Dec. 6, 1927. 1,651,938

E. E. WOLF

COLTER

Filed June 22, 1926

Fig. 1.

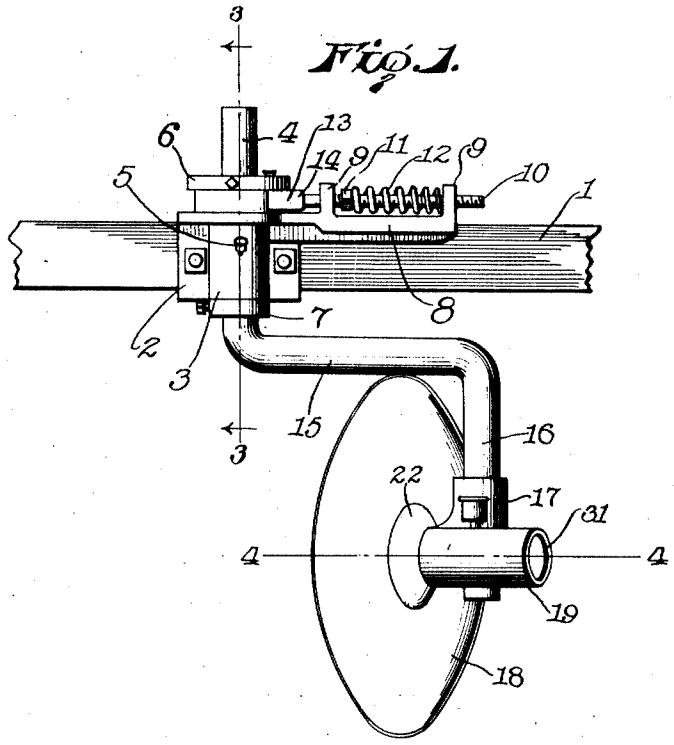


Fig. 2.

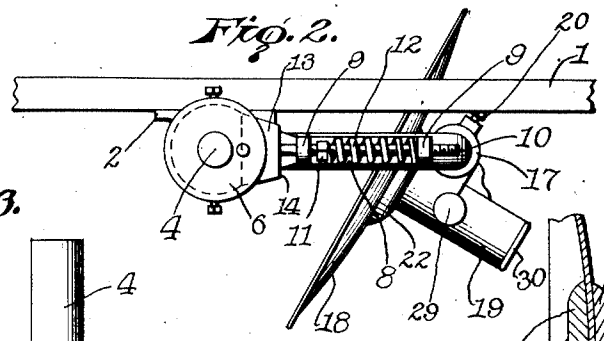


Fig. 3.

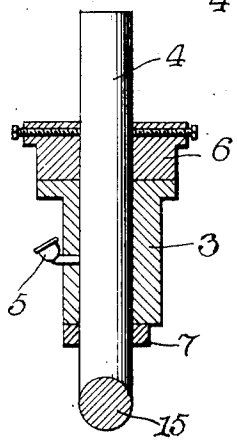
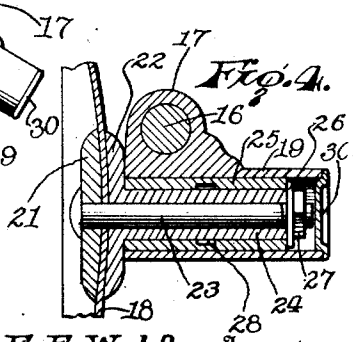


Fig. 4.



E. E. Wolf, Inventor

By Lacey & Lacey, Attorneys

Patented Dec. 6, 1927. 1,651,938

UNITED STATES PATENT OFFICE.

EVERT E. WOLF, OF DELPHI, INDIANA.

COLTER.

Application filed June 22, 1926. Serial No. 117,825.

