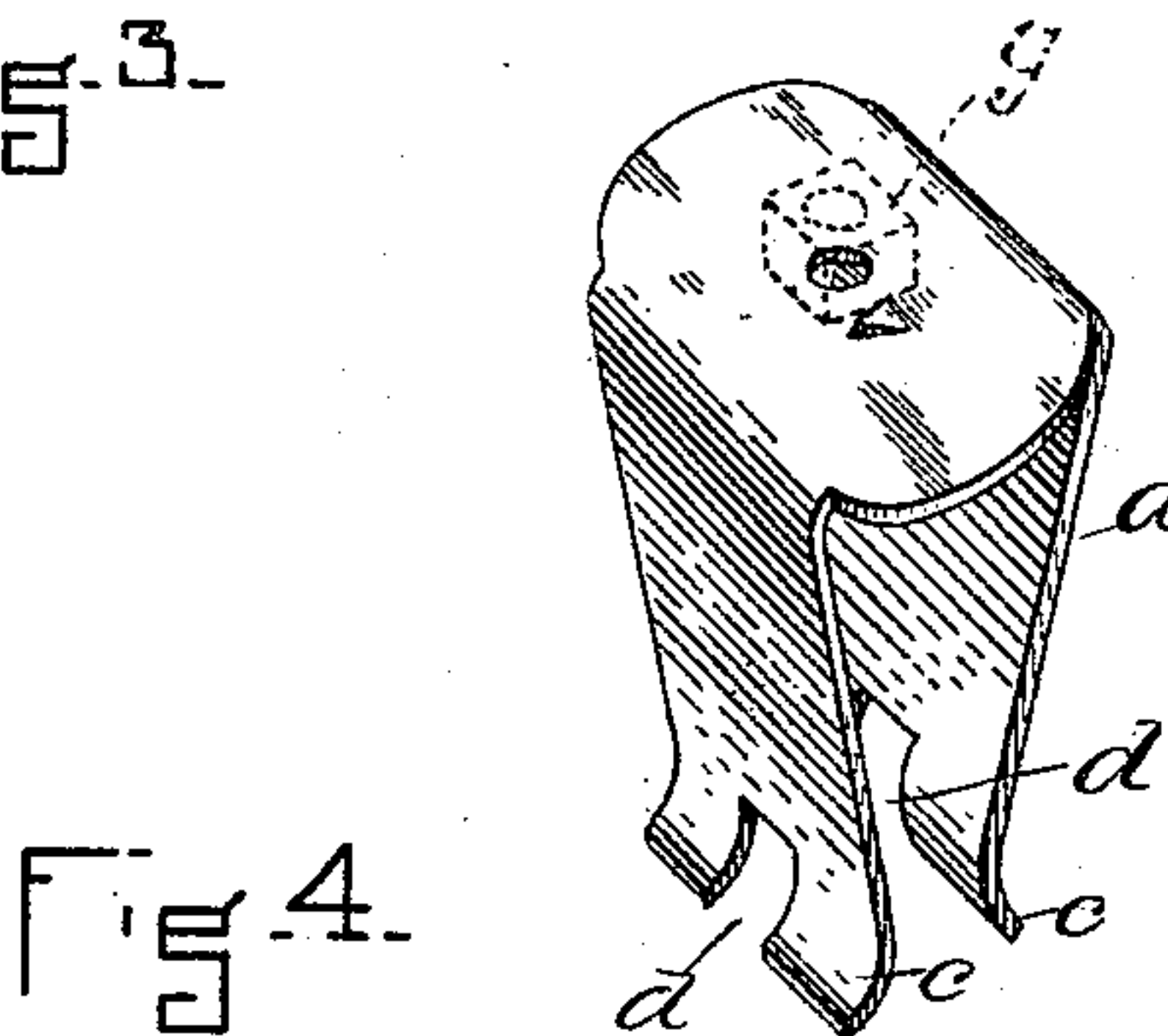
