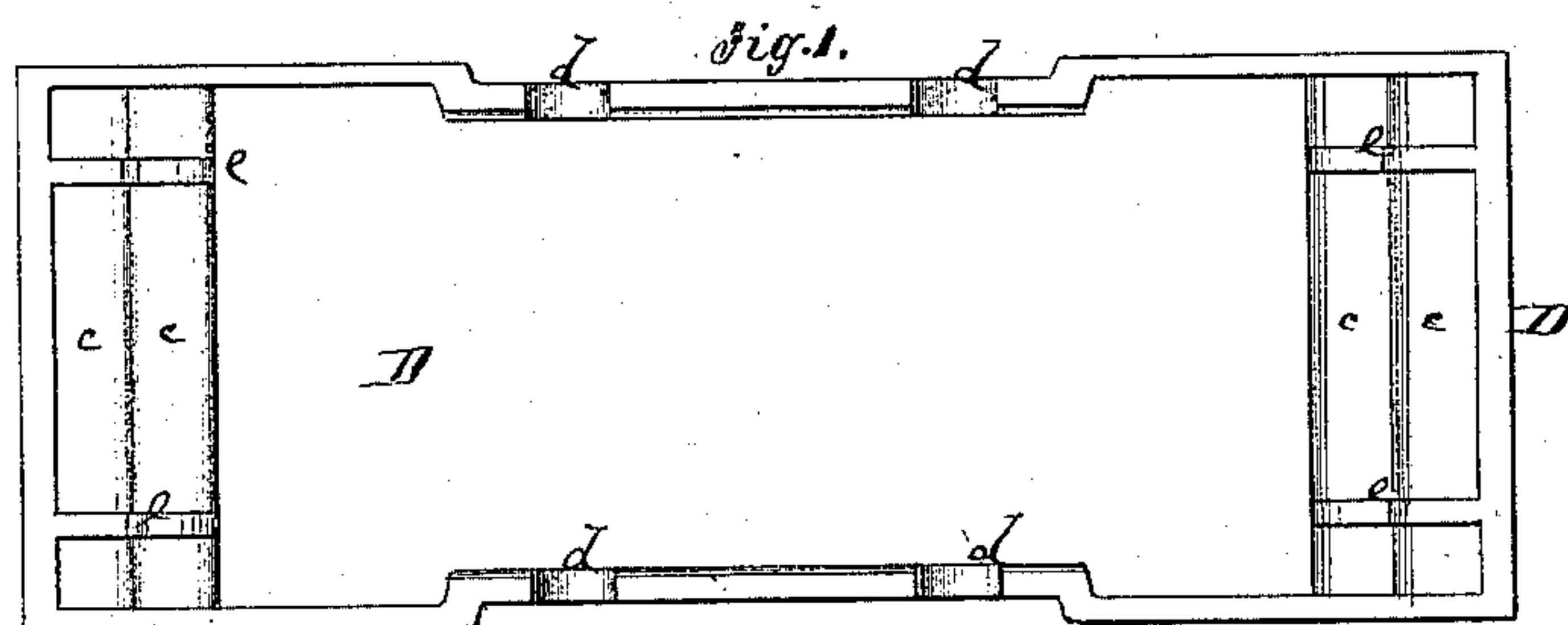


C. M. BANKS.

Car Spring.

No. 99,813.

Patented Feb. 15, 1870.



Witnesses:

A. Remmele, Jr.

[Signature]

Inventor:

C. M. Banks

PER

[Signature]
Attorneys.

United States Patent Office.

C. M. BANKS, OF ROXBOROUGH, PHILADELPHIA, PENNSYLVANIA.

Letters Patent No. 99,813, dated February 15, 1870.

IMPROVED SPRING FOR RAILWAY-CARS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, C. M. BANKS, of Roxborough, Philadelphia, in the county of Philadelphia, and State of Pennsylvania, have invented a new and improved Spring for Cars, &c.; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 represents an inverted plan view of the cover of my improved box for springs.

Figure 2 is a plan or top view of the spring box and springs without the cover.

Figure 3 is a vertical longitudinal section of the box and springs.

Figure 4 is a vertical transverse section of the same.

Similar letters of reference indicate corresponding parts.

This invention relates to a novel arrangement of spring-supports for railroad-cars and other purposes, and has for its object to produce considerable elasticity with the aid of strong bars and rigid supports.

The invention consists in the general arrangement of a supporting box and cover with a series of transverse rollers and of longitudinal spring-bars resting thereon, the rollers having a slight longitudinal play, to let all the parts yield to other than direct vertical pressure.

A in the drawing represents the box or receptacle for the springs. The box is of suitable length and width, and is made of suitable material.

At its ends are formed, on the inside, two or more steps, *a a*, for the support of the spring ends.

In the sides of the box are vertical grooves *b b*, in which the ends of rollers *B B* are guided.

The springs *C C*, &c., are metal bars of suitable strength, placed with their ends upon the steps *a*, as shown.

The first lower pair of springs *C C* rest on the lower step *a*, and upon them rest the lower pair of transverse rollers *B*. The next pair of springs *C¹ C¹* rest upon the lower pair of rollers and upon the second step *a*, and support the second set of rollers.

For the third pair of springs *C² C²*, which rest upon the second pair of rollers, there is no end-support on

the box, but their ends fit against the under side of steps *c*, that are provided on the ends of the cover *D* of the box.

The third pair of rollers rest on the springs *C²*, and support the fourth set of springs *C³*, whose ends also fit under steps *c* of the cover.

The cover is somewhat smaller than the box, and has slots *d* to fit over the roller end.

The springs are all placed loose, as shown, and are not weakened by rivet holes or other fastenings.

There are ribs *e* in the box and cover, to retain the springs the requisite distances apart.

The grooves *b* for the rollers are somewhat wider than the roller ends, to allow the latter to turn freely, and to prevent cramping.

The box *A* is supported on the truck or other sustaining part of the vehicle, while the cover is secured to the upper supported part. As pressure is applied, it is by the steps transferred to the ends of the springs, and will draw them together. If the pressure is unequal, *i. e.*, more powerful on one side than on the other, it will cause the rollers to shift until the requisite equilibrium is obtained. It is evident that the number of springs may be varied at will.

When the box is arranged in an exposed position, I prefer to use the larger part *A* for a cover and the smaller part *D* for the body of the box. The cover *A* will then overlap and protect the edges of the lower part *D*.

Having thus described my invention,

I claim as new, and desire to secure by Letters Patent—

1. The rollers *B B*, arranged between the springs *C C*, &c., and guided in the grooves *b* of the box *A*, as set forth.

2. The ribs *e*, provided in the box and cover to hold the springs the requisite distances apart, as set forth.

3. The springs *C C*, &c., arranged in the box *A* and cover *D*, in combination with the rollers *B B*, substantially as herein shown and described.

C. M. BANKS.

Witnesses:

CHAS. T. JEFFRIES,
JAS. W. JEFFRIES.