

(No Model.)

J. L. DYER.

CRANK AXLE.

No. 246,874.

Patented Sept. 13, 1881.

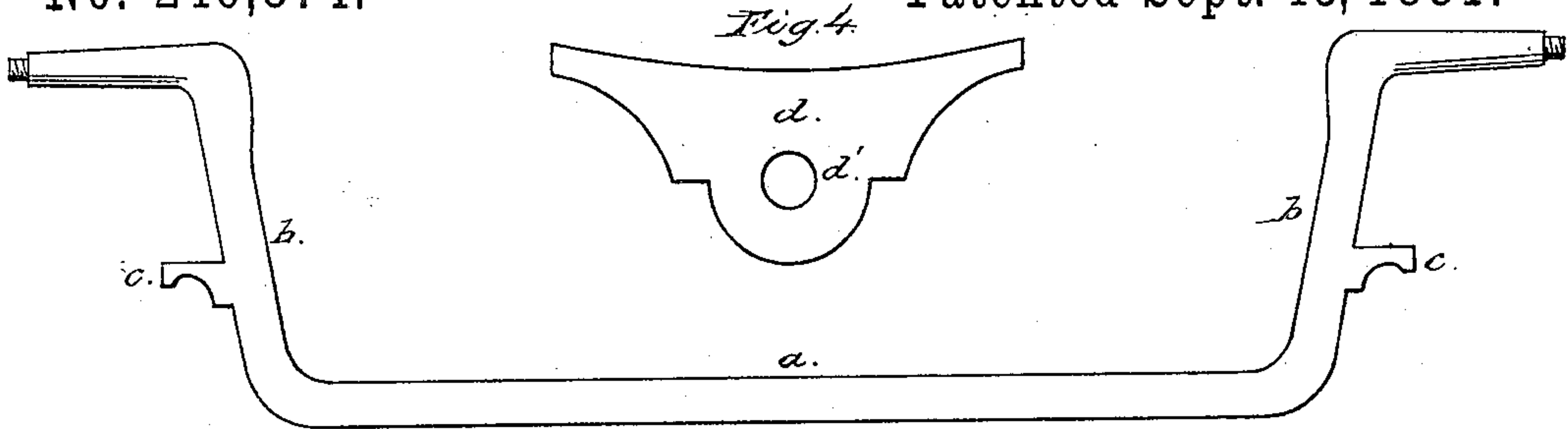


Fig. 1.

Fig. 2.

