

No. 854,894.

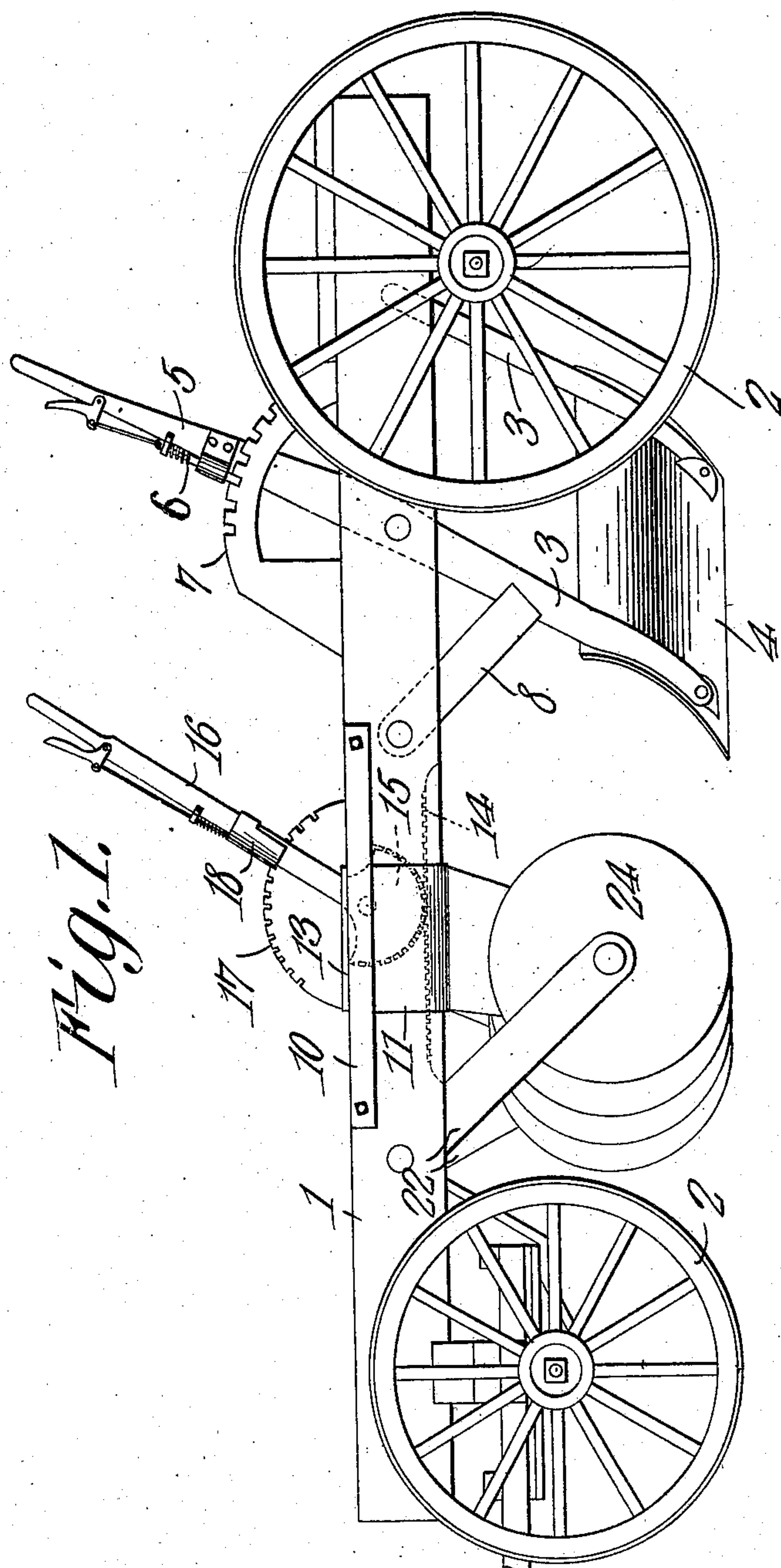
PATENTED MAY 28, 1907.

W. A. JONES.

GRADING MACHINE FOR BUILDING AND REPAIRING ROADS.

APPLICATION FILED FEB. 15, 1907.

