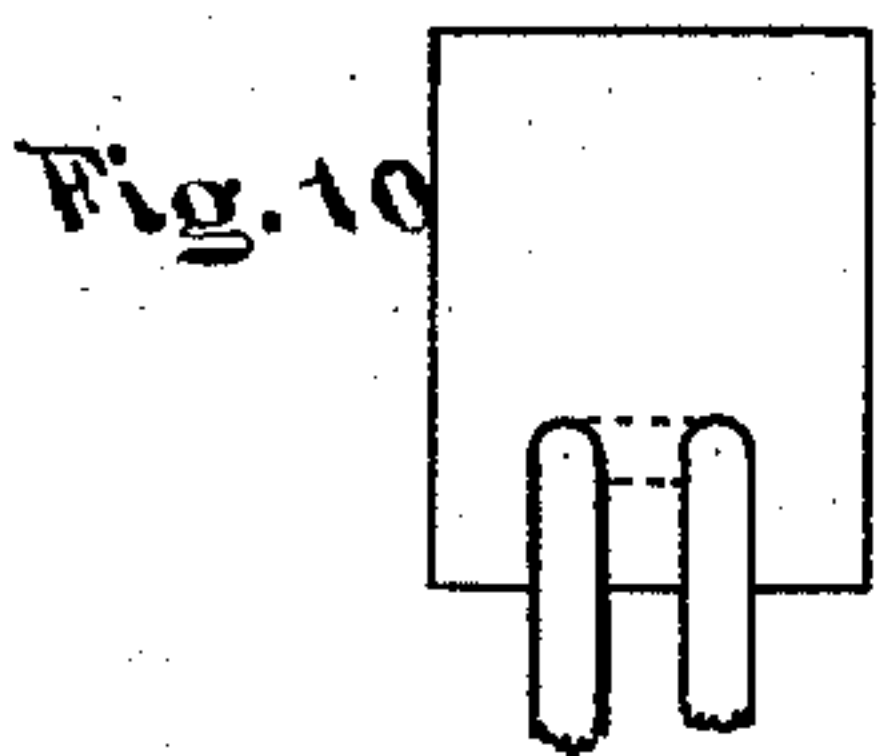
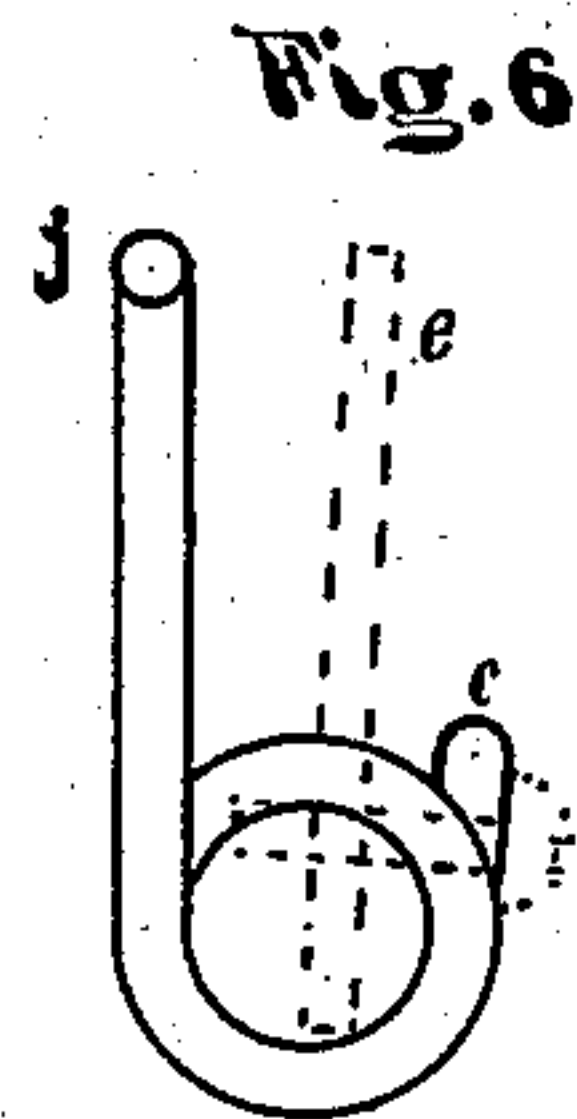
