E. BOARD.

CLENCHING NAIL OR RIVET.

APPLICATION FILED FEB. 4, 1919.

1,400,409.

Patented Dec. 13, 1921.

Fig. 1.

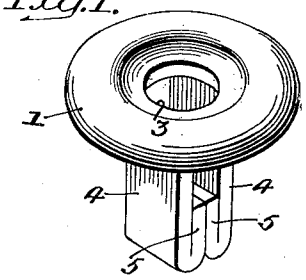


Fig. 4.

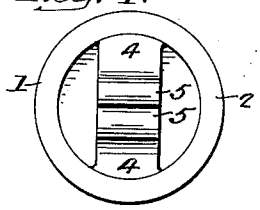


Fig. 12.

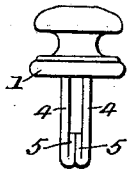


Fig. 2.

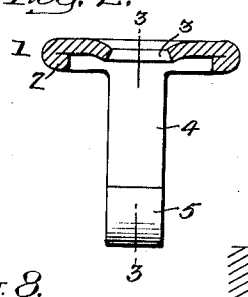


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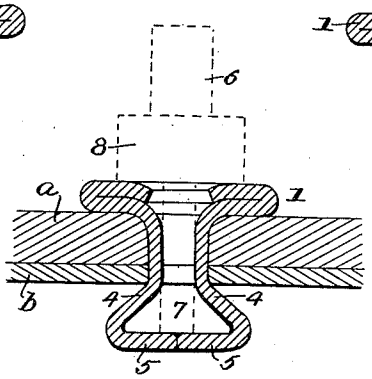


Fig. 3

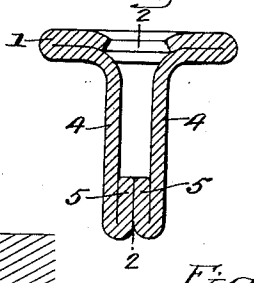


Fig. 8.

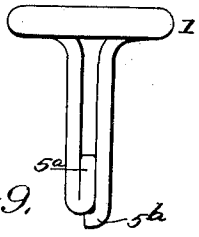


Fig. 10.

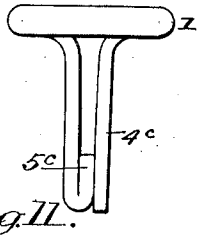


Fig. 6.

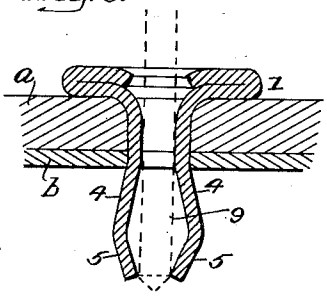


Fig. 9.

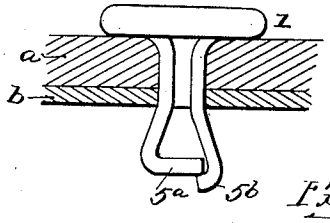


Fig. 11.

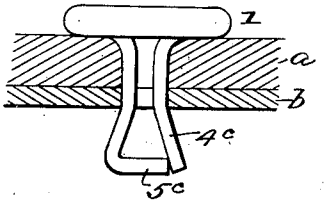


Fig. 7.

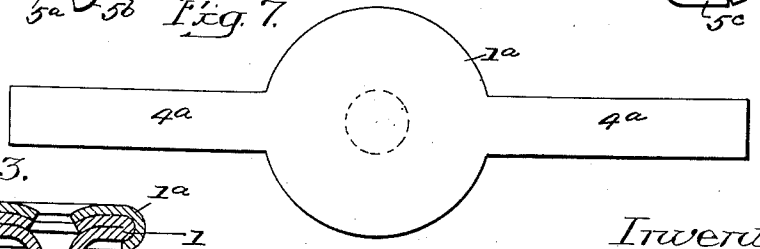
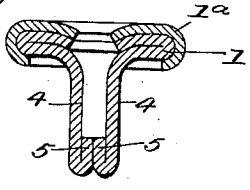


Fig. 13.



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by his Attorneys,

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CLENCHING NAIL OR RIVET.

1,400,409. Specification of Letters Patent. Patented Dec. 13, 1921.

Application filed February 4, 1919. Serial No. 274,859.

To all whom it may concern:

Be it known that I, EDWARD BOARD, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented certain Improvements in Clenching Nails or Rivets, of which the following is a specification.

My invention relates to certain improvements in clenching nails, or rivets, of the type in which the clenching is accomplished by means of a tool inserted through the head of the rivet. The device is especially useful for fastening materials to a base which is inaccessible at the back. It can also be used as a shank of a button, or other device, which is secured to a material, the back of which is inaccessible.