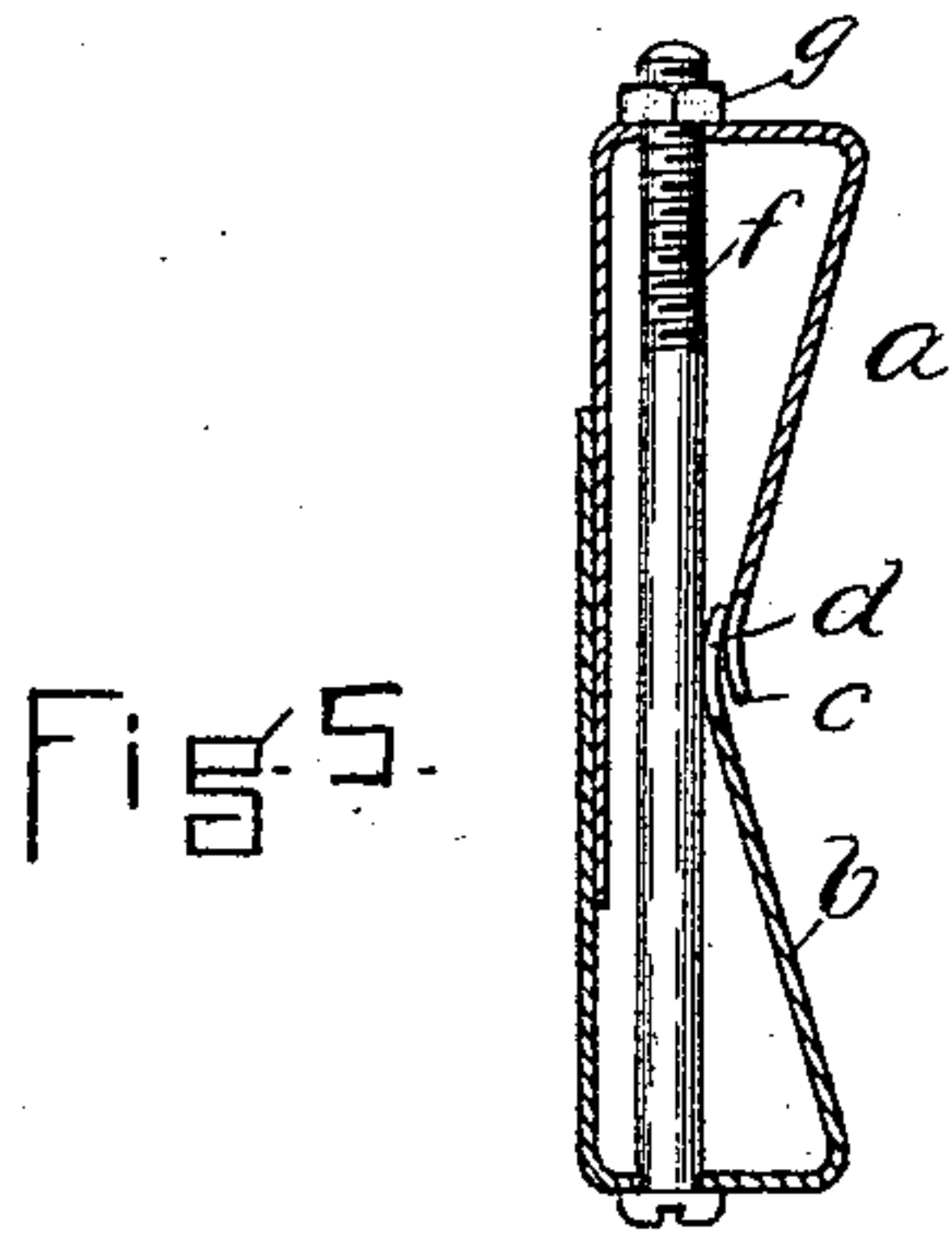
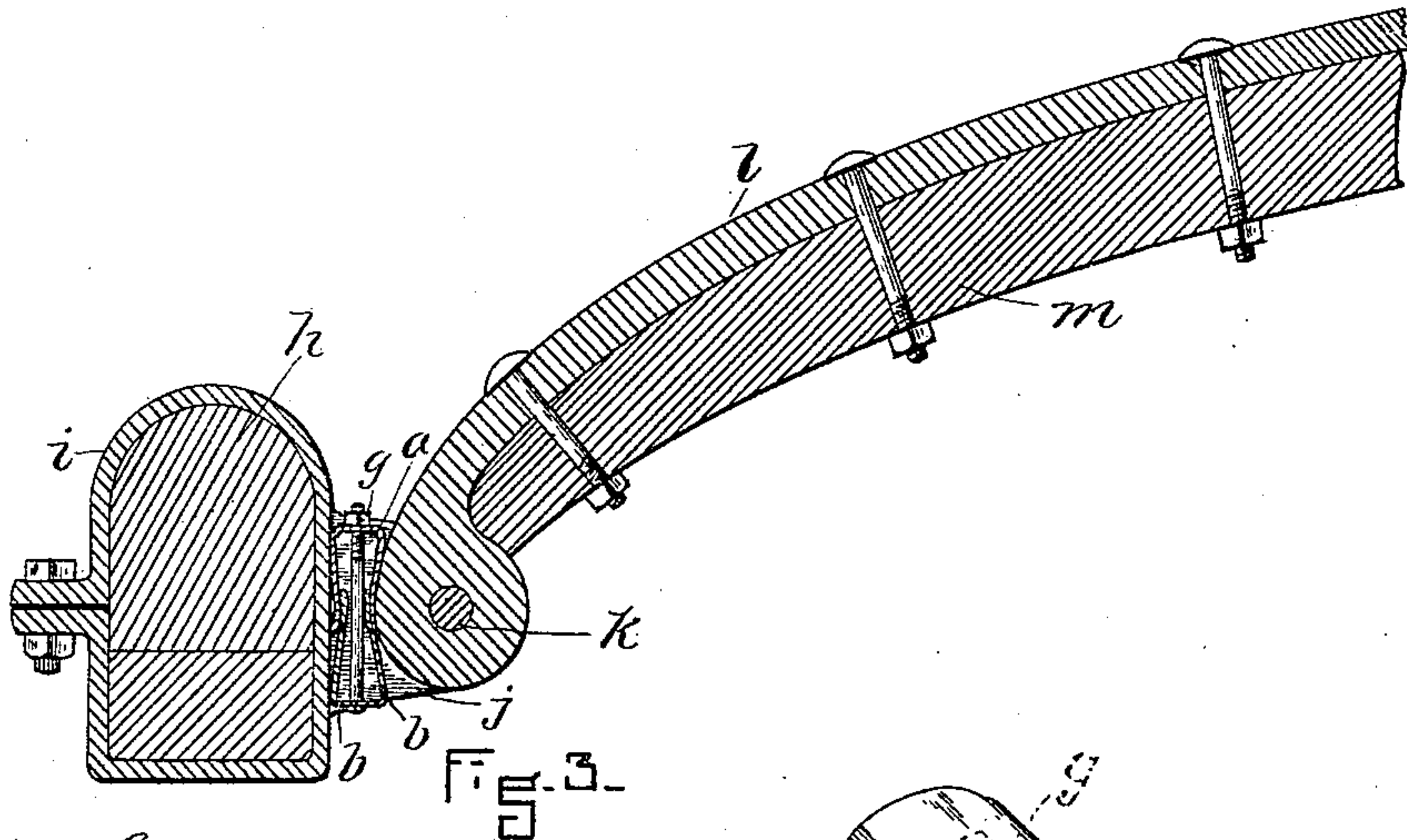
