

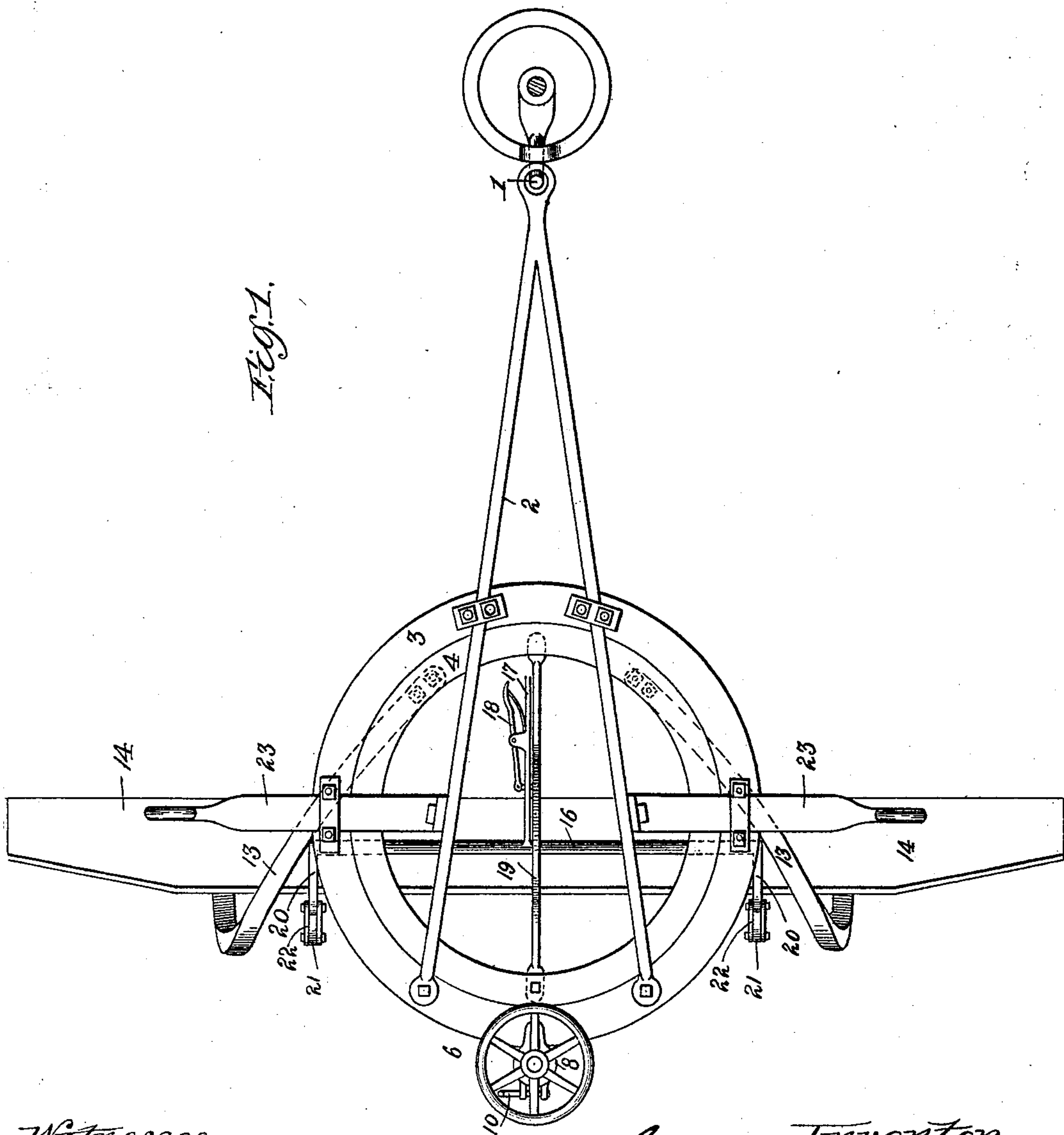
(No Model.)

2 Sheets—Sheet 1.

T. R. McKNIGHT.  
ROAD SCRAPER.

No. 518,269.

Patented Apr. 17, 1894.



Witnesses.

Wm. M. Rheem.

