R. SINCLAIR.

DITCHING MACHINE.

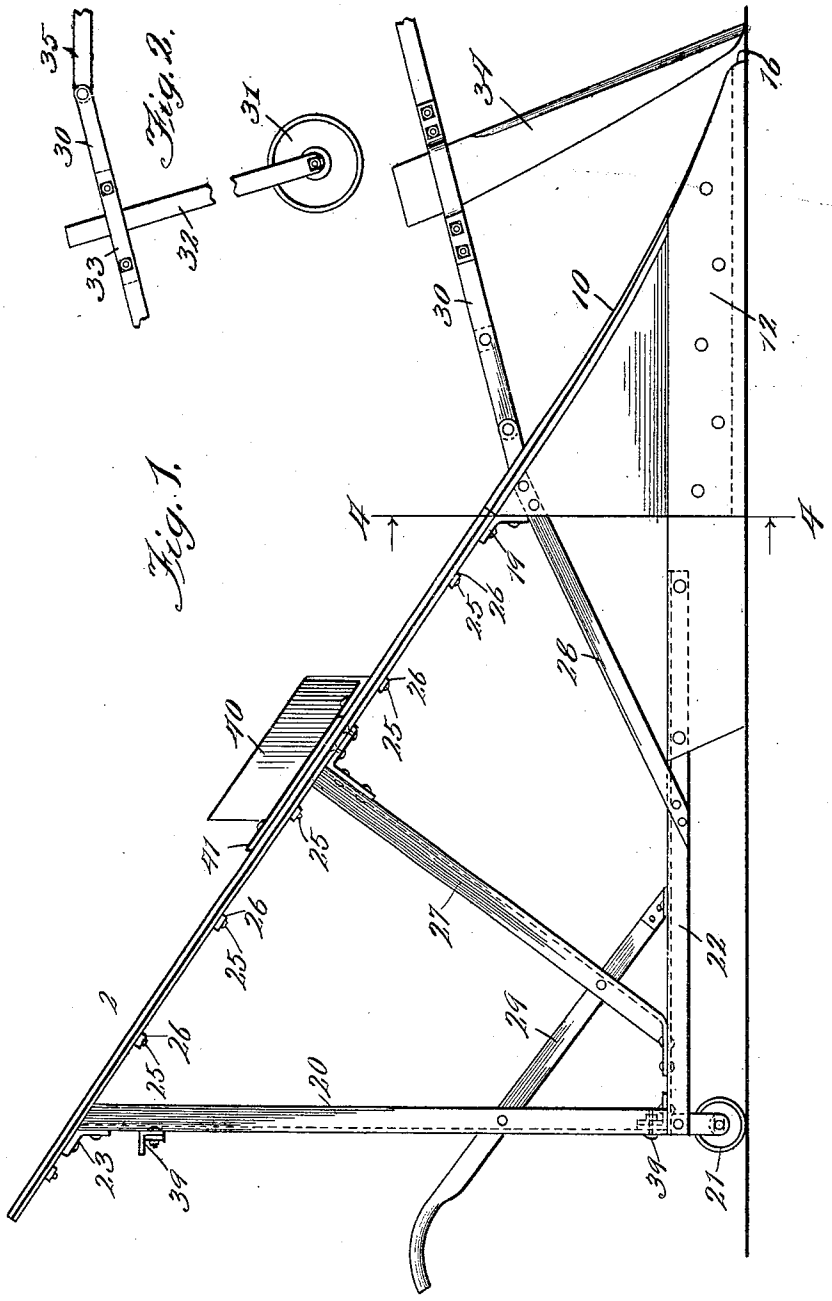
APPLICATION FILED MAR. 14, 1910.

961,321. **Patented June 14, 1910.**

2 SHEETS—SHEET 1.

Fig. 2.

Fig. 1.



Witnesses:

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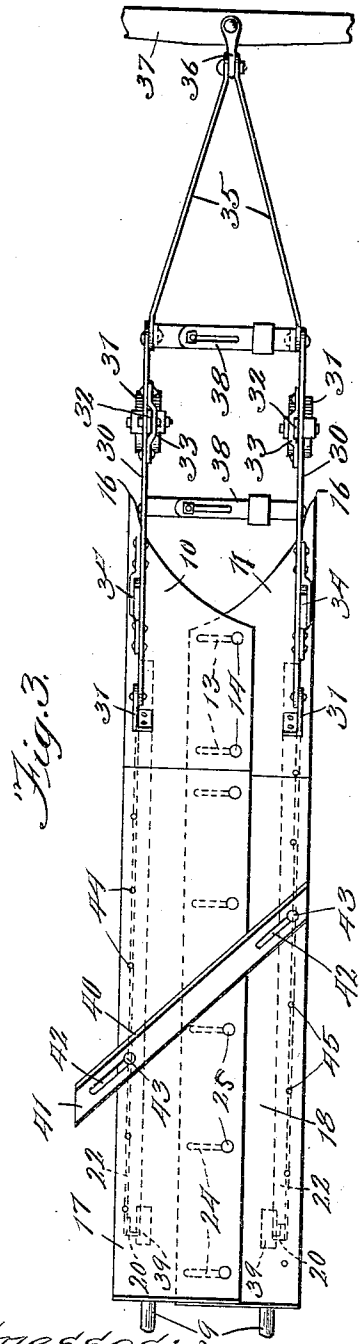