This invention relates to disk colters and has for its object the provision of simple means whereby the colter may be so mounted upon a plow beam that it will remain normally in operative position but may yield readily to rocks or other obstructions so as to clear the same without being damaged. Another object of the invention is to provide means for mounting a colter whereby it may be set to run at any desired angle to the line of draft. Other objects of the invention will appear incidentally in the course of the following description, and the invention resides in certain novel features which will be particularly pointed out in the appended claims.

In the drawing:

Figure 1 is a side elevation of a colter embodying my invention;

Fig. 2 is a top plan view of the same;

Fig. 3 is a vertical section on the line 3—3 of Fig. 1;

Fig. 4 is an enlarged detail horizontal section on the line 4—4 of Fig. 1.

In the drawing, a portion of a plow beam is indicated at 1. In carrying out the invention, I bolt or otherwise rigidly secure to the side of the plow beam a bracket 2 which is constructed with a vertically disposed sleeve or bearing member 3 through which the upper end 4 of the colter shank is fitted so as to be rotatable therein, the said sleeve or bearing being equipped with an oil cup 5 of any preferred construction to supply lubricant to the shank. Above and below the bearing 3, collars 6 and 7 are secured to the shank by set screws so that they may be set at any desired points in the height of the shank and the colter thereby adjusted to run at any desired depth in the ground. It will be understood that, as shown in Fig. 1, the collars are adjusted to bear against the top and bottom respectively of the bracket or bearing member 3 and thereby hold the colter in the position in which it may be set. Extending laterally from the upper end of the bearing 3 is an arm 8 which is preferably formed integral with the bearing or bracket, and upon the upper side of this arm are spaced lugs or guides 9 slidably receiving a stop rod 10 which is threaded through a part of its length to receive a nut 11 serving as an abutment for an expansion spring 12 which is coiled around the stop rod between the said abutment and the outer guiding lug 9. The collar 6 is formed or provided with a lateral projection 13 having a flat side 14 which is normally disposed at a right angle to the plow beam 1 and against which the forward end of the stop rod 10 normally bears. Inasmuch as the flat side 14 is at a right angle to the plow beam, the tension of the spring 12 acting upon the abutment 11 will hold the stop rod against the said flat side and thereby maintain the colter in a normally operative position. It will be understood, as shown in Fig. 2, that the arm 8 extends from the bracket or bearing 3 parallel with the side of the plow beam.

The colter shank has a horizontally extending portion 15 at the lower end of the front terminal 4 and from the rear end of the said horizontal portion a lower terminal 16 depends vertically. The said lower terminal 16 is fitted through a sleeve 17 which forms a part of a coupling whereby the colter disk 18 is carried. The sleeve 17 is disposed eccentric to the bearing sleeve 19 and the said sleeve 19 has its axis at a right angle to the axis of the sleeve 17, as clearly shown in Figs. 1 and 2, the coupling being secured upon the shank terminal 16 by a set screw, shown at 20 in Fig. 2, so that it may be adjusted vertically upon the said terminal and thereby increase the range of vertical adjustment of which the colter is capable. The colter disk 18 is fitted between two heads or clamping plates 21 and 22 which are disposed at the center of the disk, and centrally through the said heads or plates and the disk is inserted a securing bolt 23, the outer clamping head or plate 22 being provided with a laterally extending sleeve 24 which is disposed axially within the bearing 19, a bushing 25 being fitted around the said sleeve within the bearing 19, as clearly shown in Fig. 4. The outer threaded end of the bolt 23 projects beyond the outer end of the bushing 25 and the sleeve 24, and a washer 26 and nut 27 are fitted upon the extremity of the bolt to bear against the outer ends of the said sleeve and the bushing 25 so that the disk will be clamped firmly in place. It will be understood that the bushing 25 is fitted tightly in the bearing 19 so that it will be relatively fixed, and in the inner circumference of the bushing is an annular groove 28 to receive lubricant from an oil cup 29 fitted in the top of the bearing sleeve. A dust cap 30 is fitted in the outer end of the bearing

sleeve to prevent the entrance of dirt and grit thereto so that the wear upon the parts will be minimized.

