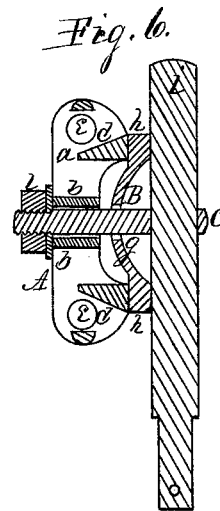
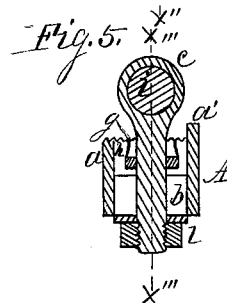
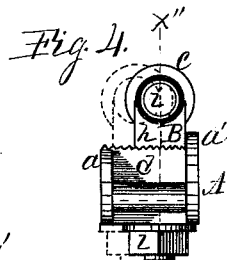
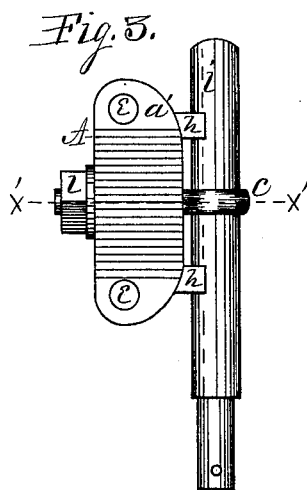
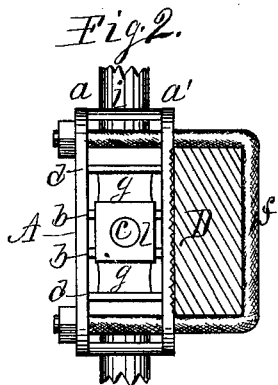
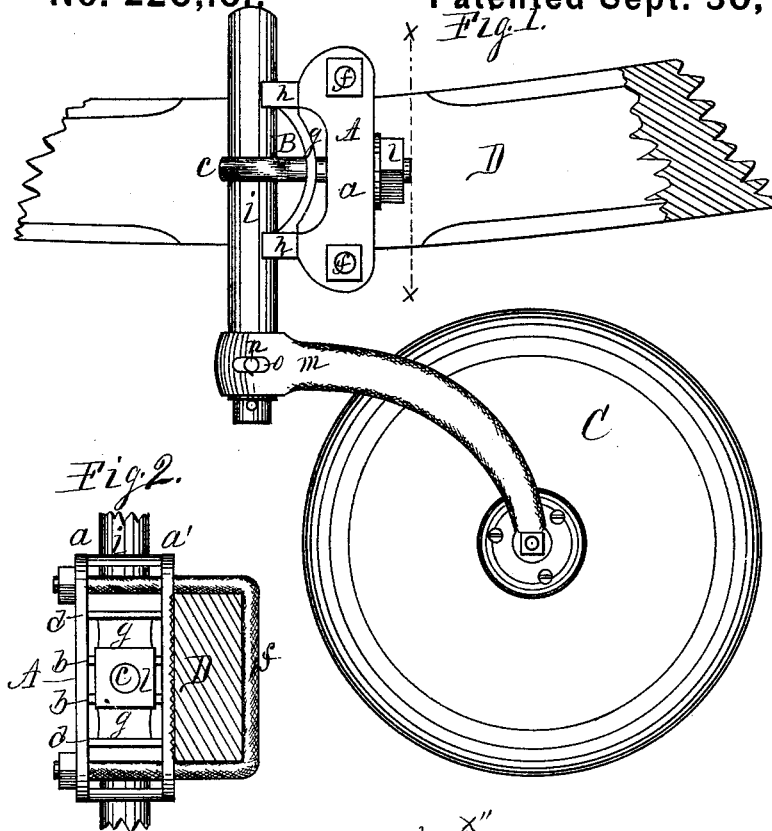


K. W. MANWARING.
Colter.

No. 220,161.

Patented Sept. 30, 1879.



