G. J. ZIEGLER.

TRACTOR.

APPLICATION FILED FEB. 25, 1920.

1,424,128.

Patented July 25, 1922.

2 SHEETS—SHEET 1.

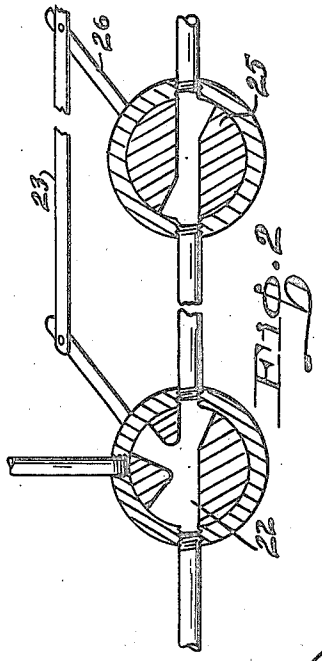


Fig. 2

Fig. 1

INVENTOR

G. J. Ziegler

By Hazard & Miller

ATTYS

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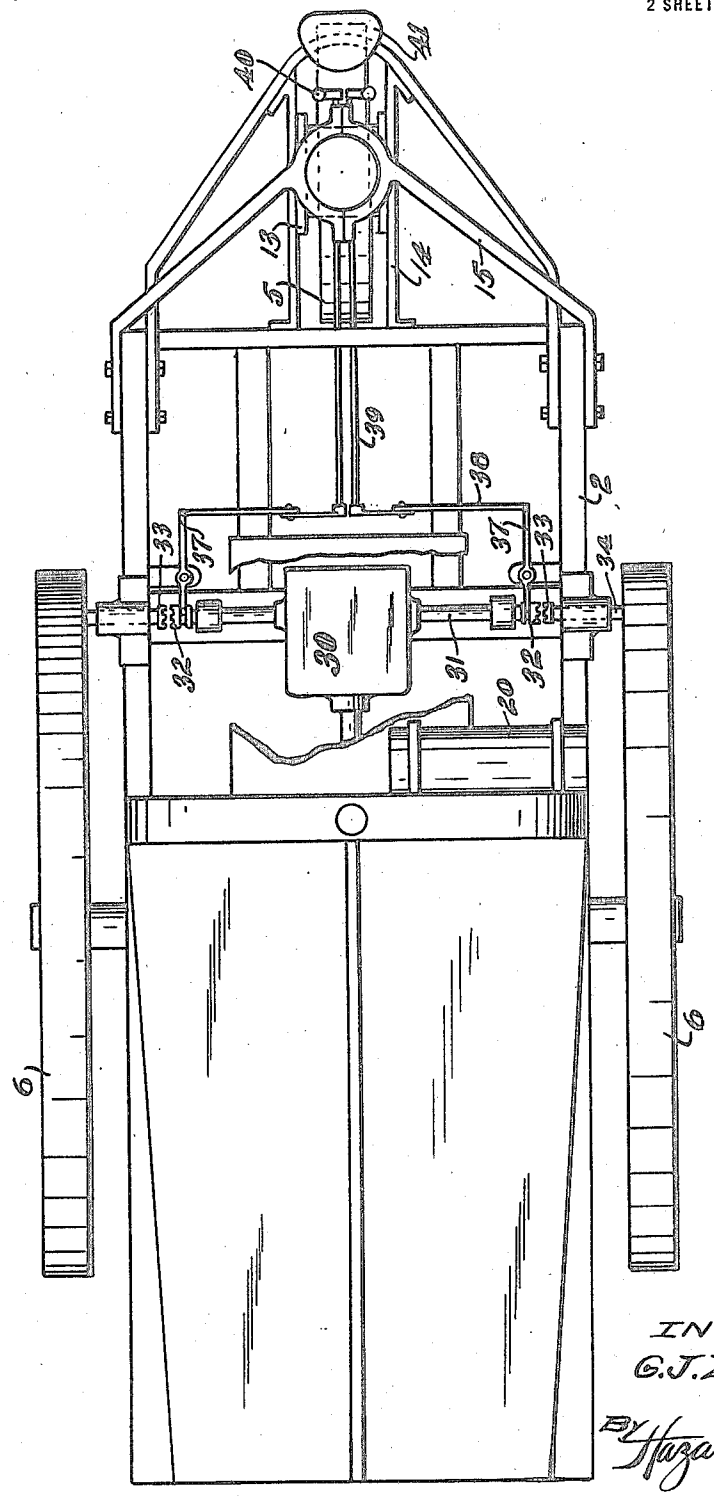


Fig. 5

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UNITED STATES PATENT OFFICE.

