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AUTOMATIC STABILIZER FOR TRACTORS

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Fig. 1.

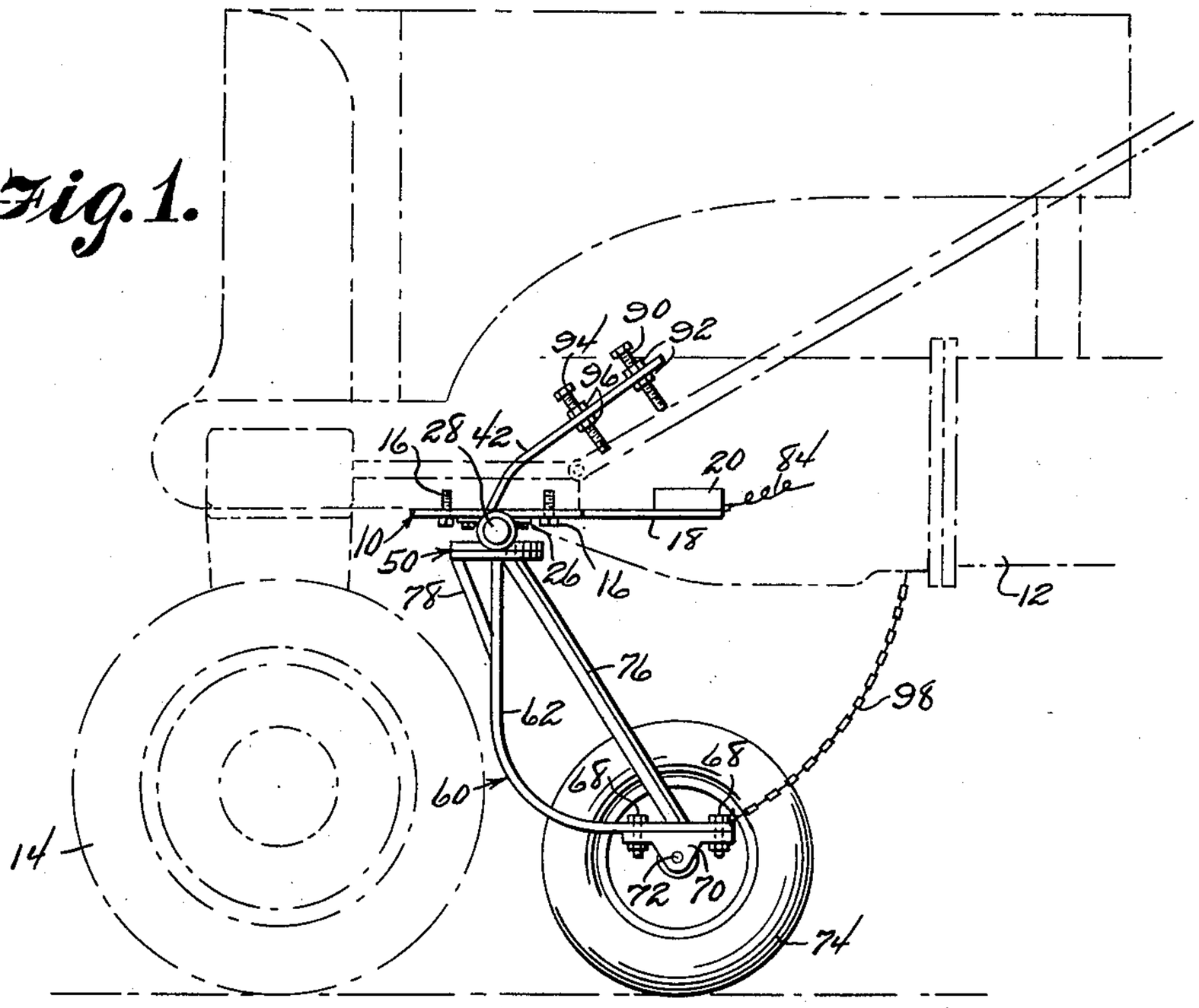

Fig. 2.

