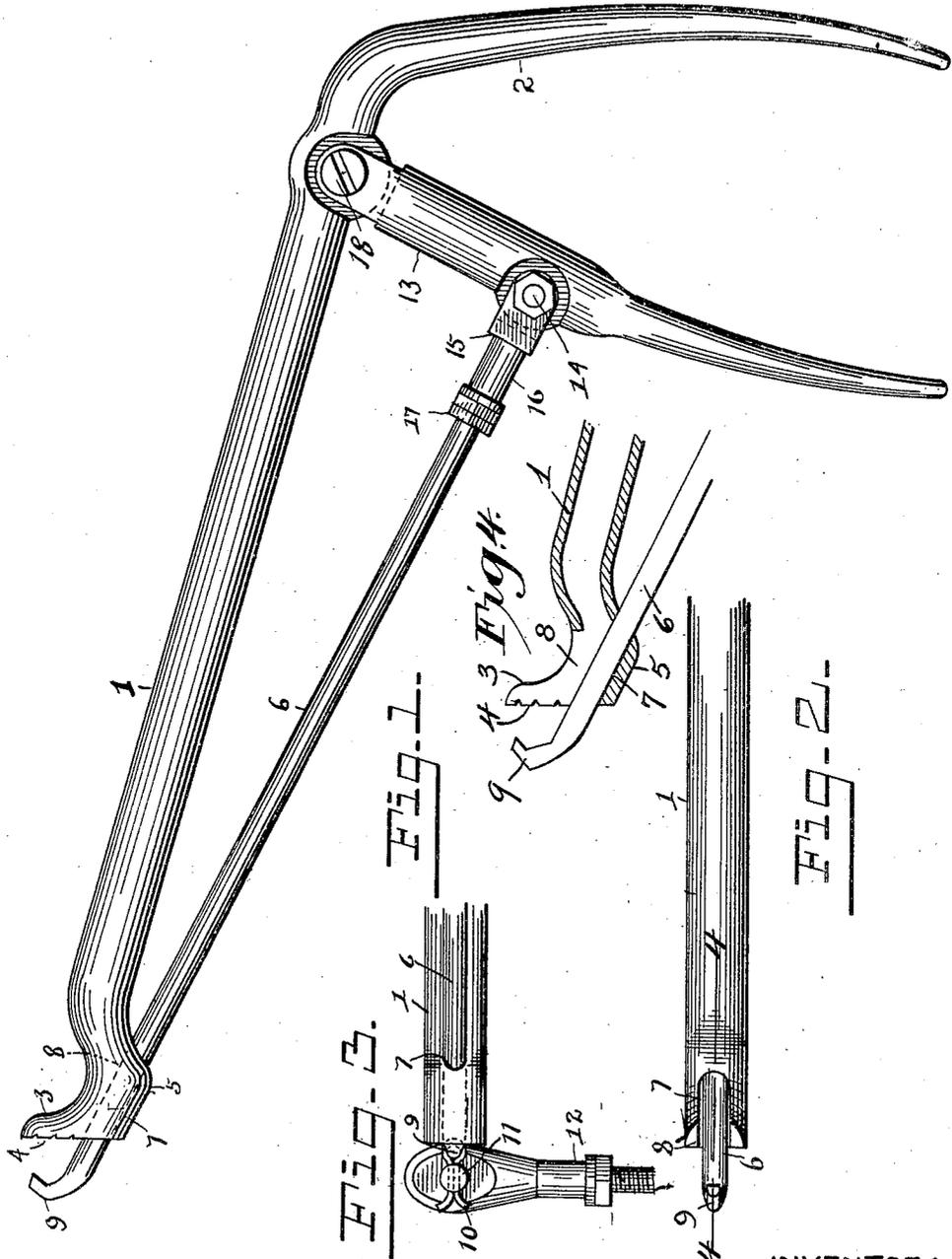


W. E. AYLOR AND M. A. MCGUFF,
 COTTER PIN EXTRACTOR.
 APPLICATION FILED AUG. 14, 1918.

1,319,829.

Patented Oct. 28, 1919.



WITNESS

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UNITED STATES PATENT OFFICE.

WILLIAM E. AYLOR AND MATTHEW A. MCGUFF, OF DAYTON, OHIO.

COTTER-PIN EXTRACTOR.

1,319,829.

Specification of Letters Patent.

Patented Oct. 28, 1919.

Application filed August 14, 1918. Serial No. 249,773.

