April 7, 1925. 1,532,148

M. K. MALONE

COTTER KEY

Filed Jan. 15, 1925

Fig. 1.

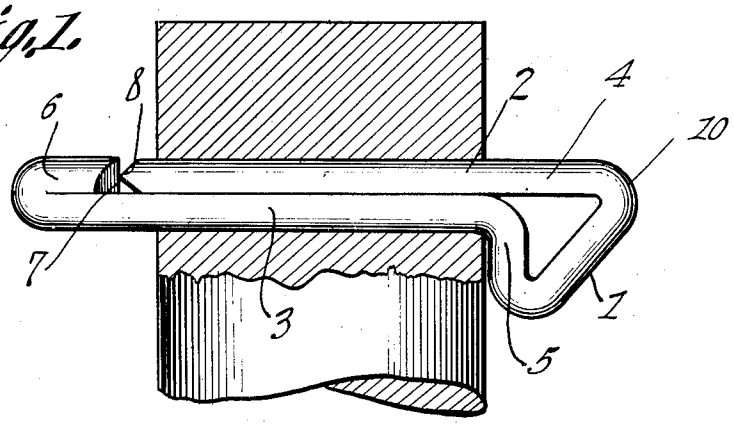


Fig. 2.

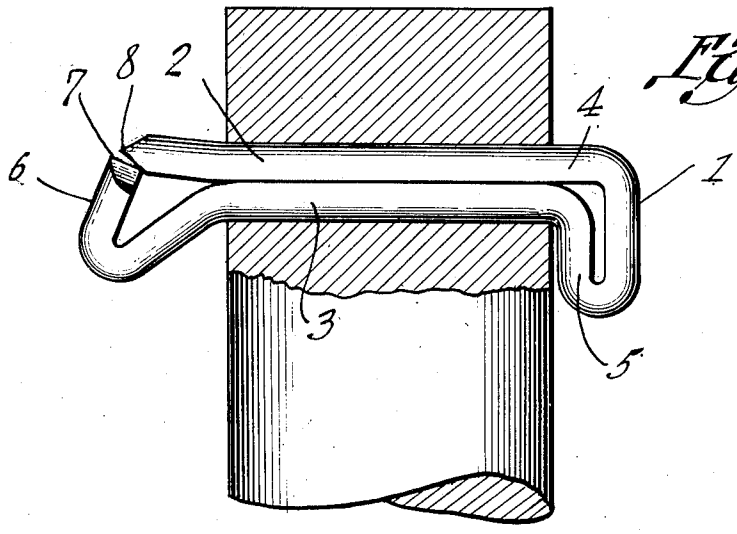


Fig. 3.

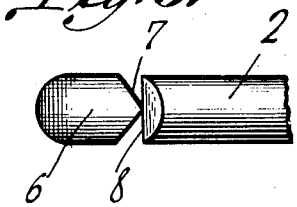
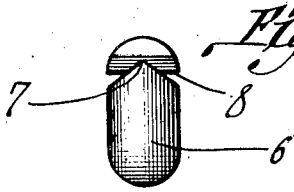


Fig. 4.



Inventor

M. K. Malone

By C. A. Snow & Co.

Attorneys

Patented Apr. 7, 1925. 1,532,148

UNITED STATES PATENT OFFICE.

MACKEY K. MALONE, OF WILLS POINT, TEXAS, ASSIGNOR OF ONE-HALF TO D. LEON SANDERS, OF WILLS POINT, TEXAS.

COTTER KEY.

Application filed January 15, 1925. Serial No. 2,651.

To all whom it may concern:

Be it known that I, MACKEY K. MALONE, a citizen of the United States, residing at Wills Point, in the county of Van Zandt and State of Texas, have invented new and useful Cotter Keys, of which the following is a specification.

This invention relates to cotter keys and more particularly to the self locking type.

The object of the invention is to provide a key of this character which may be readily manufactured from automatic machinery from half round or other suitable form of wire and which is constructed as to insure its being easily driven into a hole to lock the parts in position, the operation of driving it in operating also to lock the pin and eliminate vibration.

Another object is to so construct a key of this character with its free ends so arranged and formed as to cut into each other and permit the moving side to pry back the other side of the key and force it into locking position.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed may be made within the scope of what is claimed without departing from the spirit of the invention.

