

(No Model.)

2 Sheets—Sheet 1.

J. P. KIRK.
PLOW.

No. 489,015.

Patented Jan. 3, 1893.

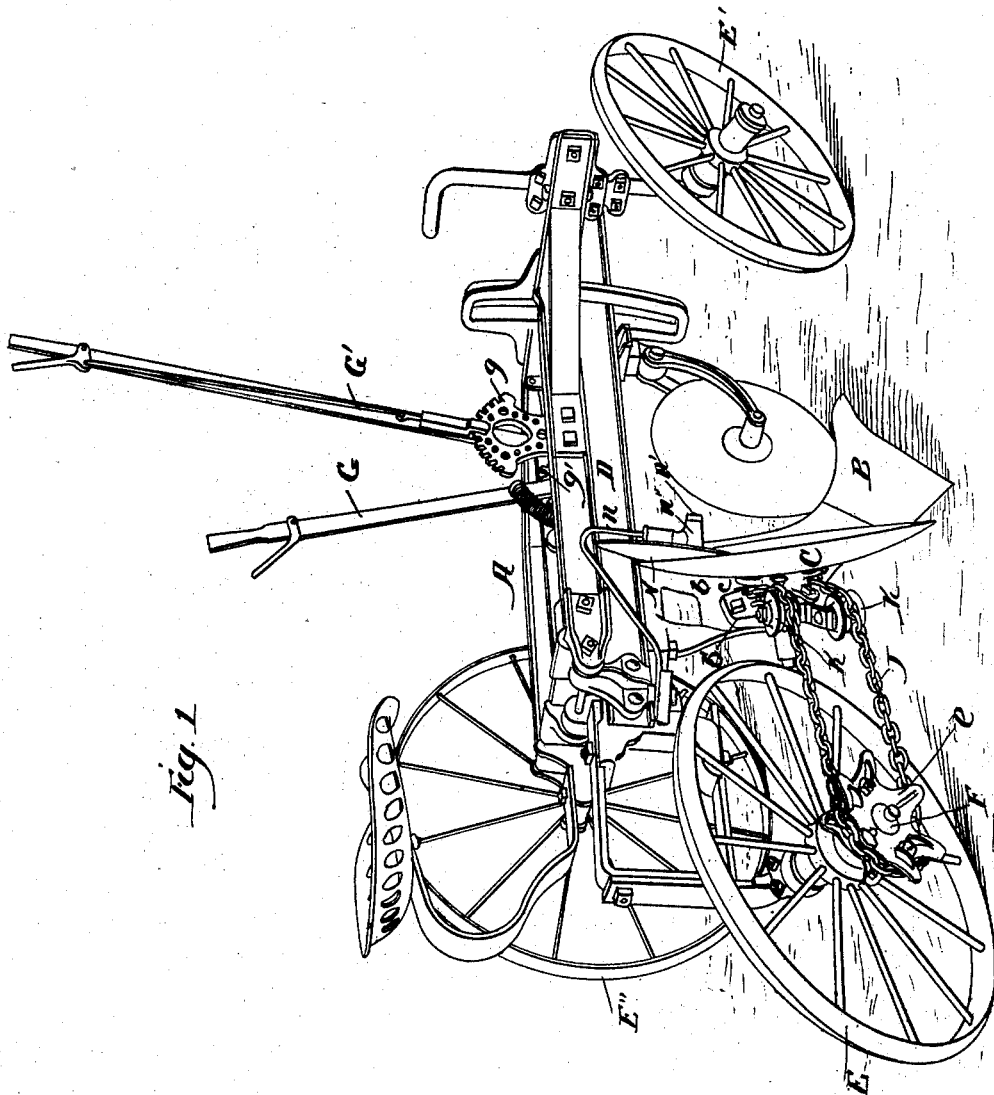


Fig. 1

Witnesses:

M. M. Johnson
Charles E. Buckle

Inventor:

J. P. Kirk

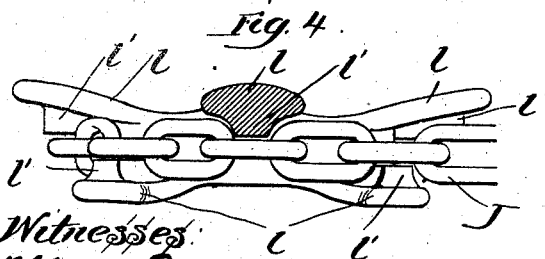
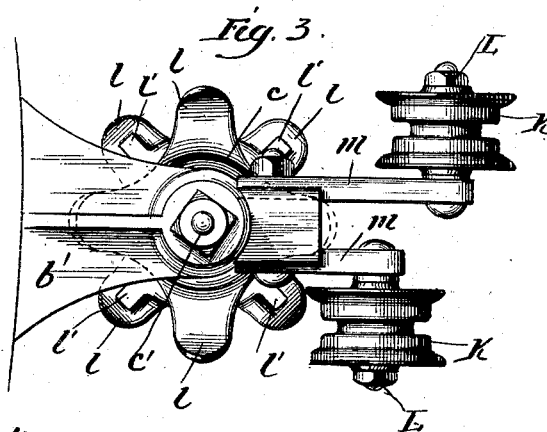
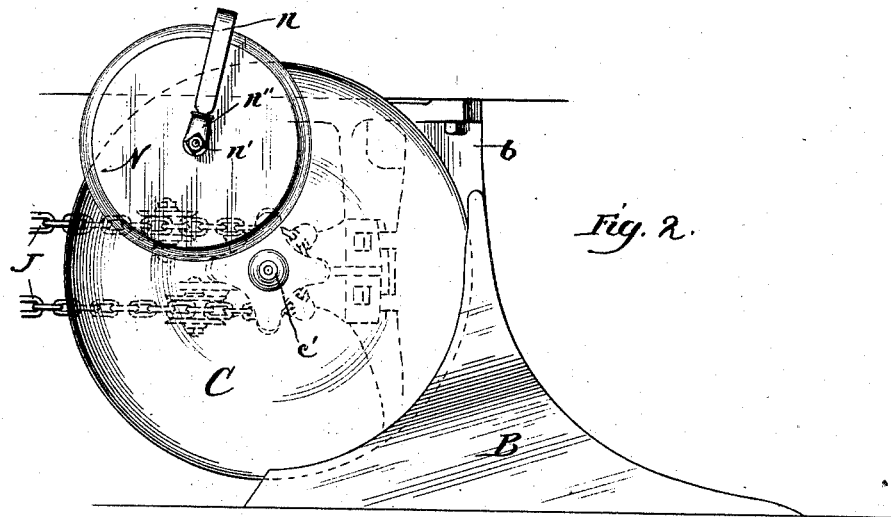
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2 Sheets—Sheet 2.

J. P. KIRK.
PLOW.

No. 489,015.

Patented Jan. 3, 1893.



Witnesses: M. M. Johnson
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Inventor:
J. M. Kirk

UNITED STATES PATENT OFFICE.

JOHN P. KIRK, OF AUSTIN, TEXAS.

PLOW.

SPECIFICATION forming part of Letters Patent No. 489,015, dated January 3, 1893.

Application filed March 18, 1892. Serial No. 425,489. (No model.)

To all whom it may concern:

Be it known that I, JOHN P. KIRK, a citizen of the United States, residing at Austin, in the county of Travis and State of Texas, have invented certain new and useful Improvements in Plows, of which the following is a specification, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view; Fig. 2 is a detail, being an enlarged view of the mold board and scraper; Fig. 3 is a detail, being an enlarged view showing one of the sprocket wheels and the manner of mounting the idler wheels upon their axles; and Fig. 4 is a detail, being a view of a portion of the chain and wheel and sectional view of one of the sprockets.

My invention relates to plows which are provided with a revolving mold board to adapt them for use in sticky soil. In this class of plows as heretofore constructed, it has been found necessary to make use of a universal joint in some part of the mechanism for driving the mold board, which construction greatly impairs the efficiency of the driving mechanism.

The object of my present invention is to provide an improved plow of the above described class in which the revolving mold board is driven without the intervention of a universal joint, and to thereby simplify the construction of the plow and carriage. I accomplish this object as illustrated in the drawings and as hereinafter described.

That which I regard as new will be pointed out in the claims.

In the drawings,—A, indicates the carriage of the plow. The plow consists of a share B and a revolving mold board C. The share B is secured to a bar or standard *b* in the usual manner, which standard is rigidly secured at its upper end to a longitudinal beam D, which corresponds to the ordinary plow beam. The beam D is supported upon and forms a part of the carriage A, which is provided with wheels E, E', E'', the wheels E, E' being mounted upon the carriage on one side, and the wheel E'' on the other side of the beam. The beam D is vertically adjustable, and is provided with levers G, G', having spring pawls operating in segmental racks *g, g'* for

adjusting the beam vertically and locking it in position. As these devices for adjusting the beam upon the carriage form no part of my present invention, I will not describe their construction more fully, as it is not necessary to a full understanding of the invention.

The furrow wheel E is mounted upon an axle F, which is rigidly attached to the carriage back of the plow, and is downwardly inclined in such a manner as to adapt the wheel E to rotate in a plane which is inclined to the perpendicular, as best shown in Fig. 1. The tire of the wheel E is also inclined so as to present a flat surface to rest upon the ground.

