J. M. HODGES.

SUBSOILER PLOW.

APPLICATION FILED MAR. 31, 1909.

944,095. Patented Dec. 21, 1909.

2 SHEETS—SHEET 1.

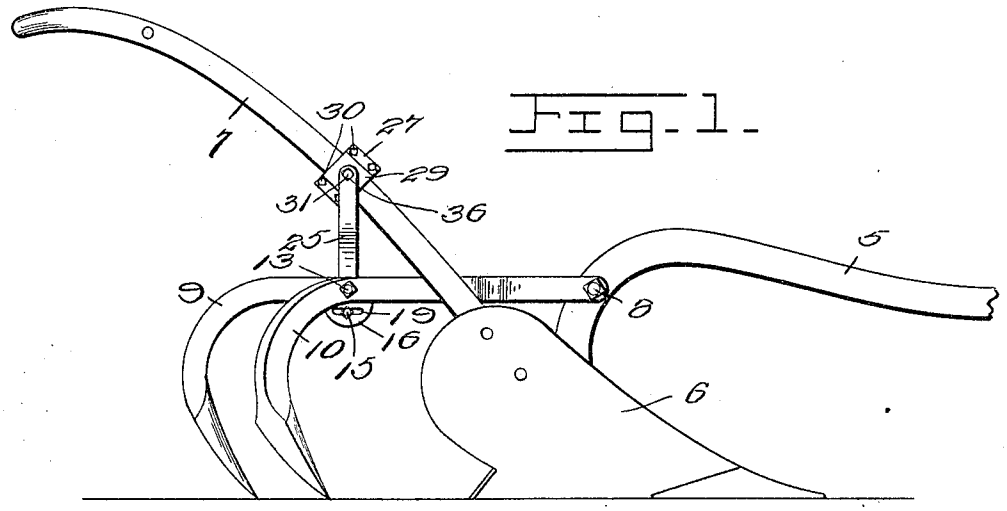

Fig. 1.

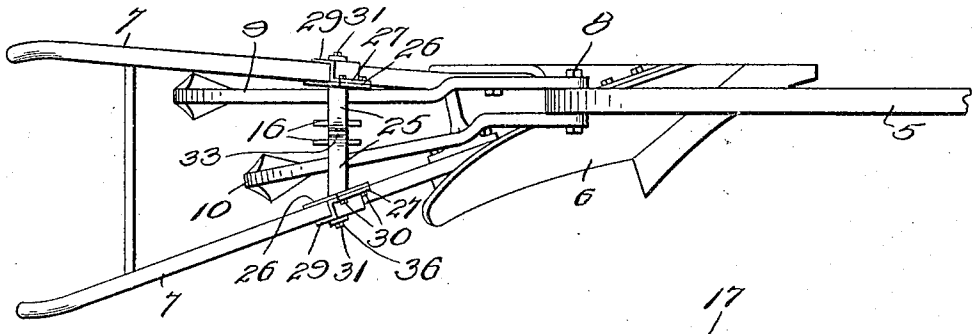

Fig. 2.

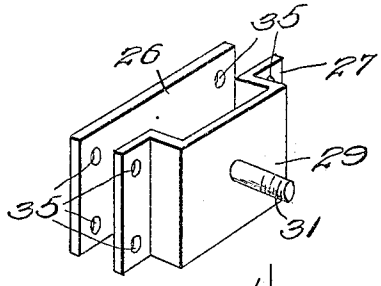

Fig. 4.

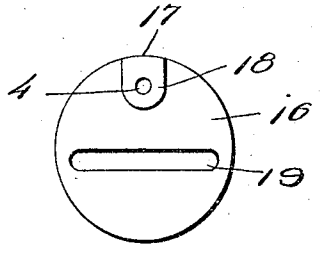

Fig. 5.

Witnesses

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2 SHEETS—SHEET 2.

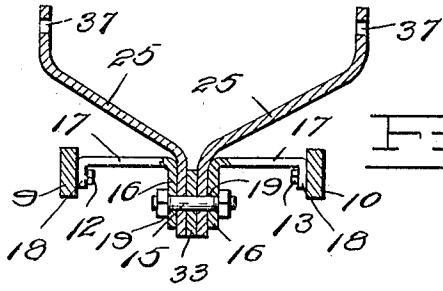

Fig. 6.

