Oct. 27, 1925.

1,559,309

J. M. BROOKS

TRACTOR HARROW

Filed Sept. 22, 1924

3 Sheets-Sheet 1

Fig. 1.

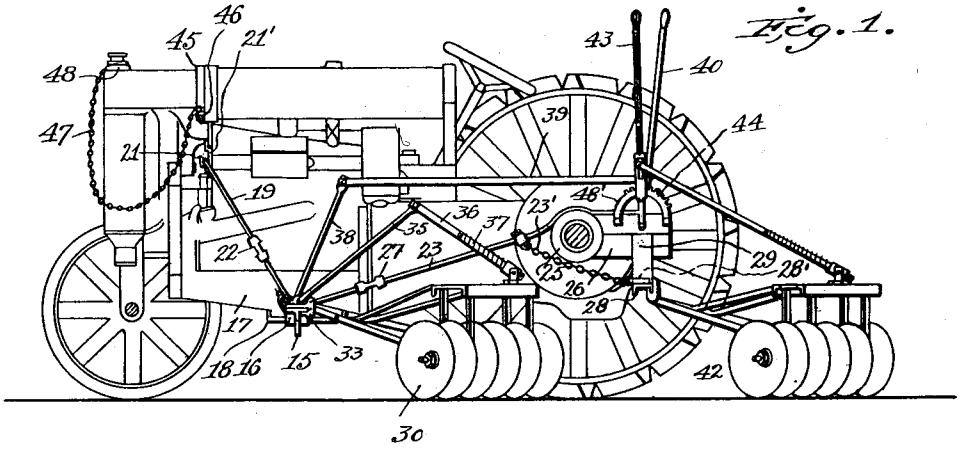
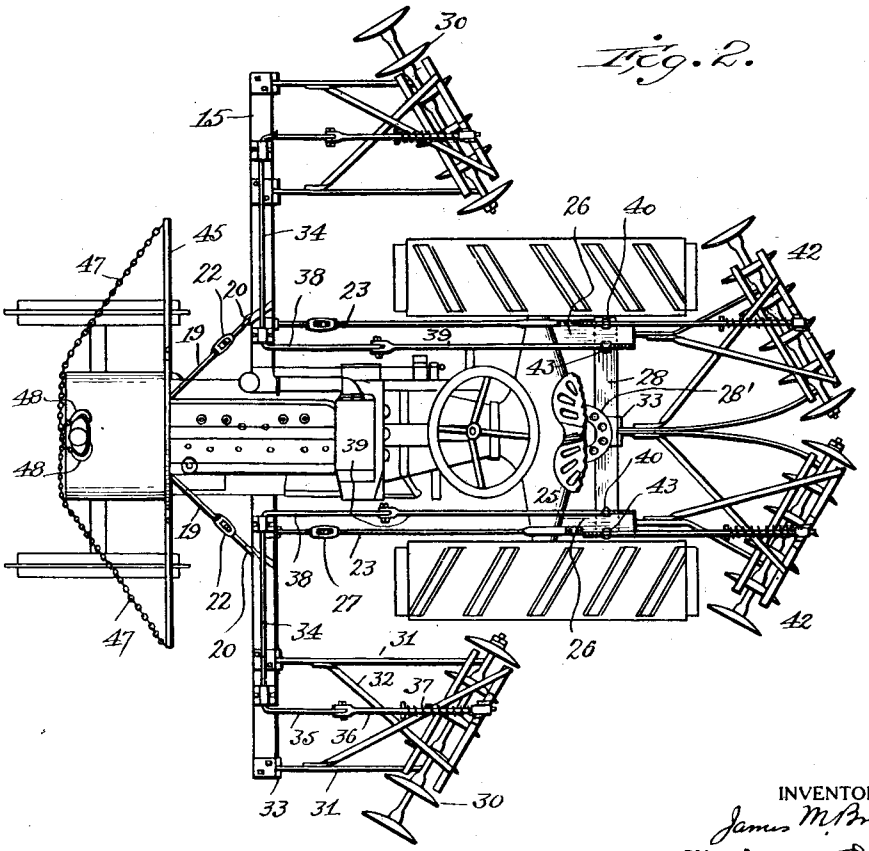


Fig. 2.



