

J. Bingham.
Elastic Coupling
No 29,338. Patented Jul. 24, 1860.

Fig. 2.

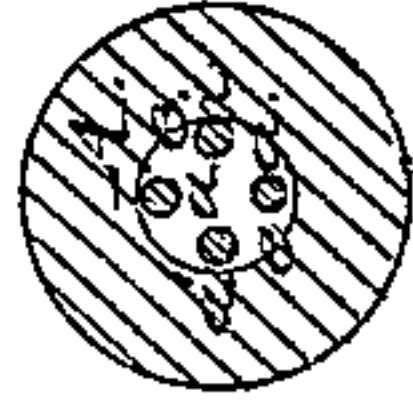


Fig. 1.

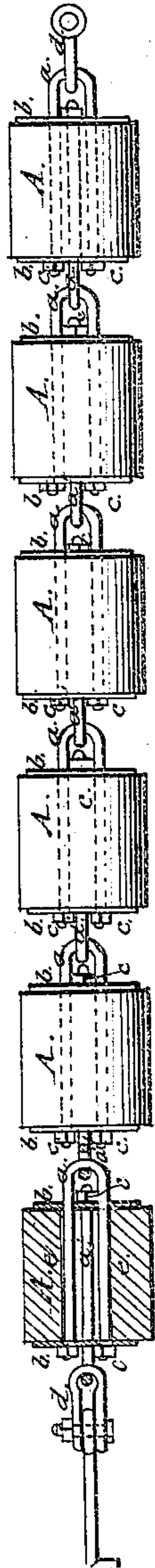


Fig. 4.

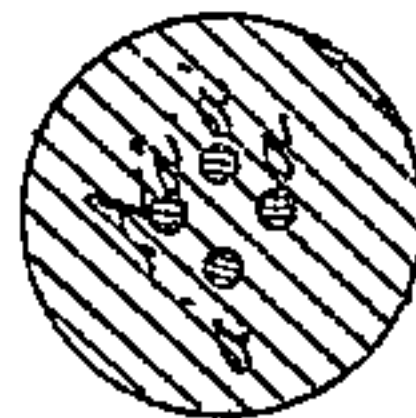
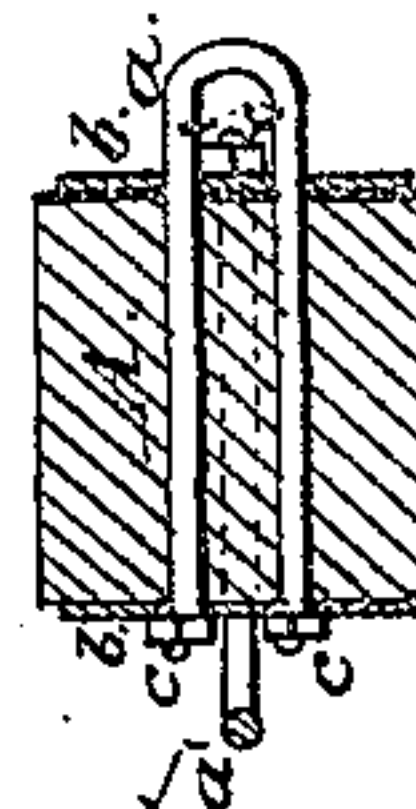


Fig. 3.



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SURGE-RELIEVER FOR CABLES.

Specification of Letters Patent No. 29,338, dated July 24, 1860.

To all whom it may concern:

Be it known that I, JAMES BINGHAM, of the city and county of Philadelphia and State of Pennsylvania, have invented a new and Improved Surge-Reliever for Anchor-Cables; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a longitudinal view of a surge reliever constructed according to my invention with one link in section. Fig. 2 is a transverse section of one link. Fig. 3 is a longitudinal section of one link of a modified construction. Fig. 4 is a transverse section of the same.

Similar letters of reference indicate corresponding parts in the several figures.

A, A, (Figs. 1 and 2) are short hollow cylinders of india-rubber having their interiors only just large enough for the stirrup bolts *a, a'*, to pass through them.

b, b, are wrought iron plates applied one to each end of each india-rubber cylinder. These plates are nearly large enough to cover the ends of the cylinders, and each has four holes at equal distances from its center and at equal distances apart, two holes for the two limbs of each of the two stirrup links or bolts *a, a'*, to pass through. The stirrup bolts pass through the central cavities *e, e*, of the cylinders in opposite directions so that a bow of one bolt is left protruding through the exterior of each plate. Each bolt is secured by two nuts *c, c*, applied outside one of the plates *b, b*, one on the projecting end of each of its limbs; and the two bolts passing through each cylinder are arranged transversely to each other—that is to say, in such a manner that the limbs of each are interposed between the limbs of the other as shown in Fig. 1, where it is shown by the lettering that the limbs of *a*, alternate with the limbs of *a'*. One cylinder A, two plates *b, b*, and two bolts *a, a'*, with their nuts constitute one link. The links are con-

nected by a stirrup bolt of one link passing through a stirrup bolt of the adjacent one on either side of it as shown in Fig. 1. Each of the so constructed links constitutes a spring the india-rubber being compressed between the plates by any strain in the form of a pull on the bows of the stirrup bolts. It will be desirable in most cases to use several of these elastic links connected together though in some cases one or two might be used. The connection with the cable may be made with shackles *d, d*, passing through the outer bows of the end links.

The surge reliever thus constructed will most effectually relieve the cable to which it is applied of any strain, and it possesses the advantage over other contrivances for the same purpose in the simplicity of its construction, no forging being necessary except in the bending of the stirrup bolts, and in its not requiring to be made of great weight. It is also capable of being very easily repaired.

The link shown in Figs. 3, and 4, only differs from that shown in Figs. 1, and 2, in the india rubber cylinder A, having no central cavity *e*, for the stirrup bolts to pass through but being perfectly solid with the exception of having four longitudinal holes through which the limbs of the stirrup bolts pass tightly.

Having thus described my invention I claim as new and desire to secure by Letters Patent as an improved article of manufacture:

A surge reliever consisting of a chain having each of its links composed of two stirrup bolts or links *a, a'*, the limbs of which are interposed their ends passing through heads or plates *b, b*, and secured from withdrawal by nuts *c, c*, the heads being separated by a block of rubber A, through which the links also pass all as herein shown and described.

JAS. BINGHAM.

Witnesses:

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