Julia M. Bristol

Inventor.  
Thomas R. McKnight

By

Conrad W. Jackson

Att'y

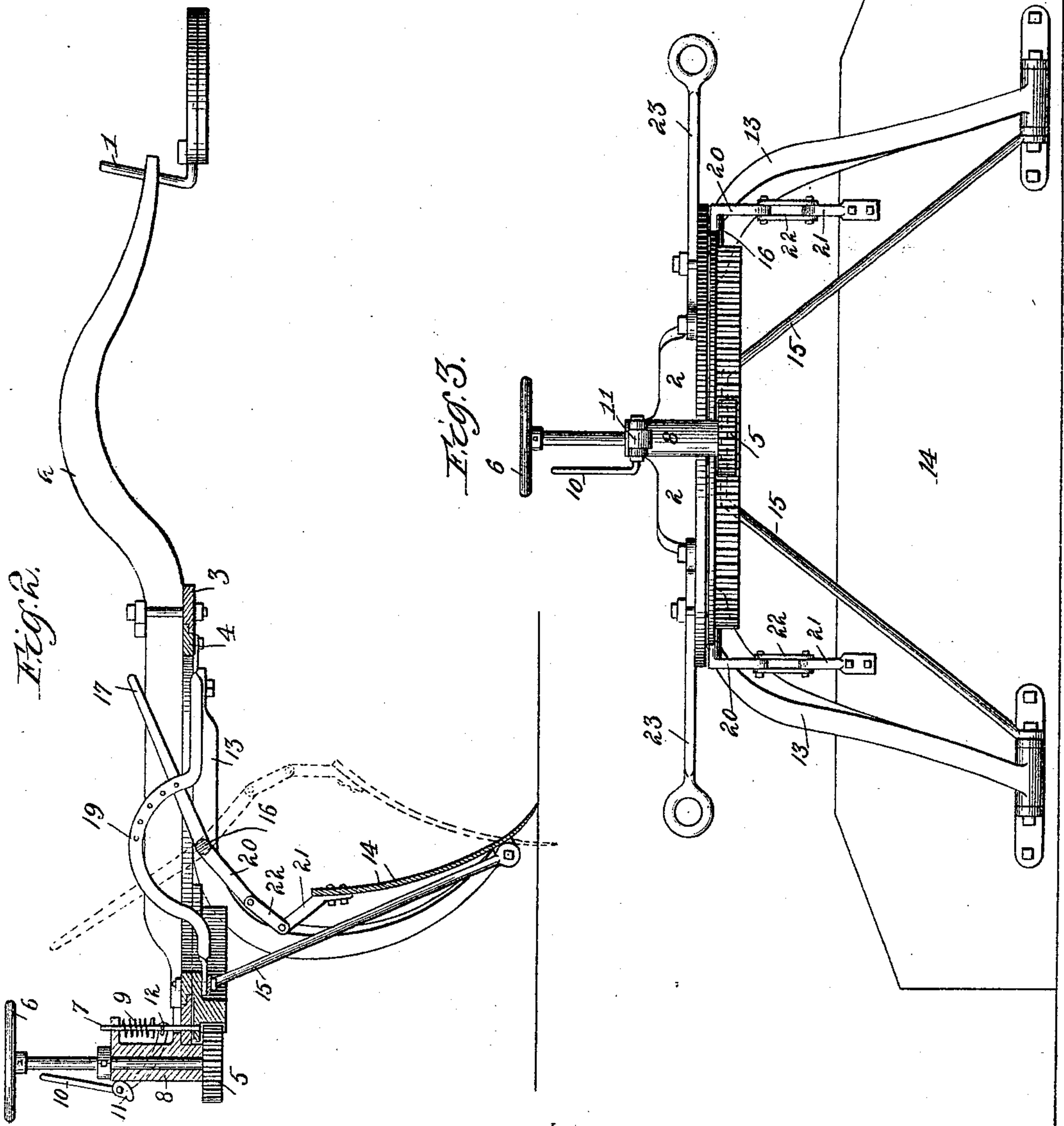
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# UNITED STATES PATENT OFFICE.

THOMAS R. MCKNIGHT, OF AURORA, ILLINOIS, ASSIGNOR TO THE WESTERN  
WHEELED SCRAPER COMPANY, OF ILLINOIS.

