A. BOSQUET.

Apparatus for Capsuling Bottles.

No. 163,045. Patented May 11, 1875.

Fig: 1.

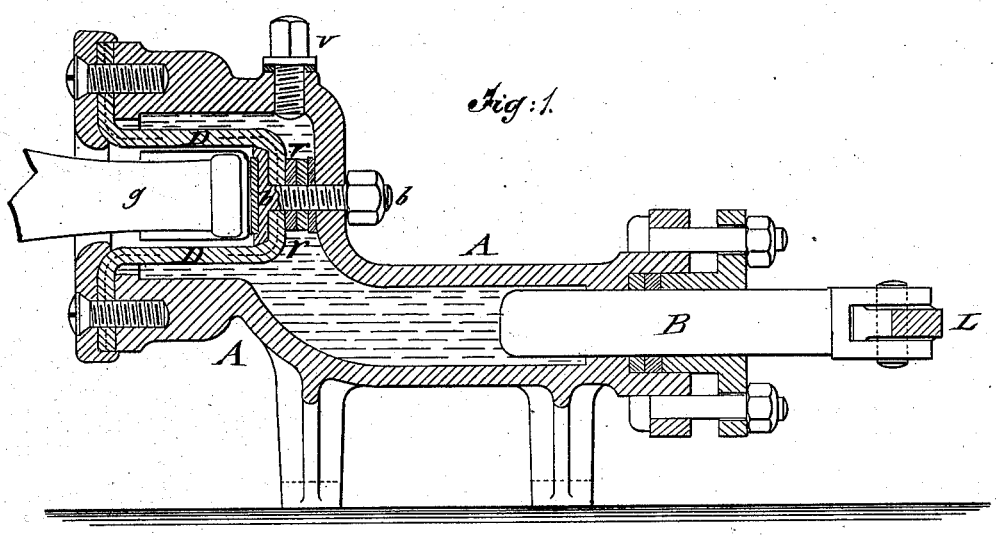


Fig: 2.

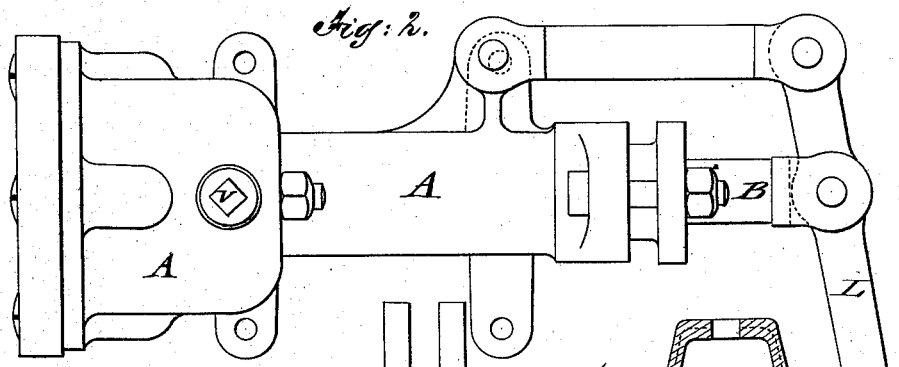


Fig: 4.

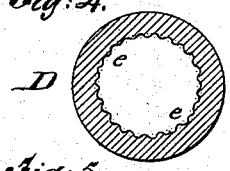


Fig: 5.

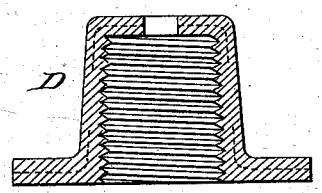


Fig: 3.

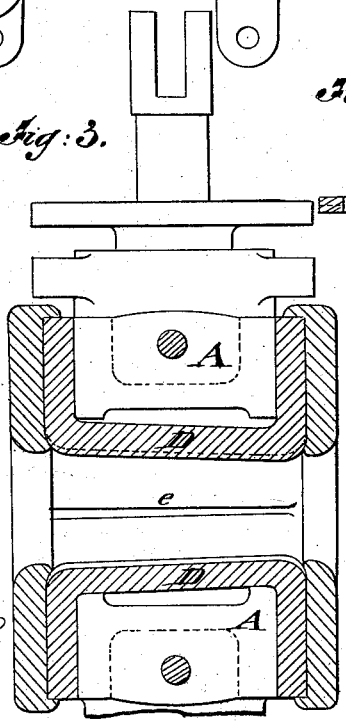


Fig: 6.

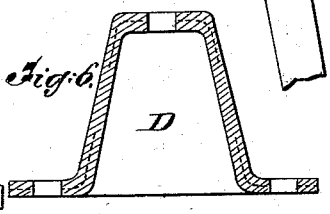
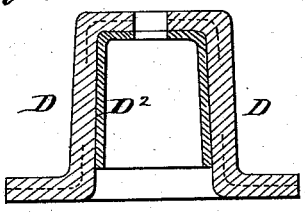


Fig: 7.



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ANTOINE BOSQUET, OF PARIS, FRANCE.

IMPROVEMENT IN APPARATUS FOR CAPSULING BOTTLES.

Specification forming part of Letters Patent No. **163,045**, dated May 11, 1875; application filed April 17, 1875.