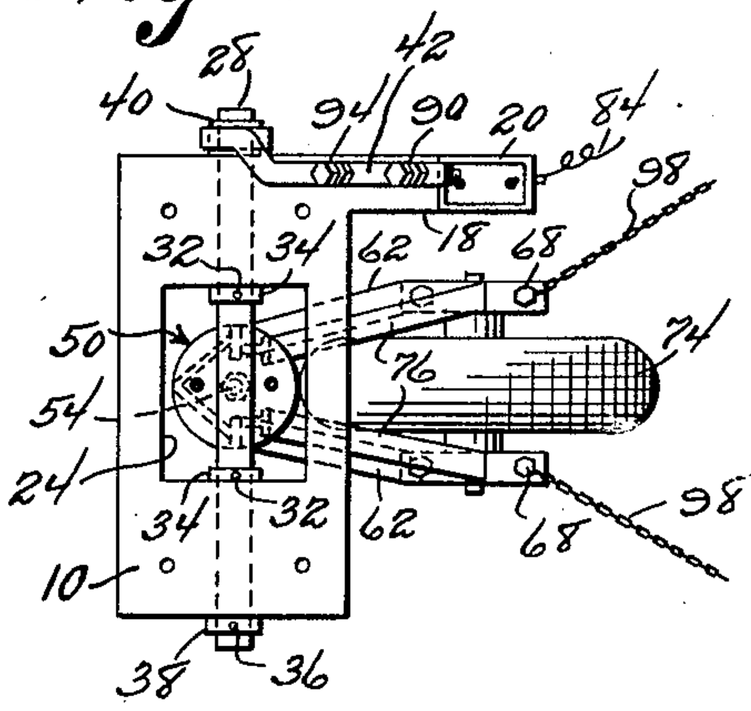

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Fig. 3.

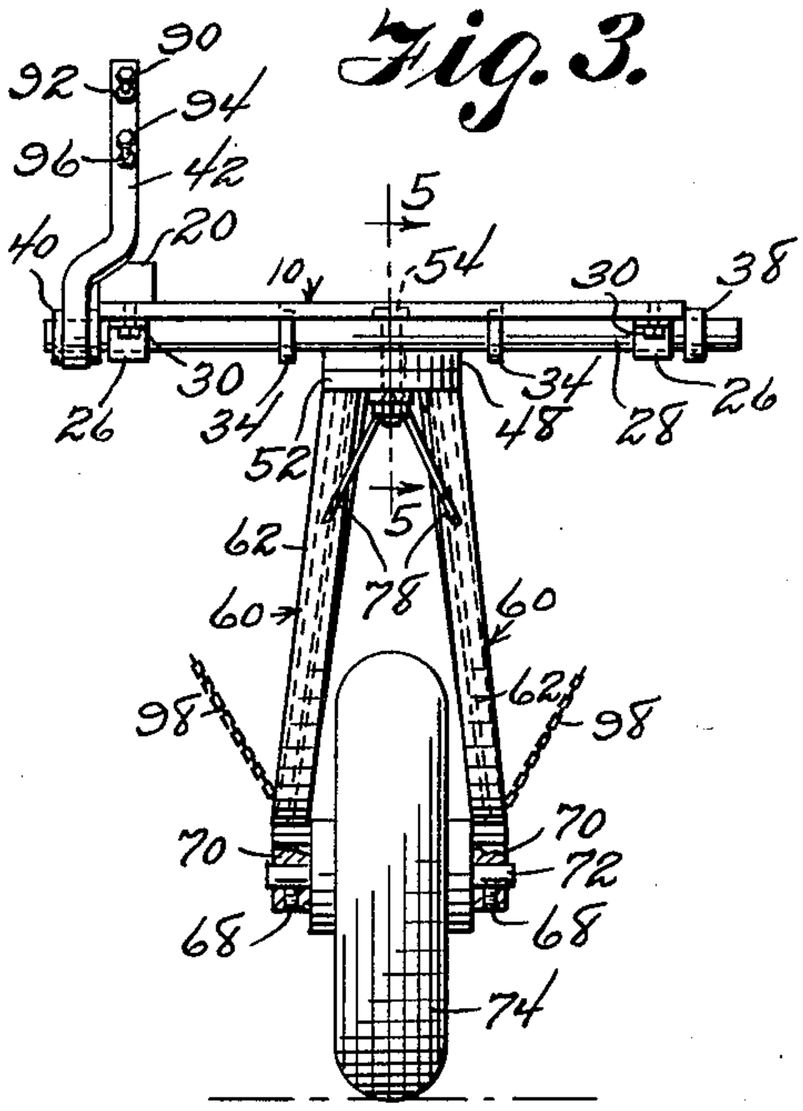


Fig. 4.

