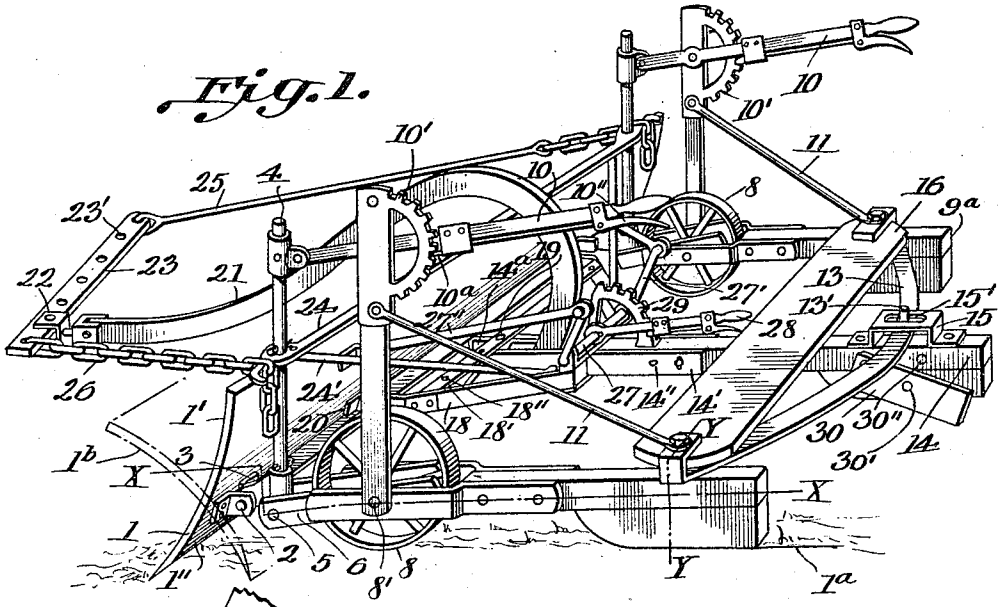
W. S. WALKER.

ROAD DRAG, GRADER, AND SCRAPER COMBINED.

APPLICATION FILED JULY 31, 1914.

1,210,735. Patented Jan. 2, 1917.

Fig. 1.



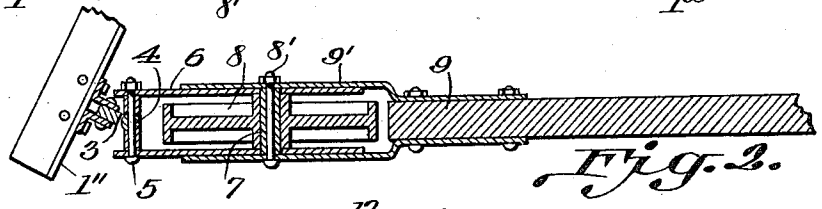


Fig. 2.

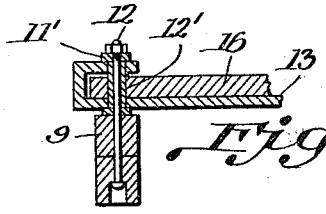


Fig. 3.

Fig. 4.

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WALTER S. WALKER, OF HELENA, MISSOURI.

ROAD DRAG, GRADER, AND SCRAPER COMBINED.

1,210,735. Specification of Letters Patent. Patented Jan. 2, 1917.

Application filed July 31, 1914. Serial No. 854,416.

To all whom it may concern:

Be it known that I, WALTER S. WALKER, a citizen of the United States, residing at Helena, in the county of Andrew and State of Missouri, have invented certain new and useful Improvements in Road Drags, Graders, and Scrapers Combined, of which the following is a specification, reference being had therein to the accompanying drawing.

My invention relates to improvements in implements which are used for ditching, grading, surfacing and generally improving the condition of dirt roads, and also for forming ditches wherever needed, such as in low, flat land, and for surfacing and ditch-ground for preparing the same for irrigation.

Further objects are to so construct an implement of this character that by its use, earth may either be moved from the edge, to the middle of the road, or vice versa, as desired, and be adjusted for so doing with the utmost ease and facility; also to provide ready means, whereby the blade may be lifted from the ground, and also may be adjusted at any angle of inclination, for moving said earth, in the process of grading, or for scraping, leveling and floating the surface of the ground.

Still further objects are, to so construct said implement, that it shall be simple, substantial, durable, light of weight, and comparatively cheap in cost of manufacture, and also be light of draft.

