T. PATES.
Wheel-Colter.

No. 213,061 Patented Mar. 11, 1879.

Fig.1.

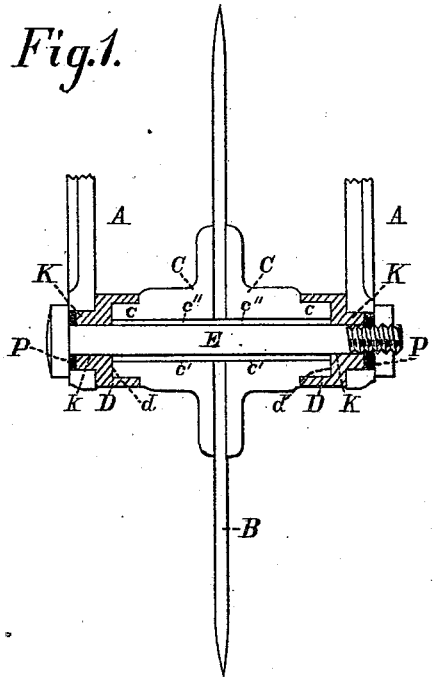


Fig.2.

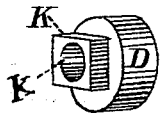


Fig.3.

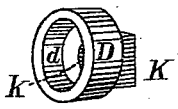
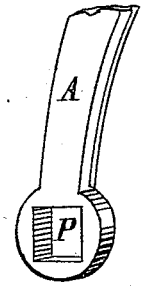


Fig.4.



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UNITED STATES PATENT OFFICE.

THOMAS PATES, OF ALTON, ILLINOIS, ASSIGNOR TO HAPGOOD & CO., OF ST. LOUIS, MISSOURI.

IMPROVEMENT IN WHEEL-COLTERS.

Specification forming part of Letters Patent No. **213,061**, dated March 11, 1879; application filed December 19, 1878.

To all whom it may concern:

Be it known that I, THOMAS PATES, of Alton, in the county of Madison and State of Illinois, have invented a new and useful Improvement in Wheel-Colters, which improvement is fully set forth in the following specification and accompanying drawings.

My invention relates to wheel-colters; and consists in the peculiar construction of parts, which will first be described in the specification, and afterward pointed out in the claim.

Figure 1 of the drawings represents a central horizontal sectional view through a colter, showing the construction of parts, also showing how the ends of the bosses are journaled in the shouldered recesses *d* in boxes interposed between the bosses C and yoke-arms A. Figs. 2 and 3 are perspective views of my improved bearing-box D, showing its construction, with the extension K extending outward from the center of the outer end of the box, and perforated, as shown, affording a long closely-fitting bearing on the axial bolt. Fig. 4 is a view of the end of the arm A, showing the square hole P.

A A represent the lower and bifurcated ends or arms of an ordinary form of yoke for connecting a wheel-colter to a plow. B is an ordinary wheel-colter, with bosses C secured one to each of its sides. The outer ends of the bosses C have a portion thereof formed into cylindrical journals *c*, as shown plainly at Fig. 1.

c' c' is an aperture through the bosses C, through which the bolt E extends, as shown also at Fig. 1.

I prefer to make the aperture *c'* larger in diameter than the bolt E, and to interpose a pipe-like bushing, *c''*, on which the bosses C have a bearing, as shown also at Fig. 1. The bushing *c''*, I usually make of rawhide-leather, although it may be of any suitable metal; or it may be dispensed with, as it is not a part of my invention.

D D are journal-boxes, each of which is formed with a cylindrical and shouldered recess, *d*, and an interior surface to receive the journal *c*. The rims of the recesses *d* embrace the journals *c*, and the bottoms or shoulders of the recesses *d* have bearing direct on the ends of the bosses C as dead-center pivots, as is shown plainly at Fig. 1. The outer end of the box D has an extension, K, formed with four sides, as a cube, extending into the like four-sided perforation P in the arm A. The extension K is fixed in the perforation P, as shown at Fig. 1, and thus secures the box D from rotating.

The object in making the extension K with four sides is, that the box D may be reversed or moved so as to bring a fresh side to wear, as the top side of the rim of the recess *d* is most liable to wear the faster. The extension K may have more or less sides than here shown, any number admitting of the box D being reversed to bring a fresh place to wear.

k is a perforation through the box D, and extending through the length of the extension K, and made of a size to closely fit the bolt E. The axial bolt E extends through the parts, as shown at Fig. 1, and has a head at one end, and a nut screw-threaded to the bolt at the other end. The bottom or shoulder of the recess *d* is kept bearing on the outer end of the boss C, and any wear is taken up by the nut on the bolt E by screwing up the nut and keeping the parts close bearing. The colter is made to run true, and sand or soil-grit kept away from the wearing parts most effectually by the perforation *k* closely fitting the bolt E, and which also assists in keeping all the parts in position. Any loosening of the nut on the bolt E, or any moving back of the box D, does not, by reason of the journals *c* and the rim of the recess *d* being cylindrical, open room for grit to get on the journals *c* under the rim of the recess *d*, the rim of the recess *d* also acting as a sand-cap barrier, keeping soil-grit away from the journals *c* and from other wearing parts very effectually.

Having thus set forth and described my improvements, I claim—

The wheel-colter B, provided with bosses C, having aperture C', through which the axial bolt extends, as shown, and cylindrical journal ends *c*, in combination with detachable

and reversible boxes D, formed with shouldered recesses *d*, adapted to fit closely upon the ends of said bosses and embrace the journals *c*, and having angular extensions K, formed with perforations *k*, which closely fit the axial bolt and extend into the yoke-arms, as shown, and yoke-arms A, provided with angular holes P, adapted to fit and hold the extensions K, seated therein, and bolt E, all constructed and arranged to operate substantially as and for the purpose described.

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