(No Model.)

2 Sheets—Sheet 1.

E. J. BROOKS.

SEAL.

No. 312,963. Patented Feb. 24, 1885.

Fig. 1.

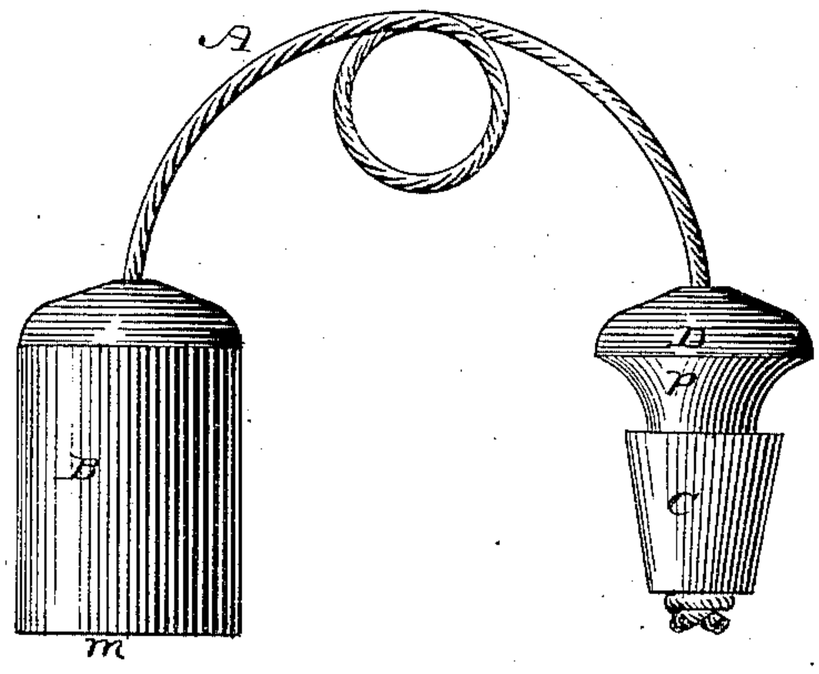


Fig. 3.

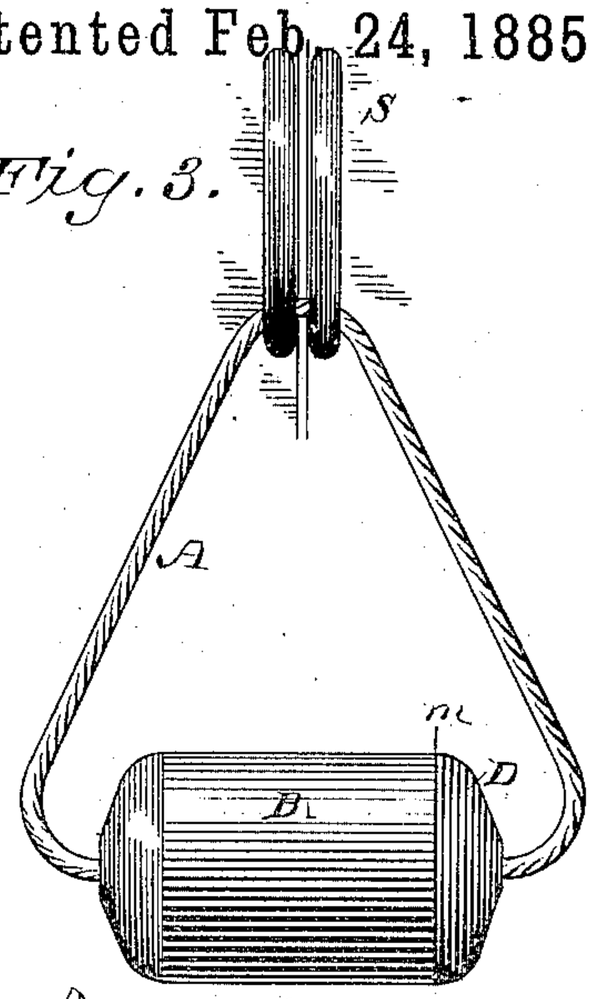


Fig. 2.

Fig. 4.

