May 22, 1928. 1,670,539

T. W. HICKS

TILLER

Filed March 29, 1923

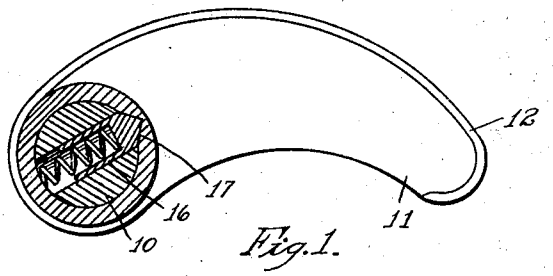


Fig. 1.

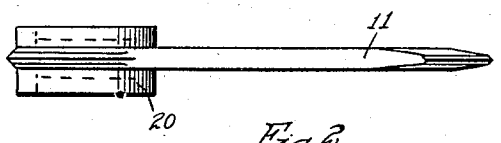


Fig. 2.

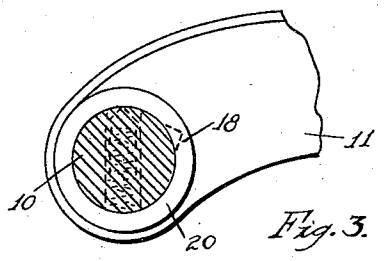


Fig. 3.

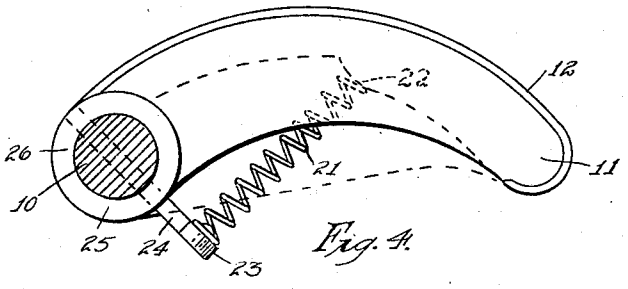


Fig. 4.

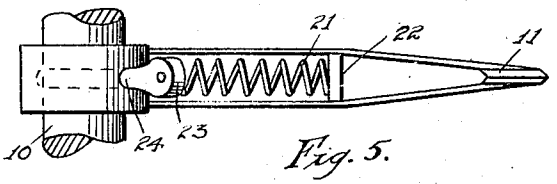


Fig. 5.

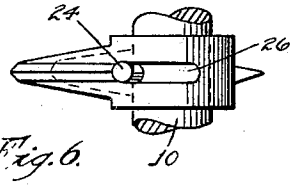


Fig. 6.

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Patented May 22, 1928. 1,670,539

UNITED STATES PATENT OFFICE.

THOMAS W. HICKS, OF MINNEAPOLIS, MINNESOTA.

TILLER.

Application filed March 29, 1923. Serial No. 628,645.

This invention relates to improvements in tillers and more particularly to tiller blade construction and mounting the same, the same being an improvement over that type of tiller broadly disclosed in my prior Patent No. 1,320,469, dated November 4, 1919.

One of the objects of the present invention is to provide an improved tiller of the above general character in which the blades are so constructed and mounted as to prevent damage thereto should the blades strike an obstruction during their rotation.

A further object is to provide a tiller of the above character in which the blades will become automatically disconnected when if, for any reason, continued rotation thereof with the tiller shaft is prevented or obstructed.

A further object is to provide a device of the last above mentioned character in which the blades after becoming disconnected will be automatically returned to normal position, that is, operatively connected with the tiller shaft.

Other objects will be in part obvious from the annexed drawing and in part indicated in connection therewith in the following analysis of the invention.

The invention accordingly consists in the features of construction, the combination of parts, and in the unique relation of the various members and the relative proportioning and dispositioning thereof, all as more clearly outlined herein.

To enable others skilled in the art to fully comprehend the underlying features thereof in order that they may embody the same, by numerous modifications in structure and relation contemplated by this invention, drawing depicting a preferred form of the invention have been annexed as part of this disclosure and in such drawings like characters of reference indicate corresponding parts throughout all the views, of which—

Fig. 1 is a sectional plan view showing a blade connection in operative position;

Fig. 2 is a side elevation;

Fig. 3 is a detail view of the same in disconnected position;

Fig. 4 is a sectional plan view of a modification;

Fig. 5 is a side elevational view thereof; and

Fig. 6 is a side elevational view thereof taken from the opposite side.

Referring now to the drawings in detail 10 indicates the usual tiller shaft upon which a plurality of radially disposed tiller blades 11 are adapted to be mounted, only one of which is here shown. The blades are of crescent shape mounted upon the shaft at one end and convexly curved along their cutting edges 12, as indicated. It is, of course, to be understood that any desired number or form of blades may be mounted upon the tiller shaft 10, and it is preferable that they be arranged in an angular relation to each other whereby a more efficient disintegration of the soil is obtained. As fully explained in my prior patent, these blades are adapted to coact with the soil as it is turned up and over by the plow, the mold-board at the rear of the plow acting as an abutment for the furrow slice while it is being cut or disintegrated by the blades. If an obstruction such as a rock is turned up by the plow of a size greater than the space between the mold-board and the disintegrator, the blades would be damaged if no means were provided for accommodating this excessive mass. One way of overcoming this objection is to yieldingly mount the blades upon the tiller shaft whereby they will give way or move relatively to the shaft to let the rock pass between the same and the mold-board.

If desired, reconnection of the blade and the tiller shaft may be made automatically as shown in Figs. 1 and 3. In this case, the tiller shaft 10 is provided with a plunger or detent 16 having a pointed end 17 adapted to coact with a similarly shaped recess 18 in the boss 20 of the blade 11. The beveled or pointed surfaces 17, 18, will permit the blade 11 to instantly slip out of connection with the tiller shaft should an obstruction be encountered. On the next rotation of the shaft, the plunger 16 will force the detent 17 back into the recess 18. If the obstruction is not passed, the operation will be repeated as may be necessary.

In the modification shown in Figs. 4, 5 and 6, the blade 11 is hollowed to receive a spring 21 which re-acts between an abutment 22 within the blade 11 and an arm 23 at one end of the pin 24 passing through registering openings in the shaft 10 and boss 25 of the blade. The opposite end of the pin 24 projects beyond the shaft 10 and has a certain amount of free movement within the slot 26. Thus, if the blade 11 encounters an obstruction as before explained,

it will yield to compress the spring 21, being permitted a certain amount of movement as provided by the slots 26 as indicated.

Without further analysis, the foregoing will so fully reveal the gist of this invention that others can, by applying current knowledge, readily adapt it for various applications without omitting certain features that from the standpoint of the prior art fairly constitute essential characteristics of the generic or specific aspects of this invention and, therefore, such adaptations should and are intended to be comprehended within the meaning and range of equivalency of of the following claim.

What I claim is:

In a tillage implement, a rotatable shaft, a soil working blade mounted on the shaft and capable of rotation relative to the shaft, and spring actuated means interposed between the shaft and the blade for yieldingly holding the blade in position to rotate with the shaft.

In testimony whereof I affix my signature.

THOMAS W. HICKS.