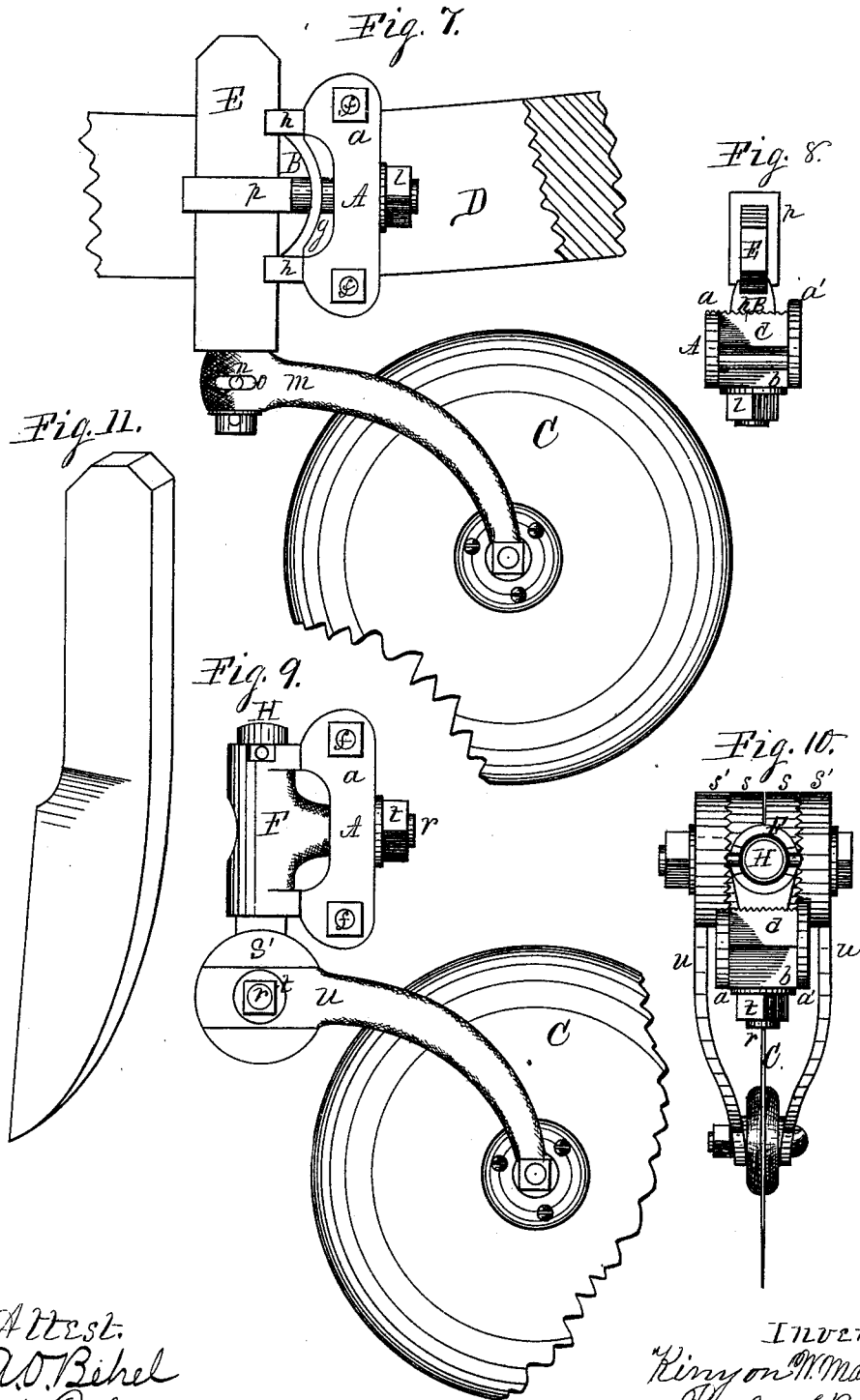
Attest,
A. O. Behel
N. O. Behel

Inventor
Kinson M. Manwaring,
Benjamin Behel
Atty.

K. W. MANWARING.
Colter.

No. 220,161.

Patented Sept. 30, 1879.



Attest.
A. D. Bichel
W. D. Bichel

Inventor
Kinyon W. Manwaring
Per Jacob Bichel.
Atty.

UNITED STATES PATENT OFFICE.

KINYON W. MANWARING, OF MOLINE, ILLINOIS.

IMPROVEMENT IN COLTERS.

Specification forming part of Letters Patent No. **220,161**, dated September 30, 1879; application filed June 19, 1879.

To all whom it may concern:

Be it known that I, KINYON W. MANWARING, of Moline, in the county of Rock Island and State of Illinois, have invented a new and useful Improvement in Plow-Colters, of which the following is a specification.

This invention relates to improvements in plow-colters employed to open the surface of the ground in advance of the plow.

The object of this invention is to produce an improved device by which plow-colters, whether rolling or rigid, may be fixed to the beams of plows, whether right or left hand, and by means of which the colter may be readily adjusted vertically to regulate their working depth, and laterally to properly line them with the plow.

To this end I have invented and constructed the device represented in the accompanying drawings, in which—

Figure 1 is a side elevation of my improvement with colter attached, and as applied to the plow-beam, of which Fig. 2 is a rear view, in which the plow-beam is shown in section cut on dotted line *x*. Fig. 3 is an elevation of the side applied to the beam. Fig. 4 is a plan or top view. Fig. 5 is a transverse section on dotted line *x'*, and Fig. 6 is a vertical central section on dotted lines *x''* and *x'''*. Fig. 7 is a side elevation of the same device, in which a colter-shank of rectangular-bar form is employed instead of the round-bar shank shown in the figures from 1 to 6, inclusive. Fig. 8 is a plan or top view of Fig. 7. Fig. 9 is a side elevation of a modified form of my improved device, of which Fig. 10 is a plan view. Fig. 11 is an isometrical representation of a knife-colter.

In the figures, A represents a clamp-frame, composed of plates *a* and *a'*, of the form represented in the drawings, and are of proper size to receive the plow-beam. These plates are placed some distance from each other, being connected near their centers by cross-bars *b*, which form a crosswise opening between them of slot form, sufficiently large to receive the shank of the screw-eyebolt *c*, to permit it to be moved lengthwise of the slot freely. The plates *a* and *a'* are also connected toward their ends by other crosswise bars, *d*, having their outer face edges corrugated;

and the plates *a* and *a'* are provided with holes *e* near their outer ends, and are adapted to receive the screw-threaded ends of the screw-staple *f*. These plates *a* and *a'*, with the crosswise bars *b* and *d*, form the main clamp-frame of my improvement.