To all whom it may concern:

Be it known that we, WILLIAM E. AYLOR and MATTHEW A. MCGUFF, citizens of the United States, residing at Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Cotter-Pin Extractors, of which the following is a specification.

Our invention comprises a tool or implement for extracting cotter pins employed for holding the clevis pins in airship construction. In airship construction all the parts necessarily have to be united and the airship completed in all its details in order that it may be subjected to tests or actual flights. These tests are carried on for a certain time in order to ascertain whether the airship is in a satisfactory and safe condition. After this is determined by the tests the entire aircraft is dismantled and all the parts disconnected for packing and shipping the same to the point of ultimate use. This dismantling or taking apart of the airships has heretofore entailed considerable time owing to it being necessary to remove a great many cotter pins which hold the clevis pins used to unite the clevises. It is therefore the object of the present invention to provide a specially constructed tool designed for the express purpose of removing these cotter pins quickly and with comparative ease. The accompanying drawings illustrate our improved cotter pin extractor and to these reference will now be made in general terms. Figure 1 is a side elevation of the cotter pin extractor showing the cotter pin extracting bar partly extended to hook into the eye of a cotter pin. Fig. 2 is a top plan view of the forward end of the implement as shown in Fig. 1 and Fig. 3 is a bottom plan view showing the hook end of the extracting bar engaging the eye of a cotter pin and in the act of withdrawing said pin from the clevis pin and Fig. 4 is a sectional view of the end of the tool on the line 4-4 of Fig. 2.

In a detail description of the invention similar reference characters indicate corresponding parts in the several illustrations. 1 designates the stationary body portion of the tool which consists preferably of a round bar the forward end of which is flattened and turned to form a handle 2 which is gripped by the hand in the manipulation of the device. The front end of the said bar 1 is curved downwardly as at 5 to bring it

into a suitable position to form a guide and support for the cotter pin extracting bar 6. To meet this requirement the portion 5 of said bar 1 has an opening 7 therein through which the pin extracting bar 6 slides in the manipulation of the implement. The supporting bar 1 remains stationary while the extracting bar 6 is operated. The forward end of said bar 1 is also extended upwardly as at 3 and has a recess surrounded by a corrugated portion 4 which abuts against a side of the clevis or other surface in positioning the implement for extracting the cotter pins. The said face 4 is provided with a rough surface or corrugations which enable it to avoid slipping on the surface of the clevis when brought in contact therewith and operated. The said end 3 of the bar 1 is also provided as before stated with the recess which is of U-shape and into which the cotter pins are drawn in removing the same. The forward end of the cotter extracting bar 6 is reduced in diameter and turned up to form a hook 9 which enters the eye of the cotter pin 10 as shown in Fig. 3. In this illustration the said extracting bar 6 is being drawn rearwardly to withdraw the cotter pin 10 from the clevis pin 11 which holds the clevis 12. The cotter pin extracting bar 6 is connected to a handle 13 by a pivot pin 14 and a clevis 15 and may be adjusted to shorten or extend the length of said bar 6 by adjusting lock nuts 17. The handle or lever 13 is fulcrumed to the main body or bar 1 near the handle 2 by a pivot pin 18. In manipulating the implement the bar 6 is extended to the desired point to enter the eye of the cotter pin to be removed. In some cases the cotter pins are in more or less inaccessible places and it is required to extend the rod 6 to a greater length than in cases where the cotter pins are more exposed. The hook end 9 enters the eye of the pin while the handle portion 2 is gripped by the hand with the fingers extended over the pivotal handle 13. By drawing rearwardly on the handle 13 the pin extracting bar 6 is likewise drawn rearwardly with the result that the cotter pin is quickly removed. The leverage of the handle 13 is such that enables a comparatively light force to be applied thereto in extracting cotter pins.

Having described our invention we claim:

In a tool for removing cotter pins, the combination of a stationary bar having one end terminating in a handle and the other

end terminating in an enlarged portion having a recess therein and an opening therein below said recess therein, a pin extracting bar supported and movable in said opening, 5 said bar having its end formed in a hook to enter the eye of a cotter pin and to draw the cotter pin into the recess in the end of said stationary supporting bar in extracting said

cotter pin, and a handle to which said pin extracting bar is pivoted, said handle being 10 pivoted to the main bar, substantially as specified.

In testimony whereof we affix our signatures.

WILLIAM E. AYLOR.
MATTHEW A. MCGUFF.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."