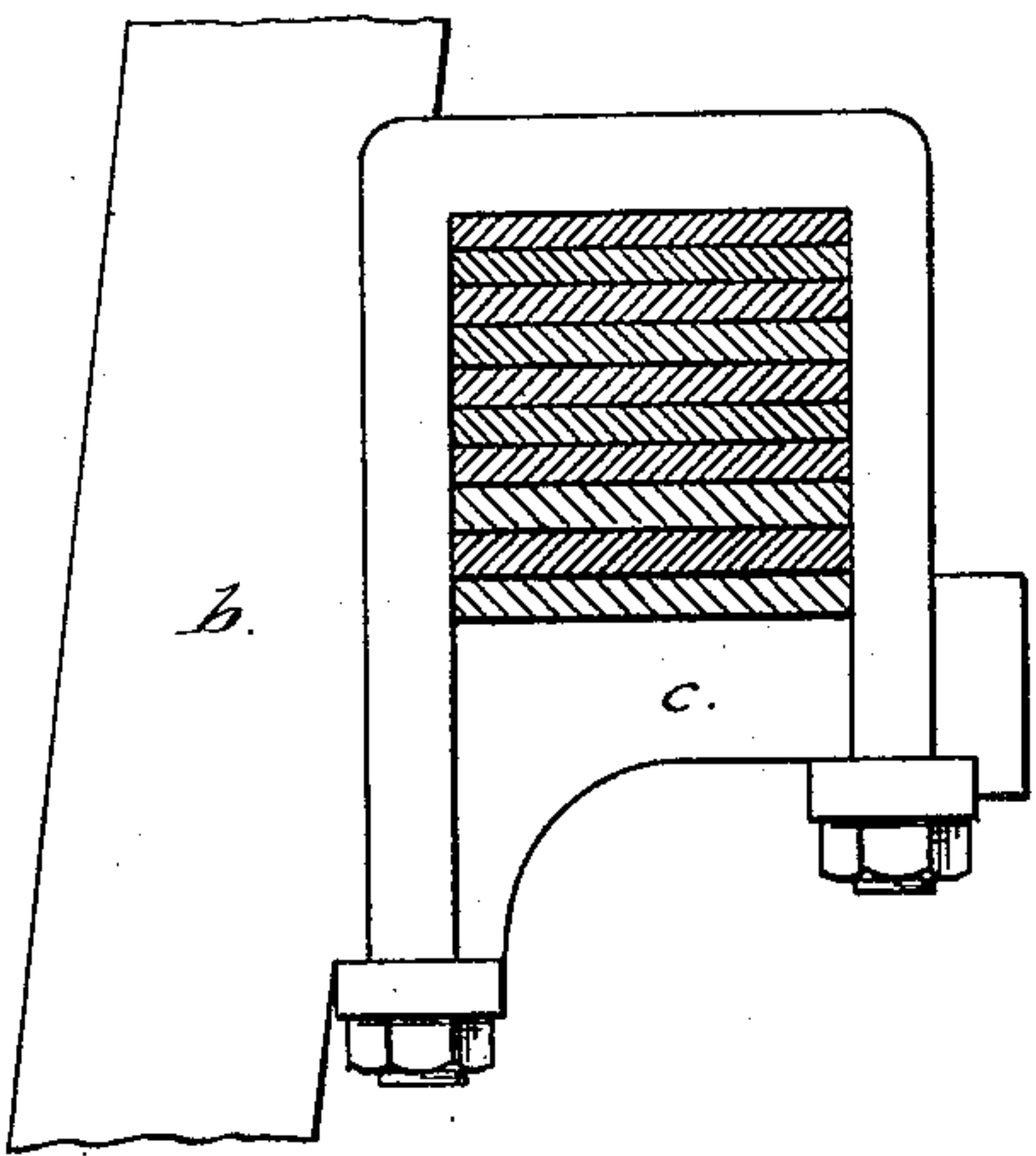


Fig. 3.