INVENTOR

James M. Brooks

BY Davis & Davis

ATTORNEYS

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Fig. 12.

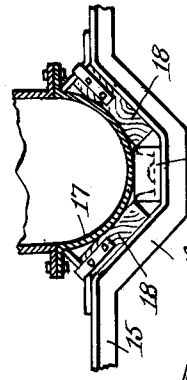


Fig. 3.

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Fig. 4.

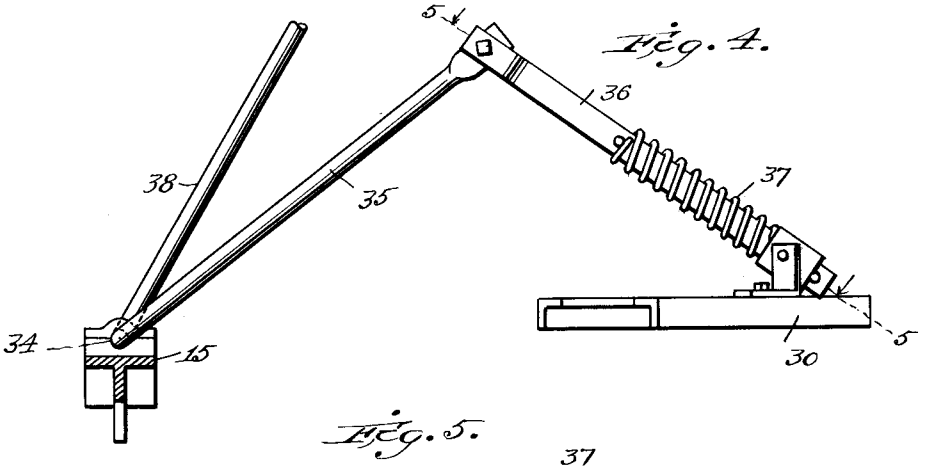


Fig. 5.

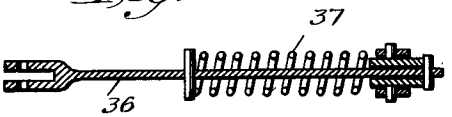


Fig. 6.

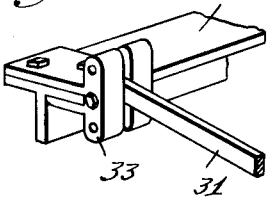


Fig. 7.

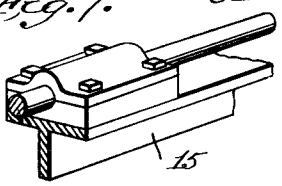


Fig. 8.

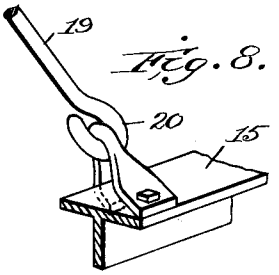


Fig. 9.

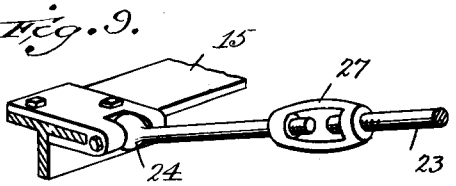


Fig. 10.

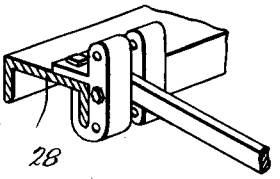
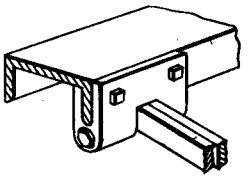


Fig. 11.



INVENTOR
James M. Brooks
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Patented Oct. 27, 1925. 1,559,309

UNITED STATES PATENT OFFICE.

JAMES M. BROOKS, OF ATLANTA, GEORGIA.

TRACTOR HARROW.

Application filed September 22, 1924. Serial No. 739,116.

To all whom it may concern:

Be it known that I, JAMES M. BROOKS, a citizen of the United States of America, and a resident of Atlanta, county of Fulton, and State of Georgia, have invented certain new and useful Improvements in Tractor Harrows, of which the following is a full and clear specification.