GEORGE J. ZIEGLER, OF LOS ANGELES, CALIFORNIA, ASSIGNOR OF ONE-THIRD TO SHERWIN GIBBONS, ONE-THIRD TO ERNEST STEWART, AND ONE-THIRD TO FREDERICK C. BEUTEL, ALL OF LOS ANGELES, CALIFORNIA.

TRACTOR.

1,424,128. Specification of Letters Patent. Patented July 25, 1922.

Application filed February 25, 1920. Serial No. 361,347.

To all whom it may concern:

Be it known that I, GEORGE J. ZIEGLER, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented new and useful Improvements in Tractors, of which the following is a specification.

This invention relates to tractors and has for its object to provide an improved tractor and plow, and a further object is to provide means for facilitating the adjustment of the plows by a peculiar organization of the frame of the tractor on its supporting wheels, and further to provide a hydraulic means for varying the elevation of the plows as to the plane over which the wheels of the vehicle operate, and the invention consists of the construction, the combination and in details and arrangements of the parts, an embodiment of which invention is illustrated in the accompanying drawings and described and claimed herein.

Figure 1 is a side elevation of the improved tractor plow.

Fig. 2 is a detail of a valve for controlling the operation of the elevating or adjusting device.

Fig. 3 is a plan view of the tractor plow with parts being broken away.

The improved tractor plow comprises a generally rectangular frame 2 on the front end of which there is provided a power plant or outfit 3 that may be covered with any suitable hood 4 as is usual in internal combustion power outfits such as here shown. The frame 2 has at its rear end a centrally arranged wheel 5 and intermediate of its ends the frame is supported on main traction wheels 6—6 on a suitable axle or bearing part 7.

One of the features of the present invention is to place the supporting wheels 6—6 at such position longitudinally of the frame that the weight of the organization is almost balanced on the wheels so that the framework can rock or tilt on a transverse axis as the axis of the shaft or journal parts 7—7. This is to facilitate the elevation or lowering of the plows P a suitable number of which may be appropriately secured by any suitable means to the bottom portion of the frame 2, preferably, in a position between the front wheels 6—6 and the rear wheel 5.

To secure the elevation or lowering of the plows, an efficient, simple, easily operable and reliable adjusting means is shown as comprising a hydraulic device which, in this case, consists of a piston 10 in the form of a post extending upwardly from the yoke 11 in which the rear wheel is journaled at 12, the post being non-rotatively guided between side guides 13 that may be provided adjacent extension frame parts 14 arranged on the rear of the main frame 2.

Above this extension there is provided a hanger or supporting frame portion 15 having a cylinder 16 through the base of and in which the piston part 10 of the device is slidable. The piston is shown as slightly less in diameter than the diameter of the cylinder 16 and oil or other fluid under pressure may be admitted to the cylinder 10 by a supply pipe 17 extending toward the front of the apparatus and having a suitable connection with a pump 18. The pump has an intake pipe 19 extended to a reservoir 20 into which leads a return pipe 21. This return pipe is connected to the main hydraulic supply pipe 17 by a three-way valve 22 which when turned in one direction by the actuating link train 23 will so set ports as to open communication between the pipe 17 and the pipe 24 leading from the pump and will cut off communication to the return pipe 21 of the reservoir, and, therefore, when the motor is operating the pump 18 can be utilized to force liquid under pressure into the hydraulic device with the result that the reaction of the fluid on the piston 10 causes the cylinder and the frame structure to swing on the axle or axis 7 so as to tilt said frame and elevate its rear end, and thus lift the plows either to a suitable horizontal plane under the soil surface or entirely above said surface.

When it is desired to lower the plows and the rear frame structure, the valve 22 is thrown so that its ports will be set to connect the pipe 17 to the return pipe 21 and so connect the pipe 24 from the pump with the return pipe 21, so that pressure will be relieved from the hydraulic elevating mechanism and the fluid from the pump 18 will be diverted into the tank 21. If the pump is continuously operating with the engine of the power plant then there is simply a circulation of the fluid from the reservoir 20 through pipe 19 to the pump 18, thence

through pipe 24 to the valve 22 and return pipe 21 without producing pressure in the cylinder 16.

In order to lock the hydraulic device so as to maintain the cylinder 16 at any desired elevation with relation to the piston 10, a supplemental lock valve 25 is provided between the valve 22 and the hydraulic device, this valve having a connection 26 with the operating link train 23 so that the valves can be turned in unison.

Any suitable transmission mechanism may be utilized for transmitting the power from the motor 3 to the traction wheels 6, and in this present case a transmission gear 30 is connected to the engine shaft, and from this transmission gear extends a jack shaft 31 transversely across the machine, and on this shaft there is provided independent clutches 32 each connected by a clutch jaw 33 to a shaft section 34, one for each wheel 6.

