C. F. HEINKEL.

COTTER PIN.

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1,300,609.

Patented Apr. 15, 1919.

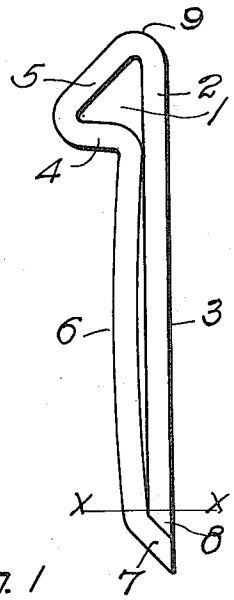


Fig. I

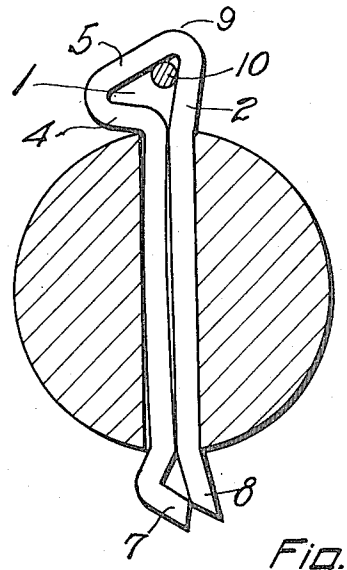


Fig. II

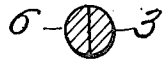


Fig. III

Witnesses:

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UNITED STATES PATENT OFFICE.

CHRISTIAN F. HEINKEL, OF CLEVELAND, OHIO.

COTTER-PIN.

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To all whom it may concern:

Be it known that I, CHRISTIAN F. HEINKEL, a citizen of the United States, residing at Cleveland, county of Cuyahoga, and State of Ohio, have invented a new and useful Cotter-Pin, of which the following is a specification.

My invention relates to cotter pins which are split and self locking.

The object of my invention is a cotter pin which is easy to lock in position, easy to remove from the locked position, and which is not apt to rattle in the hole into which it is inserted.

I attain this object by the mechanism illustrated in the accompanying drawings in which Figure I is a general view of a cotter pin made according to the present invention; Fig. II is a sectional view showing the cotter pin of Fig. I in an inserted and locked position; and Fig. III is a section on line X—X of Fig. I.

Similar reference characters refer to similar parts throughout the several views.

Generally speaking, the present cotter pins have the disadvantages of inconvenience to lock them in position and to remove them from a locked position and of rattling in the hole.

The present invention aims to overcome these disadvantages by the form of the head and legs of the cotter pin. Cotter pins have been made with a substantially circular head on one side and with a triangular head, both of these heads have the disadvantage of flattening before the cotter pin is locked. This invention aims to overcome this disadvantage by forming the head of the cotten pin as shown and described.

Referring now particularly to the drawings: The cotter pin shown has the head 1, substantially in the form of a triangle as shown. The side 2 of this triangle is in line with and a continuation of the leg 3 while the side 4 is substantially at a right angle to the leg 3. The side 5 connecting the sides 2 and 4 completes the triangle. The leg 6 extends from the side 4 downward to the end of the leg 3, at which point it has the bent portion 7 which overlaps the end 8, preferably beveled as shown, of the leg 3 as clearly seen in Fig. I.

The cotter pin, as a whole, is formed of half round material.

The holes into which cotter pins are inserted are, usually, drilled considerably larger than the diameter of the cotter pin which permits the cotter pin to rattle in the hole. To prevent this rattle and at the same time create some friction between the cotter pin and the wall of the hole, so that the cotter pin may stay in position to some extent even if not locked, the leg 6 is curved outwardly; if preferred or found advantageous, the leg 3 may also be curved. This curvature, in one or both legs, is in itself sufficient to hold the cotter pin in position in many cases, but when a more positive lock is required, the end of one leg should be bent over the end of the other leg.

In order to lock this cotter pin, it is inserted into the hole and pushed down until the side 4 touches the object into which the cotter pin is inserted; the head is then given a blow, as for instance with a hammer, at the point 9. This blow will cause the leg 3 to move downward and force the lower portion of the leg 6 outward and at the same time force the lower portion of its own leg outward whereby the cotter pin becomes locked in the lower end of the hole. The aforesaid blow will also cause the upper portion of leg 3 to bend outwardly slightly which causes the cotter pin to hug the wall of the hole at the upper end thereof.

This cotter pin then can be inserted and locked from one end which is a decided advantage since it is quite frequently inconvenient to get at the other end of the cotter pin to lock it.

In order to remove this cotter pin from its locked position, it is only necessary to insert an instrument, as for instance the pin 10, into the head and pull upward. The greatest portion of this upward force will be exerted directly on the leg 3 which will then move upward until the lock at the bottom is broken or released at which time the cotter pin as a whole can readily be removed from the hole and it will be found in sufficiently good condition to be used again.

I claim:

1. A cotter pin having a pair of legs, a head formed as a triangle, one side of this triangle being substantially in alinement with and a continuation of one of the legs, another side of this triangle being substantially at a right angle to the first said leg and formed on the other leg to form an abutment

for the head, the third side of this triangle connecting the other two sides and forming a strut to force the first said side outward when it is forced down sufficiently far to lock the pin and also to prevent the head from flattening out too much, and the end of the last said leg being bent over the end of the first said leg.

2. A cotter pin having a head, a pair of legs which have a curve formed therein which curve extends substantially along the entire length of the legs and being adapted to cause the legs to press against the wall of the opening into which the cotter pin is inserted along the middle portion thereof.

3. A cotter pin having a pair of legs which have a curve formed therein, the highest point of the curve being located substantially midway of the legs for the purpose of causing the legs to press against the wall laterally of the opening into which the cotter pin is inserted.

CHRISTIAN F. HEINKEL.

Witnesses:
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