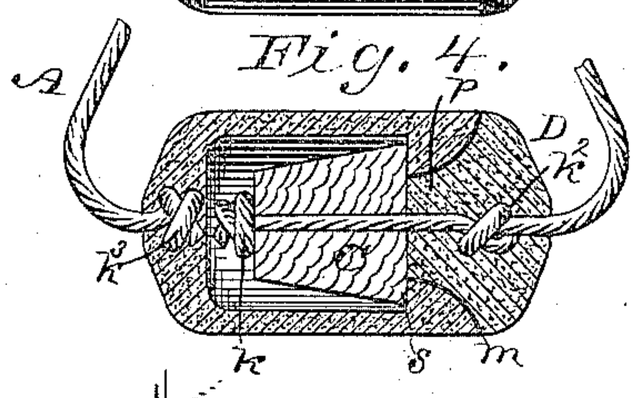


Fig. 5.

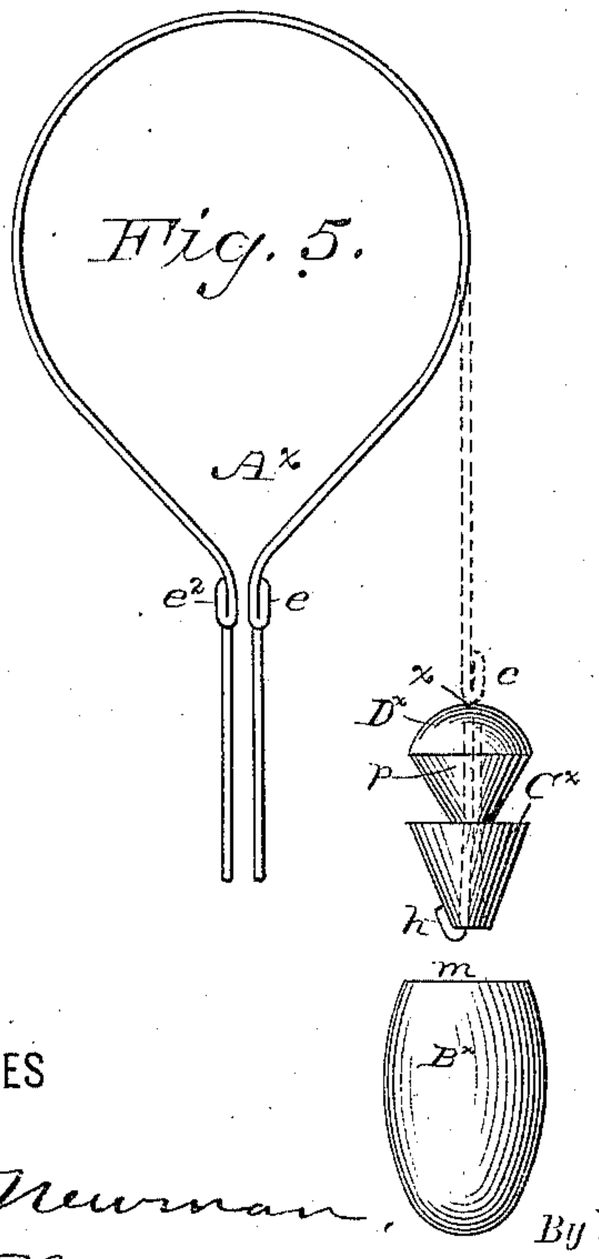
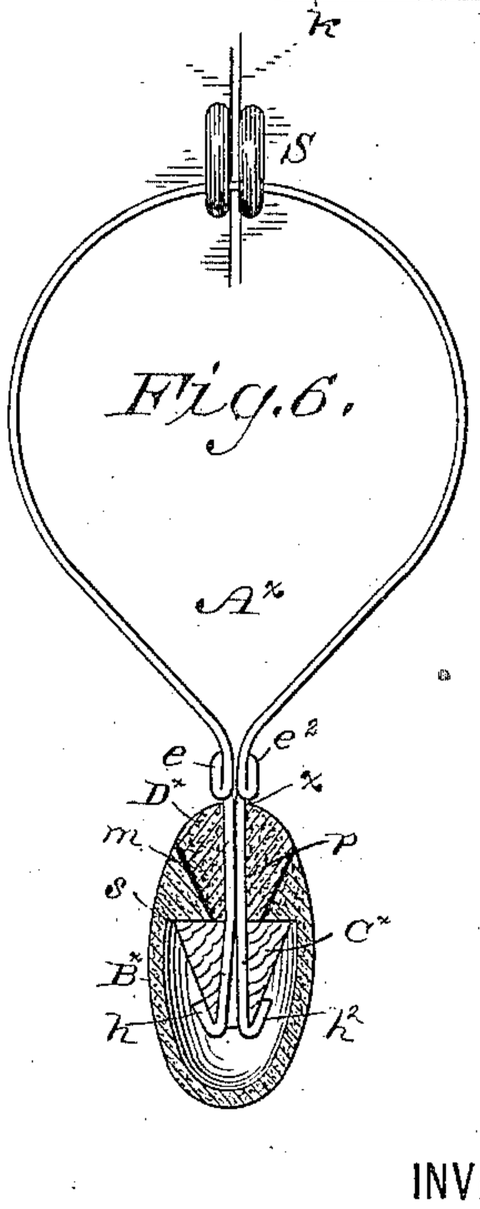