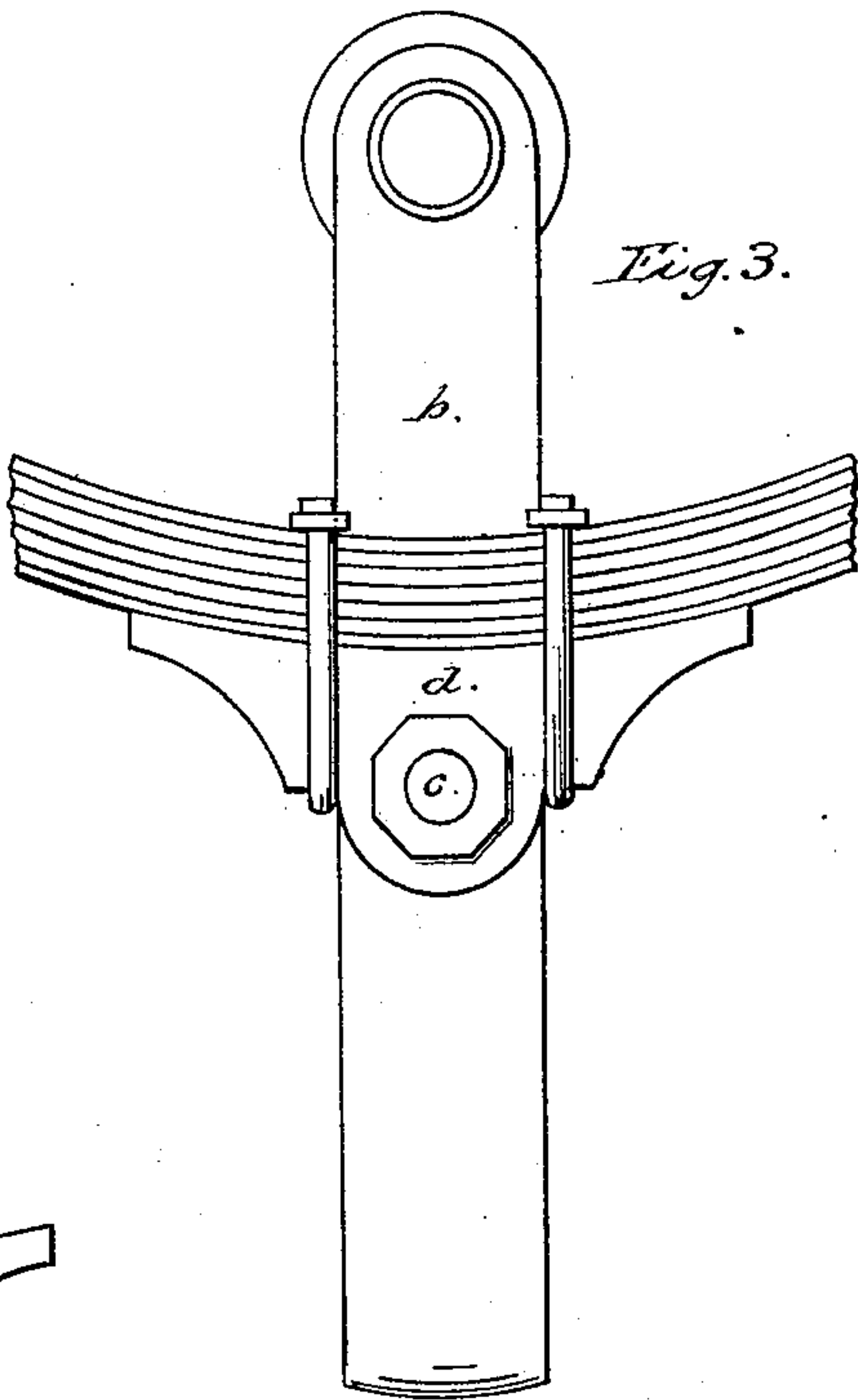


Fig. 5.

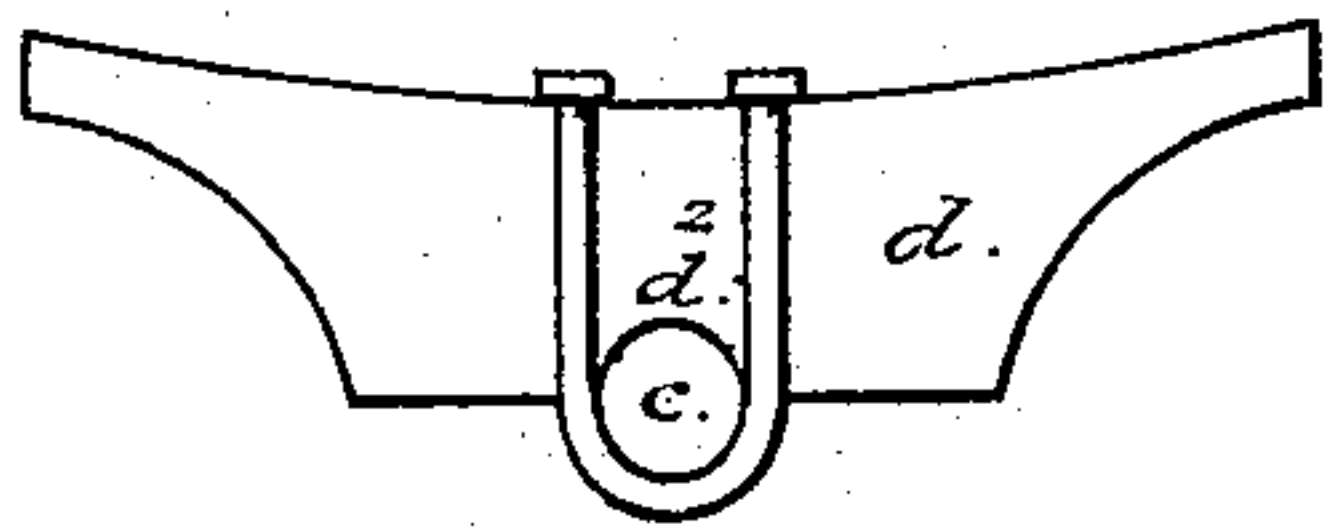


Fig. 6.