The outer face of the plate *a'*, which comes in contact with the plow-beam, is corrugated, for the purpose of increasing its hold on the beam when clamped thereto.

B represents an adjustable bolster, composed of the curved bar *g*, provided with a central opening to receive the shank of the screw-eyebolt *c*, and with end plates, *h*, one edge of which is corrugated to receive the corrugations of the crosswise end bars, *d*, and their outer edges are of concave form to receive the vertical shank of the colter.

i is the vertical shank of the colter, which, in this instance, is of round-bar form. *c* is an eyebolt with screw-threaded shank.

The vertical shank of the colter is passed through the eye of the eyebolt, and the screw-threaded shank of the eyebolt is passed through the center opening in the curved bar of the bolster, and through the center crosswise slot in the frame formed between the center cross-bars thereof. In this position the vertical shank of the colter will rest in the concave outer edges of the bolster ends, and the corrugations of the bolster will engage the corrugations of crosswise bars of the frame; and by means of the screw-nut *l* the parts, when adjusted, can be firmly held in position.

The lower end of the vertical shank of the colter is of journal form, adapted to receive the yoke *m*, which is swiveled thereto, and limited in its vibratory movements by means of the pin *n* and slot *o*, in the usual manner.

The yoke *m* is formed of two curved arms, between the outer ends of which the colter C is journaled, in a manner substantially the same as is common in such work.

D represents a portion of a plow-beam with my improved device fixed in position thereon by means of the screw staple-bolts *f*.

From the foregoing it will be seen that the vertical shank *i* of the colter, and consequently the colter thereto attached, is made vertically adjustable, to regulate the working depth of the colter, by means of its eyebolt-connection

with the clamping-frame, which is accomplished by loosening the screw-nut *l* and sliding the shank up or down, and when adjusted by tightening the screw-nut it will be held firmly in its adjusted position; and in connection with the screw-eyebolt, the corrugated surfaces of the bolster and of the crosswise bars of the frame, and the crosswise slotted center of the frame, the colter is made laterally adjustable to place it properly in line with the plow.

This device is capable of use on either side of the plow-beam, and consequently equally applicable on either right or left hand plows. This is accomplished by inverting the frame.

In Figs. 7 and 8, *E* represents the vertical shank of the colter, which, in this instance, is of rectangular-bar form. In the use of this form of colter-shank it will require the eyebolt to be made of corresponding rectangular form, as shown at *p*, to receive the shank *E*, and the outer edges of the end plates, *h*, of the bolster *B* will require to be notched to receive the edge of the colter-shank. This form is also adapted to the use of the rigid knife-formed colter represented at Fig. 11, and their vertical and lateral adjustments are the same, and accomplished in the same manner as the adjustments of the round shank hereinbefore described.

In Figs. 9 and 10 I have represented a modification of my improvement, in which I have employed the tubular socket *F* instead of the bolsters employed in the previously-described forms. This tubular socket is made laterally adjustable in the same manner as the bolsters in the previous forms, and is held in position on the clamp-frame by a suitable screw-bolt, *r*, passed through the socket from its front side in an opening prepared to receive it, and by means of the screw-nut *t* is firmly secured to the clamp-frame. This tubular socket receives the journal-formed colter-shank *H*, which is held in position in the socket by a pin passing through its upper end above the socket, which,

in connection with the notched upper end of the socket, serves to limit the vibratory movement of the colter attached to the lower end of the journal-formed colter-shank.

s are rosette heads, fitted to the lower end of the shank *H*, having their outer faces radially corrugated to receive similar corrugated rosette-heads *s'*, having their outer faces grooved to receive the upper ends of the yoke-arms *u*. These parts are firmly held in place by a screw-bolt, which is passed through the parts in the center of the rosettes. The colter *C* is journaled in the outer ends of the yoke-arms in the usual manner.

By this construction it will be seen that if the clamping-bolt which passes through the parts in the center of the rosettes be loosened, the yoke-arms and the colter thereto attached may be raised or lowered, to regulate the working depth of the colter, and, when adjusted, can be fixed in position by tightening the screw-bolt.

I claim as my invention—

1. The combination, with the clamp-frame, substantially as herein described, of the bolster, the colter-shank, and the screw-eyebolt, these parts constructed and operating to hold the colter in an adjustable manner vertically, to regulate its working depth, and capable of use on right and left hand plows, substantially as and for the purpose hereinbefore set forth.

2. The combination of the laterally-slotted clamp-frame, the bolster, the screw-eyebolt, and colter-shank, constructed and operating as herein described, to adjust the colter both up and down and sidewise, and capable of use on both right and left hand plows, substantially as and for the purpose hereinbefore set forth.

KINYON W. MANWARING.

Witnesses:

HENRY H. HILL,
BENJ. W. HILL.