Fig. 6.



WITNESSES

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(No Model.) 2 Sheets—Sheet 2.

E. J. BROOKS.

SEAL.

No. 312,963. Patented Feb. 24, 1885.

Fig. 7

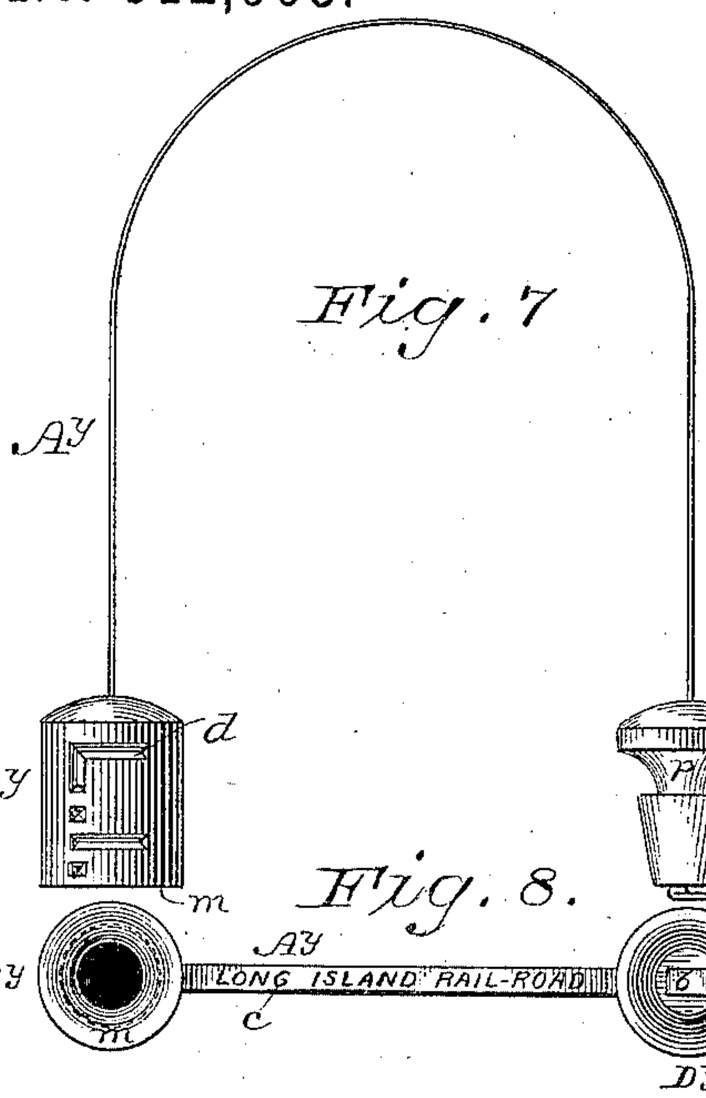


Fig. 8.

Fig. 9.

