

No. 688,228.

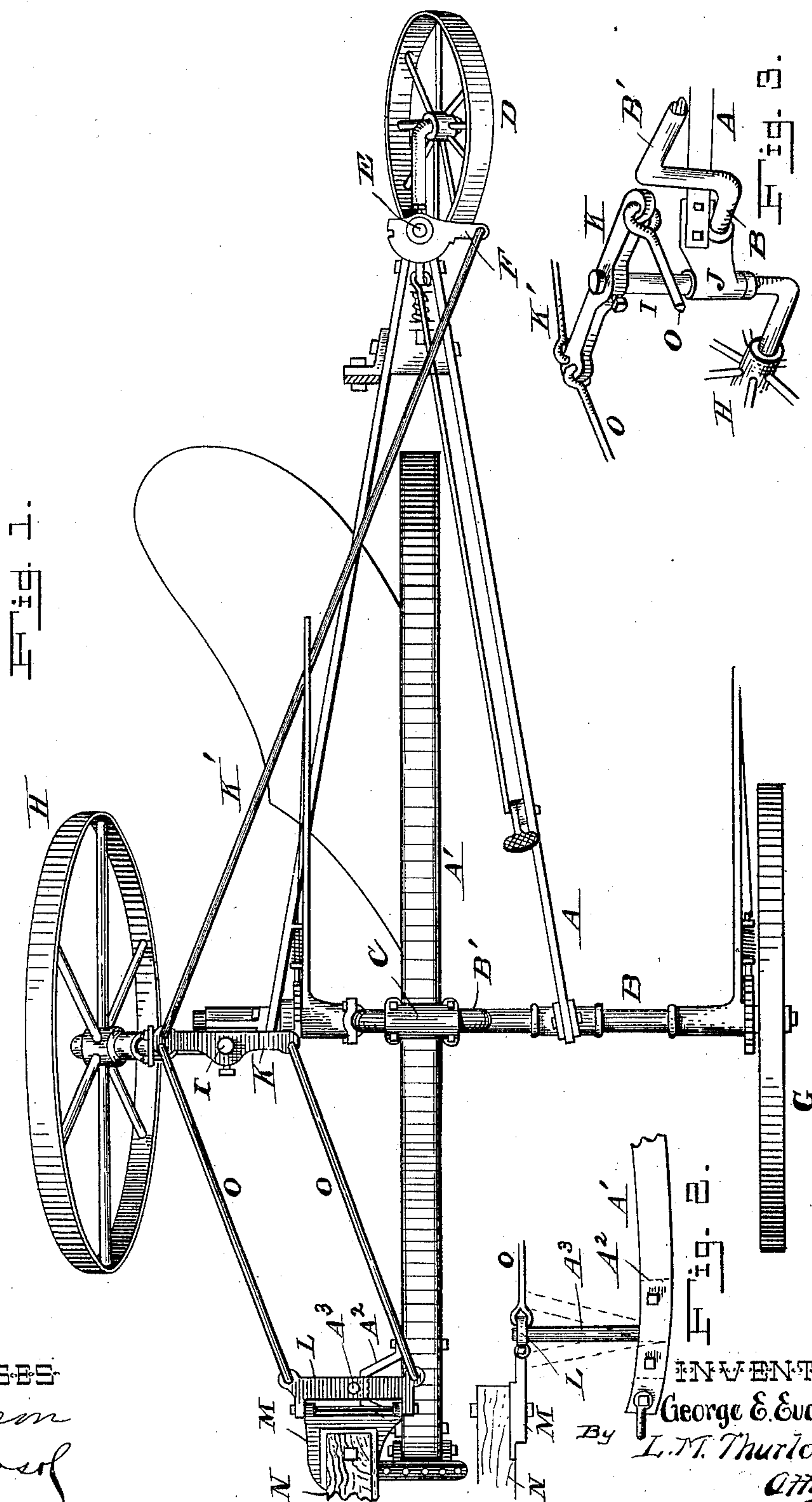
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STEERING MECHANISM FOR PLOWS.

(Application filed May 13, 1901.)

(No Model.)



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STEERING MECHANISM FOR PLOWS.

SPECIFICATION forming part of Letters Patent No. 688,228, dated December 3, 1901.

Application filed May 13, 1901. Serial No. 60,048. (No model.)

To all whom it may concern:

Be it known that I, GEORGE E. EVANS, a citizen of the United States, residing at Peoria, in the county of Peoria and State of Illinois, have invented certain new and useful Improvements in Steering Mechanism for Plows; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to plows, but more particularly to steering mechanism for the same.

The object of my invention is to provide a draft connection for plows which will make the steering easier and by which the clevis on the plow-beam, to which the draft connections are attached, will be in close proximity to the tongue, which does the guiding, so that when turning the team to one side the relation of the said tongue and clevis will remain substantially the same.

Furthermore, the object of my invention is to provide a steering mechanism that will operate as smoothly in one direction as the other. In devices heretofore used the latter object is not accomplished, because of the improper application of the elements employed.