Fig. 3.

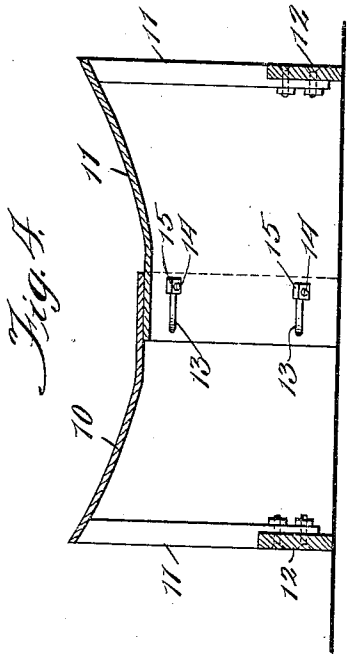

Fig. 4.

Witnesses:

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UNITED STATES PATENT OFFICE.

ROBERT SINCLAIR, OF CHICAGO, ILLINOIS.

DITCHING-MACHINE.

961,321. Specification of Letters Patent. **Patented June 14, 1910.**

Application filed March 14, 1910. Serial No. 549,296.

To all whom it may concern:

Be it known that I, ROBERT SINCLAIR, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Ditching-Machines, of which the following is a specification.

This invention relates to improvements in ditching machines, and more especially to that class of machines particularly designed for digging trenches for tiles or for irrigation purposes, and the primary object of the invention is to provide an improved machine of this character for digging trenches of any depth within prescribed limits, and one which may be readily adjusted for trenches of varying widths.

A further object is to provide an improved machine of this character comprising a pair of plows arranged with their shares disposed toward each other and connected together so that the dirt will be directed between the plows, or to the center of the machine.

A further object is to provide improved means for receiving and conveying the dirt from the shares and depositing it upon the surface of the ground at the side of the trench.

A further object is to provide improved means for adjusting the plows whereby the space between the land sides may be varied for trenches of different widths.

A further object is to provide an improved device of this character which will be simple, durable and cheap in construction, and efficient and effective in operation.

To the attainment of these ends and the accomplishment of other new and useful objects as will appear, the invention consists in the features of novelty in the construction, combination and arrangement of the several parts hereinafter more fully described and claimed, and shown in the accompanying drawings illustrating an embodiment of the invention and in which—

Figure 1 is a side elevation of an improved machine of this character constructed in accordance with the principles of this invention. Fig. 2 is a detail side elevation of the wheel frame and supporting wheel. Fig. 3 is a top plan view of Fig. 1. Fig. 4 is a detail sectional view on line 4—4 of Fig. 1 with parts omitted.

Referring more particularly to the drawings and in the present exemplification of the invention, the numerals 10 and 11 designate the plow share of two plows arranged side by side, with the land sides 12 arranged on the outside, and with the shares 10 and 11 between the land sides and extending toward each other. One of the shares, preferably the share 10, extends over the other share 11, and one of these shares, preferably the share 11, is provided with a plurality of slots 13. Extending through the other share 10 are fastening devices 14, preferably in the form of headed bolts, and 15 designates nuts which are screwed or fastened to the free extremities of the fastening devices under the shares. By means of these slots and fastening devices 14, it will be apparent that the plows may be adjusted toward and away from each other so as to vary the distance between the land sides 12 and thereby accommodate the plow for trenches of varying widths.

The faces of the plow shares 10 and 11 are substantially flat and inclined slightly toward each other, as shown more clearly in Fig. 4, so as to form a trough or cradle to receive the dirt as it is dug by the plow points 16 to prevent the dirt from being thrown over the land sides and for confining the dirt on the shares.