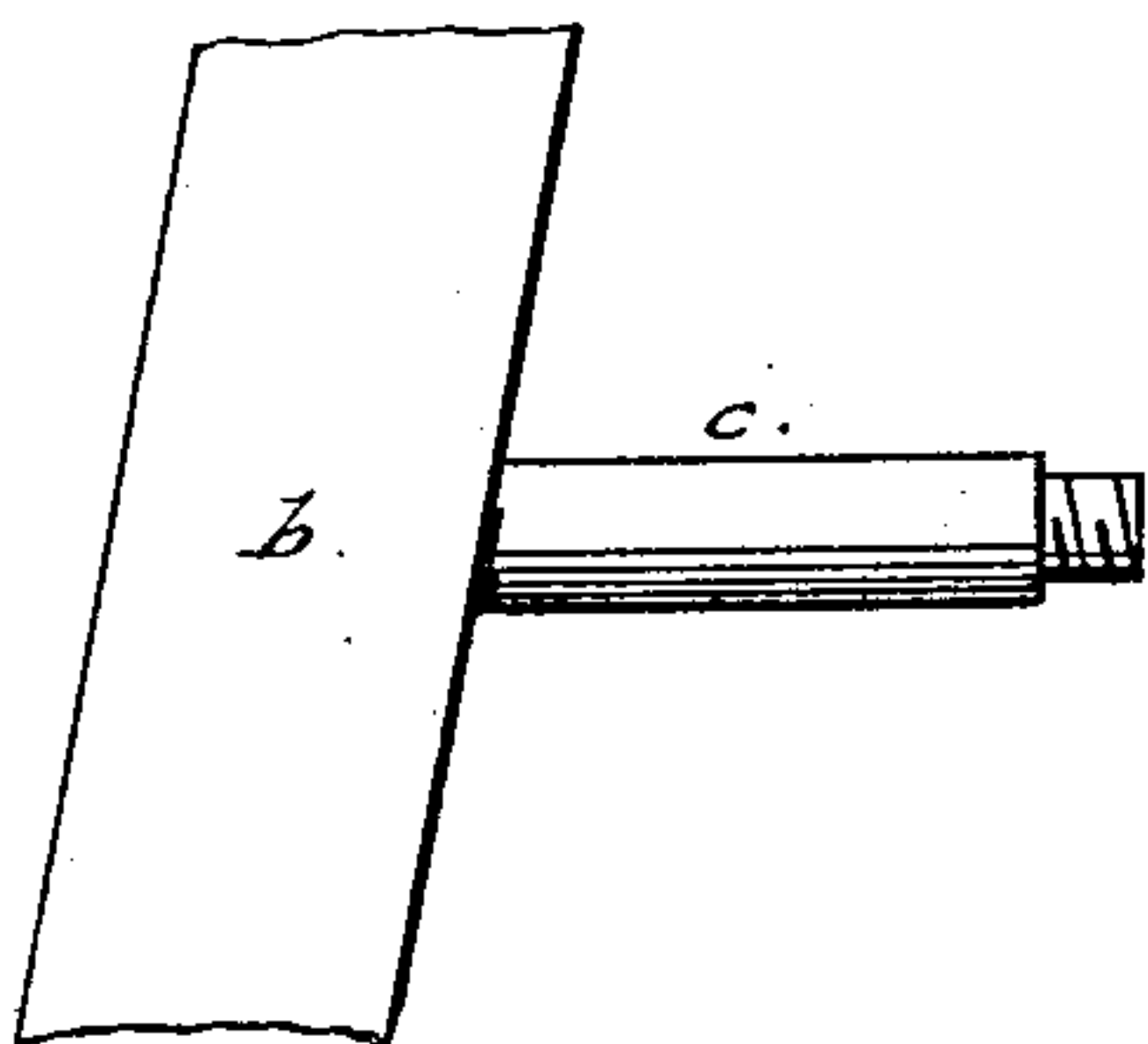


Fig. 7.