3 SHEETS—SHEET 1.



WITNESSES:

Walter A. Jones,

INVENTOR.

*E. J. Stewart*  
*Herbert D. Lawson*

By

*C. A. Snow & Co.*

ATTORNEYS

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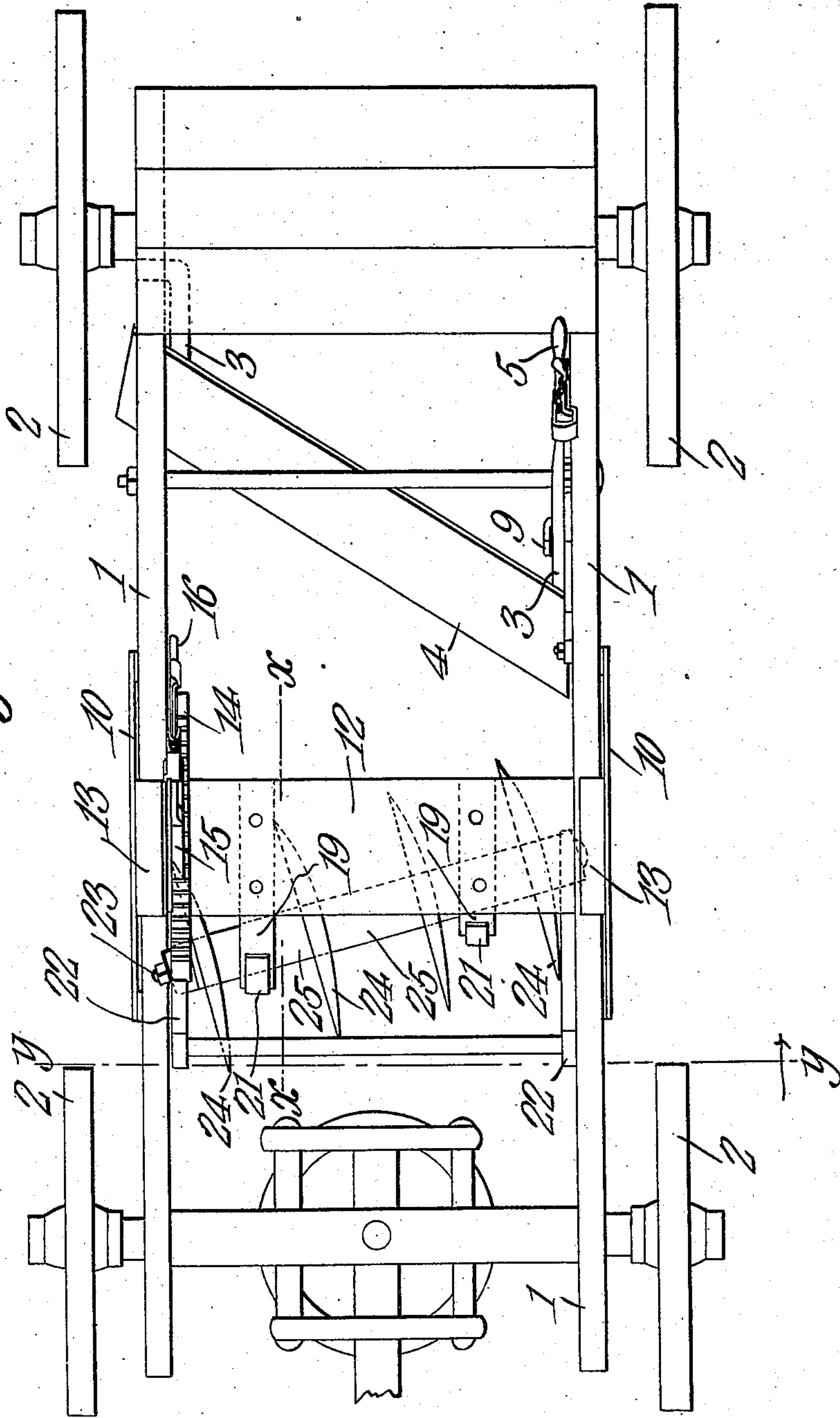
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Fig. 2.