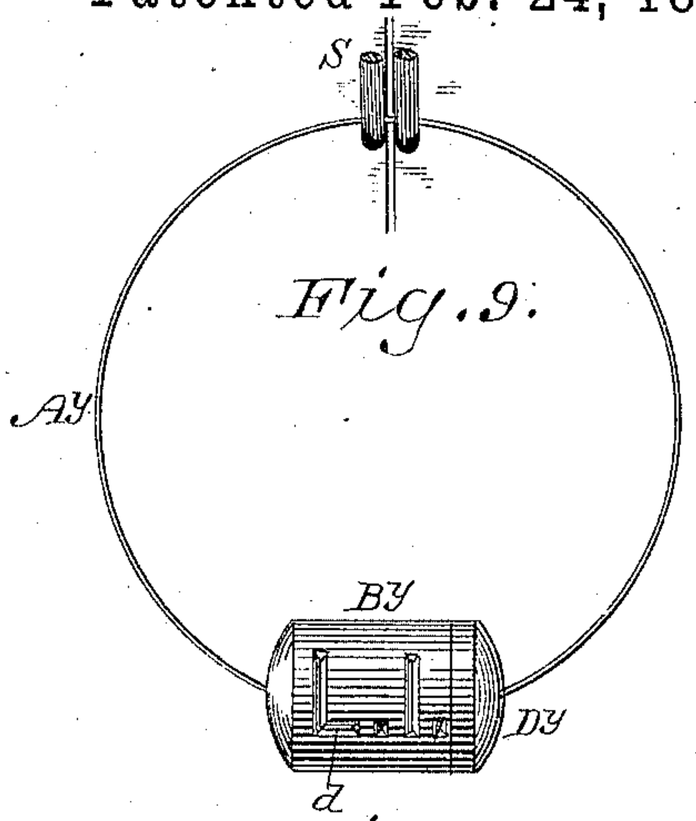
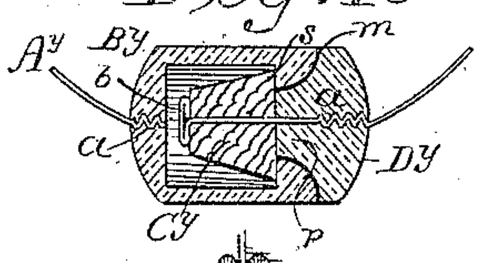
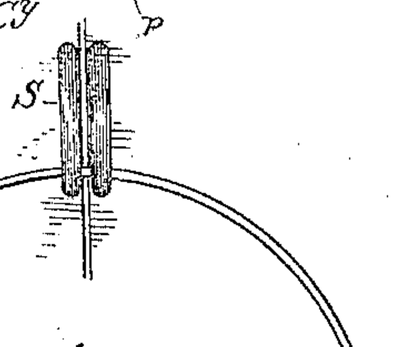


Fig. 10.





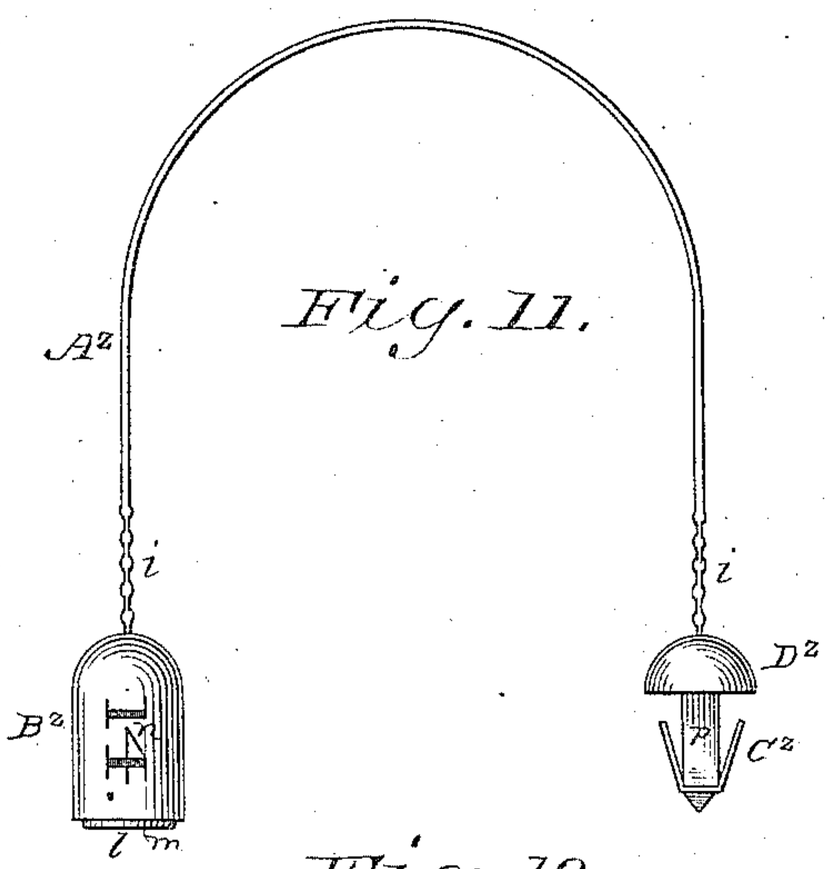


Fig. 11.