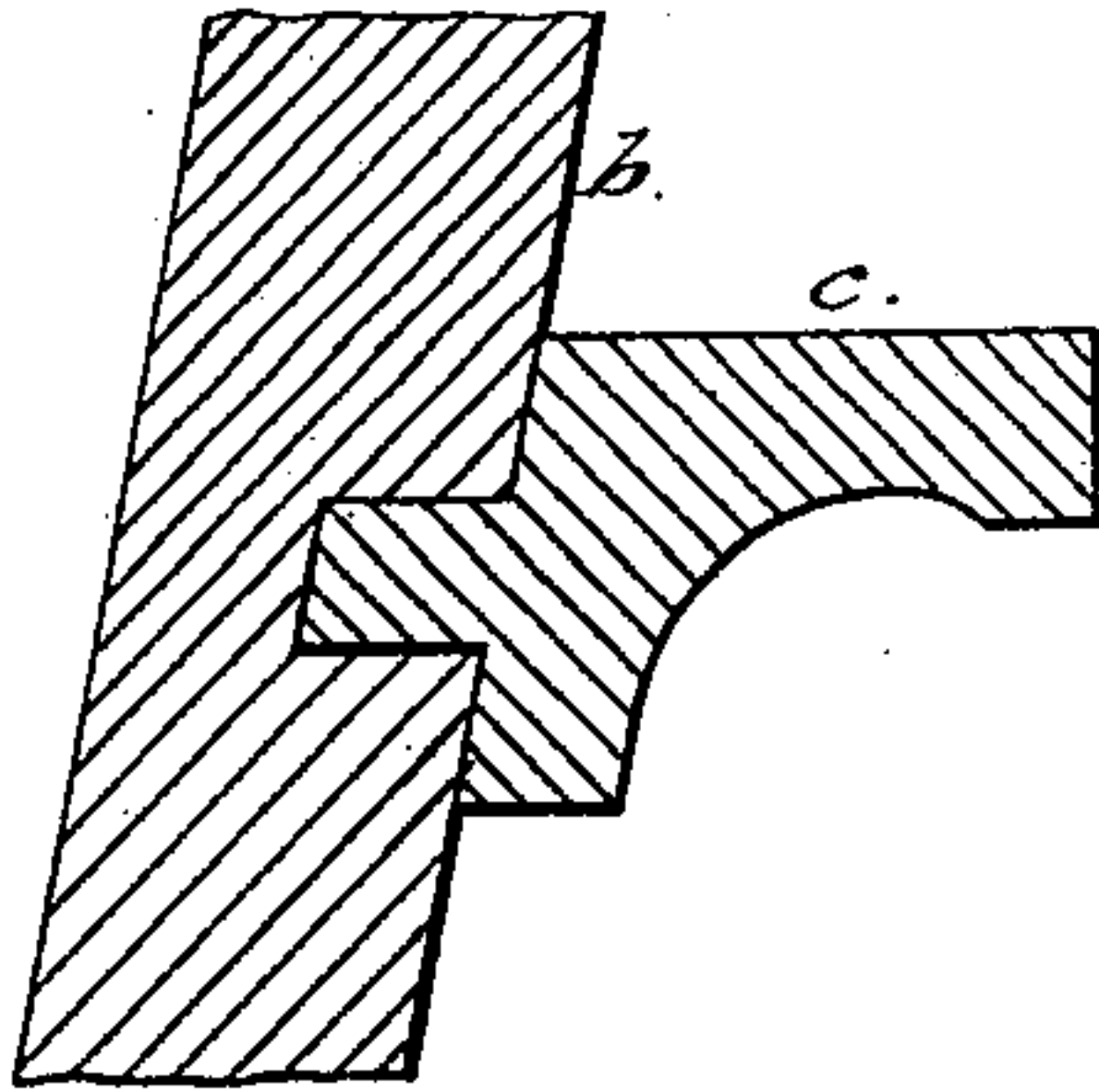