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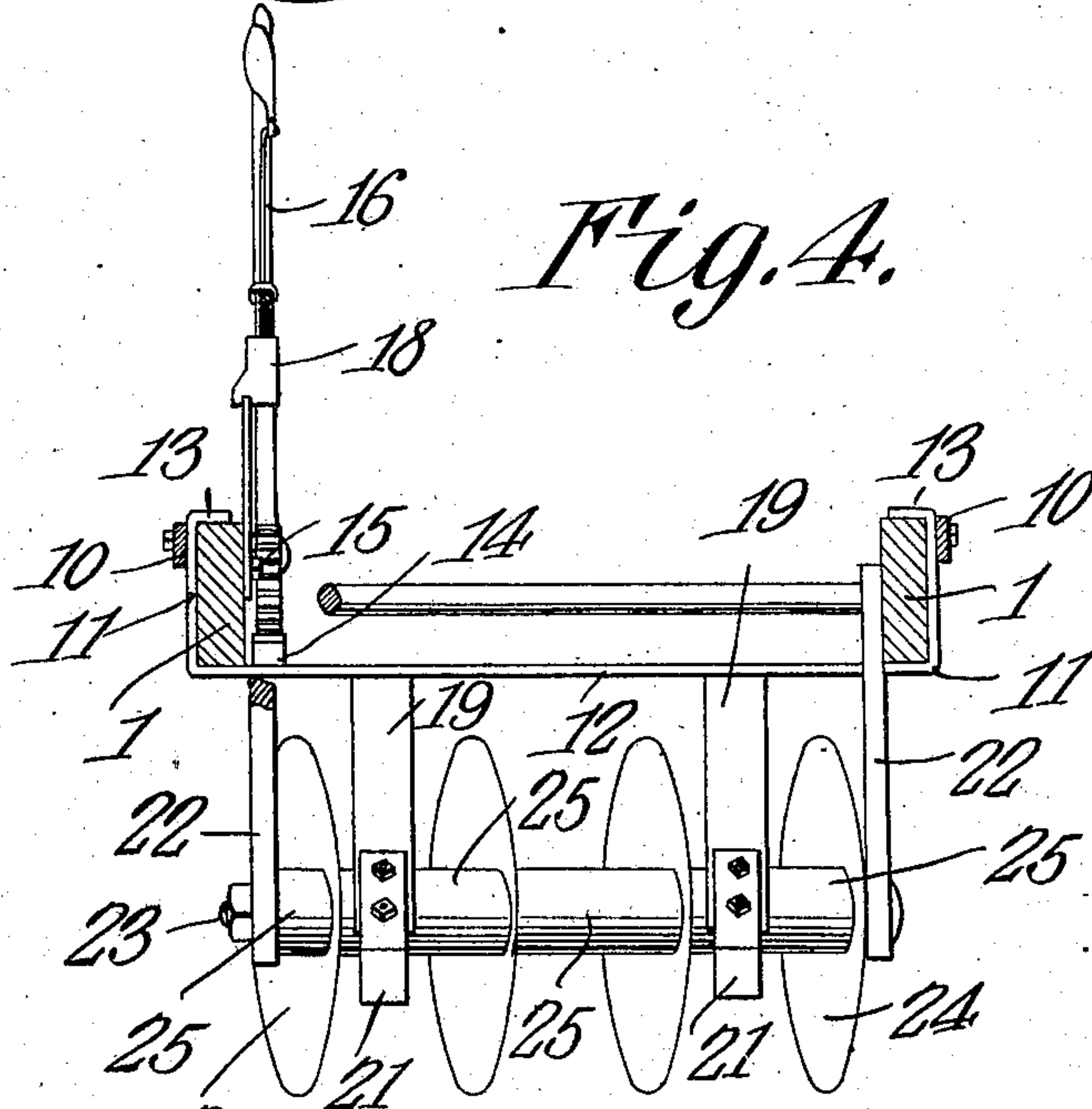