I attain these objects by the mechanism illustrated in the accompanying drawing, in which: —

Figure 1 is a view, in perspective, of the implement. Fig. 2 is an enlarged horizontal section of an outer runner, on the line X X seen in Fig. 1, looking downward. Fig. 3 is an enlarged section of a running board pivot, cut transversely through one of the outer runners, on the line Y Y, seen in Fig. 1. Fig. 4 is a top plan of the hounds and of the central runner, all of the parts thereabove being broken away to avoid obscurity.

Referring to Fig. 1, blade 1 is preferably formed of steel and is composed of the moldboard 1′ and share 1″, secured together along their juncture, in any substantial manner, known to the plow maker's art. Each end of said blade is pivotally connected at 2, with pivot block 3, which is rotatably mounted on the lower end portion of standard 4, through the lower end of which, bolt 5 pivotally secures the same in the front end of blade carrier 6. The rear ends of said carrier are pivotally mounted on hollow axle 7, on which latter, transporting wheel 8 is rotatably mounted, as seen in Fig. 2. Said axle is secured in place by bolt 8′, which is passed therethrough and through fork sides 9′, secured on the front end portion of outer runner 9, for forming an extension for said runner, the rear end of which is adapted to be dragged upon the ground. Referring to Fig. 1, with the upper end of standard 4, the front end of lift lever 10 is pivotally connected. The central portion of said lever is pivotally mounted on ratchet segment 10′, secured on the upper end of upright 11. Said lift lever is provided with latch-lever 10″, for operating latch-bolt 10^a, which is in detachable engagement with said ratchet segment. The lower end of said upright is secured on bolt 8′, while its upper end is secured by brace 11′, the lower end of which is secured on pivot bolt 12.

Outer runner 9^a is connected with the opposite end of blade 1, and since said runner and its connected parts are like the described runner 9, and its described parts and connections, the same are not described, nor designated. The ends of space bar 13, rest upon the rear ends of outer runners 9 and 9^a, while the center of said bar rests upon the rear end of central runner 14. Stud 13′ extends upward from bar 13, through slot 15′ formed through guide clevis 15, secured on runner 14. Foot board 16 has its ends supported on the ends of bar 13, which latter are returned bent over the ends of said board. Pivot sleeve 12′, (see Fig. 3,) passes loosely through said return bent end of bar 13 and the end of board 16, with the apertured end of brace 11′ resting on said sleeve, which latter and said sleeve are secured in place by bolt 12. The opposite end of said bar and of said board are secured in the same manner on the rear end of runner 9^a.

Referring to Figs. 1 and 4, central runner 14 has the metal runner extension 14′ pivotally connected therewith at 14″. Said extension is pivotally connected at 17, with hounds 18 and has slot 14^a formed through its front end portion. Bolt 19 is passed through said slot and through the desired ones of holes 18″, formed through hound

bars 18′, (but one of said bars being shown in Fig. 4,) for adjustably securing extension 14′ and its runner 14, at any desired angle of inclination to blade 1; which latter is pivotally secured to the front ends of said hounds, by hound securing means 20. The rear end of goose necked beam 21 is rigidly secured in the central portion of extension 14′, and is used for turning the latter and all of the described runners to said desired angle of inclination.

Referring to Fig. 1, connected with the front end of beam 21, is the swiveled clevis 22, holding double-tree 23, provided with a plurality of apertures 23′, for connection of draft devices therewith, said devices being not shown. Standards 4 are spaced and braced by brace rod 24, in the ends of which the central portions of said standards are rotatably mounted, for bracing the same, said rod is braced by braces 24′ rigidly secured thereto, at their upper ends while the lower ends of said braces are secured on the rear ends of hounds 18, for both laterally and longitudinally bracing said rod and standards. Auxiliary securing means 25 and 26 have their front ends respectively secured to the ends of double-tree 23 and their rear ends adjustably secured on the hooked extremities of rod 24, for assisting bolt 19 in holding beam 21 and the therewith connected parts at any desired angle of inclination to blade 1. Rock-shaft 27 is rotatably mounted on the rear ends of hounds 18, and has tilting cranks 27′ formed on the ends thereof. Said cranks are pivotally connected with the upper edge portion of blade 1, by rods 27″ for tilting blade 1 to any desired angle of inclination to the ground 1^a; one of said desired angles being indicated by dotted lines 1^b. Said rock-shaft is set at any desired position, by tilting lever 28, provided with ratchet holding means 29, secured on the rear ends of hounds 18. Plate 30 is pivotally secured on runner 14, and is adjusted as to height by bolt 30′, placed either as shown or through aperture 30″.