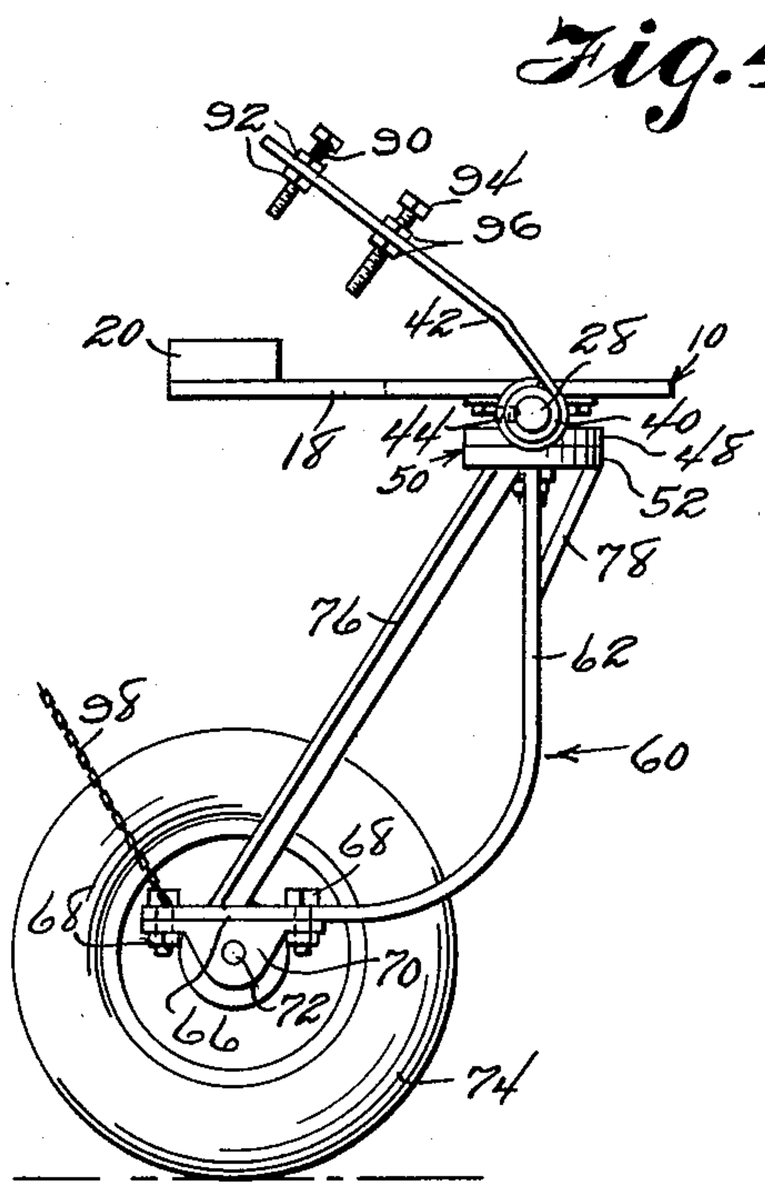


Fig. 5.