It will be noted that the sleeve 17 may be adjusted vertically upon the terminal 16 and may be also adjusted rotatably about the same and thereby set in any desired angle to the line of draft, the set screw 20 being turned home against the shank terminal to secure the disk in the set position. The shank is also rotatable with respect to the collars 6 and 7 and the set screws carried by said collars will secure the shank in the position in which the shank may be set so that the disk may be adjusted through a wide range to be disposed in the desired relation to the plow beam and the line of draft. The colter disk is, of course, disposed so as to extend at a greater or less angle across the path of travel of the plow and as the plow is drawn through the ground the colter will enter the soil and make a preliminary cut therein and also cut through any vines or roots which may be encountered so that they will be prevented from fouling the plow. Should the colter strike a large stone or a root or other obstruction which it cannot cut through or move aside, the colter will itself be deflected laterally causing the shank to rotate within the bearing 3 and thereby permitting the colter to ride around the obstruction. Inasmuch as the front end of the stop pin 10 bears against the flat surface 14 which is disposed at a right angle to the line of draft, the rod will be caused to move relatively rearward and place the spring 12 under increased tension, it being understood that this surface 14 is fixed with respect to the collar 6 and, consequently, moves with the collar and the colter shank and, therefore, assumes an inclined position relative to the stop pin when the colter rides around an obstruction as described. Immediately upon the obstruction being cleared, the spring will be free to expand and will exert such pressure through the stop pin 10 that the pin will react upon the surface 14 of the projection 13 and return the parts to the normal position.

My device is obviously simple in construction and arrangement of its parts and operates efficiently to normally maintain the colter in its operative position. The construction and arrangement of the parts is also such that a wide range of adjustment of the colter is afforded so that the colter can be very accurately set to conform to the nature of the soil or other conditions under which it must work.

Having thus described the invention, I claim:

1. The combination with a plow beam, and a colter having its shank rotatably mounted upon the side of the plow beam, of a projection carried by the colter shank and having a flat side substantially tangential to the shank, and a stop pin mounted on the plow beam and yieldably held in engagement with said flat-sided projection.

2. The combination with a plow beam, and a colter having its shank rotatably mounted upon the side of the plow beam, of a flat-sided projection carried by the colter shank, an arm carried by the plow beam in fixed relation thereto and having spaced guides on its upper side, a stop pin slidably mounted through said guides to engage said flat-sided projection, and an expansion spring acting between the rear guide and the stop pin to yieldably hold the stop pin in engagement with said projection.

3. The combination with a plow beam, and a vertically disposed bearing secured on the side of the plow beam, of an arm projecting rearwardly from said bearing, a colter shank rotatably fitted in said bearing, means for retaining the colter shank in said bearing, a flat-sided projection carried by the colter shank, a stop pin slidably mounted upon the said arm in position to engage the said projection, and an expansion spring acting between the arm and the stop pin to hold the stop pin in engagement with said bearing.

4. The combination with a plow beam, and a vertically disposed bearing secured upon the side of the plow beam, of a colter shank rotatably fitted in said bearing and extending above and below the same, collars secured upon the shank to engage the upper and lower ends of the bearing, an arm rigid with and projecting rearwardly from the upper end of the bearing, a flat-sided projection on the rear side of the upper collar on the shank, and a stop pin slidably mounted upon the said arm and yieldably held in engagement with the flat-sided projection.

5. The combination of a plow beam, a colter shank having an intermediate portion normally disposed horizontally and having vertical terminal portions, the front terminal portion extending upwardly and the rear terminal portion extending downwardly, means for rotatably mounted the front terminal upon the side of the plow beam, a coupling having a vertical sleeve adjustably and rotatably fitted upon the rear depending terminal of the colter shank, and a horizontal bearing eccentric to said sleeve, a colter disk, a sleeve projecting rearwardly from the colter disk and rotatably fitted in the said bearing, and means for retaining the said sleeve within the said bearing.

In testimony whereof I affix my signature.

EVERT E. WOLF. [L. S.]