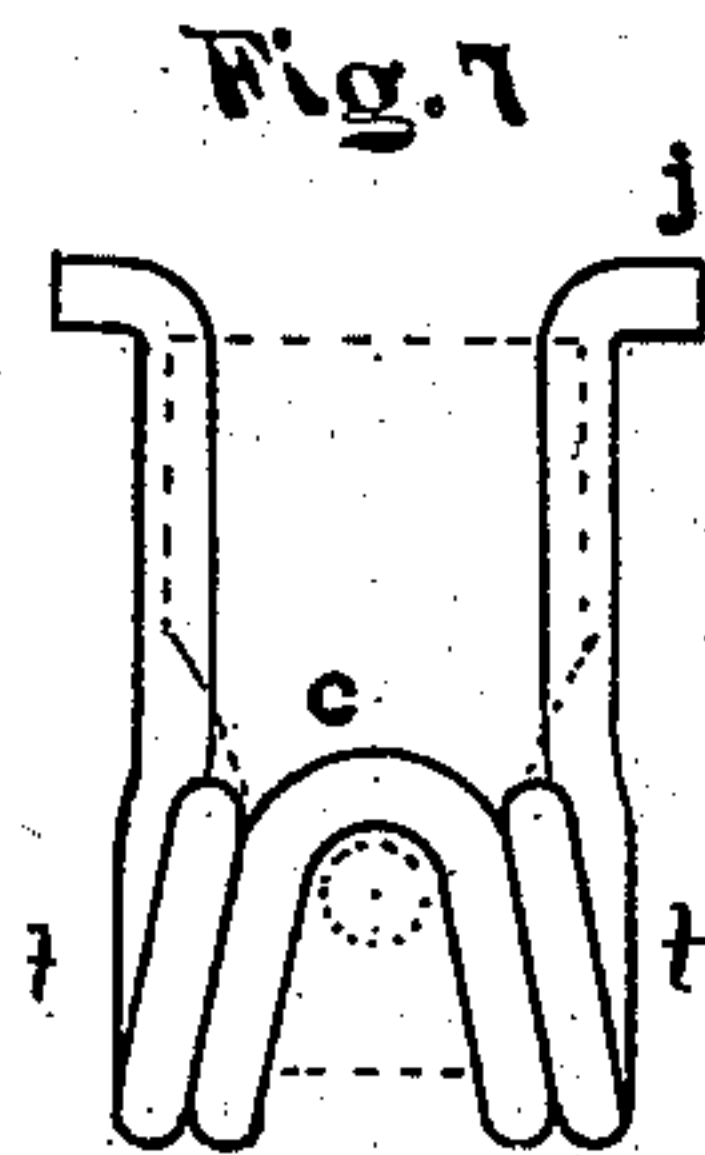