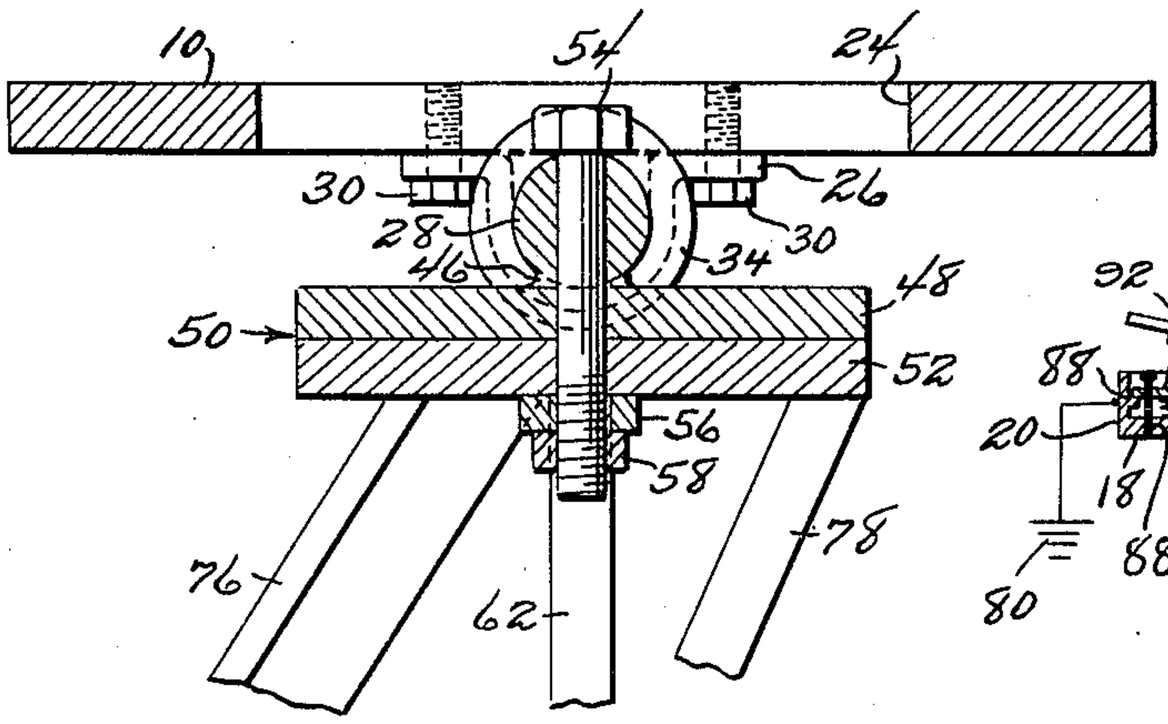
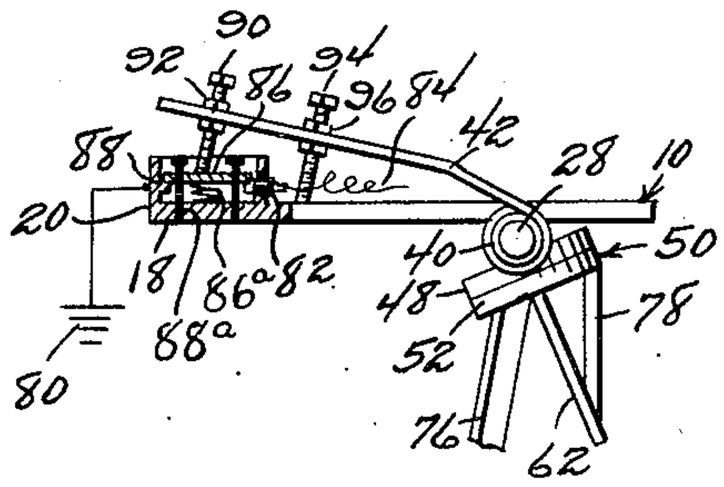


Fig. 6.



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UNITED STATES PATENT OFFICE

2,540,653

AUTOMATIC STABILIZER FOR TRACTORS

Don H. Claypool, Mansfield, Ohio

Application March 13, 1946, Serial No. 654,193

2 Claims. (Cl. 180—82)

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This invention relates to an automatic stabilizer for tractors and the main object of the invention is to provide a device that will automatically ground the ignition and stop the engine when the tractor is raised backward on its rear wheels causing the front wheels to leave the ground.

Another object of the invention is to provide a device which is simple in construction, efficient in operation and durable in use.

With the above and other objects and advantages in view the invention consists of the novel details of construction, arrangement and combination of parts more fully hereinafter described, claimed and illustrated in the accompanying drawings in which:

Figure 1 is a side elevation of an embodiment of the invention as applied to a tractor;

Figure 2 is a top plan view thereof;

Figure 3 is a front view thereof;

Figure 4 is a view of the side opposite that shown in Figure 1;

Figure 5 is a sectional view on the line 5—5 of Figure 3 and

Figure 6 is a detailed sectional view of the device in operation.

Referring more in detail to the drawings, the reference numeral 10 designates the rectangular shaped base plate which is secured to the tractor 12 rearwardly of the steering wheels 14 by means of fasteners 16.

Extending rearwardly from the plate at one end thereof is the supporting arm 18 the end of which has formed thereon a switch housing 20 the use of which will be later explained.

Formed at the center of the plate 10 is the longitudinally extending rectangular shaped opening 24 and extending longitudinally of the plate 10 across the center line of the opening 24 and mounted on the plate for oscillatory movement by hangers 26 is the shaft or rod member 28. The hangers 26 are secured to the plate 10 by fasteners 30.

Secured to the member 28 by set screws 32 are the collars 34 which are positioned within the opening 24 in engagement with the outer edges of the opening 24. On one end of the member 28 is secured by means of a set screw 36, a collar 38 which engages the outer edge of the plate 10, and on the opposite end of the member 28 is a similar collar 40 having a rearwardly and upwardly inclined contact arm 42 welded thereto. The collar can be adjusted on the member 28 by the set screw 44.

Thus by means of the collars the member 28 is prevented from endwise movement.

The member 28 has welded thereto at 46 to the center thereof the upper circular bearing plate 48 of fifth wheel structure 50 which has engagement with the complementary shaped

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rotatable bearing plate 52. The pivot pin 54 extends through member 28 and plates 48 and 52 to mount the plates for rotation with relation to the tractor, lock washer 56 and nut 58 retaining the plates in rotary engagement with each other.