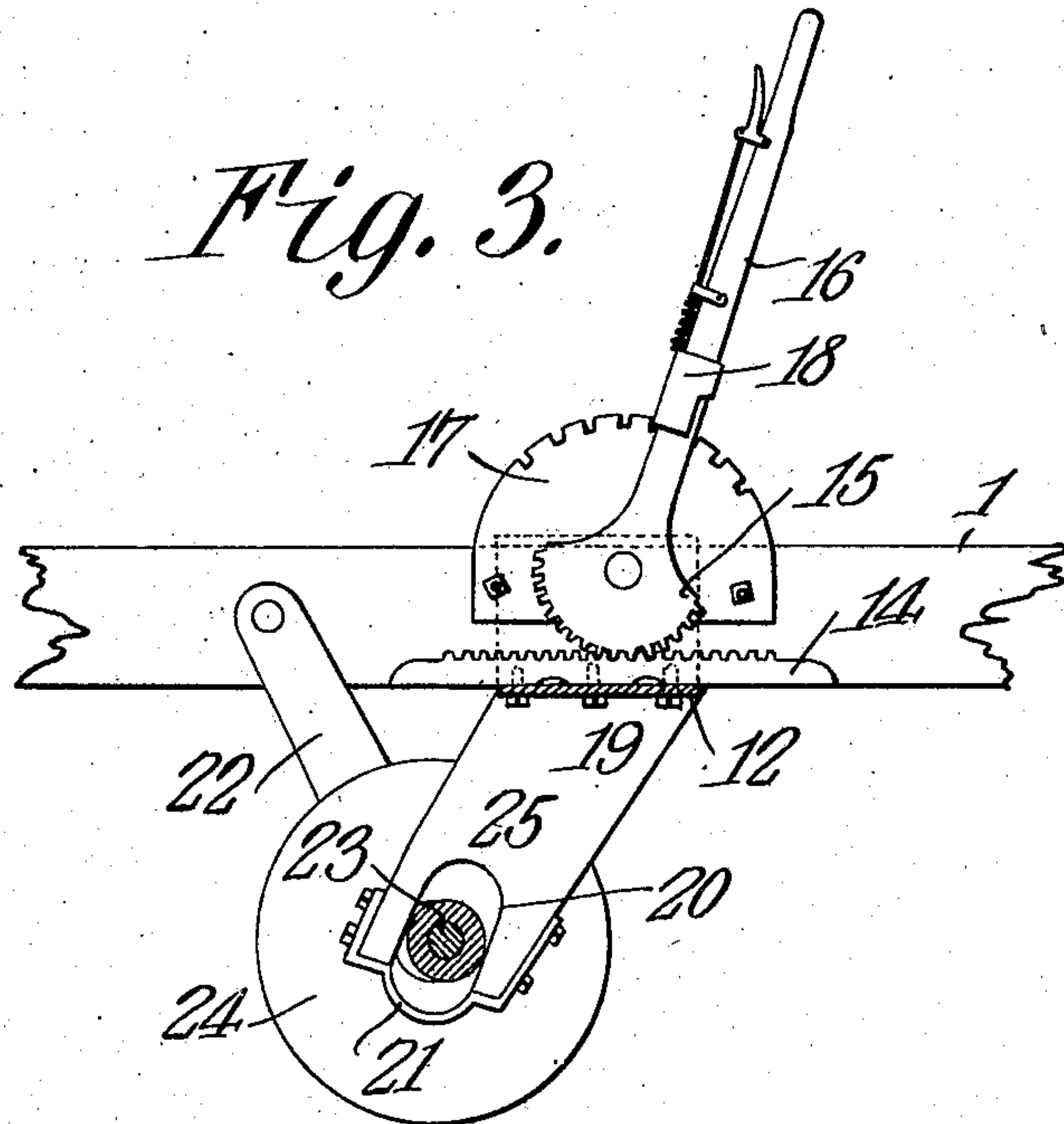
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# UNITED STATES PATENT OFFICE.