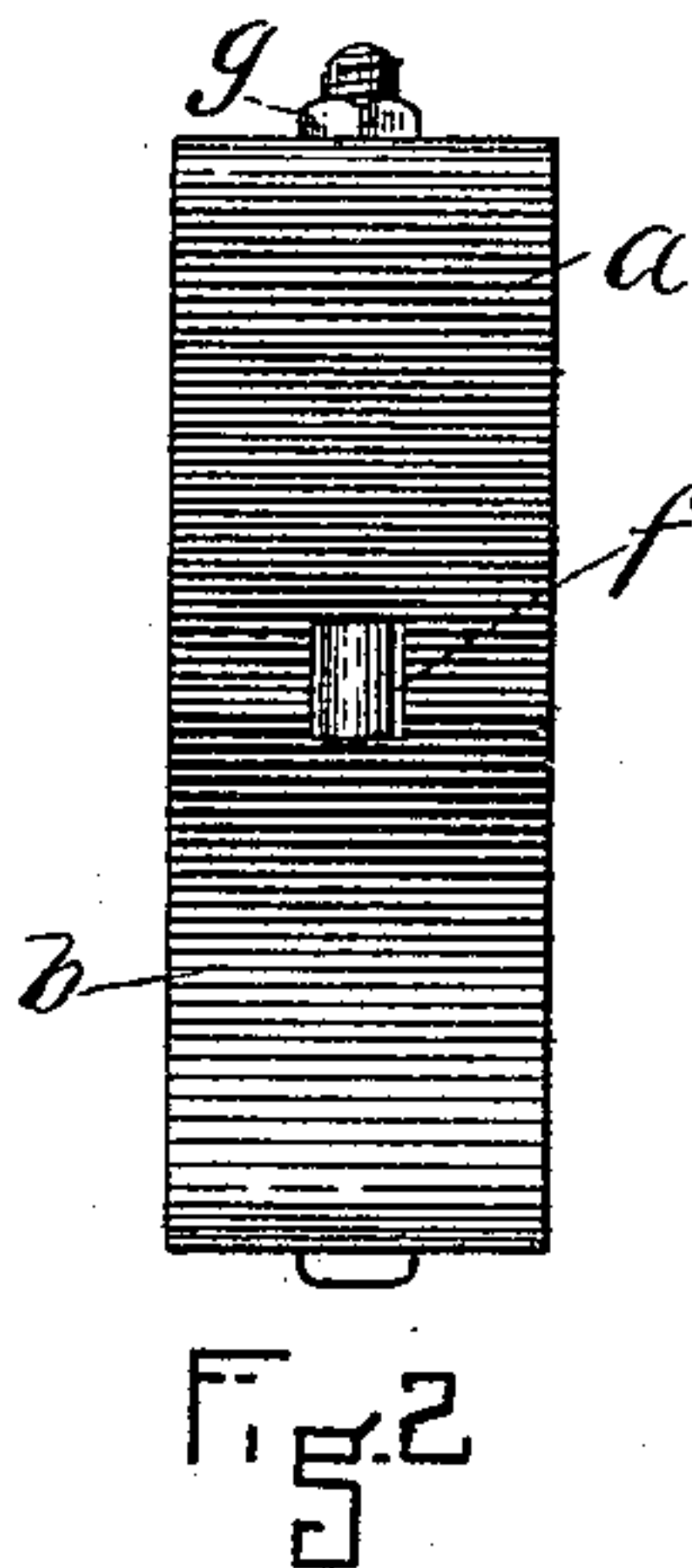