Secured to the plate 52 at opposite sides of the pin 54 are the outwardly inclined supports 60 having the vertical portion 62 curved rearwardly to form the horizontal portion 66 on the free end of which is secured by fasteners 68 the axle bearings 70 in which the axle 72 for the ground wheel 74 is journalled.

Secured to the plate 52 rearwardly of, but adjacent to the upper ends of the supports 60, are the downwardly inclined angle iron braces 76 which are secured to the horizontal portions 66 of the supports 60 intermediate the fasteners 68. Secured to the front of the plate 52 at the center thereof are the outwardly and downwardly inclined braces 78 which are secured at their lower ends to the vertical portions 62 of the supports 60.

Reference has been previously made to the switch housing 20 which is grounded at 80 and provided with an insulated connector 82 which is connected to the ignition system of the tractor by the lead 84. The switch housing 20 comprises the conductor 86 mounted on the guide pins 88*a*, mounted in the switch housing 20. The conductor 86 is normally urged upwardly out of engagement with the connector 82 by a spring 86*a* and a contact 88 is formed on the housing wall in alignment with but opposite from the conductor 82. Mounted for engagement with the conductor 86 is the bolt 90. The bolt 90 is mounted in the arm 42 and is adjustable with relation to the conductor 86 by means of nuts 92 positioned on opposite sides of the arm 42. Rearwardly of the bolt 90, is a bolt 94 which acts as a stop for arm 42 by engagement with the arm 18 of the plate 10. The bolt 94 is adjustably mounted in the arm 42 by means of nut 96.

Secured to the supports 60 by the fasteners 68 and to the tractor body 12 are chains 98 which limit the movement of the supports 60.

Many and serious accidents have occurred to the operators of tractors when the tractor has raised on its rear wheels due to the heavy drag thereon by an implement or the condition of the terrain over which the tractor is travelling and the operation of this device is intended to eliminate the hazards accompanying and caused by such action of the tractor.

The plate 10 is secured to the tractor immediately in the rear of the steering wheels and due to the action of the fifth wheel the wheel 74 will follow in line with the steering wheels during the movement thereof.

Should the front wheels leave the ground the

wheel 74 due to its oscillatory mounting will remain in engagement with the ground moving under the front wheels causing the arm 42 to swing downward and the bolt 90 to engage the conductor 86 grounding the ignition and killing the engine. The weight of the tractor will be immediately returned to the front wheels and before they have been raised to any great extent. The chains 98 will only function should the wheel 74 move forwardly too far to interfere with the proper return of the steering wheels of the tractor.

It is believed that the operation and construction of the device will be apparent to those skilled in the art and it is to be understood that changes in the details of construction, arrangement and combination of parts may be resorted to provided they fall within the spirit of the invention and the scope of the appended claims.

Having thus described the invention what is claimed as new and desired to be secured by Letters Patent is:

1. A stabilizer attachment for tractors adapted to be connected to the bottom thereof in rear of the forward wheel support, comprising an attaching plate, a wheel supporting structure and means for connecting the wheel supporting structure to the plate for pivotal movement about both vertical and horizontal axes, an arm connected to said connecting means to be pivoted fore and aft and an additional ground circuit connected with the ignition system of the tractor and adapted to be closed to shut off the tractor engine upon the engagement of the arm with the additional ground circuit, said wheel supporting structure adapted to follow the forward wheels of the tractor and to pivot forwardly as the tractor tends to be raised on its rear wheel whereby to operate the arm to close the additional ground circuit.

2. A stabilizer attachment adapted to be connected to the bottom of a tractor in rear of the forward wheel support thereof, comprising an attaching plate having bearing portions depending therefrom, a shaft journalled in the bearing portions, for oscillatory movement with regard to said plate, a plate secured to the shaft for movement therewith, a depending wheel supporting structure extending downwardly and having a bearing plate engaging with the bottom of said last mentioned plate, a pivot pin extending throughout the plates and through the shaft whereby to permit the wheel supporting structure to caster and to pivot forwardly on the shaft, an arm extending from said shaft to be pivoted therewith, and a switch device supported on the attaching plate and adapted to be engaged by the arm to operate the same, said switch device connected to an additional ground circuit connected with the ignition system of the tractor so as to shut off the tractor engine upon the engagement of the arm with the switch, as the front of the tractor is raised to cause the forward pivoting of said wheel structure.

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