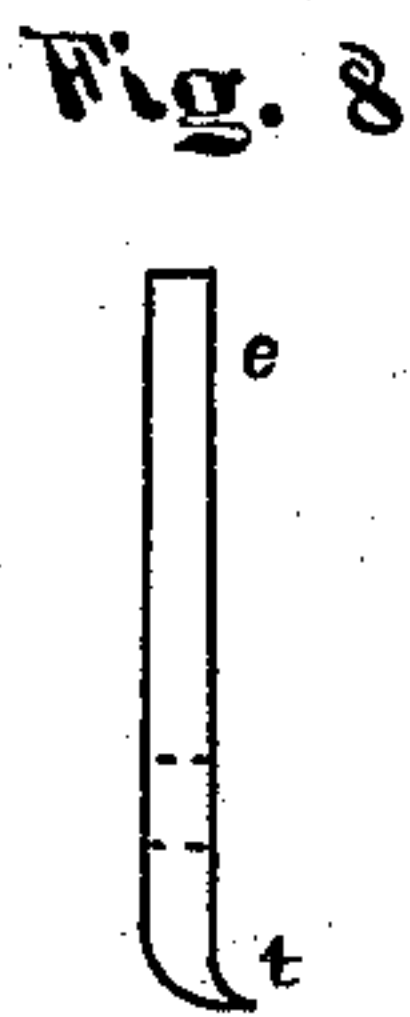
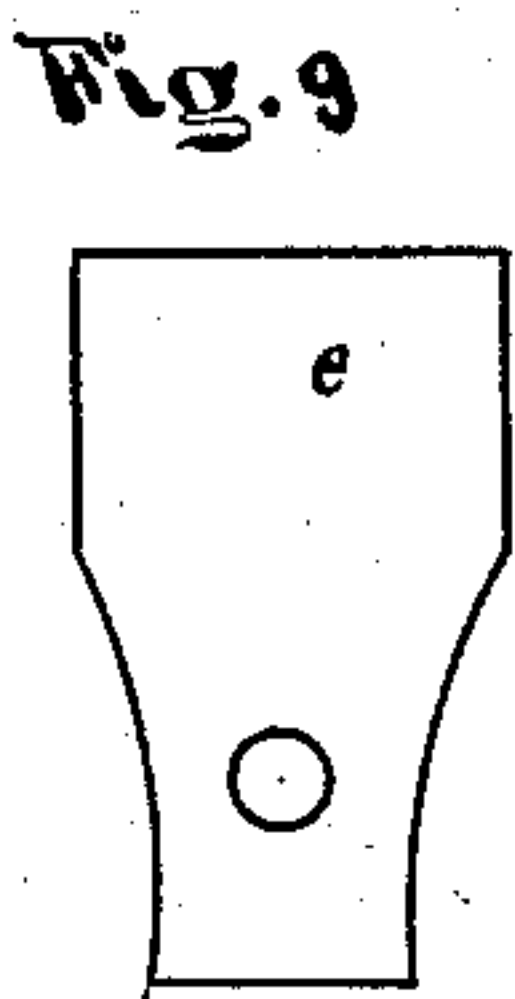
