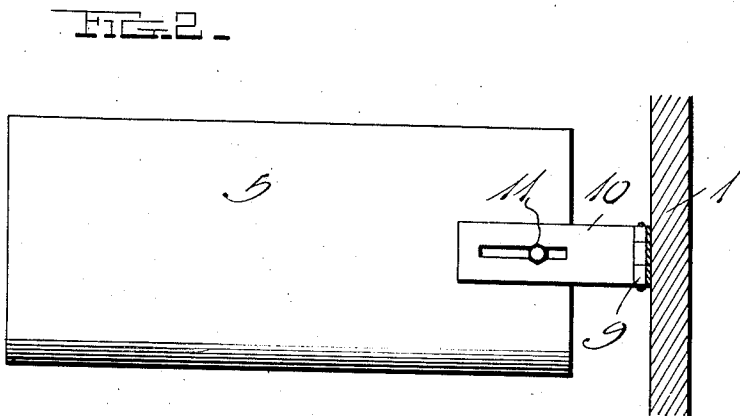
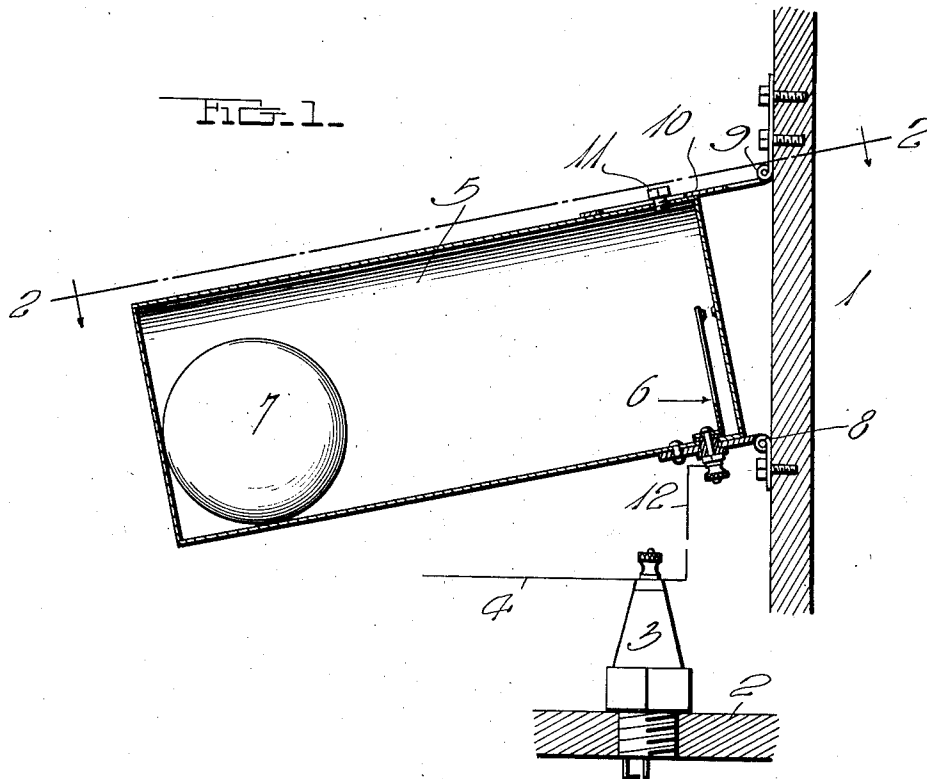


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 AUTOMATIC GRAVITY IGNITION CUT-OUT FOR TRACTORS.
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1,414,932.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, CHARLES CHISMAN, a citizen of the United States, residing at Driggs, in the county of Teton and State of Idaho, have invented certain new and useful Improvements in Automatic Gravity Ignition Cut-Outs for Tractors; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to an improved automatic gravity ignition cut-out for use on tractors, although, it is not restricted to this particular use.

The principal object of the invention is to provide a device of the above mentioned type which will automatically ground the ignition circuit in case the tractor bucks, thus preventing the tractor from overturning as it oftentimes does.

Another object of this invention is to provide a device of this class which includes a gravity operated ignition controlling switch which is associated with a runway in which is a switch operating member, the latter being moved along the runway and into effective position when the runway assumes an abnormal inclined position.

A further object of the invention is to provide novel mounting means for a device of this class, which means is such that it will permit the runway to be moved to various inclined positions, which condition will permit the switch operating member to move more or less readily to its effective position according to the inclination of the runway.

A still further object of the invention is to generally improve upon and simplify the construction of devices of this class and to provide one which is made up of extremely few and inexpensive parts which insure effective operation at all times.

Other objects and advantages of the invention will be apparent during the course of the following description.

In the accompanying drawings forming a part of the specification and in which like numerals are employed to designate like parts throughout the same:

Figure 1 is a central longitudinal sectional view of a device constructed in accordance with my invention, the same being shown in position for use.

