

F. H. BATEMAN.  
BREAK PIN STRUCTURE FOR CULTIVATORS.  
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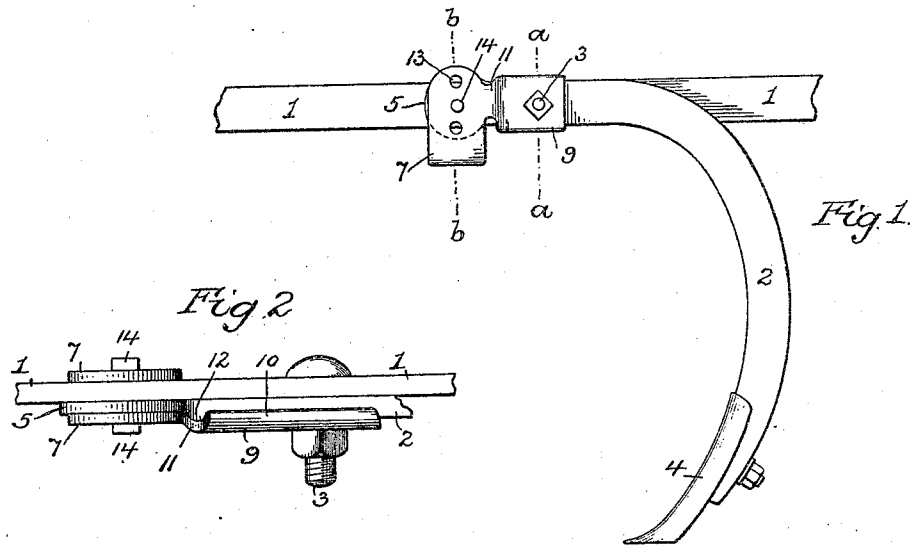


Fig. 3.

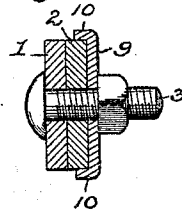


Fig. 4.

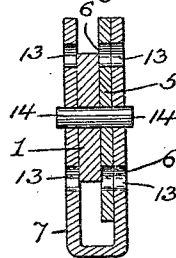


Fig. 6.

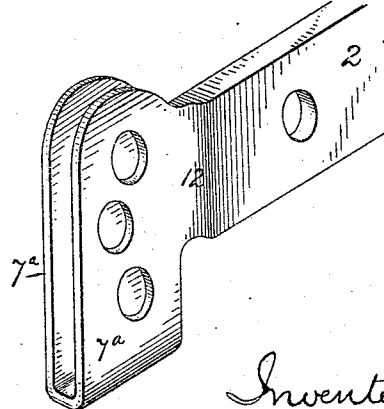
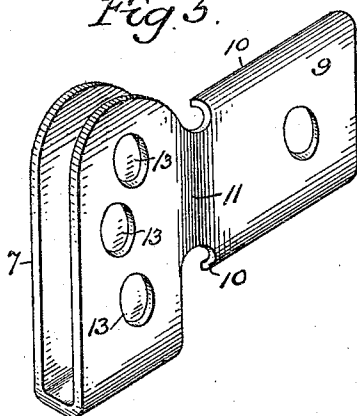


Fig. 5.



Witnesses  
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by his Attorneys  
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# UNITED STATES PATENT OFFICE.

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## BREAK-PIN STRUCTURE FOR CULTIVATORS.

No. 929,539.

Specification of Letters Patent.

Patented July 27, 1909.

Application filed October 8, 1908. Serial No. 456,781.

*To all whom it may concern:*

Be it known that I, FREDERIC H. BATEMAN, a citizen of the United States, residing in Grenloch, New Jersey, have invented certain Improvements in Break-Pin Structures for Cultivators, of which the following is a specification.

The object of my invention is to provide a simple, cheap and effective break-pin structure for the pivoted blade-carrying arms of a cultivator and especially to provide such break-pin structure for use in connection with blade-carrying arms not originally equipped therewith. This object I attain in the manner hereinafter set forth reference being had to the accompanying drawing, in which—

Figure 1 is a side view of part of one of the bars of a cultivator having a blade-carrying arm provided with a break-pin attachment in accordance with my invention; Fig. 2 is a plan or top view of part of the same; Fig. 3 is a vertical transverse section on the line *a—*a**, Fig. 1; Fig. 4 is a vertical transverse section on the line *b—*b**, Fig. 1; Fig. 5 is a perspective view of the attachment, and Fig. 6 is a perspective view illustrating a modification of my invention. Figs. 2, 3 and 4 are on a larger scale than Fig. 1, and Figs. 5 and 6 are on a still larger scale.

In the drawing, 1 represents part of one of the longitudinal bars constituting the main frame of a cultivator and 2 represents the usual curved and depending arm of rectangular cross section, which is pivoted to the bar by means of a transverse bolt 3 and has secured to its lower end a cultivator blade 4 of any desired character. Ordinarily the forward end of the arm is reduced in thickness and expanded vertically to produce a segmental head 5, in which are series of openings 6 disposed in the arc of a circle having its center at the axis of the pivot bolt 3, and the bar 1 also has a transverse opening for the reception of a locking bolt which enters one of the openings 6 in the head of the blade-carrying arm in order to provide for a high, low or intermediate adjustment of the blade carried by said arm.

