

(No Model.)

G. D. MITCHELL.
CULTIVATOR BEAM COUPLING.

No. 572,813.

Patented Dec. 8, 1896.

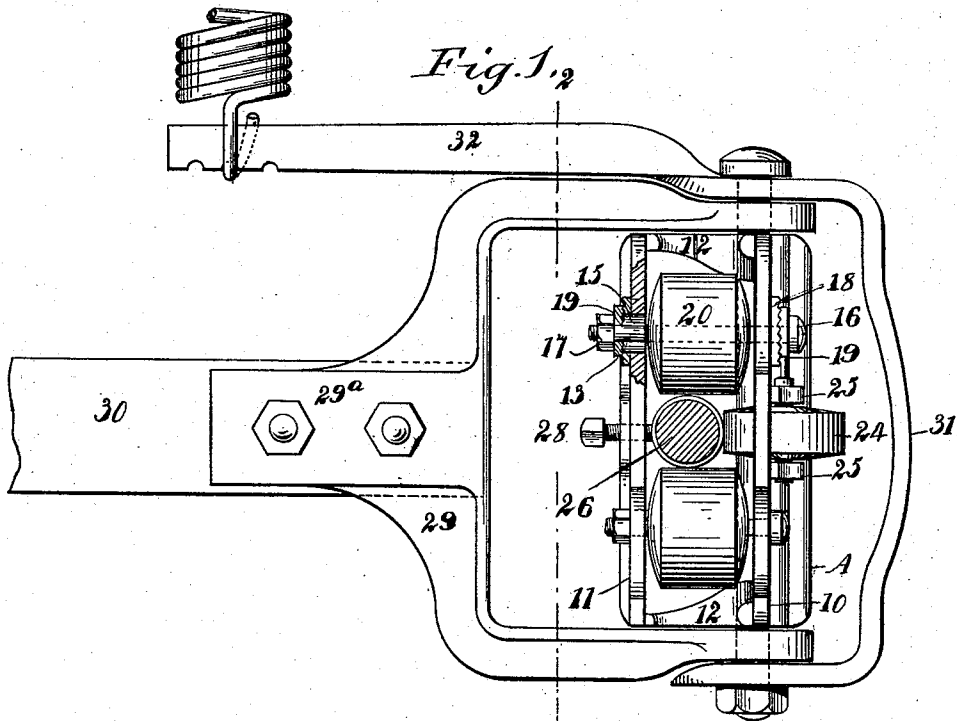
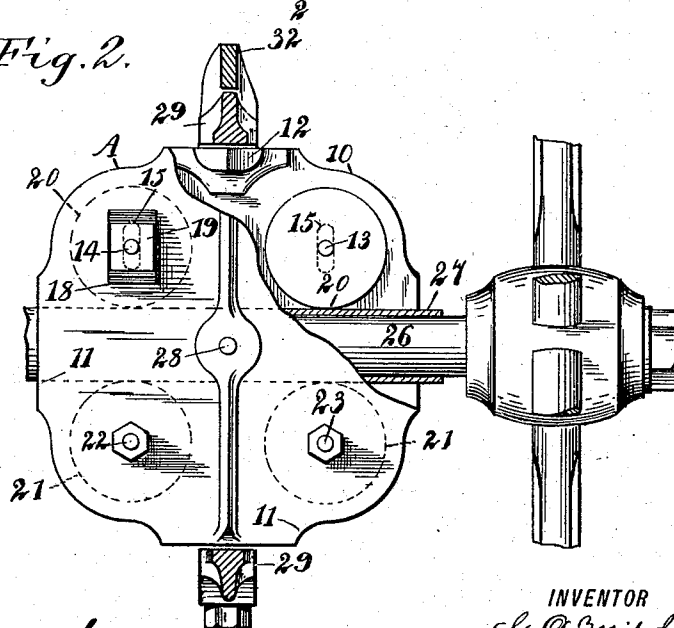


Fig. 2.



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CULTIVATOR-BEAM COUPLING.