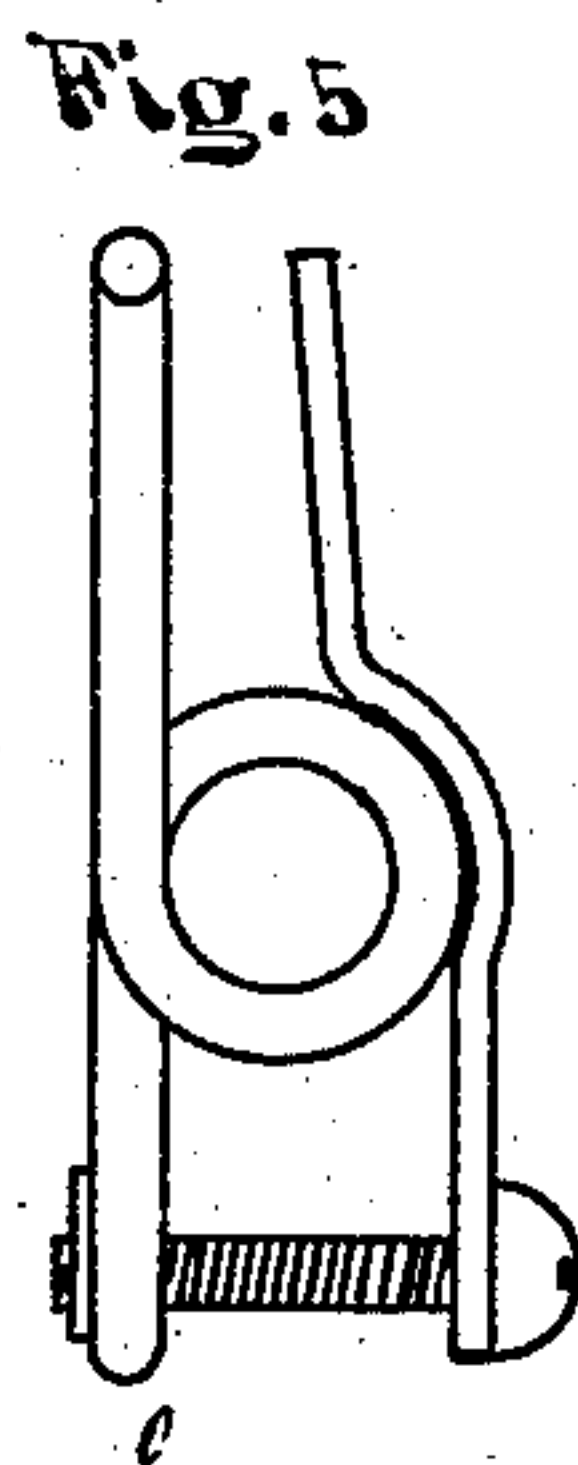
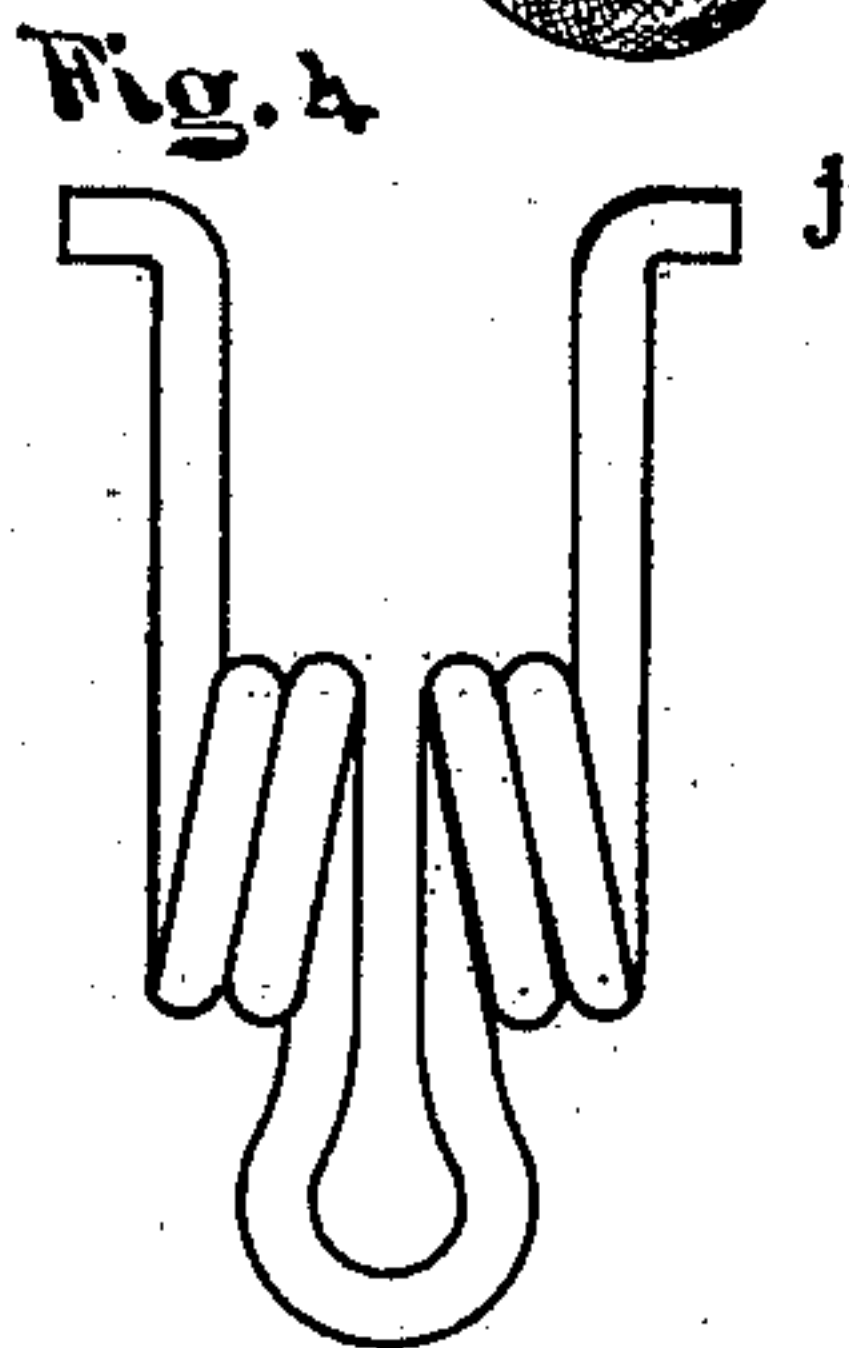