One object of my invention is to construct the clenching nail, or rivet, so that it will lock itself when in the clenching position; and it will be impossible to remove it without first destroying the lock.

A further object of the invention is to make the device from a single piece of metal.

In the accompanying drawings:

Figure 1 is a perspective view of my improved clenching nail, or rivet;

Fig. 2 is a sectional view on the line 2—2, Fig. 3;

Fig. 3 is a sectional view on the line 3—3, Fig. 2;

Fig. 4 is an inverted plan view;

Fig. 5 is a sectional view, similar to Fig. 3, showing the device clenched and fastening two pieces of material together.

Fig. 6 is a view showing the method of destroying the lock when it is desired to remove the clenching nail;

Fig. 7 is a plan view of the blank from which the clenching nail is made;

Figs. 8 and 9 are views of one modification;

Figs. 10 and 11 are views of another modification;

Fig. 12 is a view of an automobile, or carriage, button made in accordance with my invention; and

Fig. 13 is a view of a modification, showing the arms made of separate material from the cap.

Referring to the drawings, 1 is the head of the clenching nail having a flange 2 so as to provide a rounded edge and a central opening 3 formed by punching a hole in the blank, as illustrated in Fig. 7, and turning in the edges to form a slight internal flange, as clearly shown in Figs. 2 and 3. Two arms 4, 4 are formed by bending up the extensions 4^a of the blank 1^a, Fig. 7, as illustrated in Fig. 3, and turning in the ends of these arms, as at 5, so that the two surfaces of these turned in portions bear against each other and also space the arms 4, 4 apart, as clearly shown in Fig. 3. This forms a very practical clenching nail, which can be made from a single piece of metal bent into shape. When it is desired to fasten two materials together, such as leather or cloth *a* to a metallic automobile body *b*, for instance, a hole is made in both materials and the nail is inserted so that a portion of the two arms will project beyond the metal body. Then, by inserting a tool 6 shown by dotted lines in Fig. 5, the end 7 of the tool strikes against the ends of the portions 5 of the arms and as pressure is applied to the tool it will bend to force the arms apart, until the portions 5 are on the same plane with their ends abutting, as in Fig. 5. In order to accomplish this readily, I provide the tool 6 with a shoulder 8, which prevents an operator from projecting the tool to such an extent that the lock would be destroyed. The tool is then removed and the two pieces of material are firmly held together with the nail properly clenched and locked on the inside. This nail forms, in fact, a rivet, which firmly holds the two pieces together. If it be desired to remove the nail, all that is necessary is to insert a tool 9, without a shoulder, through the opening in the head of the nail, as illustrated by dotted lines in Fig. 6, so that it will push the portions 5 past the locking point in order to destroy the lock, and by lifting the head of the nail from the material the arms will be drawn together as they pass through the opening in the material.

In Figs. 8 and 9, I have illustrated a modification in which one of the arms 4^a has a locking portion 5^a, which is turned in, while the other arm has an abutment 5^b so that, when the tool is inserted in the nail, the portion 5^a of one arm is moved out, as illustrated in Fig. 9, until it strikes the abutment 5^b of the other arm. This movement causes both arms to spread.

In Figs. 10 and 11, I have illustrated one of the arms 4^c without a locking portion, and the other arm having a turned in extension 5^c. This construction acts in substantially the same manner as the modification illustrated in Figs. 8 and 9, but care must be exercised so as to prevent the portion 5^c from passing beyond the end of the arm 4^c.

In some instances, I may make the arms from a single piece of metal, as illustrated in Fig. 13. After this piece is bent into form, a cap, such as shown at 1^a, Fig. 13, may be clamped to it in any suitable manner. This cap may be of any suitable material and may be ornamented in any manner desired.

I claim:

1. A clenching nail or rivet comprising a head perforated at its center; two parallel arms extending from the edge of the perforation at right angles to the head at least one of said arms having its end turned back toward the head and lying parallel with and substantially abutting the remainder of said arm, so that when a tool is driven through the perforation in the head it will come in contact with the turned back portion causing the arms to spread laterally and preventing the withdrawal of the nail or rivet.

2. A clenching nail or rivet made from a single piece of sheet metal having a flat head perforated at the center; two arms projecting at right angles from said head, said arms being of lesser width than the head, each arm being flat, and the end of each arm being turned back toward the head, said turned back end portions lying parallel with and substantially abutting the remainder of said arms, so that when a tool is driven through the opening in the head it will come in contact with the turned back portions, causing both arms to spread laterally, while the turned back portions assume a position parallel with the head, abutting against each other and preventing the withdrawal of the nail or rivet.

In witness whereof I affix my signature.

EDWARD BOARD.