H. C. STONE.
Wood-Screws.

No. 200,104. Patented Feb. 5, 1878.

Fig: 1.

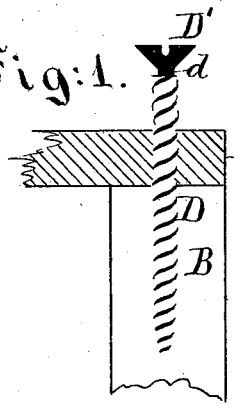


Fig: 2.

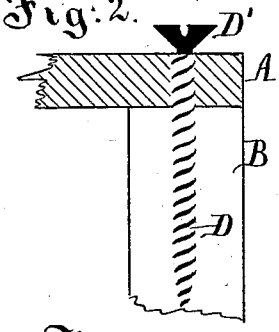


Fig: 3.

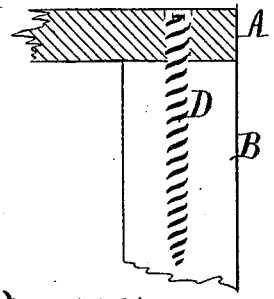


Fig: 7.

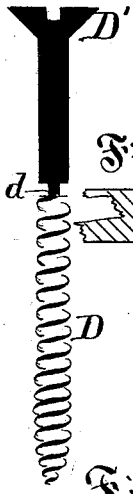


Fig: 4.

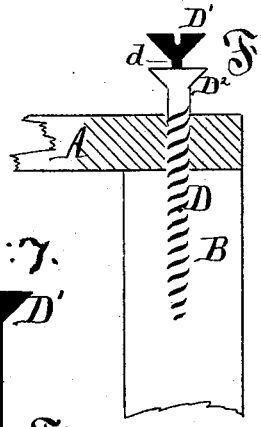


Fig: 5.

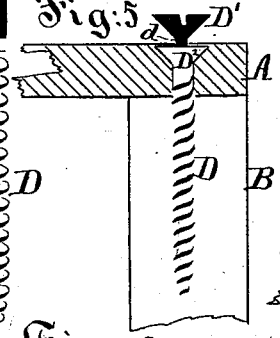


Fig: 6.

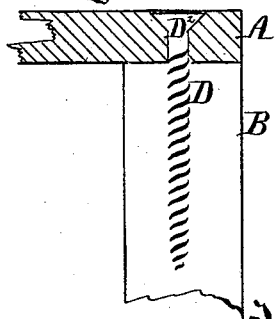


Fig: 8.

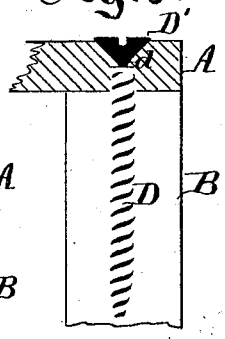
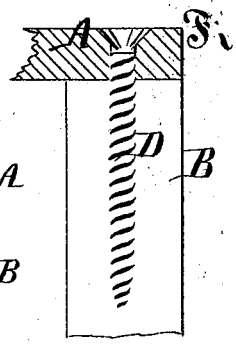


Fig: 9.



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Thomas D. Stetson
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UNITED STATES PATENT OFFICE.

HENRY C. STONE, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN WOOD-SCREWS.

Specification forming part of Letters Patent No. **200,104**, dated February 5, 1878; application filed November 22, 1877.

To all whom it may concern:

Be it known that I, HENRY C. STONE, of Brooklyn, county of Kings, in the State of New York, have invented certain new and useful Improvements relating to Screws for Boxes and other Articles, of which the following is a specification:

The principal object of my invention is to so secure the parts together that any surreptitious opening will be plainly recognizable afterward.

My experiments have been principally with boxes. I have devised and successfully applied fastenings which, while aiding to hold on the cover, and thus perform in a good degree the ordinary uses of fastening-screws, are so constructed and applied that they cannot be removed by any of the ordinary appliances or by any skill or tools likely to be commanded by petty thieves.

When my screw has been sunk into the work by the ordinary means to the proper extent, the head is broken off, and the screw remains in a condition impossible of removal except by such violence and disturbance of the parts as will render plainly evident the fact that the box or other article has been tampered with.

The accompanying drawings form a part of this specification, and represent the invention in several forms. The simplest is that shown in Figs. 1, 2, and 3, which are vertical sections through a portion of a box-cover and the adjacent end of the box.

Figure 1 represents my screw in the act of being inserted. Fig. 2 represents the same when driven home, and Fig. 3 the same after the head has been broken off.