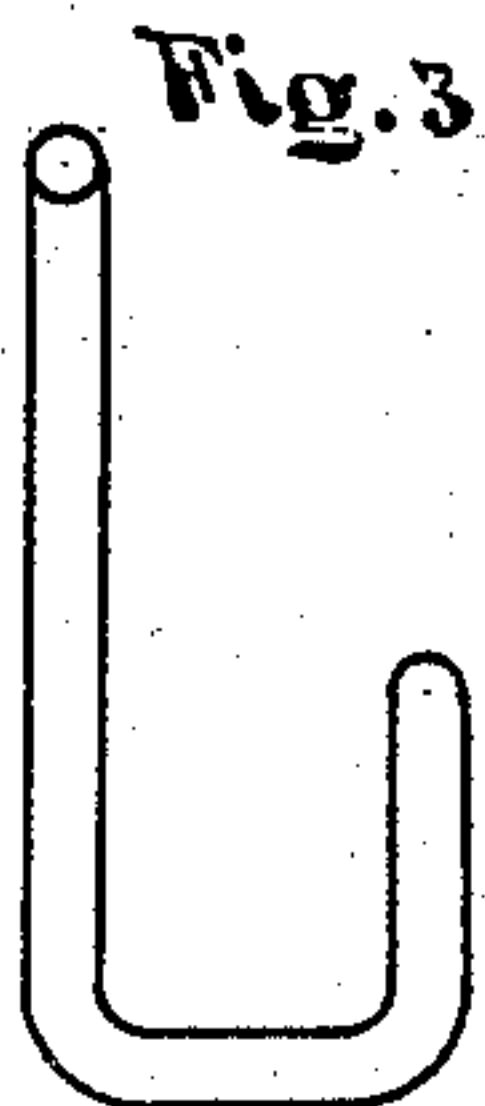