On the ends of the shafts 34 are secured pinions 35 engaging internal gears 36 provided on the traction wheels 6. The clutches 32 each have a respective lever 37 connected by links 38 to rock shafts 39 which extend rearwardly and are provided with levers 40 disposed adjacent to the driver's seat 41 at the rear end of the machine.

From this it will be seen that either of the main wheels 6 can be locked to the driving or jack shaft 31 and the other wheel remain idle so that the tractor may be turned with facility on either wheel as a pivot and both of the wheels may be locked to the jack shaft 31 when it is desired to drive straight ahead.

Various changes may be made without departing from the spirit of the invention as claimed.

What is claimed is:

1. A tractor comprising, in combination, a frame supported intermediately of its length on a wheeled axle upon which it is tiltable, the parts thereon so constructed and arranged to render the tilting facile; an agricultural implement carried by the frame to the rear of the wheeled axle, a jacking device at the rear end of the frame for tilting the frame upon its axle, said jacking device including fluid pressure means, and means on the tractor frame for preventing swerving of said jacking device.

2. A tractor comprising, in combination, a frame supported intermediately of its length on a wheeled axle upon which it is tiltable, the parts thereon so constructed and arranged to render the tilting facile; an agricultural implement carried by the frame to the rear of the wheeled axle, a jacking device at the rear end of the frame for tilting the frame upon its axle, which jacking device includes a jack post with a ground wheel arranged on its lower end; and means mounted on the tractor frame for preventing swerving of the said wheel.

3. A tractor comprising, in combination, a substantially rectangular frame with side wheels arranged intermediately the length of the frame; the frame tiltable vertically about the axis of the wheels so as to raise and lower agricultural implements that are attached to the frame to the rear of the axis of said wheels; a trailing, wheeled device mounted on the rear portion of the frame; fluid pressure actuated means in combination with the trailing wheeled device for accomplishing the angular adjustment or tilting of the frame on its axle, and means mounted on the tractor frame for preventing swerving of said trailing wheeled device.

4. The combination in a tractor, of ground wheels, a frame mounted on the wheels and tiltable about an axis intermediate its length, the weight of the superstructure being approximately balanced with respect to the axis to facilitate the vertical angular adjustment of the frame, a fluid pressure means arranged at the rear end of the frame and including a ground engaging wheel for tilting the frame upon its axis, and means mounted on the tractor frame for preventing swerving of said ground engaging wheel.

5. The combination in a tractor, of ground wheels, a frame mounted on the wheels and tiltable about an axis intermediate its length, the weight of the superstructure being approximately balanced with respect to the axis to facilitate the vertical angular adjustment of the frame; means for angularly adjusting the frame including fluid pressure actuated means, a jack post and a ground wheel having reactive relation with a part of of the wheel supporting means of the vehicle, and means mounted on the tractor frame for preventing swerving of said frame adjusting means.

6. The combination in a tractor, of ground wheels, a frame mounted on the wheels and tiltable about an axis intermediate its length, the weight of the superstructure being approximately balanced with respect to the axis to facilitate the vertical angular adjustment of the frame; means for angularly adjusting the frame including fluid pressure actuated means, a jack post and ground wheel having reactive relation with a part of the wheel supporting means of the vehicle; means mounted on the tractor frame for preventing swerving of said frame adjusting means; and a pump operative by the power plant of the tractor for supplying fluid under pressure to said fluid pressure actuated means.

7. A tractor comprising, in combination, a main frame, a set of wheels on which the frame is mounted intermediately between its ends so as to be tiltable about the axis of the wheels, a trailing wheel adapted for relative vertical adjustment as to the frame,

mounted on the tractor frame for preventing swerving of said trailing wheel, fluid pressure actuated means for effecting the adjustment between the trailing wheel and the frame, and agricultural implements carried by the frame between the first mentioned set of wheels and said trailing wheel.

8. In a tractor, a wheel carrying axle, a frame mounted thereupon and adapted to tilt vertically, an agricultural implement supported from the frame to the rear of said axle, a vertically movable trailing wheel for supporting the frame to the rear of said agricultural implement, means on the tractor frame for preventing swerving of said trailing wheel, fluid pressure means for effecting a downward movement of said trailing wheel to elevate the rear portion of the frame, means actuated by the power plant of the tractor for supplying fluid under pressure to the operating means of said trailing wheel and means associated with said fluid pressure supplying means for locking the trailing wheel in its vertically adjusted position.

In testimony whereof I have signed my name to this specification.

GEORGE J. ZIEGLER.