## ROAD-SCRAPER.

SPECIFICATION forming part of Letters Patent No. 518,269, dated April 17, 1894.

Application filed March 28, 1893. Serial No. 468,066. (No model.)

*To all whom it may concern:*

Be it known that I, THOMAS R. MCKNIGHT, a citizen of the United States, residing at Aurora, in the county of Kane and State of Illinois, have invented a certain new and useful Improvement in Road-Scrapers, of which the following is a specification, reference being had to the accompanying drawings, in which—

Figure 1 represents a top or plan view of the scraper blade and supporting devices. Fig. 2 is a side view of the same, partially in cross section; and Fig. 3 is a rear elevation of the same.

My invention relates to road-scrapers, and particularly to that class commonly known as direct draft scrapers. In machines of this class the scraper frame, which carries the scraper blade, is suspended under a wheeled carriage. The forward end of the scraper frame is connected to the front axle of the carriage, so that as the scraper progresses the draft will be exerted directly upon the scraper frame and blade.

In machines of this class it has been customary to so construct the frame that it could be adjusted in various ways for the purpose of fitting the scraper for different kinds of work, the usual adjustments being an angular adjustment to the line of draft, a vertical adjustment for the blade, and a lateral adjustment of the scraper frame and blade. In some cases means have also been provided for tilting the blade to change its pitch to adapt it for use with different kinds of soil. In such cases the mechanism for changing the pitch of the blade has been carried by the carriage, and where a lateral adjustment of the scraper frame and blade has also been provided it has been necessary to provide the carriage with suitable devices to permit of the lateral movement of the mechanism for changing the pitch of the blade. This has made the construction of the machine complicated and expensive, and has also been found to be unsatisfactory in many respects.

The object of my present invention is to provide new and improved mechanism for changing the pitch of the blade, which mechanism will be carried by the scraper frame and will be entirely independent of the carriage, so that it will move with the scraper

frame when it is adjusted laterally, and the necessity of fitting up the carriage to permit of such lateral motion be thereby avoided. I attain this object as hereinafter specified and as illustrated in the drawings.

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

In the drawings,—1 indicates a hook of the usual form, which is secured to the front axle of the carriage of a scraper, in the usual manner.

2 indicates the scraper frame, and 3 and 4 indicate rings which form a part of the scraper-frame. The outer circular ring 3 is rigidly secured to the scraper-frame, and the inner ring 4 is carried by the outer ring and is adapted to rotate thereon. The ring 4 is provided on its under side with cog teeth, as best shown in Fig. 3.

5 indicates a cogged pinion, which is mounted upon the fixed ring 3 in the usual manner, and adapted to be rotated by the hand wheel 6 so as to rotate the inner ring.

7 indicates a pin mounted on brackets on the journal 8, which supports the cogged wheel 5, and provided with a spring 9. The pin 7 is in the usual form, and is adapted to pass through openings in the outer ring into holes in the inner revolving ring, so as to lock the inner ring in the desired position.

10 indicates a lever which is pivoted upon the journal 8.

11 indicates a cam which is rigidly secured to the lower end of the lever, and adapted by bearing against the surface of the journal 8 to lock the said lever in position.

12 indicates a rock arm, secured at its upper end to said lever so as to rock therewith, and at its forward end to the pin 7 in such a way that when the lever 10 is depressed the arm 12 is raised, and with it the pin 7. The lever and pin are of the usual form, and it is not necessary to further describe the same.

13 indicates curved arms for supporting the scraper blade, secured by their forward ends to the under surface of the inner ring 4, as best shown in Fig. 1.

14 indicates the scraper blade, which is pivoted near its lower edge to the lower ends of the curved arms 13.

15 indicates braces, which are pivoted at



their lower ends near the lower edge of the scraper blade 14, upon the same pivot as that by which the blade is pivoted to the arms 13. The upper ends of the braces 15 are secured to the under surface of the inner ring 4, as best shown in Fig. 2.

16 indicates a rock shaft, which is journaled upon the scraper frame through the medium of bearings upon the under surface of the inner ring 4, and is pivotally connected with the scraper blade as will hereinafter appear.

