WORKMAN & HITCHCOCK.

Attaching Cultivator Teeth.

No. 110,103. Patented Dec. 13, 1870.

Fig. 1.

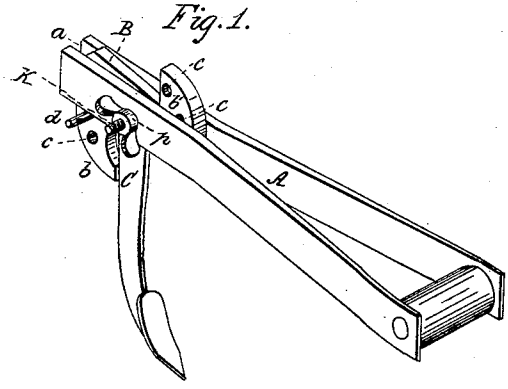
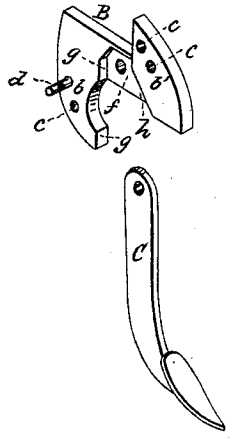


Fig. 2.



Witnesses:

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UNITED STATES PATENT OFFICE.

WILLIAM WORKMAN AND JASON HITCHCOCK, OF RIPON, WISCONSIN.

IMPROVEMENT IN FRICTION-BLOCKS FOR ATTACHING CULTIVATOR AND OTHER TEETH.

Specification forming part of Letters Patent No. **110,103**, dated December 13, 1870.

To all whom it may concern:

Be it known that we, WILLIAM WORKMAN and JASON HITCHCOCK, of Ripon, in the county of Fond du Lac and State of Wisconsin, have invented a certain new and useful Improvement in Friction-Blocks for Attaching Cultivator and other Teeth, of which the following is a specification.

This invention consists of a friction-block attached to the drag-bar, either inside or out, so constructed as to be set at any desired angle, and to allow the tooth-shank a free action in turning or backing the team, as hereinafter described.

In the drawings, Figure 1 is a perspective view of our improvement; Fig. 2, a similar view of the block and tooth-shank detached.

A is the drag-bar, B the friction-block, and C the tooth-shank. The block and shank may either be located in a slot, *a*, of the drag-bar or outside, as may be desired. The friction-block is cast or formed flat, with two wings, *b b'*, projecting up and down, and preferably provided with a series of holes, *c c c*, for the insertion of wooden pins *d d* in case the bolt and nut, hereinafter described, should give out. It also has a cavity or socket, *f*, of sufficient depth for the reception of the upper end of the tooth-shank, which rests therein, striking the shoulders *g h* in its forward and backward action. The rear wing of the block forms a bearing, against which the body of the shank rests, to hold the strain in going forward. The whole is retained by a bolt, *k*, and nut *p*, which, when tightened, clamps the friction-block, but leaving the tooth to move free in its socket.

The operation is as follows: The block is adjusted to any desired position, so as to set point *b* backward or forward to fit the angle of the tooth to the work to be done. The nut *p* is then turned up tightly to clamp the block in place. In going forward the tooth-shank rests against point *b*, which holds the strain; but in backing up or turning around at the ends of the rows the reaction or release of the strain allows the drag-bar to fall to an extent equal to the movement of the shank in its socket. This greatly facilitates the action. It is of especial advantage in backing up, as the teeth collapse by the back action and lose their rigidity. We claim this as a special feature of novelty in our invention.

If desired, instead of the clamping action, the pins *d*, fitting in the holes *c c*, may be employed for setting the angle of the block and retaining it in position. We intend these, however, more particularly for use when the bolt or nut gets loose or wears out, so as not to hold securely.

We are aware that the teeth themselves without the interposition of the blocks have before been clamped in place and held by friction. Such we do not claim.

What we claim, and desire to secure by Letters Patent, is—

The friction-block B, formed with the wings *b b'* and the intermediate socket, *f*, and shoulders *g* and *h*, in combination with a tooth-shank, C, substantially as described.

In witness whereof we have hereunto signed our names in the presence of two subscribing witnesses.

W. WORKMAN.
JASON HITCHCOCK.

Witnesses:
THOS. HARRIS,
GEORGE T. KELLY.