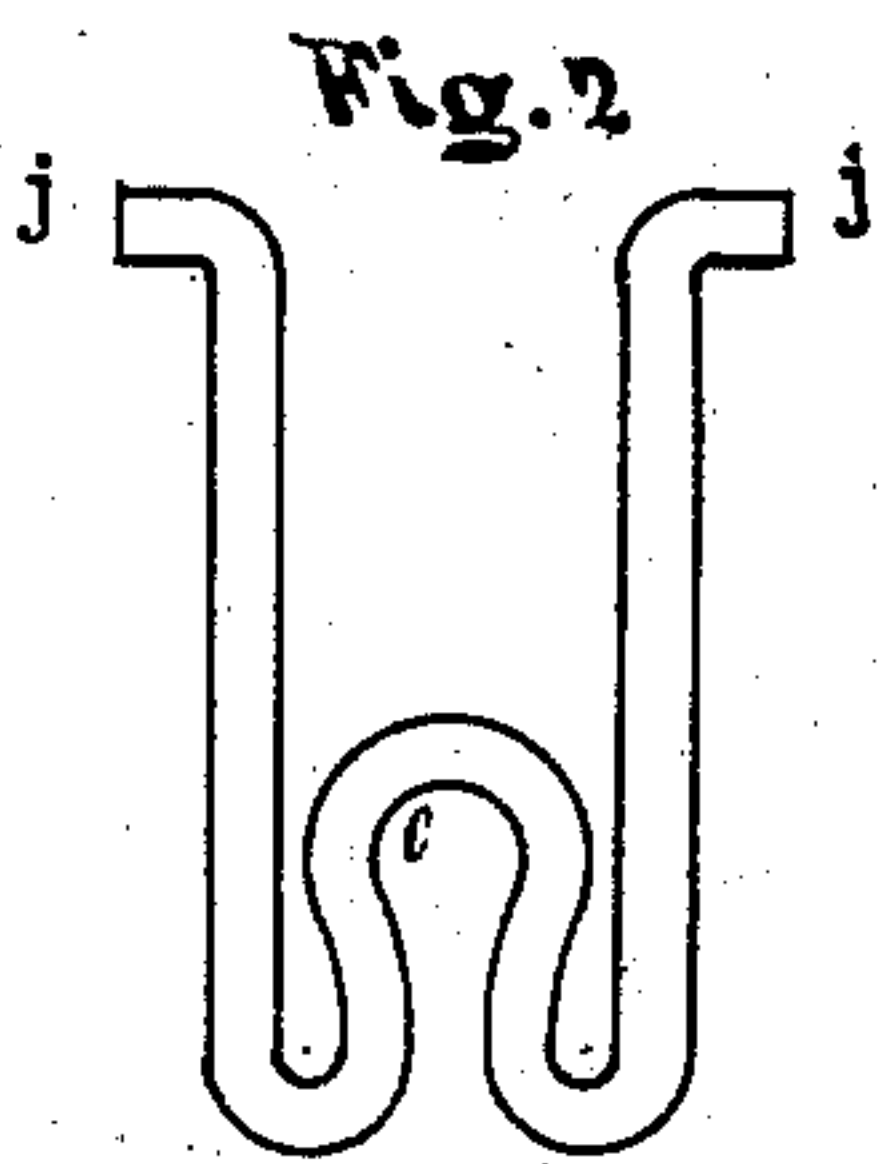
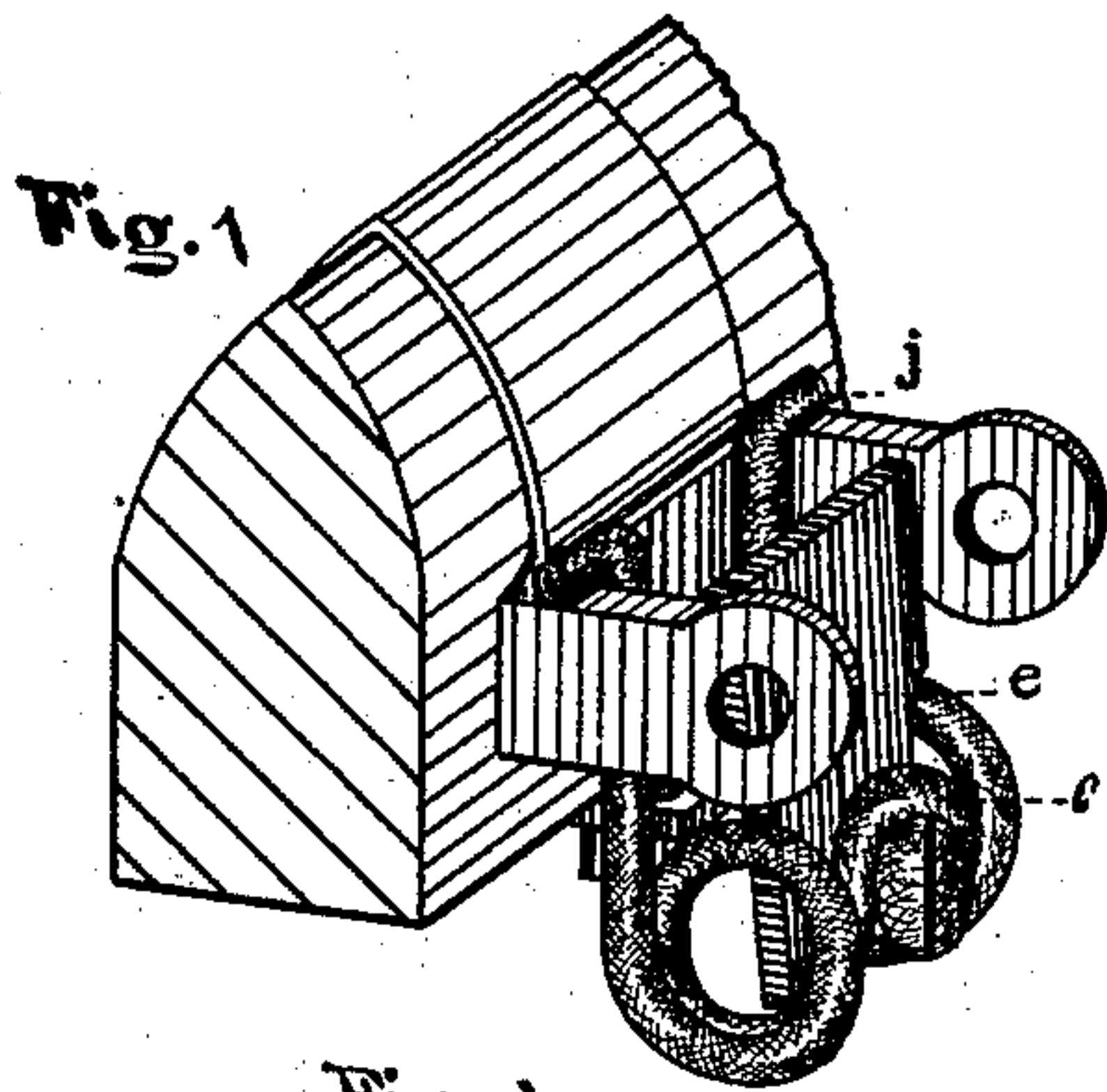