Fig. 12.

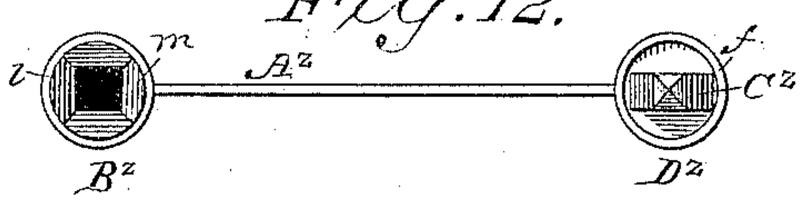


Fig. 13.

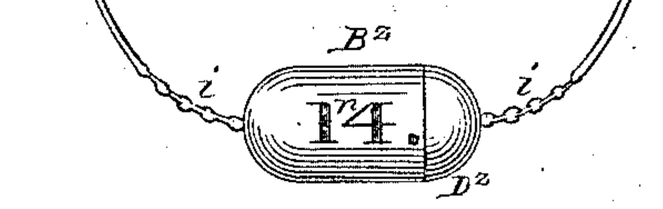
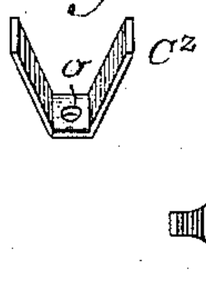


Fig. 14.

Fig. 15.



WITNESSES

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UNITED STATES PATENT OFFICE.

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SEAL.

SPECIFICATION forming part of Letters Patent No. 312,963, dated February 24, 1885.

Application filed October 21, 1884. (No model.)

To all whom it may concern:

Be it known that I, EDWARD J. BROOKS, a citizen of the United States, residing at East Orange, in the State of New Jersey, have invented a new and useful Improvement in Seals, (Q–2,) of which the following is a specification.

This is an improved "self-fastening" seal embodying certain improvements on those set forth in my specification forming part of United States Patent No. 304,258, dated August 26, 1884.

The present invention consists, primarily, in the combination, with a flexible shackle adapted to be applied to ordinary sealing-staples or the like, a brittle hollow seal part having internal catch-shoulders, and an elastic securer attached to one or both shackle ends, of a rigid pusher carried by the shackle in contact with said securer for thrusting the securer through the contracted mouth of said seal part without reliance upon the shackle, so that a tight-fitting securer may be readily forced into effective position, and at the same time the shackle may be so flexible or brittle as to preclude its use for this purpose.

This invention consists, further, in making said pusher integral with a cap-disk so fitted to the mouth of said seal part and so united with the securer as to be held by the latter over or within said mouth, so as to preclude tampering with the securer.

This invention consists, finally, in a brittle hollow seal part of plaster-of-paris or a like composition, which can be molded cold and hardens without burning, in combination with a flexible shackle of cord or twine, the former molded fast on one end of the latter, so as to render them inseparable, an elastic securer connected with the other end of the shackle, and a rigid pusher carried by the shackle in contact with said securer, substantially as hereinafter set forth.

Two sheets of drawings accompany this specification as part thereof.

Figure 1 of these drawings is an elevation of a seal ready for use, illustrating this invention. Fig. 2 is an elevation of the same, showing end views of its seal part and securer. Fig. 3 is an elevation of the same seal fastened, and Fig. 4 is a longitudinal section of its seal part securer and pusher and cap-disk. Fig. 5 is an elevation of the several members of a seal of a different general form as regards some of its features, but embodying the principal parts of the present invention; and Fig. 6 is a sectional elevation of this seal fastened. Figs. 7, 8, 9, 10, and 11, 12, 13, 14 are series of views similar to Figs. 1, 2, 3, 4, showing two other seals illustrating additional modifications of the same invention; and Fig. 15 is a view of the metallic securer of the latter detached and two modified forms of the same.

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

In carrying out my present invention the seal may be of either of the three general forms set forth in my previous specification aforesaid, and shown in the drawings accompanying the same; but, preferring the first and last of said forms, I have confined the drawings accompanying this specification thereto to avoid unnecessary prolixity.