To all whom it may concern:

Be it known that I, ANTOINE BOSQUET, of Paris, in the Republic of France, have invented a new and Improved Apparatus for Capsuling Bottles, of which the following is a specification:

This invention relates to improved apparatus for fixing metallic capsules on bottles and other necked vessels, the apparatus belonging to that class in which the necessary pressure is applied to the capsule through the medium of water or other fluid acting on an elastic diaphragm or chamber of india-rubber brought in contact with the capsule.

The apparatus hitherto employed for capsuling bottles have not given entire satisfaction, on account of the exposure of the interior or bottom end of the diaphragm to hydraulic pressure in the same manner as the cylindrical part, so that the diaphragm works on the end of the capsule when its cylindrical or conical part should be brought into action to bind the capsule tightly around the neck of the bottle. It becomes, therefore, an important condition for the proper working of the apparatus that the diaphragm or chamber should be secured at its exterior, and also at its interior or bottom end, for allowing only its cylindrical part to act on the capsule. The securing the inner end of the diaphragm constitutes the main part of my invention.

In order that the invention may be more readily understood, the same will be described by reference to the accompanying drawings, in which—

Figure 1 represents a vertical longitudinal section of my improved apparatus for capsuling bottles; Fig. 2, a side elevation; Fig. 3, a vertical longitudinal section of a modification of the same; and Figs. 4, 5, 6, and 7, detail sections of the various shapes of the elastic diaphragms.

Similar letters of reference indicate corresponding parts.

The general features of the apparatus are the same as in the well-known machines hitherto employed for this purpose, being based on the general principle of the hydraulic press.

A lever, L, forces the plunger B into the cylinder or barrel A, and displaces the liquid therein, which transmits the pressure to the cylindrical or conical portion of the elastic diaphragm or chamber D, causing the same to collapse and press the capsule C closely upon the neck of the bottle. The elastic chamber D is secured by its flanged outer end to the cylinder-casing, the inner end being also applied firmly to the casing or liquid chamber A by means of a connecting-bolt, *b*, passing through the same, as shown in Fig. 1, or by an outwardly-turned flange, as in Fig. 3, supporting thereby both ends of the chamber D against hydraulic pressure. Bolt *b* is secured by a nut on the outside, and provided with a head covering the bottom end of the chamber. The head is lined with a thickness of soft felt, in order to prevent damage to the top of the capsule. The damage is, however, entirely avoided by making the elastic chamber with open ends, and securing it by the end flanges, as in Fig. 3. The apparatus is filled with liquid by a hole and screw-plug, *v*.

The bottom end of the diaphragm or chamber may be used for different lengths of capsules by backing up the chamber with metallic washers *r*, placed on the stem of the bolt intermediately between the end of the elastic chamber D and the casing A.

For the purpose of capsuling bottles containing aerated liquids, such as champagne, lemonade, &c., the elastic chamber D is made of greater depth and of conical form, so as to affix capsules of considerable length, such as usually employed with these bottles.

The head of the bolt is made adjustable by sliding it forward in a tube with cross-pin or set-screw, and a cup or lining of sheet iron or copper is embedded in the elastic material of the chamber at the bottom end, in order to render the same rigid at that part, and protect that portion of the capsule which covers the cork of the bottles from any hard contact or hydraulic pressure. The same result may be obtained when the elastic chamber is open at both ends, as in Fig. 3, in which case the cork projects beyond the capsuling device.

The apparatus may with equal facility, by changing somewhat its shape, be applied to wide-mouthed bottles, carboys, jars, pots, &c., and also for applying capsules within the necks of large-mouthed vessels for stoppering the same by filling up the capsules with plas-

ter. For this purpose the elastic chamber extends not to the inside of the casing, but to the outside of the same, being otherwise of similar construction and action.

The interior surface of the chamber D may be smooth or corrugated, for the purpose of producing either no perceptible plaits or regular plaits on the capsule. By arranging a series of longitudinal grooves, *e*, in the chamber, a corresponding number of ridges is formed around the capsule by a preliminary pressure, after which the bottle is partially turned, and a second pressure applied, which folds down the ridges in regular plaits. By increasing the number of corrugations on the interior of the chamber D, the capsule may, by repeated pressing and slight turning of the bottle, be contracted at the neck of the bottle without forming any apparent plaits. The same result is reached by the conical shape of the chamber, as in Fig. 5, made with increasing thickness from the bottom to the outer part, so that the pressure may first be applied on the capsule by the thinnest part, and then gradually extended toward the thicker part. A screw-thread on the interior of the chamber, as shown in Fig. 6, accomplishes the same result by turning the bottle when the pressure is applied.

As the necks of the bottles vary considerably in diameter, it may be useful in some cases to insert one or more elastic cups within the chamber D, as shown in Fig. 7, for the purpose of reducing the inner diameter of the elastic chamber when capsuling a bottle having a neck of small diameter.

The elastic material of which the various forms of chambers are made is strengthened by an interior thickness of woven fabric introduced centrally into the same, as indicated in dotted lines.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In machines for capsuling bottles, the combination of the elastic diaphragm or chamber with the surrounding casing by being secured at both ends, so that the hydraulic pressure acts only on the cylindrical or conical part, and compresses the corresponding part of the capsule around the neck of the bottle, substantially in the manner and for the purpose specified.

2. The elastic diaphragm or chamber, having grooves or corrugations at the inner surface, to obtain either regular plaits or hardly perceptible folds on the compressed part of the capsule, as desired, substantially as specified.

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