The hub of the wheel E is provided on the outer side of the wheel with a grooved annular extension or sprocket wheel *e*, which may be made integral with the hub of the wheel E or independently thereof, and is adapted to receive a drive chain J, by means of which motion is communicated to the mold board C. The chain J is not an ordinary flat chain such as are usually used with sprocket wheels, but is made up of ordinary chain links, formed of metal circular in cross section. A common chain is used because a flat chain is not adapted to take the double bend required by the construction shown.

The mold board C is formed of a concave metal disk mounted at its center upon a suitable axle *c'* which is carried in a bearing in a bracket *b'*, which bracket is secured to and projects from the standard *b*. The mold board C is of such size and is so adjusted as to run behind the upper edge of the plow share,—which is preferably curved, as shown,—to receive the plowed earth therefrom, substantially as in the common forms of rotary mold board plows.

The mold board C is provided with a rotary disk scraper N, which scraper is journaled upon a shaft *n'*, carried by a bracket *n*, which is rigidly secured to the frame A, and is so shaped that it holds the scraper in such position that a portion of its periphery bears upon the upper portion of the mold board C, whereby it acts to remove any substances which may stick to the mold board as it revolves. The shaft *n'* is carried in a bearing *n''*, which is swiveled on the end of the bracket

n. By this construction, the angle of the scraper to the mold board may be varied slightly, as may be necessary in the operation of the plow.

5 The mold board C is provided on its convex side, at the center, with an extended hub or sprocket wheel *c*, which may be formed integral with the hub of the mold board, or may be formed separate therefrom and then
10 secured to the mold board, or its hub, and is similar to the wheel *e* on the furrow wheel E. The wheel *c* and mold board C are driven from the furrow wheel E by means of the drive chain J which connects the wheels *c*
15 and *e*, as best shown in Fig. 1.

K, K, indicate idler wheels, which are so placed as to be adapted to act as guides to direct the chain J between the wheels *c* and *e*, and prevent it from interfering either with
20 the wheel E or the mold board C. The idlers K are loosely mounted upon axles L, which are perpendicularly mounted upon supporting rods or bars *m*, which bars are secured at their inner ends to the bracket *b'*, as best
25 shown in Fig. 3, and are so shaped as to hold the idlers in proper position for directing the chain J. As shown, the idlers K, K, should be so placed as to cause the chain J to lie parallel with the wheel E and mold board C.

30 In order to adapt the sprocket wheels *e* and *c* to engage the chain J, they are provided with sprockets or lugs *l* projecting radially from opposite sides of their peripheries, which sprockets *l* have inwardly projecting lugs *l'*
35 formed on them, as best shown in Fig. 4. The sprockets *l* are so placed that the lugs *l'* will engage successive links of the chain J. The rims of the wheels are comparatively narrow. By the above described construction of the
40 sprocket wheels and sprockets, the accumulation of dirt on the wheels is prevented, as very little surface is exposed where dirt can lodge.

The levers G, G, and their connections for
45 raising or lowering the beam D, are not described, as these parts are not of my invention.

By the construction above described, the mechanism for driving the mold board will not be affected by vertical adjustment of the
50 plow beam, and a high degree of efficiency and strength is secured.

That which I claim as my invention and desire to secure by Letters Patent, is,—

1. The combination of a carriage having a furrow wheel provided with a sprocket wheel 55 on its hub, with a revolving mold board provided with a sprocket wheel, and a drive chain connecting the sprocket wheel on the hub of the furrow wheel with the sprocket wheel on the revolving mold board, substantially as 60 described.

2. The combination with a carriage, and a plow share, of an inclined furrow wheel having its hub provided with a sprocket wheel and mounted upon an axle connected with the 65 carriage in rear of the plow share, a plow beam which supports the plow share, a revolving mold board provided with a sprocket wheel, and a drive chain extending at an angle between the sprocket wheel on the furrow 70 wheel and the sprocket wheel on the revolving mold board, substantially as described.

3. The combination of a carriage having a furrow wheel traveling in the line of progression and provided with a sprocket wheel on 75 its hub, with a mold board rotating at an angle to the line of progression and provided with a sprocket wheel, and a drive chain extending at an angle between the sprocket wheel on the furrow wheel and the sprocket 80 wheel on the revolving mold board, substantially as described.

4. The combination with a plow having a share B, revolving mold board C, a sprocket wheel carried thereby, and a carriage for 85 supporting said plow, of a furrow wheel E, a sprocket wheel mounted thereupon, drive chain J, and devices for guiding said chain, substantially as and for the purpose specified.

5. The combination with a plow, having 90 share B, revolving mold board C, a sprocket wheel *c* carried thereby, and a carriage adapted to support said plow, of a furrow wheel E, having a sprocket wheel mounted thereupon, drive chain J, and idlers K, K adapted to 95 guide said chain, substantially as and for the purpose specified.

JNO. P. KIRK.

Witnesses:

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CHAS. E. PICKLE.