To all whom it may concern:

Be it known that I, MARION H. HARTER, a citizen of the United States, residing at Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain new and useful Improvements in Cotter-Pin Pullers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in cotter pin pullers and has for its object to provide such a puller that is positive in its action and has great lifting or extracting power.

To the above ends, generally stated, the invention consists of the novel devices and combination of devices hereinafter described and defined in the claims.

In the accompanying drawings which illustrate the invention, like characters indicate like parts throughout the several views.

Referring to the drawings:

Fig. 1 is a side elevation of the improved cotter pin puller, applied to a cotter pin inserted through a hole in a bolt to hold a castellated nut thereon, some parts being shown in different position by means of broken lines;

Fig. 2 is a view corresponding to Fig. 1 with the exception that the puller has been operated to lift the engaged cotter pin;

Fig. 3 is a fragmentary view partly in elevation and partly on section taken on the line 3–3 of Fig. 2; and

Fig. 4 is a plan view of the invention as shown in Fig. 2.

The numeral 5 indicates a screw-threaded bolt or bar having mounted thereon, a castellated nut 6 held against rotation by a cotter pin 7 inserted through diametrically opposite slots in said nut and a bore in the bolt 5.

The improved cotter pin puller comprises a pair of handles 8 and 9 interconnected and pivotally connected at 10. These handles 8 and 9 are provided, respectively, with jaws 11 and 12 having on their opposing faces, shearing edges 13. Formed with the outer end of the jaw 11, is a long supporting finger 14 offset toward the jaw 12 and having its inner face formed on a curve, the center of which is at the axis of the pivot 10. A sharp curved tooth 15 is formed on the outer end of the jaw 12 and arranged to move close to the inner face of the supporting finger 14 during the pivotal movement of the handle 8.

To pull the cotter pin 7 from the bolt 5, the curved tooth 15 is inserted through the eye thereof, as shown in Fig. 1, with the cotter pin puller held in the hand 16, as indicated by broken lines. The handle 9 is then drawn toward the handle 8 to carry the supporting finger 14 into engagement with the nut 6 as a base of resistance, as indicated by broken lines in Fig. 1. Then by drawing the handle 9 toward the handle 8, the curved tooth 15 will be moved toward the jaw 11 and thereby draw the cotter pin 7 from the bolt 5, as shown in Figs. 2 and 3. In lifting the cotter pin 7, the supporting finger 14 engages said pin, as best shown in Fig. 2, and is thereby held against slipping on the nut 6.

If the cotter pin is too long to be entirely withdrawn by the tooth 15 and cannot easily be withdrawn by means of the fingers, the same may be grasped by the shearing edges 13 and withdrawn by a step-by-step movement, by resting the jaws 11 on the nut 6 or other support and lifting on the handles 8 and 9. Or, in case the cotter pin is broken at its eye by the tooth 15, the same may be withdrawn in the same manner.

The curved inner face of the supporting finger 14 is located sufficiently close to the tooth 15 to prevent an engaged cotter pin from being accidentally separated from said tooth, and the curved surface of the tooth also greatly assists in holding the cotter pin thereon. By means of the improved cotter pin puller, cotter pins located in out-of-the-way places and in various different positions, may be very easily pulled.

What I claim is:

1. A cotter pin puller comprising a pair of jaw-equipped pivotally connected handles, one of the jaws having a supporting finger offset toward the other jaw, said other jaw having a tooth adapted to enter the eye of a cotter pin and to move close to the inner face of the supporting finger and in the plane thereof.

2. A cotter pin puller comprising a pair of jaw-equipped pivotally connected handles, one of the jaws having a supporting finger offset toward the other jaw, the inner face of the supporting finger being on
a curve the center of which is substantially at the pivotal connection of the handles, said other jaw having a tooth adapted to enter the eye of a cotter pin, said tooth being arranged to move close to the curved inner face of the supporting finger.

3. A cotter pin puller comprising a pair of jaw-equipped pivotally connected handles, one of the jaws having a supporting finger offset toward the other jaw, the inner face of the supporting finger being on a curve the center of which is substantially at the pivotal connection of the handles, said other jaw having a sharp curved tooth adapted to enter the eye of a cotter pin, said tooth being arranged to move close to the curved inner face of the supporting finger.

In testimony whereof I affix my signature.

MARION H. HARTER.