Extensions 17, 18 are provided respectively for the shares 10 and 11, and these extensions are supported at their forward ends by means of suitable brackets or supports 19, which latter are secured preferably to a portion of the share, and are so arranged that the forward ends of the extensions will abut the respective ends of the shares. The free ends of the extensions may be supported in any desired or suitable manner, preferably by means of uprights 20, each of which in turn is supported by means of a wheel 21, and are connected to the respective land sides by means of a connecting member 22. Brackets 23 may be provided on each of the uprights 20 for the respective extensions 17 and 18, and these extensions may be secured permanently in position, preferably by means of fastening devices passing through the respective extensions and the brackets 19, 23. One of these extensions, preferably the extension 18, is provided with slots 24, similar to the slots 13 in the share 11, and fastening devices 25 similar to the fastening devices 14 pass

through the extension 17 and through the respective slots 24, and nuts 26 are provided on each of the fastening devices 25 for securing the extensions 17 and 18 in their adjusted positions.

If desired, suitable supporting braces 27, 28 may be provided, and handles 29 may also be provided for guiding the plows when starting the furrow. A draft bar or beam 30 is secured to the plows in any desired or suitable manner, preferably by means of brackets 31. These draft bars or beams may be of any desired length and are preferably inclined upwardly, as shown in Fig. 1. The forward ends of these beams 30 are supported by wheels 31[a] journaled in wheel frames 32, which latter are adjustably secured by means of fastening clips 33 to the respective beams. These wheels 31 and supporting frames 32 are provided for regulating the depth of the furrow. A colter 34 is provided, preferably one for each of the plows, and is arranged adjacent the points 16 of the respective plows.

Connected to the forward end of the draft beams or bars 30 are links 35 which incline toward each other, and are connected by means of the clevis 36 to which clevis the ordinary whiffletree 37 is connected. Adjustable braces 38 are provided between the draft beams 30, so as to resist the lateral strain on these beams, which would be caused by the draft exerted thereon from the whiffletree 37. Similar adjustable braces 39 may be provided between the uprights 20.

With this improved construction it will be apparent that as the plow is advanced, the colters 34 will cut the dirt and the plow points 16 will loosen the same, and the dirt will be delivered upon the shares 10 and 11. As the plow advances, the dirt will be shifted from the shares on to the extensions 17 and 18, which latter are inclined upwardly and are arranged to form flat extensions of the shares.

In order to deflect the dirt from the extensions 17 and 18, and to deposit the same upon the surface of the ground adjacent the trench, a deflector board 40 is provided which is preferably arranged at an angle to the length of the extensions, as shown, so that as the dirt travels up the extensions, it will engage the deflector 40 and be directed therefrom on to the surface of the ground. This deflector may be adjusted longitudinally with respect to the extensions 17, 18, and for this purpose the deflector may be provided with a flanged portion 41, through which slots 42 are provided adjacent the extremities thereof and fastening devices 43, preferably in the form of bolts, pass through these slots and through apertures 44, 45 in the respective extensions 17 and 18, and these apertures are arranged throughout the length of the extensions. By adjusting the angle of inclination of the deflector with respect to the length of the extensions, it will be apparent that the dirt may be deposited along the side of the trench, and by bodily adjusting the deflector 40 longitudinally of the extensions 17 and 18, the plow may be permitted to dig a trench of any depth. As the depth of the trench increases, the deflector 40 may be adjusted toward the free ends of the extensions 18. It will also be apparent that when a trench of greater width is desired, all that is necessary is to release the fastening devices 14, 25, and adjust the plows away from each other after which adjustment the fastening devices may be tightened; the slots 42 in the deflector 40 also serving to permit of such adjustment.

In order that the invention might be fully understood the details of the foregoing embodiment thereof have been thus specifically described, but

What is claimed as new is—

1. A ditching machine comprising a pair of plows arranged with their shares disposed toward each other, means coupling the plows together for adjustment toward and away from each other, means forming an upwardly inclined extension of each of the shares for catching and conveying the dirt from the shares and means connecting said extensions together for adjustment toward and away from each other.

2. A ditching machine comprising a pair of plows arranged with their shares disposed toward each other, means coupling the plows together for adjustment toward and away from each other, means forming an upwardly inclined extension of each of the shares for catching and conveying the dirt from the shares, means connecting said extensions together and for adjustment toward and away from each other, and means for supporting said extensions.

3. A ditching machine comprising a pair of plows arranged with their shares disposed toward each other, means coupling the plows together for adjustment toward and away from each other, means forming an upwardly inclined extension of each of the shares for catching and conveying the dirt from the shares, means connecting said extensions together for adjustment toward and away from each other and a deflector supported by said extensions and adapted to be adjusted longitudinally and transversely with respect thereto.