The object of this invention is to provide a simple disk gang harrow attachment for tractors, the construction being such that the attachment may be readily connected to or disconnected from the tractor, as more fully hereinafter set forth.

In the drawings—

Fig. 1 is a side elevation showing my invention attached to a tractor of conventional design;

Fig. 2 is a plan view of the same;

Fig. 3 is a perspective view of one side of the attachment disconnected from the tractor;

Figs. 4, 5, 6, 7, 8, 9, 10, 11 and 12 are views of details hereinafter described.

In the drawings annexed, 15 designates a steel T-beam bowed downwardly at 16, at a point midway its ends, to form a saddle for engagement with the under side of the usual crank-case 17 of a tractor. This saddle portion substantially fits the curvature of the crank-case, but suitable filler-pieces, such as 18, may be employed to give the beam a broad and solid bearing against the under side of the crank case, the beam being held up against the crank-case by means hereinafter set forth. All the other parts of the attachment are connected to this beam so as to be removable therewith.

The beam 15 is caused to hug the under side of the crank-case 17 through the medium of a bowed suspension rod 19 whose opposite ends are connected by means of eyes 20 with the beam at opposite sides of the tractor and whose intermediate upwardly-extending bowed portion engages in a clip or hook 21 attached to the front end of the engine structure, a pair of turnbuckles 22 being employed for tensioning this bowed rod to thus pull the beam 15 upwardly against the under side of the crank-casing. In addition to the foregoing bowed tie-rod, the beam is further locked to the under side of the tractor by means of a pair of tie-rods 23, one arranged at either side of the tractor. The forward ends of these tie-rods 23 are pivotally attached to the beam 15 at 24 and their rear ends curve over and rest upon the top sides of the axle-housing 25, the rear extremities being fastened to the top side of a block 26 whose forward end is rounded to fit snugly and hard against the rear face of the axle-housing, the curvature of this forward end of the block, together with a binding-chain 23′ passing on the under side of the axle-housing, serving to lock the block against upward movement with respect to the axle-housing when a turnbuckle 27 in each of the rods 23 is tightened. The two blocks 26 are rigidly mounted on a transverse beam 28 by means of upstanding brackets 29 secured to opposite sides of the blocks 26. It will be observed that the tie-rods 23 respectively lie between the wheels of the tractor and the body of the tractor and that the transverse connecting beam 28 extends between the wheels of the tractor and engage the under side of the usual tractor draw-bar 28′ in a plane below the axle. It will be observed that by loosening the turnbuckles 22 and 27 and the chain 23′ sufficiently to permit the tie-bow 19 to be lifted off the hook 21 and the blocks 26 to be lifted off the axle-housing, the entire attachment may be disconnected from the tractor.

A gang 30 of disk-harrows is attached to the beam 15 at each side of the tractor, the beam being long enough to position these gangs at points outside of the tractor-wheels and preferably the gangs being arranged at an oblique angle to the line of draft. Each gang is swung to the beam by means of a pair of draft-rods 31 suitably braced by cross-braces 32, the draft-rods being pivotally connected to the beam by means of shackles 33 having a series of vertical holes for vertical adjustment purposes. For lifting and lowering each gang 30, I mount on the beam 15 a rock-shaft 34, one end 35 of which is bent upwardly and rearwardly and is pivotally connected to a link 36 whose rear end is pivotally and slidably connected to the disk-gang, a coil-spring 37, surrounding the link 36, being employed to give resiliency to the connection between the gang and the link. The inner end of the rock-

shaft 34 is provided with an upwardly-extending arm 38 whose upper end is pivotally connected by means of a link 39 to a hand-lever 40 pivotally mounted on the aforesaid block 26, whereby the gang may be raised and lowered from the driver's seat of the tractor, the usual toothed segment and pawl 41 being employed to lock the lever in its adjusted position.