(No Model.)

J. R. SANBORN & E. A. FERRY.  
Thill Coupling.

No. 235,654.

Patented Dec. 21, 1880.



Witnesses;  
Dr. L. H. Bingham  
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Inventors;  
Jacob R. Sanborn  
Edwin A. Ferry  
By Allen Webster atty.



# UNITED STATES PATENT OFFICE.

JACOB R. SANBORN AND EDWIN A. FERRY, OF SPRINGFIELD, MASS.

## THILL-COUPLING.

SPECIFICATION forming part of Letters Patent No. 235,654, dated December 21, 1880.

Application filed April 26, 1880. (No model.)

*To all whom it may concern:*

Be it known that we, JACOB R. SANBORN and EDWIN A. FERRY, both of Springfield, in the county of Hampden and State of Massachusetts, have invented certain new and useful Improvements in Anti-Rattlers for Thill-Couplings; and we do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to anti-rattlers for thill-couplings, which are constructed separate and apart from the coupling.

Heretofore many devices to prevent rattling in the ordinary thill-coupling have been used; but they have been found objectionable, in that they are difficult to adjust, easily gotten out of repair, and do not last. Those which occupy a position in the coupling, like ours, are very difficult to place in position, and they having but a narrow surface bearing against the coupling-eye, the bearing part is soon worn through, thus destroying the whole device, and unsightly grooves are soon worn in the eye. Again, in some couplings a greater degree of pressure is desired than in others, and in the ordinary device the degree of pressure cannot be varied. The objects of our invention are therefore to provide a simple, cheap, efficient, durable, and easily-adjustable device to prevent rattling in couplings for thills.

Our invention consists in the combination of a bearing-plate with a wire spring and an adjusting device; in the shape of part of the spring; and, finally, it consists in the general construction, as hereinafter set forth, whereby the objects of our invention are attained.

In the accompanying drawings, in which similar letters of reference indicate like parts, Figure 1 is a perspective, showing the position of our device between the coupling-ears. Figs. 6, 7, 8, and 9 are front and side views of the several parts of the same; and Figs. 2, 3, 4, 5, and 10 are views of various modifications.