4. A ditching machine comprising a pair of plows arranged with their shares disposed toward and over-lapping each other, means adjustably connecting said shares, and means forming extensions of the shares for catching and conveying the dirt from the shares.

5. A ditching machine comprising a pair of plows arranged with their shares dis-

posed toward and over-lapping each other, means adjustably connecting said shares, means forming extensions of the shares for catching and conveying the dirt from the shares, said extensions overlapping each other, and means adjustably connecting the latter.

6. A ditching machine comprising a pair of plows arranged with their shares disposed toward and over-lapping each other, means adjustably connecting said shares, means forming extensions of the shares for catching and conveying the dirt from the shares, said extensions overlapping each other, means adjustably connecting the latter, and means for supporting the free ends of the said extensions.

7. A ditching machine comprising a pair of plows having their shares extending toward and overlapping each other, means adjustably connecting the shares, means forming extensions of the shares for catching and conveying the dirt from the shares, and means for deflecting the dirt from said extensions and on to the surface of the ground.

8. A ditching machine comprising a pair of plows having their shares extending toward and overlapping each other, means adjustably connecting the shares, means forming upwardly inclined extensions of the shares for receiving the dirt from the shares and conveying it to the surface of the ground, and a deflector supported by the extensions for directing the dirt from the extensions.

9. A ditching machine comprising a pair of plows having their shares extending toward and overlapping each other, means adjustably connecting the shares, means forming upwardly inclined extensions of the shares for receiving the dirt from the shares and conveying it to the surface of the ground, and an adjustable deflector supported by the extensions for directing the dirt from the extensions.

10. A ditching machine, comprising a pair of plows having their shares extending toward and overlapping each other, said shares being depressed adjacent the overlapping portions, means adjustably connecting the shares, and means for catching and conveying the dirt from the shares to the surface of the ground.

11. A ditching machine comprising a pair of plows having their shares extending toward and overlapping each other, means adjustably connecting the shares, overlapping members co-inciding with the shares and forming upwardly inclined extensions thereof, said extensions overlapping each other, means adjustably connecting the extensions, and supports for the latter.

12. A ditching machine comprising a pair of plows having their shares extending toward and overlapping each other, means adjustably connecting the shares, overlapping members co-inciding with the shares and forming upwardly inclined extensions thereof, said extensions overlapping each other, means adjustably connecting the extensions, supports for the latter, and a deflector supported by and adjustable with respect to the extensions.

13. A ditching machine comprising a pair of plows having their shares extending toward and overlapping each other, means adjustably connecting the shares, overlapping members coinciding with the shares and forming upwardly inclined extensions thereof, said extensions overlapping each other, means adjustably connecting the extensions, supports for the latter, and a colter arranged in advance of each plow.

14. A ditching machine comprising a pair of plows arranged with their shares substantially flat and disposed toward each other to overlap, means adjustably connecting the shares, means forming upwardly inclined extensions of and coinciding with the shares for catching and conveying the dirt from the shares, and a colter arranged in advance of each plow.

15. A ditching machine comprising a pair of plows arranged with their shares substantially flat and disposed toward each other to overlap, means adjustably connecting the shares, means forming upwardly inclined extensions of and coinciding with the shares for catching and conveying the dirt from the shares, a draft beam for each plow, and a colter supported by each beam.

16. A ditching machine comprising a pair of plows arranged with their shares substantially flat and disposed toward each other to overlap, means adjustably connecting the shares, means forming upwardly inclined extensions of and coinciding with the shares for catching and conveying the dirt from the shares, a draft beam for each plow, means adjustably connecting the beams, a supporting wheel for each beam and a colter supported by each beam in advance of the respective plows.

17. A ditching machine comprising a pair of plows having their shares arranged at substantially right angles to their land sides and extending toward and overlapping each other, means adjustably connecting the shares, and upwardly inclined sections coinciding with the shares to form continuations thereof, and means adjustably connecting said sections.

18. A ditching machine comprising a pair of plows having their shares arranged at substantially right angles to their land sides and extending toward and overlapping each other, means adjustably connecting the shares, upwardly inclined sections coinciding with the shares to form continuations thereof, and means adjustably connecting

said sections, and a deflector adjustably supported by the extensions.

19. A ditching machine comprising a pair of plows having their shares arranged at substantially right angles to their land sides and extending toward and overlapping each other, means adjustably connecting the shares, upwardly inclined sections coinciding with the shares to form continuations thereof, means adjustably connecting said sections, and handles connected with the plows for initially guiding the machine.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 9th day of March A. D. 1910.

ROBERT SINCLAIR.

Witnesses:

J. H. JOCHUM, Jr.,

M. W. CANTWELL.