Fig. 2 is a view taken on the line 2—2 of Fig. 1.

In the drawings, wherein for the purpose of illustration is shown a preferred embodiment of my invention, the numeral 1 indicates a part of a tractor or other machine upon which the device is installed, and the numeral 2 indicates the engine thereof, which as usual, is provided with a spark plug 3. The latter is supplied with current through the wire 4 in the usual way. It is my intention to install my improved device on any part of the tractor.

The device comprises a closed tube 5, at one end of which is a suitable electric switch 6, actuated by means of a gravity controlled element 7, here shown in the form of a sphere. As shown, the tube 5 is mounted on the support 1 in an inclined position, which arrangement causes the switch actuating member 7 to normally remain in an ineffective position, in which position it is shown.

Novel means is employed for connecting the tube to the tractor. This means comprises a pair of hinges 8 and 9, the latter of which includes a relatively long slotted arm 10, which is adapted to be secured to the tube 5. Means for securing the hinge to the tube is here shown in the form of a headed bolt 11, which extends through the slot in the part 10 and is screw-threaded into the tube. By this arrangement, it will be seen that the degree of inclination of the tube may be varied so as to cause the switch controlling member 7 to move more or less readily to effective position, according to the inclination of the tube or runway. Connected to the binding post of the switch 6 is a wire 12, which permits the current to pass therethrough and become grounded in case the tractor bucks and causes the member 5 to assume an abnormal inclined position.

The operation of the device is as follows: Under ordinary circumstances, when the engine is running under normal conditions, current is supplied to the engine cylinders by means of the wire 4 which connects with the spark plug 3. On the other hand, in case the tractor bucks, as it oftentimes does, the runway or cylinder 5 will assume an abnormal inclined position, consequently, the member 7 will move toward the connected end of the cylinder and actuate the switch 6. Now, the current passing through the wire 4, instead of taking the above outlined course, will pass through the wire 12 and

become grounded, thus causing a short circuit and preventing further operation of the engine until the tractor assumes its normal position. When the tractor does
5 take its normal position, the switch actuating member will move along the runway in a reverse position to its ineffective position. Circumstances will then be normal, and the current will follow the course first outlined.
10 By unloosening the bolt 11, the inclination of the tube may be changed to cause the member 7 to be more or less sensitive. In other words, if the inclination of the tube is greater than that illustrated it will be
15 seen that the front end of the tractor will be permitted to move up off of the ground a considerable distance before the device is effective and vice versa. This is a feature to be considered in view of the fact, that it
20 is not always desired to have the device become effective under all circumstances, it would not be desirable to have the device become effective if the tractor were merely ascending a steep incline, as it might do if the
25 inclination of the tube were not great enough.

From the foregoing it will be apparent that every time the tractor bucks, that is, every time the front end thereof moves up-
30 wardly to an abnormal degree my device will become effective and prevent further operation of the engine and at the same time prevent the tractor from overturning as it would do if no device of this character were
35 employed. Furthermore, if the vehicle should overturn as it may possibly do, it will be seen that my device will cause a short circuit and prevent further operation of the engine. This is an important feature
40 because of the fact that it will prevent explosion from taking place and injuring the driver who might be pinned beneath the overturned machine.

While I have shown and described the
45 switch actuating member as being in the form of a ball I do not desire to limit myself to this particular construction.

It may be well to again call attention to

the fact that the device is applicable to any suitable part of the tractor, and the electric
50 wire which it includes may be attached either to one of the spark plugs or the magneto point as may be desired.

A careful consideration of the foregoing description taken in conjunction with the
55 accompanying drawings will be found sufficient to enable person skilled in the art to which this invention appertains to obtain a clear understanding of the same, therefore further description is deemed unnecessary.
60

It is to be understood that the form of the invention herein shown and described is to be taken as a preferred form of the same, and that various minor changes in the shape, size, and arrangement of parts may be re-
65 sorted to without departing from the spirit of the invention or the scope of the subjoined claims.

I claim:

1. The combination with a gravity oper-
70 ated switch including an inclined runway and a switch operating weight movable along said runway; of hinge means for mounting said runway on a support, and means for holding said runway in the nu-
75 merous inclined positions permitted by said hinge.

2. An automatic ignition cut-out for motor vehicles comprising a tube, closed at its opposite ends, switch means at one end
80 of the tube for affecting the ignition circuit, a gravity controlled switch actuating weight movable in the tube, normally in ineffective position, a vertical support, a hinge connected to the latter and underface of the
85 adjacent end of the tube, serving to pivotally mount the tube on the support, a second hinge including a short leaf secured to the support and a comparatively long slot-
90 ted leaf, and a binding screw passing through the slot in said leaf and into the tube for permitting the tube to be moved to and held in various angular positions.

In testimony whereof I have hereunto set my hand.

CHARLES CHISMAN.