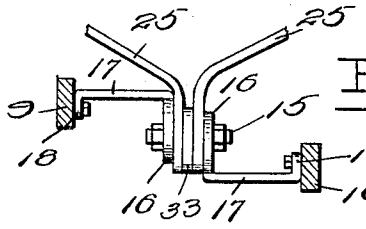

Fig. 7.

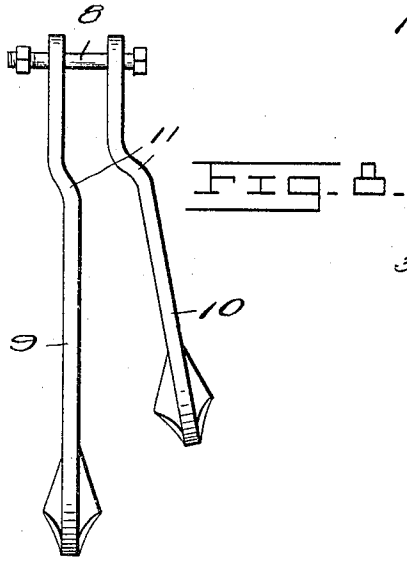

Fig. 8.

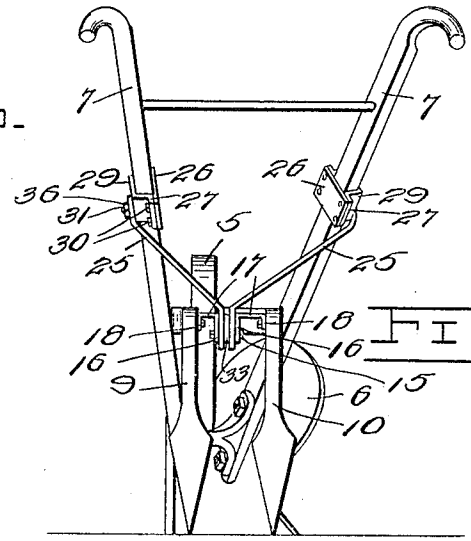

Fig. 5.

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UNITED STATES PATENT OFFICE.

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SUBSOILER-PLOW.

944,095. Specification of Letters Patent. Patented Dec. 21, 1909.

Application filed March 31, 1909. Serial No. 486,953.

To all whom it may concern:

Be it known that I, JAMES M. HODGES, a citizen of the United States, residing at Radford, in the county of Montgomery and State of Virginia, have invented certain new and useful Improvements in Subsoiler-Plows, of which the following is a specification.

This invention relates to certain new and useful improvements in plows.

The object of my invention is, to provide an adjustable attachment for plows, arranged to be secured to the rear of a plow to effectively score and turn the subsoil.

With these and other objects in view the present invention consists in the combination and arrangement of parts as will be hereinafter more fully described and particularly pointed out in the appended claims, it being understood that changes in the specific structure shown and described may be made within the scope of the claims without departing from the spirit of the invention.

In the drawings forming a part of this specification and in which like numerals of reference indicate similar parts in the several views, Figure 1 shows a side view of a plow provided with my subsoiler attachment. Fig. 2 is a top view thereof, Fig. 3 shows a rear end view, Fig. 4 shows an enlarged detached detail of the clamping plates as used in my invention, Fig. 5 discloses an enlarged detached detail of one of the locking disks, Fig. 6 discloses an enlarged detached detail in section showing the hangers and the connecting coupling arms, Fig. 7 is an enlarged detached detail disclosing the coupling arms as adjusted in opposite direction, Fig. 8 discloses an enlarged detached top view of the shovel beams.

A plow in being dragged through the earth in the process of plowing, lifts and turns the earth down to a predetermined distance, the depth of the cut being controlled by the set and adjustment of the plow. The heel of the plow however being flat, the bottom or subsoil of the furrow is packed and polished to such an extent that in effect a crust is formed upon which the plowed soil rests. In certain soils this crust or polished and packed earth stratum, acts as a barrier to the roots of certain plants, preventing their propagation to the desired depth. In my invention, I provide two pointed blades, which are positioned to the rear of the plow and extend below the heel of the same, to a depth insuring the stratum of subsoil being thoroughly cultivated, so that the bed of the furrow is left in a broken comminuted condition.