In the accompanying drawings:—

Figure 1 represents a side elevation of a cotter key constructed in accordance with this invention, shown in position ready to be struck and locked;

Fig. 2 is a similar view showing the key after it has been locked;

Fig. 3 is a detail front elevation showing the meeting ends of the key; and

Fig. 4 is an end elevation thereof;

In the embodiment illustrated the cotter pins as a whole are formed of half round heavy wire and are made on a suitable automatic wire forming machine of lengths cut from a coil of any desired diameter and of any required length. The wire is bent to form an eye or head 1 made in the form of a triangle with the flat faces of the wire brought together to provide the short leg 2 and the long leg 3, the side 4 of the triangular head 1 is in alinement with and forms a continuation of the leg 2 while the side 5 of said head extends substantially at right angles to leg 4, the side 6 which connects the sides 4 and 5 completes the triangle. The leg 3 extends from side 5 downward to the end of leg 2 and projects beyond said leg end having its terminal bent or turned inwardly upon the flat face thereof as shown at 6, said terminal 6 being in alinement with the short leg 2, and normally abutting the end of said leg before the pin is inserted in the work as is shown clearly in Fig. 1. The meeting ends of these legs are beveled in planes at right angles to each other so that the cutting edges 7 and 8 thereof will cut into each other and when the leg 2 is driven forward it will force back the other leg of the key into position shown in Fig. 2 forming a substantially triangular locking member at this end of the key. This separation of the ends of the key provides tension in the hole in which the key is placed and eliminates wear from vibration.

The arrangement of the terminal 6 in alinement with leg 2 provides a single end to be inserted in the hole.

In the use of this key it is placed through the hole in the work as shown in Fig. 1 and then the end 10 is struck causing the leg 2 to move longitudinally forward on leg 3 which latter is stationary owing to the abutment formed by the side 5 of the triangular head 1 bearing against the work. The forward movement of leg 2 owing to its biting engagement with the end 6 of leg 3 will force said end 6 back causing leg 3 beyond the work to be bent at an oblique angle as shown in Fig. 2 and thereby locking the pin in operative working position it being understood that the blow struck on end 10 of the head 1 will flatten said head out into the position shown in Fig. 2.

It will thus be seen that a single strike or lick on the end 10 of the key will lock it tightly in operative position with the terminal of end 6 arranged slightly at an angle to the end of leg 2 as shown in Fig. 2 so that when it is desired to remove the key a suitable implement such as a screw-driver may be inserted between these ends for forcing end 6 outward to disengage it from end 2.

To remove the cotter pin or key the end

6 is bent out or broken off and a quick pull exerted on the head 1 will remove the key from the work.

This key may be used as ordinary cotter keys of the old type by striking a slight blow on the head 1 and breaking off the end 6 of leg 3 and finishing by bending back both ends.

I claim:—

1. A cotter pin having a pair of legs of different lengths with a bendable head connecting one end, the terminal of the longer leg being folded inwardly and arranged in alinement with the short leg, the meeting ends of said legs having abutting biting engagement whereby the body portion of the longer leg is bent laterally on the longitudinal movement of the shorter leg in one direction.

2. A cotter pin having a pair of legs of different lengths with a bendable head connecting one end, the terminal of the long leg being folded inwardly and arranged in alinement with the short leg and contacting therewith, the meeting ends of said legs being beveled to provide biting edges arranged in planes at right angles to each other so that when the short leg is moved outwardly, the folded end of the long leg will be moved laterally to form a locking connection with the work.

3. A cotter pin having a pair of legs connected by a head formed as a triangle, one side of said triangle being substantially in alinement with and forming a continuation of one of said legs, another side of the triangle being substantially at right angles to the other leg and forming an abutment for the head, the third side of the triangle connecting the other two sides and forming a strut to force the first side outward when forced down to lock the pin, one of said legs being longer than the other and one stationary and the other movable, the longer leg having a terminal folded inwardly in alinement with the shorter with the ends of said legs beveled in opposite directions to form right angularly disposed biting edges to provide for the lateral bending of the long leg when the short leg is forced forwardly.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

MACKEY K. MALONE.

Witnesses:

J. A. Oxford,

C. O. Blatt.