In operation, the driver hitches the motive power, not shown, (which is generally draft animals,) to double-tree 23, removes bolt 19, (see Fig. 4,) and by the use of said animals, draws beam 21 toward the right or toward the left, until the desired direction and angle of inclination of said beam to blade 1 is reached. The driver then sees to it that slot 14^a is in register with the desired ones of apertures 18″, and inserts said bolt therein. He then secures the ends of auxiliary securing means 25 and 26, so that the same are taut, holding double-tree 23 in the position shown. Said driver then steps upon foot board 16, grasps tilting lever 28, and thereby adjusts the angle of inclination of blade 1 to the ground. While said blade is in the position shown, the described implement is adapted to scrape and move earth, and if tilted to the position indicated by dotted lines 1^b, the same is adapted to level and compress the surface of soft or muddy ground, in the process of what is commonly termed floating. By the use of levers 10, said driver adjusts said blade as to depth of same in the ground, after which said draft animals are started, and such scraping and moving of earth as may be desired is accomplished. When said driver desires to fill depressions in the surface of said ground, he tilts said blade from the position shown to the position indicated by dotted lines 1^b, upon which said earth is thereby deposited and compressed in said depression. For transporting said implement, blade 1 is raised above the surface of the ground, by the use of levers 10, upon which the weight of the parts that are in front of wheels 8, to a considerable extent counterbalance on said wheels, the weight of the rearwardly extending parts, thereby rendering the same very light of draft. Plate 30 at all times cuts into the ground, while the machine is in use, and prevents lateral movement of the rear portion of the implement. While in transportation, bolt 30′ is removed, said plate is raised at its rear end, and said bolt is inserted through said plate and through aperture 30″, for holding said plate above the ground.

Having fully described my invention, what I claim as new and desire to secure by Letters Patent is:—

1. In a road drag, grader and scraper, combined, a blade adapted to scrape earth from and along the surface of said road; two outer runners and a central runner the rear ends of which are adapted to be dragged upon said surface; pivotal connecting means whereby said blade is pivotally connected with said outer runners for adjustment of their angle to each other in a horizontal plane; a pair of hounds for said central runner; pivotal connecting means whereby said hounds and central runner are connected for similar adjustment of the same; hound connecting means whereby the front ends of said hounds are connected with said blade; a draft beam the rear end of which is secured in the front end portion of said central runner; securing means whereby said central runner is secured in its said adjustments, rod and chain auxiliary securing means whereby the front end of said draft beam is secured at any desired angle of inclination to said blade; and spacing means for the rear ends of said runners.

2. A blade for scraping the ground; an outer runner for each end of said blade; a runner fork rigidly secured on the front end of each one of said runners; a wheel in each of said forks; wheel mounting means on which said wheels are mounted; a blade carrier for

each end of said blade the rear ends of said carriers being rotatably mounted on said wheel mounting means; a standard for each of said carriers the lower ends of which are pivotally connected with the front ends of said carriers; universal jointing means whereby the ends of said blade are universally jointed to the lower end portions of said standards; an upright rigidly secured on each one of said outer runners; lifting means on the upper ends of each of said uprights; and securing means for said lifting means whereby the same is detachably secured in various adjusted positions.

3. A scraper blade; a pair of outer runners; a central runner a pair of hounds for the front end of said central runner; a standard for each of said outer runners; a brace rod having its ends rotatably mounted on the central portions of said standards; hound braces whereby the same are rigidly connected with said brace rod; hound connecting means whereby the front ends of said hounds are pivotally connected with said blade; universal jointing means whereby said blade is universally jointed to said standards; blade oscillating means mounted on said hounds whereby said blade is oscillated; and holding means whereby said oscillating means is detachably held for tilting and detachably holding said blade at various angles of inclination to the ground.

4. A blade adapted to scrape the surface of the ground; a pair of outer runners; lifting means on the forward ends of said outer runners for lifting said blade; universal jointing means whereby said blade is universally jointed on the lower portions of said lifting means; a space bar; a foot board the ends of which rest upon the ends of said space bar; pivotal securing means whereby the ends of said bar and board are pivotally secured on the rear ends of said runners; a pair of hounds; hound connecting means whereby the front ends of said hounds are pivotally connected with said blade; a central runner extending backward from said hounds and being pivotally connected therewith; and guiding means whereby the rear end of said central runner is slidably guided at a point beneath said space bar.

In testimony whereof I affix my signature in the presence of a witness.

WALTER S. WALKER.

Witness:
JOHN J. HINTON.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."