WALTER ATLAS JONES, OF COOLIDGE, GEORGIA.

## GRADING-MACHINE FOR BUILDING AND REPAIRING ROADS.

No. 854,894.

Specification of Letters Patent.

Patented May 28, 1907.

Application filed February 15, 1907. Serial No. 357,526.

*To all whom it may concern:*

Be it known that I, WALTER ATLAS JONES, a citizen of the United States, residing at Coolidge, in the county of Thomas and State of Georgia, have invented a new and useful Grading-Machine for Building and Repairing Roads, of which the following is a specification.

This invention relates to grading machines for use in building and repairing roads.

The object of the invention is to provide a novel arrangement of disk plows for loosening the soil.

A still further object is to provide powerful and efficient means adapted to be readily operated manually for directing the disks toward or away from the surface of the ground so as to make the cuts of various desired depths.

With these and other objects in view the invention consists of certain novel features of construction and combinations of parts which will be hereinafter more fully described and pointed out in the claims.

In the accompanying drawings is shown the preferred form of the invention.

In said drawings: Figure 1 is a side elevation of the machine; Fig. 2 is a plan view thereof; Fig. 3 is a section on line  $x-x$ , Fig. 2; and Fig. 4 is a section on line  $y-y$ , Fig. 2.

Referring to the figures by characters of reference, 1 is a frame of suitable proportions mounted on supporting wheels 2 in the usual or any preferred manner and pivotally connected to the sides of the frame adjacent the rear end thereof are depending arms 3 connected to opposite portions of a diagonally arranged scraper blade 4. One of the arms 3 extends upward to form a lever 5 carrying a spring pressed dog 6 adapted to engage a toothed sector 7 so as to lock the scraper in any desired position. A supporting bar 8 is pivotally connected to one side of the frame and has a hooked end 9 adapted to extend under one of the arms 3 so as to hold the blade 4 out of contact with the ground when the same is not in use. Although the scraper has been shown and described it is to be understood that the same constitutes no part of the present invention and that other constructions than that shown may be employed if desired.

Guide strips 10 are secured longitudinally upon the sides of the frame 1 and slidably mounted between these strips and the sides

of the frame are guide plates 11 formed at the ends of a cross strip 12 extending under the frame. These guide plates have inwardly extending flanges 13 at their upper edges which bear upon the sides of the frame 1. The cross strip 12 has a rack bar 14 secured transversely thereon adjacent one end and this rack is engaged by a sector 15 formed at the lower end of a lever 16 which is fulcrumed upon one side of the frame 1. A toothed sector 17 is disposed adjacent the lever and is adapted to be engaged by a spring pressed dog 18 so as to hold the lever in any position to which it may be adjusted. Hangers 19 are rigidly connected to the cross strip 12 and extend downward therefrom preferably at an incline. The lower ends of these hangers are slotted as shown at 20 and are provided with retaining strips 21 which are bolted or otherwise fastened thereto and serve to close the lower ends of the slots.

Arms 22 are pivoted to the sides of the frame 1 and extend downwardly therefrom and journaled within the lower ends of these arms is a shaft 23 which is normally diagonally disposed in relation to the frame 1. Arranged on this shaft is a plurality of disks 24 each of which has a sleeve 25 rotatably mounted on the shaft. These sleeves serve to hold the disks spaced apart desired distances. Shaft 23 and certain of the sleeves thereon are seated within the slots 20 and are designed to work longitudinally of the slots when the arms 22 are swung upon their fulcrums.

It is of course understood that when the parts are disposed as shown in Fig. 3 it becomes impossible for the arms 22 and the shaft thereon to swing because they will be held against movement by the hangers 19. These hangers can only be shifted with the cross strip 12 and said strip is normally locked against movement by means of the dog 18 and the sector 17. When it is desired to swing the disks 24 downward so as to increase the depth of the cut into the soil the lever 16 is swung toward the rear of the machine and as a result the mutilated gear 15 will force the rack bar 14 forward. This movement of the rack bar will cause a corresponding movement of the cross strip 12 and the hangers 19 will press against the rotatable element therein and cause the arms 22 to swing forward and downward thereby carrying the disks 24 therewith. Of course the arms 22 are incapable of moving independ-



ently of the hangers 19 and when the hangers are once locked against movement by means of the sector 17 and dog 18 the disks 24 become fixed in relation to the frame 1. Should it be desired to raise the disks from the ground the movement of the lever 16 is reversed and this will cause the hangers 19 to pull downward on shaft 23 and as a result the arms 22 will be swung upwardly and rearwardly. It will be seen that by providing lever 16, rack bar 14 and hangers 19 a powerful leverage is obtained upon the arms 22 and therefore the disks 24 can be readily forced into the soil and easily raised therefrom. Of course as the disks are arranged diagonally in relation to the frame 1 it is apparent that as they move forward they will cut furrows within the ground and the scraping blade 4 which follows the disks will gather the loosened soil and deflect it laterally from the machine.