I attach to the rear cross-beam 28 two additional disk-harrow gangs 42 which are pivotally connected to the beam 28 in a manner similar to the gangs 30. These rear gangs are raised and lowered by means of a lever 43 mounted on the blocks 26 and connected to the gangs in the same way as the arms 35 are connected to the gangs 30, so that these rear gangs may be raised and lowered independently of each other and the forward gangs. A suitable locking-segment 44 is employed to hold the gangs in their adjusted position.

Clip or hook 21 is preferably secured to and against a bearing-plate 21′ formed with a shoulder 21″ adapted to bear against the edge of the flange of the water-connection to the engine, and a seat 21‴ which is adapted to rest upon the time-gear casing, the lower end of the hook 21 being supported on the seat 21‴. As thus constructed, the hook and its bearing-plate can be supported in position without bolts or other similar fastening means.

The gangs of disks 30 are mounted obliquely with respect to the supporting-frames which extend at right-angles from the beam 15 or in parallel relation to the longitudinal axis of the tractor, and the gang on one side is inclined oppositely to the gang on the other side. As shown in Fig. 2 of the drawings, the gangs are inclined forwardly and outwardly with the disks arranged to throw the furrows outwardly from the tractor, and, should it be desired to throw the furrows inwardly, these side gangs can be exchanged for each other by removing the pivotal connections of the frame, thereby facing the disks inwardly. In this manner, the earth can be thrown toward or away from trees, fences or other objects located in the field. As also shown in the drawings, two disks are mounted beyond the frame at the outside, and it will be understood that the end disks can be removed from their supporting-shafts and placed on the opposite ends if necessary.

At the front end of the tractor, at a point between the water and fuel tanks, is mounted a supporting-bar 45 which is bow-shaped at its center portion and is secured around the rear end of the water-tank by a fastening-bar 46 which is passed through an opening between the water connection and the end of the fuel-tank and underlies bar 45 beyond the sides of the water-tank and is secured thereto in any suitable manner. At the ends of the bar 45 are connected chains 47, the free ends of which are provided with suitable hooks 48 that are adapted to be engaged to a portion of the pivoted side disk-frames to suspend the disks out of engagement with the ground when desired. As shown in the drawings, these chains 47 are in inoperative position with their hooks engaged around the filling-cap of the radiator, to support their free ends when not in use.

Locking segments 44 are preferably provided with a toothless portion 48′ which will permit the rear-gangs of disks to rise further upwardly when they are held raised from the ground by the pawl of the lever 43 engaging the last tooth.

At times, it is desirable to permit a free up-and-down movement to each of the rear gangs; to accomplish this, a lock-ring 49 is pivoted to the upper end of the pawl-rod of lever 43 in a position to be thrown over the end of said lever and thus lock the pawl out of engagement with the lock-segment 44.

From the above description, it will be seen that a plow soil-working attachment for tractors is provided which is capable of being mounted on the tractor without altering its structure in any manner or attaching any part with bolts or like fastening means. The parts of the attachment which are connected to the tractor are secured in position by clamping and trussing only, the supporting and pulling beam of the side-implements being rigidly tensioned in position by means of adjustable connections extending forwardly and rearwardly, and the pulling-bar of the rear-implements being positively retained in position beneath and against the underside of the rigid draw-bar of the tractor by the tension of the tie-rods 23 together with the binding-chain 23′.

What I claim is:

1. A plow attachment for tractors embodying a beam provided with a saddle midway its length, means for detachably clamping this beam up against the crank-case of the tractor, and soil-working means carried by said beam.

2. A plow attachment for tractors embodying a beam provided with a saddle midway its length, means for detachably clamping this beam up against the crank-case of the tractor, and soil-working means carried by said beam, said means for attaching the beam to the tractor embodying extensible devices for suspending the beam on the forward part of the tractor.

3. A soil-working attachment for tractors embodying a transverse front beam adapted to pass under and engage the under side of the tractor at a point between the front and rear wheels, soil-working implements at-

tached to this beam at each side of the tractor, a rear beam lying between the rear wheels of the tractor and carrying members adapted to abut against the rear face of the rear-axle-housing, soil-working implements attached to this rear beam, means mounted on said members for raising and lowering both the front and the rear soil-working implements, and means for detachably attaching both said beams to the tractor embodying a pair of rods lying between the rear tractor wheels and the tractor body.

