(No Model.)

E. J. BROOKS.

TIN STRIP SEAL.

No. 345,765. Patented July 20, 1886.

Fig. 1.

Fig. 2.

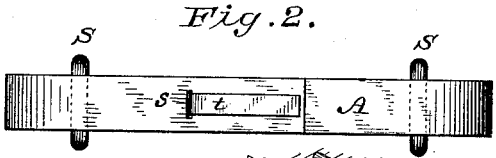


Fig. 3.

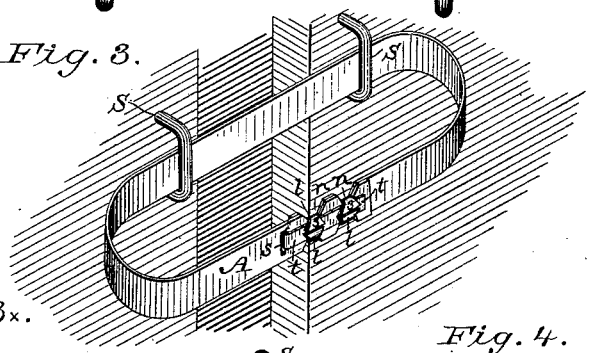


Fig. 3×.

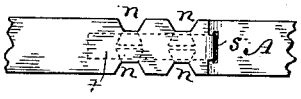


Fig. 4.

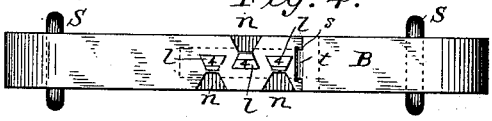


Fig. 4×.

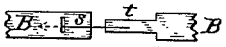


Fig. 5.

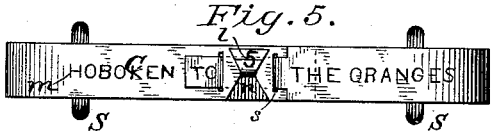


Fig. 5×.

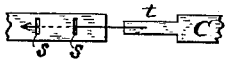


Fig. 6.

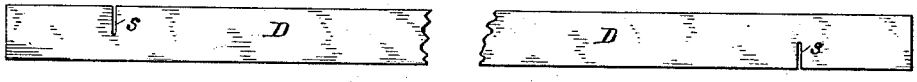


Fig. 7.

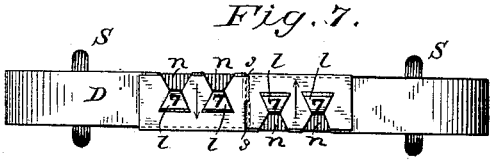
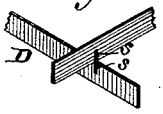


Fig. 7×.



WITNESSES

Ed. A. Newman,

Al. C. Newman,

INVENTOR

Edward J. Brooks,

By his Attorney

F. L. Ewin

UNITED STATES PATENT OFFICE.

EDWARD J. BROOKS, OF EAST ORANGE, NEW JERSEY, ASSIGNOR TO E. J. BROOKS & CO., OF NEW YORK, N. Y.

TIN-STRIP SEAL.

SPECIFICATION forming part of Letters Patent No. 345,765, dated July 20, 1886.

Application filed June 5, 1884. Serial No. 133,936. (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 Tin-Strip Seals, ("5,") of which the following is a specification.

This invention relates to improvements in those seals which are composed wholly of strips of suitable sheet metal, a cheap and brittle grade of "tin" (tin-plate) being preferred and commonly used. Various forms of these seals are shown and described in the following patents, heretofore granted for my own inventions, namely: No. 235,668, dated December 21, 1880; No. 242,259, dated May 31, 1881; No. 258,278, dated May 23, 1882, and No. 296,124, dated April 1, 1884.

My present invention consists in an improved method of fastening "tin-strip seals," whereby they may be effectively secured against the separation of the ends without breaking the metal so as to insure detection, and so secured by very simple "plier" presses, and so as to indicate the section of a railroad, for example, on which each seal is applied or fastened, and so as to be easily inspected, while the first stage of the fastening operation performed by the fingers of the sealer or an assistant going before him may secure the ends in position ready for the press, and obviate holding them at the pressing operation, as hereinafter set forth and claimed.

A sheet of drawings accompanies this specification as part thereof.

Figure 1 of the drawings is a face view of the respective ends of a simple form of seal-blank or "tin strip" adapted to be sealed or fastened according to this invention. Fig. 2 is an elevation of said tin strip applied to a pair of car-door staples and partly fastened, illustrating said first stage of the fastening operation. Fig. 3 is a perspective view of the same with the fastening completed, and Fig. 3^x a back view of its fastened ends. Fig. 4 is an elevation of another tin-strip seal applied to a pair of car-door staples in substantially the same manner and fastened somewhat differently, and Fig. 4^x a smaller view of the ends of its tin strip previous to use, illustrating the manner of interthreading the ends as the first stage of the fastening operation. Fig. 5 is an elevation of another tin-strip seal applied to a pair of car-door staples and fastened, illustrating a third modification, and Fig. 5^x a smaller face view of its ends previous to use, illustrating the method of interthreading them; and Fig. 6 is a face view of another seal-blank or tin strip adapted to be sealed or fastened according to this invention; Fig. 7, an elevation of a tin-strip seal formed from said blank applied to a pair of car-door staples, and Fig. 7^x a perspective view, on a smaller scale, illustrating the manner of interthreading its ends in the fastening operation.