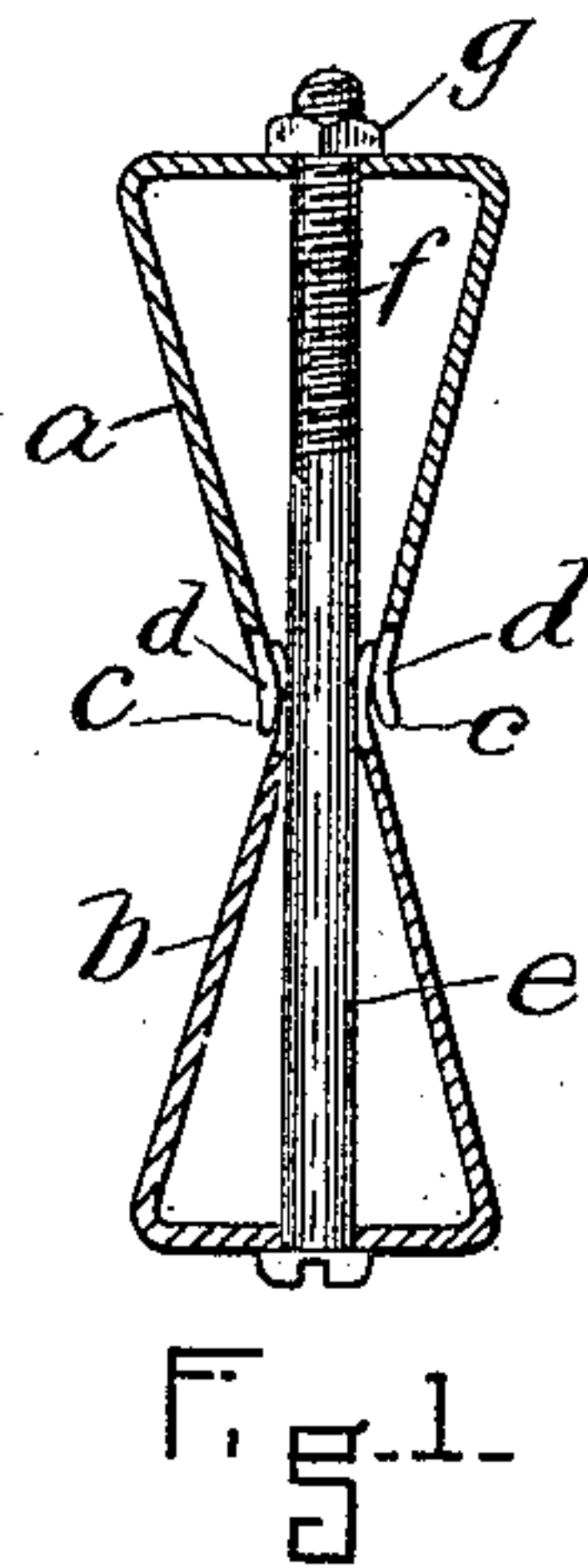