In the drawings herewith presented, Figure 1 is a plan view of a plow, showing my steering apparatus. Fig. 2 is an elevation of a pin pivotally supported on the plow-beam and adapted to carry the tongue of the plow. Fig. 3 is a perspective view of a pivoted wheel-support, showing a steering-arm attached thereto.

A indicates the plow-frame, of triangular form, which is carried at its forward ends in suitable manner on the axle B. Said axle is arched at B' and supports the plow-beam A' by means of the bearing C. The rear end of the beam is supported in a suitable guide, which, however, is not shown, as it is common to plows of this character. The rear end of the frame A is supported by means of a caster-wheel D, whose stem E is carried in a vertical bearing, (not shown,) which is common to plows also. An arm F is affixed to the said stem and projects therefrom at right angles to the length of the plow. The axle

B carries at one end a fixed wheel G and at the other a movable or pivotal wheel H, whose shaft I is carried in a vertical bearing J, attached in any good manner to the frame A. In this bearing also the arched axle B is carried. The upper end of the said shaft I has an arm K secured thereto parallel with the arm F on the shaft E of the rear caster-wheel, and the end of the latter arm is connected to one end of the arm K by means of a rod K' in such a manner that when the wheel H is turned the caster-wheel D will be swung in an opposite direction when turning the plow, as in passing around a corner, and said wheels will either travel in the same path or each in a path concentric with the path described by its neighbor. Upon the forward end of the plow-beam, at one side, is secured a bracket A², pivotally supporting a pin or stud A³, whose upper end carries in pivotal manner a cross-arm L, having a plate M hinged thereto, to which the tongue N is bolted, and the ends of said arm L and the ends of the arm K are connected by parallel rods O, as shown. In arranging the various parts the arms F, K, and L are placed parallel with one another and at right angles to the length of the plow-beam.

Now when the horses are turned to the right, or away from the observer in viewing Fig. 1, the wheel H will naturally be turned on its pivot I in the same direction, while by means of the rod K', which will be pushed rearwardly, the caster-wheel D will be moved to occupy an opposite angle, thereby turning the plow in an easy manner. When turning the plow to the left, the wheel will take an opposite movement, as is obvious. It is well known that as the tongue is usually arranged with reference to the clevis on the plow-beam said tongue and clevis are widely separated and in turning these portions are carried farther and farther apart. This makes the draft hard on the horses and causes a straining and breaking of the attachments as well as chafing the horses' legs and causing a general annoyance. It is the intention, therefore, to overcome these difficulties by bringing the tongue and clevis close together, so that the tongue will pivot close to the latter, as shown. The stud A³ is pivoted on its

supporting-bracket, so that when raising and lowering the beam the slight change in the distance between the end of the beam and the arm K will not buckle the rods O or bind them. By this means the parts are always in operative position, whether the plow is at work or not.

I have not shown the construction of the plow in detail and I claim nothing thereon, nor do I claim the use of the rod K' for turning the caster-wheels at opposite angles, as the idea of so doing and the use of a rod for accomplishing this end is not new; but I believe it is new in combination with the other mechanism shown and described.

I claim—

1. In a steering mechanism, the combination with a plow having the usual carrying-wheels two of which are caster-wheels, one at the rear and one at the front, of an arm on the vertical shaft of the rear caster-wheel, a cross-arm on the vertical shaft of the front caster-wheel, a rod connection between said arms arranged whereby the turning of one of the wheels in one direction will impart a movement to the other wheel in an opposite direction; a cross-arm pivoted at its middle length on a support behind the horses and having the plow-tongue attached thereto, and rods connecting each end of the latter cross-arm with the cross-arm on the front caster-wheel shaft whereby a movement of the tongue will impart a movement from one cross-arm to the other in the same manner to operate the wheels as described.

2. In a steering mechanism, the combination with a plow having a front and rear caster-

wheel, of an arm on the vertical shaft of each, that on the front being a cross-arm, a rod connecting the two arms as set forth, an arm pivoted on a support at the middle of its length in the region of the draft connections for the purposes described and parallel rods connecting each end of the arms as shown and for the purposes set forth.

3. In a steering mechanism, the combination with a plow, of the caster-wheels H and D, the cross-arm K on the vertical shaft of said wheel H, the arm F on the shaft of the wheel D, a rod K' connecting the said arms as set forth, a cross-arm L pivoted at its middle length on the plow-beam in the region of the draft attachment and having the plow-tongue connected therewith, and rods O connecting the ends of the cross-arms as set forth and described.

4. In a steering mechanism, the combination of a plow having a front and rear caster-wheel H and D respectively, the cross-arm K on the vertical shaft of the front caster-wheel, the arm F on the vertical shaft of the rear caster-wheel, the rod K' connecting the two arms as described and shown, a bracket A² on the plow-beam adjacent to the draft attachments, a stud A³ pivoted thereto, a cross-arm L thereon and rod connections between both said arms K and L all arranged substantially as and for the purposes described.

In testimony whereof I affix my signature in presence of two witnesses.

GEORGE E. EVANS.

Witnesses:

S. H. HUNT,
W. B. KINGMAN.