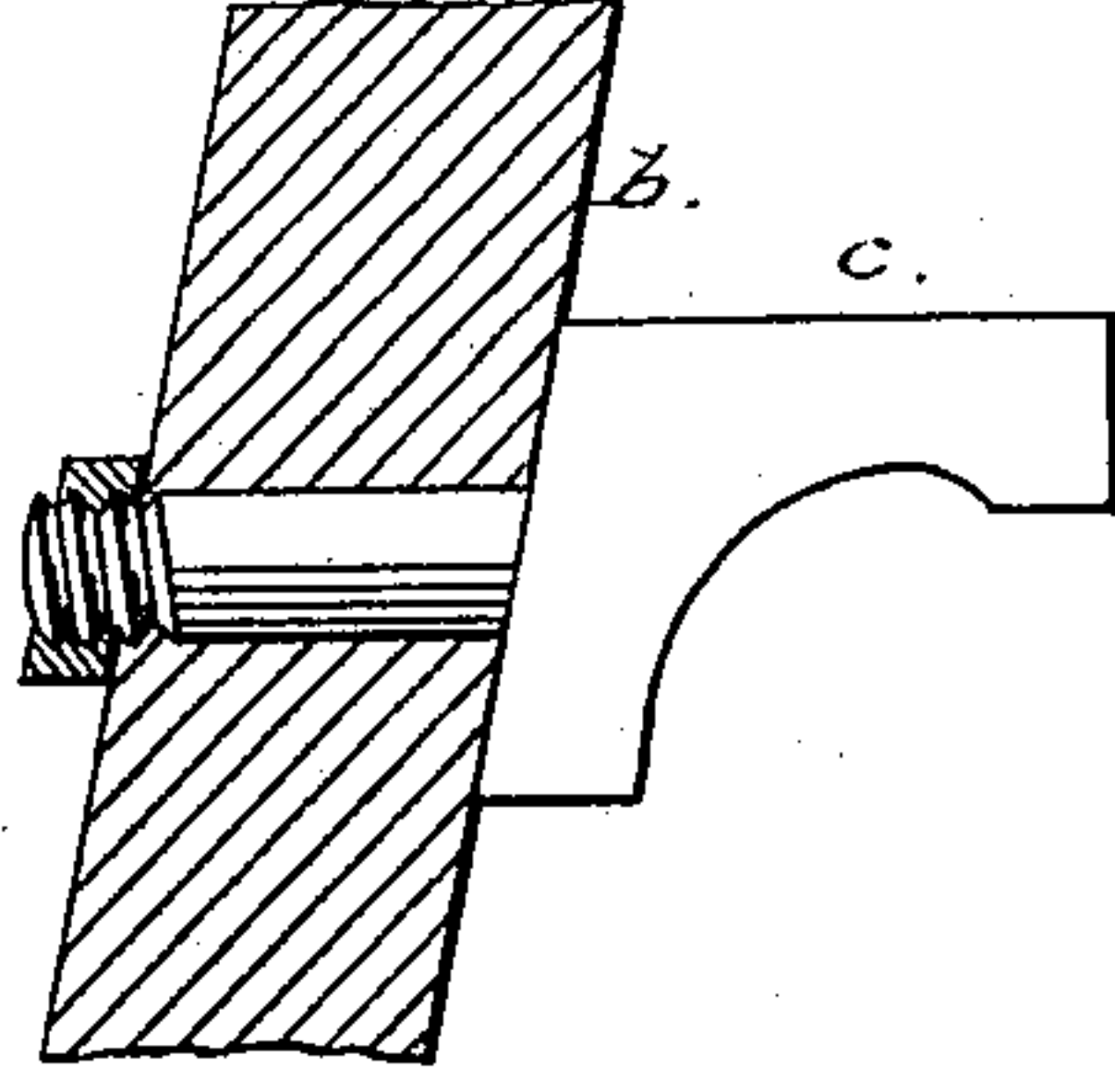