(No Model.)

W. H. BODFISH.  
ANTI-RATTLER FOR THILL COUPLINGS.

No. 460,549.

Patented Oct. 6, 1891.



WITNESSES—  
James T. Ball,  
C. G. Bartlett.

INVENTOR—  
W. H. Bodfish.  
My Atty. *Wm. Brown & Co.*



# UNITED STATES PATENT OFFICE.

WILLIAM H. BODFISH, OF MEDFORD, MASSACHUSETTS, ASSIGNOR OF ONE-HALF TO JOHN M. WILLIAMS, OF SALEM, NEW YORK.

## ANTI-RATTLER FOR THILL-COUPPLINGS.

SPECIFICATION forming part of Letters Patent No. 460,549, dated October 6, 1891.

Application filed December 10, 1890. Serial No. 374,172. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM H. BODFISH, of Medford, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Anti-Rattlers for Thill-Couplings, of which the following is a specification.

It is the object of my invention to provide an anti-rattler for thill-couplings which shall be more efficient and durable and be more readily adjusted and otherwise conveniently employed than is the case with anti-rattler thills heretofore in use.

My invention consists of two substantially U-shaped or bowed springs having normally-converging ends, the ends of one spring being arranged astride of the converging ends of the other spring, the two springs under this arrangement being rendered adjustable and placed intermediate of the thill-iron and the clip on the axle and between the ears of the clip, so that the thill-iron will be held with a yielding pressure from rattling upon its journal-bolt, and whereby by the adjustment of the bowed ends of the springs toward and from each other the latter may be made to operate with greater or less resilient force.

My invention also consists in combinations of parts incidental to and embodying details of construction of the foregoing.

Reference is to be had to the annexed drawings, and to the letters of reference marked thereon, forming a part of the specification, the same letters designating the same parts or features, as the case may be, wherever they occur.