The several seals, represented, respectively, by Figs. 1 to 4, inclusive, Figs. 6 and 7, Figs. 7 to 9, inclusive, and Figs. 10 to 14, inclusive, are each composed of a flexible shackle, A or A*x* or A*y* or A*z*, a brittle hollow seal part, B or B*x* or B*y* or B*z*, having a tapering mouth, *m*, and internal shoulders, *s*, an elastic securer, C or C*x* or C*y* or C*z*, adapted to be thrust through said mouth *m*, and to expand behind said shoulders *s*, so as to prevent its withdrawal, and a combined pusher and cap-disk, D or D*x* or D*y* or D*z*, for so thrusting said securer into effective position, said securer and pusher and cap-disk being closely united with each other by the shackle in the fastened seal, so as to preclude withdrawing the cap-disk to expose the mouth of the seal part after the seal is fastened. In said seal (represented by Figs. 1 to 4, inclusive, which is of the first of said general forms,) the shackle A is of cord or twine provided with knots k k^2 k^3, and the seal part B and pusher and cap-disk D, both of plaster-of-paris, are molded fast on its respective ends with said knots k^3 k^2 within them respectively as anchoring devices to preclude the separation of the parts, the securer C, which is in this seal an axially-perforated cork, being attached by said knot k. Supposing the securer to be first attached and

said knots k^2 k^3 formed approximately in correct positions, it will be seen that with the shackle passed through the molds of said seal part and pusher and cap-disk these parts will be molded fast on the shackle, as aforesaid, with the pusher *p* of the pusher and cap-disk in close contact with the securer, as is required for the greatest security against manipulation of the latter through the mouth of the seal part.

In said seal represented by Figs. 5 and 6, which is of the last of said general forms, the parts are not thus inseparably united in the process of manufacture, but may be finished separately. Its shackle A*x* is of stiff wire furnished with a pair of my "detector" enlargements, *e* e^2, near its respective extremities, which latter are rebent or hooked, as represented at *h* h^2, to unite the respective shackle ends with the securer C*x* before thrusting the latter into the seal part B*x* to fasten the seal. This seal part is molded with reference to fitting said pusher and cap-disk D*x* and admitting and retaining said securer, but otherwise is finished independently of either of the other parts. The securer C*x* is of cork, like said securer C, but with a larger axial bore, and preferably tapered to a sharp edge at its lower end, as represented. The pusher and cap-disk D*x* is molded with an axial bore *x*, of very little more than double the diameter of the wire of which the shackle A*x* is composed, so that it will just admit the two shackle ends straight. Each of said enlargements *e* e^2 being of three thicknesses of the wire, either of them will thus form a stop, which the pusher and cap-disk cannot pass, so that by inserting and bending up one shackle end, to form the hook *h*, for example, all the members of the seal, except the seal part B*x*, may be united preliminarily, as represented by dotted lines in Fig. 5, and in the fastened seal with both shackle ends inserted and bent up, as shown in Fig. 6, the separation of the pusher and cap-disk from the securer is effectively prevented.

The two seals represented by Figs. 7 to 10, inclusive, and Figs. 11 to 15, inclusive, as aforesaid, are both of said first general form, and differ from the one first described in certain details of their shackles A*y* A*z* and seal parts B*y* B*z* with the securer C*z*, and the pusher and cap-disk D*z* of the last, which will now be set forth. The shackle A*y* is a "flat shackle," and may be a piece of flat wire or a strip of tin or other sheet metal adapted to be crimped or bent, as represented at *a*, for example, to securely anchor it within the seal part and the pusher and cap-disk, and rebent, as represented at *b*, for example, to lock the securer on its otherwise free end in contact with the pusher and cap-disk. A shackle of this description may be provided in customary manner with lettering or other marks, as represented at *c*, Fig. 8, for example, to afford information, and at the same time prevent counterfeiting. The shackle A*z* is of my indented detector-wire, its indentations *i* affording effective holds within the molded seal part and pusher and cap-disk, while they guard against tampering with the seal. Other styles of wire shackles and flexible shackles of other kinds may be used in like manner.

The seal part B*y* is represented as molded with lettering *d*, corresponding as initials with the shackle-marks *c*, Fig. 8, and the seal part B*z* with a number, *n*, which may be a station-number. Either style of mark or any other may be used on any or all of the seals, or distinctive shapes, colors, or proportions alone may be relied on.