Fig. 8.



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UNITED STATES PATENT OFFICE.

JAMES L. DYER, OF PHILADELPHIA, PENNSYLVANIA.

CRANK-AXLE.

SPECIFICATION forming part of Letters Patent No. 246,874, dated September 13, 1881.

Application filed May 16, 1881. (No model.)

To all whom it may concern:

Be it known that I, JAMES L. DYER, of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented a new and useful Improvement in Crank-Axles; and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

My invention has for its object to improve on the present manner in which the side springs of low-hung vehicles are attached to the crank-axle with which said vehicles are provided; and the invention consists in hanging said springs, either directly or by means of interposing spring-blocks, upon arms provided on the outside of the axle-cranks, and arranged under and in line with the axle-spindles, as more fully hereinafter set forth and claimed.

In order that persons skilled in the art may know how to make and use my improvements, I will now proceed to describe the same, having reference to the accompanying drawings, in which—

Figure 1 is a view of a crank-axle constructed according to my invention; Fig. 2, a view showing the manner of securing the side springs directly to cranks of axle; Fig. 3, a view showing the manner of securing the springs to the axle-cranks by means of an interposing spring-block; Fig. 4, a view in detail of said spring-block; Fig. 5, a view of modified form of spring-block; and Figs. 6, 7, and 8, views in detail of the modified forms of the spring-supporting arms in Fig. 1, and showing the different ways of connecting them to the cranks of the axle.

a represents the crank-axle, which is formed by bending each end into cranks or side arms *b*, between the axle-spindles and main body of the axle. These side arms or cranks may be bent, either at right or obtuse angles, to the main part of the axle; but I prefer having the arms bent at obtuse angles, as shown in drawings, as this construction renders the axle at least one-third stronger at the angle-points between said arms and the main part of the axle uniting them.

Upon the outside of each crank, and directly under and in line with the axle-spindles, are arranged the arms or projections *c*, extending

outwardly a sufficient distance to accommodate the width of the side springs and permit their being suitably secured thereto. These arms *c* may be made integral with their respective cranks by forging them solidly thereto, as shown in Fig. 6, or they may be either tapped into or bolted to the cranks, as shown in Figs. 7 and 8 respectively.

When it is desired to secure the springs directly to the cranks of the axle the arms *c* are made in the form shown in Fig. 1, (said arms being forged solidly upon the outside of said cranks,) and the springs then securely fastened upon the arms by means of clips, as shown in Fig. 2; but the preferable manner of securing the springs to the cranks is by means of interposing spring-blocks *d* pivotally mounted upon the arms *c* and having the springs clipped to them, as shown in Fig. 3.

In securing the springs to the axle in the manner just described the arms *c* should be made in the form shown in Fig. 6, and the spring-block provided with a hole at *d'* to allow it to be readily slipped upon the arm, where it is held in place by means of a nut fitting upon the end of the arm, which is screw-threaded for that purpose.

If desired, the spring-blocks *d* may be made in the form shown in Fig. 5, with a semicircular recess, *d''*, cut in the under side, so as to fit nicely upon the arms *c*, (shown in Fig. 6,) to which the blocks are then secured by means of clips, and then the springs secured to the blocks, as before described. The arms *c* are of a suitable size to properly and safely support the weight of the vehicle-body, and when forged to the cranks of the axle these arms should be made from the best of wrought-iron, but when bolted to or tapped into the cranks they can be made from steel or any other strong and durable metal.

By hanging the side springs in the above-described manner instead of clipping them to the main part of the crank-axle, as has heretofore been done, the great strain upon the lower portion of the axle caused thereby is removed and the weight of the vehicle supported at points directly, or nearly so, under the axle-spindles; and the spring-blocks, by being pivotally mounted upon the spring-supporting

arms, permit the springs to readily accommodate themselves to the movements of the body of the vehicle, and at the same time prevent said body from being affected by any swaying
5 of the crank-axle.

Having thus described my invention, what I claim, and desire to secure to myself by Letters Patent, is—

1. The combination, with the side springs of
10 a low-hung vehicle, of the axle *a*, having its cranks *b* bent at obtuse angles, as described, and being provided with arms *c*, constructed and arranged substantially as shown, for supporting the said side springs when secured
15 thereto, substantially as set forth.

2. The combination, with the side springs of a low-hung vehicle, of the axle *a*, having its cranks *b* bent at obtuse angles, as described, and being provided with arms *c*, constructed

and arranged as shown, and the spring-blocks 20 *d*, pivotally mounted upon said arms as an interposing means for supporting the said side springs when secured thereto, substantially as and for the purposes set forth.

3. In low-hung vehicles, and for the purpose 25 of supporting the side springs thereof, the crank-axle herein described, provided with arms *c*, adapted to receive and sustain the said springs when secured thereto, either directly or by means of interposing spring-blocks, as 30 set forth.

This specification signed and witnessed this 2d day of May, 1881.

JAMES L. DYER.

Witnesses:

E. L. FISHER,

GEO. W. HANCOCK.