SPECIFICATION forming part of Letters Patent No. 572,813, dated December 8, 1896.

Application filed March 12, 1896. Serial No. 582,855. (No model.)

To all whom it may concern:

Be it known that I, GIDEON DODGE MITCHELL, of Newton, in the county of Harvey and State of Kansas, have invented a new and Improved Cultivator-Beam Coupling, of which the following is a full, clear, and exact description.

The object of my invention is to provide a coupling capable of receiving round axles of various diameters and which will have a free rolling bearing upon the axle of the cultivator, enabling the operator upon moving the plows to or from the vegetation to carry the coupling proportionately and in the same direction along the axle, thereby bringing the plows at all times square to the work and obviating the prolonged and tiresome holding of one or the other, or both, of the plows up to their work against the tendency to draw away from the same.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of the improved coupling, a part of the body of the coupling being in section, and likewise the axle upon which the coupling is mounted; and Fig. 2 is a vertical section taken substantially on the line 2 2 of Fig. 1, showing the rear face of the body of the coupling partly in elevation and partly in section.

The body A of the coupling consists, primarily, of a front plate 10 and a rear plate 11, the said plates being provided at top and bottom with lugs 12, the lugs serving to hold the plates a predetermined distance apart, and the plates may be and preferably are connected by bolts or their equivalents, passed through the portions reinforced by the aforesaid lugs 12.

Shafts 13 and 14 are journaled transversely in the upper portion of the body of the coupling, the shafts being located at each side of the center of the said body, as shown best in

Fig. 2. These shafts 13 and 14 pass through elongated openings 15, made vertically in both the front and the back plate of the coupling-body, in order that the said shafts may be adjustable to or from the longitudinal center of the body. Each shaft is provided with a head 16, preferably at its front end, and a bur 17 is secured upon the rear end of each shaft, as shown in Fig. 1. A locking-plate 18 is firmly attached to or is made integral with the outer face of each of the body-plates 10 and 11, and these locking-plates are located where the bearings 15 for the shafts 13 and 14 occur, the locking-plates having ribbed outer faces and vertical slots produced therein corresponding to and registering with the bearing-slots 15, as shown in Fig. 1. The ribs or serrations in the locking-plates 18 are preferably horizontally produced, and the said ribs or serrations are adapted for engagement with outer locking-plates 19, apertured to admit of the passage of the shafts 13 and 14 and having their inner faces roughened or serrated, as shown in both Figs. 1 and 2.

A roller 20 is secured upon each shaft 13 and 14, the rollers being contained between the body-plates 10 and 11, and in the lower portion of the body A, below each upper roller 20, a roller 21 is located within said body, each roller being mounted upon a shaft 23. These shafts need not be adjustable, and are therefore preferably placed in fixed bearings.

Both the rollers 20 and 21 instead of being fixed to their shafts may be and preferably are loosely mounted thereon. In the front plate 10 of the body, at each side of its vertical center about midway between top and bottom, an opening is made, and above and below the said openings horizontal bosses or brackets 25 are formed on the outer surface of the said front plate, the bosses being adapted to receive the trunnions of horizontally-located friction-rollers 24, which extend through the aforesaid openings in the front plate into the interior of the body of the coupling between the forward ends of the rollers 20 and 21, as shown in Fig. 1. The horizon-

tal or front rollers 24 may be made to turn loosely on shafts, if so desired.

The axle 26 is round and is passed through the body of the coupling from side to side between the upper and lower rollers 20 and 21 and in engagement with the inner peripheral surfaces of the front horizontal rollers 24, and it is obvious that by loosening the burs 17 on the upper roller-shafts and disconnecting the two locking-plates 18 and 19 of said shafts the upper rollers may be adjusted upward or downward to accommodate an axle of any desired diameter. The adjustment having been made, all the rollers should engage with the axle in such manner that the body of the coupling may be freely slid along the axle to any desired point between its ends.