Of the drawings, Figure 1 is a vertical sectional view of the invention. Fig. 2 is a front view of the same. Fig. 3 is a sectional view through the axle, the clip, the rear end of the thill and thill-iron, and the springs, showing the manner of applying and using the invention. Fig. 4 is a perspective view showing modified features of the invention. Fig. 5 is a vertical sectional view of a slightly-different form of springs from that shown in the other figures.

In carrying out my improvements I provide for each thill-coupling two U-shaped or bowed springs *a b*, the ends of which converge or tend to converge, as shown. The

ends of the springs are preferably (though not necessarily) slightly curved outward, as at *c*, and provided with notches *d* for a purpose which will presently appear. The springs thus constructed are arranged so that the ends of one—say, for example, of the spring *a*—may embrace the sides of the other or be placed astride the ends of the other, and a headed rod *e*, having a screw-threaded end *f*, is passed through holes formed in the bowed ends of the springs and has a nut *g* turned upon its screw-threaded end, as is most clearly shown in Fig. 1.

*H* designates an axle of a vehicle, and *i* the clip, having ears *j*, through holes formed in which the journal-bolt *k* is passed to couple the thill-iron *l*, connected with the thill to the vehicle. The springs *a b* and their adjuncts, arranged as before mentioned, are placed intermediate of the thill-iron ends and the clip *i* between the lugs *j*, so that the sides shall bear against the thill-iron and the clip and hold the former from rattling upon its journal-bolt *k* or other connecting parts. By adjusting the nut *g* on the rod *e* the springs may be made to operate with greater or less resilient force upon the thill-iron. By notching the ends of the springs at *d* the ends of the inner spring may be allowed to approach nearer than would otherwise be the case, since the portions of the springs on the sides of the notches *d* will be allowed to straddle, as it were, the rod *e*. The bowed end of the upper spring may be provided with laterally-projecting ears *n*, adapted to rest upon the ears *j* of the clip *i*, as is shown in Fig. 4, though this construction will not be necessary under all circumstances.

As a means for locking the nut *g* against accidentally turning off the screw-threaded end *f* of the rod *e*, I may strike up a V-shaped tongue *o* or tongue of other form on the bowed end of the spring, as shown in Fig. 4, over which the corners of the nut may pass when the latter is being turned on the rod *e*, and which tongue may engage the corners of the nut when there is a tendency for the said nut to turn off the rod and prevent such occurrence. When it is desired to remove the nut, the tongue *o* can be bent back to place or so that its upper surface will be below the



surface of the bowed end of the spring, so that the nut can be readily turned off the bolt. If the spring the outside ends of which operate on the face of the opposite spring 5 should become weakened, the position of the springs may be changed, so that there will be a practical renewal of the springs so far as their resilient properties are concerned.

10 Instead of bending both leaves of each spring inward, as shown in Figs. 1 to 4, inclusive, one leaf of each spring may be made straight or formed to extend at a right angle to the top and the other inclined inwardly, as shown in Fig. 5. With this construction 15 the straight leaves may be placed adjacent to the face of the clip and the inclined leaves next to the end of the thill-iron.

Other changes may be made in the form and arrangement of the parts without departing 20 from the nature or spirit of the improvement.

Having thus explained the nature of my invention and described a way and forms for making and using the same, but without attempting to describe all of the forms of con-

struction, I declare that what I claim is the 25 following:

1. An anti-rattler for thill-couplings, consisting of two substantially U-shaped springs *a b*, having normally-converging ends, the ends of one spring being arranged to overlap 30 the ends of the other spring, the rod *e*, passing through the bowed or curved ends of the spring, and the adjusting-nut *g*, as set forth.

2. An anti-rattler for thill-couplings, consisting of two substantially U-shaped springs 35 having converging ends, arranged substantially as described, the rod *e*, and nut *g*, the bowed ends of one spring being provided with the nut-locking tongue *o*, as set forth.

In testimony whereof I have signed my 40 name to this specification, in the presence of two subscribing witnesses, this 4th day of December, A. D. 1890.

WILLIAM H. BODFISH.

Witnesses:

ARTHUR W. CROSSLEY,  
A. D. HARRISON.