17 indicates a lever rigidly attached to the rock shaft 16 near the center thereof. The lever 17 is provided with a hand lever 18, which is provided with the usual spring and dog for engaging with a segmental bar 19 to lock the lever 17 in any desired position. The segmental bar 19 is secured by its front and rear ends to the inner ring 4.

20 indicates rock arms upon each end of the rock shaft 16.

21 indicates arms secured to the scraper blade near the top edge upon each side of the center of said scraper blade.

22 indicates links, which are pivoted to the lower ends of the rock arms 20 and to the upper ends of the arms 21.

23 indicates cross bars, which are secured to the supporting frame of the scraper, and provided with rings upon their outer ends by which the supporting frame of the scraper is suspended from the framework of the machine.

The operation of my device is as follows: When the lever 17 is pulled upward and backward the rock shaft 16 is rotated with it, and by means of the rock arms 20, the links 22, and the arms 21, the upper portion of the scraper blade is carried forward in the position indicated by the dotted lines in Fig. 2. The lever 17 may be adjusted at any desired point so as to vary the pitch of the scraper blade. It will be seen that by this construction the operating lever 17 and the locking device are carried upon the scraper frame 2 and are entirely independent of the carriage of the scraper, so that the scraper frame may be shifted laterally by the usual mechanism without affecting the mechanism for changing the pitch of the blade, and as the lever 17 and locking device lie below the bed of the carriage, it is not necessary to provide ways or other apparatus for permitting such lateral motion of the blade and scraper frame.

The adaptability of the machine for work is greatly increased by my improved construction, and it is also much less cumbersome and less expensive.

I do not deem it necessary to show the scraper carriage, as the construction of such carriage is well known.

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

1. In a direct draft road scraper, the combination with a scraper frame adapted to be

suspended under a scraper carriage, and a scraper blade carried by the scraper frame, of a rock shaft mounted on said scraper frame and connected with the scraper blade, and a lever for rocking the said shaft to adjust the pitch of the scraper blade, substantially as described.

2. The combination with a scraper frame, and a scraper blade pivotally connected therewith, of a rock shaft journaled on the scraper frame and pivotally connected with the scraper blade, and a lever for turning the rock shaft to vary the pitch of the scraper blade, substantially as described.

3. The combination with a scraper frame, of a rock-shaft 16 journaled in said scraper frame and having arms 20, a scraper blade pivotally supported by said scraper frame, links connecting said arms 20 with said scraper blade, and a lever 17 secured to said rock-shaft, whereby the pitch of said blade may be varied by operating said lever, substantially as described.

4. The combination with a scraper frame, of a rock-shaft 16 journaled in said scraper frame and having arms 20, a scraper blade pivotally supported by said scraper frame, links connecting said arms 20 with said scraper blade, a lever 17 secured to said rock-shaft, whereby the pitch of said blade may be varied by operating said lever, and a locking device carried by said scraper frame, whereby said lever may be locked in different positions, substantially as described.

5. In a scraper blade, the combination with a frame 2, an outer ring 3 secured to said frame, an inner ring 4 carried by said outer ring and adapted to be rotated therein, of arms 13, secured to said inner ring 4, a scraper blade 14 pivotally mounted on said arms 13, a rock shaft 16 journaled on said ring 4, and having arms 20, said arms 20 being pivotally connected with said scraper blade, and a lever 17 secured to said rock shaft, whereby by the movement of said lever the angle of said scraper blade with the ground may be adjusted, substantially as described.

6. In a scraper, the combination with a frame 2, an outer ring 3 secured to said frame, and an inner ring 4, carried by said outer ring and adapted to be rotated thereon, of arms 13 secured to said inner ring 4, a scraper blade 14 pivotally mounted on said arms 13, a rock shaft 16 journaled on said ring 4 and having arms 20, links 22 pivoted to said arms 20 and to said scraper blade, a lever 17 secured to said rock shaft, whereby by the movement of said lever the angle of said scraper blade with the ground may be adjusted, and mechanism for locking said lever whereby said scraper blade may be locked at the desired angle, substantially as described.

THOMAS R. McKNIGHT.

Witnesses:

CHAS. C. PECK,  
C. B. RUKGABER.