In constructing our device we use for the spring spring-wire of about one-eighth of an inch diameter. This is bent to form a loop, *c*, in the center and one or more coils on either

side, as shown in the drawings. The two ends are bent, as shown, to rest upon the coupling-ears and hold the device in place. The bearing-plate *e* is made of metal, hardened steel being preferred. As this is the only point which is subjected to wear, a plate of steel, hardened, of an eighth of an inch in thickness, will render the device practically indestructible. The lower end of this piece should bear against the rising inner edge of the lower part of the loop *c*, as shown in the drawings, Fig. 1, or against the rising inner edge of the coils; or if it appears desirable a projection may be formed on the lower end of the piece *e*, as shown in Fig. 8, thus carrying the piece *e* farther from the loop. A screw passes through the loop into the piece *e*.

It will now be seen that if the screw is turned in one direction the plate and loop are drawn toward each other. The lower end of the plate, bearing against the loop or coil at the lower part, is held stationary, while the upper part is carried outward and bears against the coupling-eye, and when the screw is turned in the opposite direction the parts separate and the pressure on the eye is removed.

To place this device in the coupling it is not necessary to remove the eye as in many other devices. The plate *e* being loose, the two ends are sprung toward each other until the projections *j j* will enter between the ears, and the whole is then pressed up from below until the projections pass over the tops of the ears, as shown in the drawings. The screw then being turned, any degree of pressure on the eye can be attained.

It will be seen with this combination—to wit, the wire spring, broad hardened bearing-plate, and adjusting device—an anti-rattler is constructed which possesses all the advantages of flexibility, power, and extent of sweep found in a device made wholly of wire, and by means of the plate is rendered more durable while doing away with the objectionable features found in those having a small bearing-surface.

As many modifications of this device may be made, we do not confine ourselves to the particular construction above described. We deem it, however, the best. In Fig. 2 we show a front view of a modification in which the coils are omitted. Fig. 3 is a side view of the same. Figs. 4 and 5 are a front and side view



of another modification. With this the bearing-plate rests against the outside of the coils.

The means by which the pressure is regulated may be other devices equivalent to the screw. We deem this, however, the most convenient.

We have shown in Fig. 10 a method of attaching the plate directly to the loop end of the spring and doing away with the screw. When in position this device possesses the advantages of the other, with the exception that it is not adjustable.

We are well aware that a device to prevent rattling in thill-couplings has heretofore been made wholly of wire, having a shape similar to that shown in Figs. 1, 6, and 7, with this exception that in such device, instead of the short loop *c* shown by us, the loop end of the wire extends upward and bears directly against the coupling-eye. To such a spring alone we make no claim. The objectionable features of such a device we have hereinbefore enumerated.

We are also aware of United States Letters Patent No. 181,848, dated September 5, 1876, and we claim nothing shown therein.

We do not therefore claim, broadly, a wire spring, nor a bearing-plate, irrespective of their construction and adaptation. It is by the combinations, as herein shown, that the beneficial results are accomplished.

By showing but not claiming in this application a permanent connection of the spring and bearing-plate, we do not abandon the same, as it is our intention to make this the subject of a subsequent application.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. An anti-rattler for thill-couplings, consisting of a wire spring constructed substantially as shown, and a wide bearing-plate constructed and operating in the manner substantially as specified, and a means for adjusting the spring and plate with reference to each other.

2. The combination of the wire spring, the plate *e*, and a means for regulating the pressure, substantially as and for the purposes shown.

3. The combination of a wire spring, substantially as shown, having one or more coils, and the loop *c*, in combination with a pressure-plate and a means for regulating the pressure, substantially as set forth, and for the purposes shown.

4. The combination of a wire spring, as shown in Figs. 6 and 7, with a pressure-plate, *e*, and a screw for adjustment, substantially as shown.

5. The pressure-plate *e*, having projection *t*, in combination with the wire spring and an adjusting device, substantially as shown.

In testimony that we claim the foregoing as our own we affix our signatures in presence of two witnesses.

JACOB R. SANBORN.  
EDWIN A. FERRY.

Witnesses:

ALLEN WEBSTER,  
L. H. BINGHAM.