4. A soil-working attachment for tractors embodying a front transverse beam adapted to pass under and engage the under side of the tractor at a point between the front and rear wheels, soil-working implements carried by the projecting portions of these beams, a rear transverse beam adapted to lie between the rear, traction wheels of the tractor and provided with members adapted to abut the rear side of the rear-axle-housing, these members being concaved at their abutting faces to thereby fit the curvature of the axle-housing, soil-working implements attached to said rear cross-beam, and means for detachably attaching both beams to the tractor embodying extensible rods connecting said beams and resting upon the upper side of the rear-axle-housing.

5. In combination with a tractor, a soil-working attachment consisting of a single beam to which the soil-working implements are connected and which extends outwardly on opposite sides beyond the tractor-wheels, and means for detachably attaching said beam to the under side of the crank-case of the tractor at a point between the front and rear wheels of the tractor, said means embodying suspending rods attached to said beam and extending upwardly and attached at their upper ends to the tractor body and also a pair of rods connected to said beam at their forward ends and to the rear-axle-housing at their rear ends.

6. In combination with a tractor, a transverse beam to which the soil-working implements are attached, means for attaching said beam to the tractor embodying a bowed tie-rod attached to the beam at opposite sides of the tractor and engaging the front upper part of the engine structure, each branch of this tie-rod being provided with a turnbuckle.

7. In combination with a tractor, a rear beam to which the soil-working implements are attached, and means for attaching the beam to the tractor embodying rearwardly-extending turnbuckle tie-rods whose forward ends are anchored and whose rear ends lie upon the axle-housing, means being provided at these rear ends of the tie-rods for locking engagement with the axle-housing.

8. A soil-working attachment for tractors embodying a front transverse beam adapted to engage the tractor body at a point between the front and rear wheels thereof and project laterally beyond the tractor, soil-working implements carried by these projecting portions of the beam, a rear beam adapted to lie behind the rear-axle-housing of the tractor, soil-working implements attached to this rear beam, and means for detachably attaching said beams to the tractor embodying extensible suspension rods connected with the front beam and extending forwardly and upwardly and attached at their upper ends to the tractor body, and a pair of extensible rods lying between the rear tractor wheels and the body of the tractor, the forward ends of these rods being attached to the front beam and their rear ends being connected to the rear beam and arranged to rest upon the rear-axle-housing.

9. In combination with a tractor, a soil-working attachment consisting of a front transverse beam and means for detachably holding it up against the bottom of the crank-case of the tractor, a rear transverse beam arranged between the wheels of the tractor, means including rods connecting the two beams, means for detachably holding this rear transverse beam up against a part of the tractor at the rear of the axle thereof, and soil-working implements carried by each of said beams.

10. The combination with a tractor of a soil-working attachment consisting of a front beam detachably held up against the tractor body at a point between the front and rear wheels, soil-working implements carried by this beam at each side of the tractor, a transverse rear beam arranged between the rear wheels, means for detachably holding this beam against the rear axle housing, said means embodying adjustable tie-rods extending to the aforesaid front beam, and members connecting the rear beam to said tie-rods, these members extending underneath the axle housing, and soil-working implements attached to the aforesaid rear beam.

11. The combination with a tractor of a soil-working attachment consisting of a front beam detachably held up against the tractor body at a point between the front and rear wheels, a rear beam lying back of the rear axle housing, between the traction wheels, and attached to said rear axle housing, soil-working implements carried by each of said beams, and means for detachably holding the beams in position, this latter means embodying devices for jointly clamping the front beam up against the body of the tractor and the rear beam against the rear face of the axle housing.

12. The combination with a tractor of a soil-working attachment consisting of a front beam detachably held up against the tractor body at a point between the front

and rear wheels, a rear beam lying back of the rear axle housing, between the traction wheels, and attached to said rear axle housing, soil-working implements carried by each of said beams, and means for detachably holding the beams in position, this latter means embodying extensible suspending rods at the front of the tractor and additional extensible connecting rods supported on said rear axle housing and arranged to jointly hold the two beams in position.

In testimony whereof I hereunto affix my signature.

JAMES M. BROOKS.