In the acompanying drawings 5 represents the beam, 6 the moldboard and 7 the handles of a plow of usual construction. Upon the mold side of the plow however the beam has an opening, to receive the drag bolt 8, which supports the forward end of the rearwardly extending shovel beam 9, and the obliquely extending shovel beam 10, the beam 10 being shorter than the beam 9. In order to properly trail behind the share, the beams 9 and 10 are offset, as shown at 11 in Fig. 8. At a suitable point, each shovel beam has an opening to receive a pivot bolt 12 and 13 as shown in Fig. 6. It is quite essential that means be provided, so that these shovels may be accurately adjusted, relative to the lay of the plow. This I provide in the employment of the bolt 15, which pivotally holds the two similar coupling arms 17, 17 each having a locking disk 16 extending at right angles to the arm while the opposite end of each coupling arm ends in a terminal ear 18 also extending at right angles to the arm, and held in parallel relation to the disk as clearly disclosed in Fig. 6. Each disk 16, is provided with a slot 19, and the bolt 15 is held within the slots 19 of these disks. As disclosed in Fig. 5 each slot is positioned to one side of the center of the disk while the opening 4 within the ear 18 is disclosed nearer the peripheral edge at a point upon the opposite side of the center of the disk as clearly disclosed in said figure. The ears 18 of these coupling arms are arranged to be pivotally secured to the shovel beams 9 and 10 by the bolts 13 and 12 as disclosed in Fig. 6.

As disclosed in Fig. 1 each plow handle has secured to it two clamping plates, marked 26 and 27, these plates being provided with bolt openings 35 as shown in Fig. 4 arranged to receive the bolts 30 by means of which these members 26 and 27 are adjustably clamped to the plow handle 7. The plates 27 each have the channel forming offset 29 within which the plow handle 7 is held while the opposite plate 26 is flat. The plates 27 are provided with the extending threaded pins 31 arranged to receive the nuts 36 as clearly shown.

Pivotally held upon the bolts 15 are the two similar hangers 25, these hangers being

curved in opposite outward directions and provided near the upper ends with the pin opening 37 as shown in Fig. 6. The hangers 25 are secured by means of the openings 37 and pins 31 carried by the clamping plates 27, as shown in Fig. 3.

In order to provide a lateral adjustment for the shovel beams 9 and 10, the bolt 15 is provided with a spacing block 33 held below the lower ends of the curved hangers 25 in the manner indicated in Fig. 6.

As disclosed the construction permits the curved hangers 25 being slightly swung back and forth, while the disks may be located to raise or lower the connected shovel beams. The slots 19 permit the disk 16 finding their proper position upon the pivot bolts 15 when these disks are turned in tilting the coupling arms in raising or lowering the shovel beams. A fine adjustment is permitted these shovel beams 9 and 10 within certain limits. The device is further light, simple of construction and readily operated.

And having thus described my said invention, what I claim as new and desire to secure by United States Letters Patent is:—

1. The combination with a plow, of two shovel beams, a pivot pin carried by each beam, two slotted disks, each having an extending coupling arm ending in an ear, each ear being secured to one of said pins, and a bolt within the slots of said disks.

2. The combination with a plow, of two shovel beams, a pivot pin carried by each beam, two slotted disks, each having an extended coupling arm ending in an ear held parallel to the disks secured to the arms, each ear being secured to one of said pins, a bolt within the slot of said disk, and hangers extending from said bolt.

3. The combination with a plow, of a drag bolt secured to said plow, two shovel beams carried by said drag bolt, a pin secured to each shovel beam, two slotted disks each having an extending coupling arm ending in an ear, each ear being secured to one of said pins, a bolt within the slots of said disks, hangers extending from said last mentioned bolt, and means to adjustably secure said hangers to handle of said plow.

4. The combination with a plow, of a drag bolt, two shovel beams secured to said drag bolt, a pin secured to each shovel beam, two slotted disks each having an extending coupling arm ending in an ear, each ear being secured to one of said pins, a bolt within the slot of said disks, a spacing block held upon said bolt between said disks, hangers extending from said bolts, and means to secure said hangers to the handles of said plow.

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

JAMES M. HODGES.

Witnesses:

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SELDEN LONGLEY.