If at any time it is desired to temporarily secure the coupling at a predetermined point on the axle, a sheath 27 may be provided for the axle, with which the friction-rollers of the coupling will engage, the axle turning loosely in the sheath, and a set-screw 28 is located at the rear central portion of the body, adapted to be carried inward to an engagement with the aforesaid sheath.

A yoke 29 is pivotally attached to the top and to the bottom of the body of the coupling, and the yoke has a rearwardly-extending arm 29^a, to which the shanks 30 of the cultivator plows or blades are attached. An arched bar 31 is located in front of the body of the coupling and pivoted by the same pin which pivots the yoke 29 to the said body, and the upper end of the arched draft-bar 31 is carried rearward over the yoke 29, forming a lever to which the springs are attached that are usually connected with the plows to sustain a portion of their weight, the springs constituting no portion of the invention.

It is evident that when such a cultivator-beam coupling is employed the coupling will travel along the axle simultaneously with and in the same direction that the plows may be moved during the progress of the work, and that the plows will constantly be in a straight line from the axle and consequently square with their work; and it is furthermore evident that the great strain experienced by operators of cultivators of the ordinary type will be obviated, since the operator will not need to hold the plows up to the work against the tendency to depart therefrom. By forming the spring-lever 32 in the manner shown and described the tension of the springs to be connected with the lever will not in the least interfere with the free movement of the coupling to the right or to the left, and yet will have the usual effect in assisting and lifting the weight of the plow.

The arched bar 31 provides an additional bearing for the pivot-pin of the yoke. The draft is received by the rollers 24, bearing against the front side of the axle. The team is hitched to a suitable tongue, said tongue

being connected with the axle, and the axle receives the draft from the plows.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. A cultivator-beam coupling having friction-rollers arranged for engagement with the top and bottom and front of an axle, the coupling being adapted to have free movement on the axle, as and for the purpose specified.

2. In a cultivator-beam coupling, the combination, with the body of the coupling, of friction-rollers located therein and arranged to receive the axle between them, sundry of the said rollers being adjustable, as and for the purpose specified.

3. In a cultivator-beam coupling, the combination, with the body of the coupling, of friction-rollers located therein and arranged to receive an axle between them, sundry of the said rollers being adjustable, and locking devices for the adjustable rollers, as and for the purpose described.

4. In a cultivator-beam coupling, the combination, with the body portion of the same, of friction-rollers located above and below the center and at one side of the coupling, the said rollers being adapted to receive the axle of the cultivator between them, sundry of the said rollers being mounted upon shafts which are passed through elongated openings in the body, the said shafts having a head at one end and a locking-nut at the opposite end, and locking-plates having their opposing faces serrated, located between the heads of the shafts and the body of the coupling, and also between the body of the coupling and the lock-nuts on the shafts, as and for the purpose specified.

5. In a cultivator-beam coupling, the combination, with a body portion provided with friction-rollers arranged for engagement with the axle, of devices for adjusting the said rollers to and from the axle, and a locking device carried by the body and extending therein at a point between the friction-rollers, being adapted for clamping engagement with an axle, as and for the purpose specified.

6. The combination, with an axle and a sheath loosely mounted thereon, of a beam-coupling through which the axle is passed, the said coupling being provided with friction-rollers for engagement with the axle or its sheath, and a locking device carried by the coupling and adapted for engagement with the said sheath, as and for the purpose set forth.

7. In a cultivator-beam coupling, the combination, with a body portion comprising two side plates having friction-rollers arranged between them to receive an axle between them, of a yoke pivotally connected with the body and adapted for engagement with the cultivator-beams, as and for the purpose specified.

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8. In a cultivator-beam coupling, the combination, with a body portion having friction-rollers arranged to receive an axle between them, of a yoke pivotally connected with the
5 said body and adapted for engagement with the cultivator-beams, a draft device likewise pivoted upon the body, independent of the said yoke, and a spring-lever attached to one end portion of the aforesaid draft device, as and for the purpose specified.

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Witnesses:

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