Importance is attached to the particular means devised for adjusting the disk plows because of the powerful leverage which is obtained and also because of the compact and durable nature of said mechanism.

What is claimed is:

1. A machine of the character described comprising a portable frame, a plurality of earth engaging devices, pivoted supports therefor, and slidable means for actuating the supports.

2. The combination with a portable frame; of a plurality of earth engaging devices, pivoted supports therefor and suspended from the frame, and slidable means for actuating the supports to raise or lower the earth engaging devices.

3. The combination with a portable frame; of a shaft, earth engaging devices connected thereto, shaft supports pivotally connected to the frame, and slidable means engaging the shaft to swing the supports.

4. The combination with a portable frame; of supporting elements pivotally connected to the frame, a shaft connecting the lower ends of said elements, earth engaging devices mounted thereon, and means slidably mounted upon the frame and loosely engaging the shaft for swinging said shaft and its supporting elements.

5. The combination with a portable frame; of a shaft, soil engaging devices thereon, pivoted supports for said shaft, and a non-yielding slide mounted upon the frame and loosely engaging the shaft.

6. The combination with a portable frame; of a shaft, soil engaging devices thereon, supporting elements pivotally connected to the frame and shaft, a cross strip slidably mounted upon the frame, slotted hangers depending therefrom and loosely engaging the shaft, and means for actuating the strip to swing the supporting elements.

7. The combination with a portable frame; of supporting elements pivotally connected

thereto, a shaft journaled within said elements, a soil engaging device carried by the shaft, a slide slidably mounted upon the frame, manually operated means for actuating the slide, and a hanger rigidly connected to and depending from the slide, said hanger loosely engaging the shaft.

8. The combination with a portable frame; of supporting elements pivotally connected thereto, a diagonally disposed shaft journaled within said elements, a cross strip, guide plates extending therefrom and slidably engaging the frame, guide strips extending over said plates, manually operated means for sliding the cross strip along the frame, and means rigidly connected to and depending from the cross strip for loosely engaging the shaft.

9. The combination with a portable frame, and earth engaging devices suspended therefrom and mounted to oscillate; of a cross strip, guide plates extending therefrom and engaging and slidably mounted on the frame, guide strips extending transversely of the plates, slotted hangers depending from the cross strip and loosely engaging the earth engaging devices, means for sliding the cross strip to adjust the earth engaging devices, and means for locking the cross strip in adjusted position.

10. The combination with a portable frame, and earth engaging devices suspended therefrom and mounted to oscillate; of a cross strip, guide plates extending therefrom and engaging and slidably mounted on the frame, guide strips extending transversely of the plates, slotted hangers depending from the cross strip and loosely engaging the earth engaging devices, a rack bar upon the cross strip, means for actuating said bar to slide the cross strip and adjust the earth engaging devices, and a lock for securing the cross strip in adjusted position.

11. The combination with a portable frame; of supporting elements pivotally connected thereto, a diagonally disposed shaft journaled within said elements, a cross strip, guide plates extending therefrom and slidably engaging the frame, guide strips extending over said plates, manually operated means for sliding the cross strip along the frame, means rigidly connected to and depending from the cross strip for loosely engaging the shaft, and a diagonally disposed scraper adjustably supported from the frame and in rear of the soil engaging devices.

12. The combination with a portable frame; of an adjustable scraper suspended therefrom, a cross strip, guide plates extending therefrom and bearing upon and slidably mounted on the frame, guide strips secured upon the frame and extending across the guide plates, a rack bar upon the cross strip, a gear meshing therewith, an actuating lever extending from the gear, a lock there-

for, slotted hangers rigidly connected to and  
depending from the cross strip, pivoted sup-  
porting elements, a shaft supported thereby  
and disposed within the slots of the hanger,  
5 and an earth engaging device carried by said  
shaft.

In testimony that I claim the foregoing as

my own, I have hereto affixed my signature  
in the presence of two witnesses:

WALTER ATLAS JONES.

Witnesses:

H. JONES,

H. B. NESMITH.