To adapt such a structure as that described for the use of a wooden break-pin in place of the ordinary locking bolt, I secure to the arm 2 a clip comprising a vertical yoke 7 and a longitudinally extending side plate 9, the latter lying alongside of the arm 2

and being secured thereto by the same bolt 3 which effects the pivoting of the arm to the frame bar 1. The clip has, at top and bottom, flanges 10 overlapping the top and bottom of the arm and serving to prevent any vertical movement of the clip or any swinging movement of the same having the bolt as its axis, the locking of the clip to the arm 2 being further aided by a lateral offset between the side plate 9 and the corresponding side member of the yoke 7, which offset conforms to the shoulder 12 formed on the arm 2 by the reduction in the thickness of said arm resulting from the formation of the enlarged head 5 at the end of the same, as shown in Fig. 2. Each of the side members of the yoke 7 has openings 13 coinciding with the openings 6 in the head 5 of the arm 2 so that the clip does not interfere with the adjustment of said arm when it becomes necessary to raise or lower the blade carried thereby. When the arm and its clip are adjusted so that an opening 6 in the head of the arm and opposite openings 13 in the yoke 7 are in line with the transverse opening in the bar 1, a wooden break pin 14 is driven through the aligned openings and serves to lock the blade-carrying arm to the bar 1 with sufficient rigidity to overcome any normal strain to which the blade 4 may be subjected in the operation of the cultivator, the pin being broken, however, so as to permit the blade to swing upwardly, when it strikes a root, a stone or other obstruction calculated to impose excessive strain upon it. The yoke 7 provides a bearing for both ends of the break-pin, consequently, the full strength of the pin is exerted to lock the arm 2 in position, which would not be the case if the pin was simply driven through the opening in the bar 1 and through an opening 6 in the head of the arm 2.

The clip which I have devised provides a ready, cheap and simple break-pin structure for application to blade-carrying arms not originally equipped for the use of the break-pin, the clip being readily applied when the cultivator is being used in ground which renders the use of a break-pin advisable. My invention, may, however, be adopted in the original manufacture of the blade-carrying arm, if desired, by the formation upon the forward end of the rectangular arm 2 of a yoke, such as shown, for instance, at 7<sup>a</sup> in Fig. 6, in place of the ordinary single seg-

mental head 5, this construction being much simpler and cheaper and quite as effective as the plan which has been proposed of making the blade-carrying arm of U-shape section throughout.

I claim:—

1. The combination of the main bar of a cultivator frame with a blade-carrying arm pivoted to said bar, and presenting the usual rectangular cross section but provided at its forward end with a yoke which embraces the bar, the latter and the opposite members of the yoke having transverse openings for the reception of a break-pin.

2. The combination of the main bar of a cultivator frame with a blade-carrying arm pivoted to said bar, and presenting the usual rectangular cross section, but provided at its forward end with a yoke which embraces the bar, the latter having a transverse opening for the reception of a break-pin, and the yoke having, in each member of the same, a series of segmentally disposed transverse openings to any corresponding pair of which, and to the opening in the bar, said break-pin can be fitted.

3. A break-pin clip for the blade-carrying arm of a cultivator, said clip comprising a vertical yoke for embracing the bar to which the arm is pivoted, said yoke having perforated side members, and a longitudinally extending side plate to be secured to the arm.

4. A break-pin clip for the blade-carrying arm of a cultivator, said clip comprising a vertical yoke with perforated side members, and a longitudinally extending side plate with opening for the reception of the pivot pin of the arm, said side plate having flanges for overlapping the arm and preventing movement of the clip independently of the arm in the direction in which strain is exerted to break the pin.

5. A break-pin clip for the blade-carrying arm of a cultivator, said clip comprising a

vertical yoke with perforated side members, a longitudinally extending side plate to be secured to the arm, and a lateral offset between said side plate and the corresponding member of the yoke.

6. A break-pin clip for the blade-carrying arm of a cultivator, said clip comprising a vertical yoke with perforated side members, a longitudinally extending side plate with flanges for overlapping the arm, and a lateral offset between said side plate and the corresponding member of the yoke.

7. The combination of the main bar of a cultivator frame having a transverse opening therein, a blade-carrying arm pivoted to said bar and also having a transverse opening therein, and a clip comprising a vertical yoke and a longitudinally extending side plate, the latter being secured to the arm by the pivot pin, and the yoke having openings coinciding with those of the arm and bar for the reception of a break-pin.

8. The combination of the main bar of a cultivator frame, having a transverse opening therein, a blade-carrying arm pivoted to said bar and having, at its forward end, a head less in thickness than the arm, and also having a transverse opening therein, and a clip comprising a vertical yoke having perforated side members embracing the frame bar and the head of the arm, a longitudinally extending side plate secured to one side of the arm, and an offset connection between said side plate and the adjacent member of the yoke, which offset connection engages with the shoulder formed by reducing the thickness of the arm at the head.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

FREDERIC H. BATEMAN.

Witnesses:

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