The securer C*z* is of elastic sheet metal, preferably brass, stamped so as to have a middle portion, which will pass freely through the mouth *m* of the seal part, and adapted, by a central hole, *o*, Fig. 15, for example, to be attached to the extremity of the pusher *p* by the rebent end of the shackle, and the material of the pusher molded about it, as represented in Figs. 11, 12, and 14, or otherwise.

The effective portions of the securer consist of inclined radial fingers, which are properly set at the stamping operation. Two fingers will suffice; but metallic securers C*a* C*b*, Fig. 15, with three or more fingers, may be made of lighter sheet metal, so as to be inserted more readily. The fingers should together afford sufficient resistance to strain in the direction of withdrawal to preclude loosening the cap-disk by so straining the securer without such injury to some part of the seal as to insure detection.

The pusher and cap-disk D*z* has a marginal flange, *f*, Figs. 12 and 14, to embrace a protruding lip, *l*, at the mouth end of the seal part B*z*, while those of the other seals have the pusher *p* of each adapted instead to fill the mouth *m* of the seal part.

One manner of guarding the mouth is considered the equivalent of the other, and either may be used in either of the seals.

The first, third, and fourth of the seals above described leave the factory with all their members permanently united, as represented in Figs. 1, 7, and 11. In applying either of these to a car-door, for example, as represented by Figs. 4, 5, 10, 11, 13, and 14, it is only necessary to pass its securer through a pair of sealing-staples, S, for example, and then thrust the securer, by means of its pusher and cap-disk, into and through the mouth *m* of the seal part. The securer then automatically expands close behind the internal shoulders, *s*, so that it cannot be withdrawn, and through the shackle end to which it is applied anchored in any manner in the pusher and seal-disk, holds the disk of the latter over said mouth of the seal part so tightly that even a shallow flange, *f*, Fig. 11, will suffice to prevent lateral displacement thereof; and with a tightly-fitting pusher, *p*, as shown, for example, in Fig. 5 or Fig. 14, this is not required. The second seal, Figs. 5 and 6, after its shackle A*x* has been passed through the sealing-staples S, must have

the second shackle end inserted through the pusher and cap-disk D*x* and securer C*x* and rebent to form its hook h^2, after which the securer is thrust into the seal part B*x* by means of the pusher and cap-disk, as represented by Fig. 6, and operates to secure both shackle ends precisely as each of the other securers secures the one to which it is attached, and serves, moreover, by means of the two shackle ends and their stop-enlargements *e* e^2, to hold the pusher and cap-disk D*x* in place, so that the latter guards the mouth *m* of the seal part precisely as those of said first, third, and fourth seals do. Except in said first seal, the seal part and pusher and cap-disk of each of these seals may be made of pottery or baked clay or glass, as heretofore proposed by me; but I prefer plaster-of-paris for general use, as it is inexpensive, and is more readily molded, and involves the use of less costly apparatus, while in said first seal it or a similar composition adapted to be molded cold, and which does not require baking, is essential to the employment of a shackle of cord or twine as proposed.

Having thus described my said improvement in seals, (Q–2,) I claim as my invention and desire to patent under this specification—

1. The combination, in a self-fastening seal, of a flexible shackle, a brittle hollow seal part having an inwardly-tapering mouth and internal catch shoulders, an elastic securer attached to one or both shackle ends, and a rigid pusher carried by the shackle in contact with said securer, for thrusting the securer through said mouth of the seal part into effective position behind said internal shoulders, substantially as herein specified.

2. The combination, in a self-fastening seal, of a flexible shackle, a brittle hollow seal part having an inwardly-tapering mouth and internal catch-shoulders, an elastic securer attached to one or both shackle ends, and a combined pusher and cap-disk carried by the shackle in contact with said securer and secured against separation from the latter, whereby it is caused to be held by said securer within and over the mouth of the seal part in the fastened seal, substantially as herein specified.

3. In a self-fastening seal, a flexible shackle of cord or twine, in combination with a brittle hollow seal part of plaster-of-paris molded fast on one end of said shackle, an elastic securer attached to its other end, and a rigid pusher carried by said shackle in contact with said securer, whereby the latter may be thrust into said seal part to fasten the seal, substantially as herein specified.

EDWARD J. BROOKS.

Witnesses:
HENRY L. C. WENK,
JOHN S. JENNINGS.