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

In carrying out this invention I employ seal-blanks in the form of narrow strips of sheet metal, preferably tin, as aforesaid, hereinafter, as hereinbefore, termed "tin strips," different forms of which are shown at A, B, C, and D, in the drawings. These tin strips are shipped and carried "straight," as shown in Figs. 1 and 6, and are in each case constructed with a slot or slots or a pair of slits, *s*, transverse to the strip, to provide for "interthreading," and thus interlocking, the two ends of each strip as part of the fastening operation, after the strip has been passed through a pair of car-door staples, S S, or otherwise suitably applied to the object which is to be secured. The sealing operation is in each case completed by cutting or punching a notch or notches, *n*, in one or both edges of both strip ends at the point where they are interthreaded, and bending the metal from said notches in the form of "lips" *l* over upon the face of the strip as exposed at the front of the fastening seal, as illustrated by Figs. 3, 3^x, 4, 5, and 7. The slots or slits *s* and the matching tongues *t*, if any, would preferably be formed at the factory. The strips being carried, passed through the staples or their equivalent, and interthreaded by an assistant to the sealer, the latter would find the ends preliminarily united flatwise, and the strip ready for the press, as represented by Fig. 2, so that the ends would not have to be held in place during the pressing operation, and railway freight cars could thus be carefully sealed with the utmost rapidity that may be required.

Tin strips may, moreover, be securely fastened in the manner aforesaid by the simplest form of plier-presses provided with suitable bits or dies. A single pair of lips from one notch may suffice for this purpose, and at the same time a large number may be accommodated, and the number of notches or lips readily counted at a glance at the front of the seal may indicate the section of a railroad, for example, on which each seal is applied or fastened, as aforesaid, one notch representing "first," two "second," and so on, while the readily varied and exposed positions of the respective notches and their shape may be given any arbitrary significations to aid in detecting fraudulent seals, should the production of such be attempted.

Truncated pyramidal shape, as produced by converging side cuts, is preferred for the notches *n*, as it gives each lip *l* a short bend line parallel to the edges of the strip, and thus facilitates locating and bending the lips, and at the same time renders their union with the strip so narrow as to insure breaking it, should any attempt be made to raise the lips so as to surreptitiously open the seal. In the drawings all the notches are shown as of this shape.

The tin strip A, Fig. 1, has a single slot, *s*, near one end, and a narrow tongue, *t*, at its opposite extremity, which is rebent in front of the interthreaded ends of the seal-strip, said tongue having been passed through said slot, as shown in Fig. 2, and four (more or less) notches, *n*, are now simultaneously or successively punched or cut in the double edges of the interthreaded ends, and as many pairs of lips *l* so formed and bent forward and flattened upon said tongue *t*, as represented by Figs. 3, 3^x. In the fastened seal the longitudinal strain on the strip, such as would be caused by the sliding of the car-door, would be effectively resisted by the relatively unweakened metal of the tongue *t*, as well as by the several lips *l* jointly, and in order to separate the fastened ends, so that their original appearance might be restored after violating the seal, it would be necessary to straighten out all said lips, so as to release said tongue, so as to permit it to be bent back and retracted through the slot *s*. Metal for the tin strip sufficiently brittle to preclude so opening its bends at several points, and then restoring each bend, is all that is required to prevent undetectable violations of the seal, as a single missing lip would indicate that the seal had been tampered with.

The tin strip B, Fig. 4^x, has a single slot, *s*, near one extremity, in connection with a narrow tongue, *t*, at the other extremity, the tongue itself being of sufficient width to be penetrated by the notching cutter or cutters of the seal-press. In interthreading the ends of this strap said tongue *t* is passed through said slot *s* from front to rear, as illustrated by the arrow in Fig. 4^x, and bent flat upon the back of the interthreaded ends. The latter are then notched at one or both edges, as shown at *n*, Fig. 4, the cutter or cutters penetrating the tongue as well as the slotted end, and the lips *l* so formed are bent forward and flattened upon the front of the fastened seal, as shown in Fig. 4.

The tin strip C, Fig. 5^x, has parallel transverse slots *s s* at one end and a tongue, *t*, at the other extremity, which is threaded through said slots, as illustrated by the arrow in the figure, and the fastening is completed by notching the slotted end and the tongue between the slots, as shown in Fig. 5.

The tin strip D, Figs. 6 and 7^x, has a pair of slits, *s s*, extending inward to midwith from its respective edges, and the ends are interthreaded, as illustrated by Fig. 7^x, and arrows in Fig. 7. After passing the strip through staples S S, Fig. 7, the ends are bent so as to lie flatly upon the underlying portions of the strip, and the double edges are finally notched, as shown at *n*, Fig. 7, and the lips *l* so formed are bent forward and flattened at the face of the seal, as represented in this figure.

Other forms of tin strips could obviously be fastened in the same or substantially the same manner, and the shape of the notches *n* and the number and arrangement of the notches may be varied in fastening each form of tin strip, and may serve to indicate genuine seals and the points at which the same were applied or fastened, as suggested with reference to the seal represented by Figs. 3, 3^x. In each case, also, each pair of lips may be readily stamped in the act of flattening them, as represented by different numerals in Figs. 3, 4, 5, and 7, which, severally or in different combinations, may convey additional information to inspectors of seals, and each form of tin strip may preferably be provided with lettering or distinguishing-marks, or be arbitrarily colored, as further aids to indicate genuine seals, as represented by lettering *m* in Fig. 5. Such marks are readily printed or impressed on or in the metal from which the strips are to be sheared while the same is in the sheet, as set forth by me in previous specifications.

Having thus described my said improvement in tin-strip seals, ("5,") I claim as my invention and desire to patent under the present specification—

The improved method of fastening tin-strip seals herein specified, consisting in interthreading the ends of the strip so as to preliminarily unite them flatwise, then punching or cutting notches in one or both edges through both ends to form fastening-lips, bending the latter forward, and rebending and flattening them at the face of the seal, substantially as illustrated and described, for the purposes set forth.

EDWARD J. BROOKS.

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