The remaining drawings will be described farther on.

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

A is the box-cover, and B the end, supposed to be of soft wood. D is the body of my screw. *d* is a small neck, and D^1 a head, which latter is scored across and adapted to receive a screw-driver, in the usual manner.

In the form of the device shown in Figs. 1, 2, and 3 my screw is inserted in all respects in the ordinary manner, except that the process of inserting is arrested when the body D is sunk flush with or a little within the upper surface of the cover. The screw is then broken off at the neck *d*. The breaking, in this form of the invention, may be effected by a side blow on the head, or by the means hereinafter to be described.

Figs. 4, 5, and 6 represent another modification, in which there may be a shank or unthreaded portion, similar to the corresponding part in ordinary wood-screws. It is represented in these figures very short; but it may be longer or shorter, as desired in any case. The chief peculiarity of this modification is the presence of an extra head below the neck *d*, and marked D^2. This head is unscored. In this form of the device the screw is inserted as before; but no care need be taken to arrest the turning motion until the increased resistance is felt due to the forcing home of the head D^2 upon and into the wood of the cover. When this has been forced down flush, or a little farther, as indicated in Fig. 5, the head is broken off, and the screw D remains, holding the parts in the same condition as has been described for the preceding form, except that the parts are held more strongly together by reason of the head D^2.

It will be observed that in both Figs. 1 and 4 the screw is only partly inserted. In Figs. 2 and 5 it is fully inserted, but the head is not yet removed; and in Figs. 3 and 6 the operation has been completed by the removal of the head.

The neck *d* may be turned or otherwise reduced in diameter quite around; or it may, if preferred, be held in any suitable clamps and carried past a couple of saws, or otherwise correspondingly treated, so as to leave the neck flat, or reduced in dimensions one way without reducing it in the other direction. Whichever form is adopted, the neck is sufficiently weakened to allow the head to be easily removed. This must be so proportioned that the head may be easily removed when it is no longer useful, while at the same time sufficient strength is preserved in the neck to allow the insertion of the screw. In using the device in the large way, strong pliers should be at hand, and in the few cases where the necks may fail they will be likely to do so before the screw is

driven home; and in such case the pliers may easily remove the screw, and allow the insertion of a stronger substitute.

Fig. 7 shows a modification of the screw, in which the neck *d* is below the shank. The shank is here represented as of considerable length; but that feature may be modified. When the device is broken at the point *d* the body of the screw is not only sunk flush with the wood, but deeply into it. This form of the device may be broken off either by attempting to unscrew when it has been forced home or by simply making a strong effort to continue screwing in after the screw-head had met the full resistance due to its large area. The rending strain thus induced rends the neck *d*, instead of, as in the other plans, twisting it off. The form of the device shown in Figs. 1, 2, and 3 may be similarly rended.

Figs. 8 and 9 represent such construction, Fig. 8 showing the screw near the latter part of the inserting stage, and Fig. 9 the condition after a further effort to insert it. The head is broken off, and there remains simply the screw-body sunk a little more than flush with the wood.

The use of my invention will largely take the place of seals and analogous troublesome fastenings of boxes and packages, as also in any situations where doors or other parts are to be secured against surreptitious opening.

The class of men who open boxes and abstract and exchange the contents on shipboard or railroad-cars are not provided with burglars' tools which can reach into the wood and cut a new score in the smooth surface presented by the end of my screw-body D.

The invention will be most useful on boxes and analogous packages; but I do not confine it to such use.

The form shown in Fig. 7 is intended mainly for use in holding together thick stuff where it is desired that the screw shall be threaded through two parts, as thick plank, and broken off at a considerable depth within the outer surface. All the forms of the device are alike in the fact that the parts of a box or other structure held together by my fastenings can only be separated by such violence as will show to the eye that the box has been tampered with on the way.

I claim as my invention—

1. A box or analogous structure having two parts, A B, held together by a screw, D, as shown, as a means of preventing the surreptitious opening of the box, the screw being so formed as to be difficult of removal and replacement, as specified.

2. A wood-screw having one or more narrowed or reduced points in any portion of its length, which shall break by torsion or otherwise, as may be required in its application, all as heretofore specified.

3. The screw D, having a head, D^1, connected, by a slender neck, *d*, to the main body, and having a sub-head, D^2, all adapted to serve as and for the purposes herein specified.

In testimony whereof I have hereunto set my name in presence of two subscribing witnesses.

H. C. STONE.

Witnesses:

CHAS. C. STETSON,
L. F. WETTERAN.