

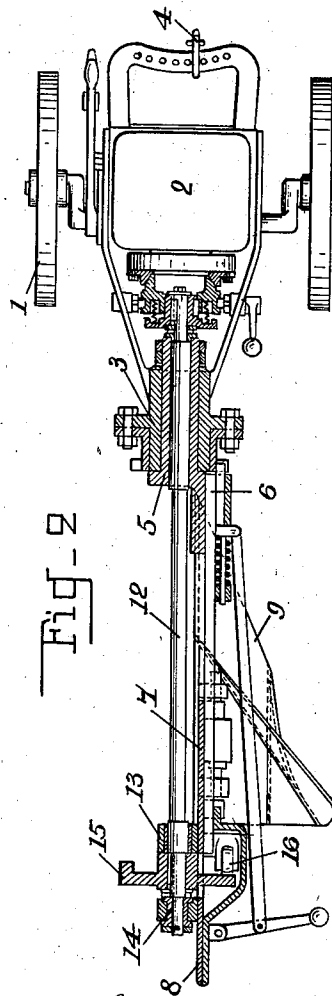
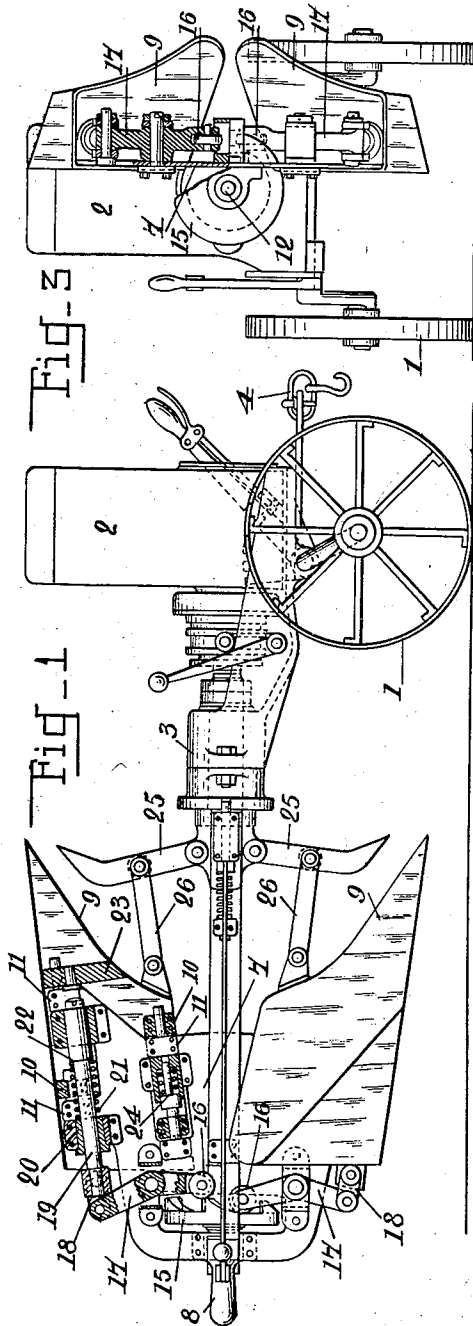
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FLOW

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PLOW

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5 Claims. (Cl. 97-26)

The present invention relates to a new and novel plowshare in which the plowshare is subjected to a force in addition to the normal force urging the forward movement of the plowshare.

Heretofore plowshares have been constructed which are moved forwardly by a continuous and substantially constant force by means of a tractor, animal or the like in order to turn the earth. It is an object of the present invention to provide means whereby the plowshare is subjected to intermittent thrusts by successive impacts of a hammer in addition to the force urging the plowshare forwardly.

It is a further object of the invention to provide means whereby the plowshare is subjected to a sequence of impacts in the direction of the normal forward displacement of the plowshare.

A still further object is to provide a plowshare which is movable with respect to the frame and which is subjected to impacts from hammers supported upon the frame.

A still further object of the invention is to provide an anvil upon the plowshare upon which a hammer may strike and the action of the hammer is controlled and accomplished by the means moving the plowshare forwardly.

A further object of the invention is to provide a locking device controlling the action of a hammer of a plowshare when such plowshare is at rest.

With the above and other objects in view which will become apparent from the detailed description below and from the claims the invention consists in the combination of parts more fully set forth below and shown in the drawing, in which

Figure 1 is a side view of the new and improved plowshare.

Figure 2 is a plan view with parts in section thereof, and

Figure 3 is a rear elevational view with parts in section.

Referring to the drawing the plowshare comprises a front axle supported on the wheels 1 by eccentric means which may be displaced relative to one another thereby enabling one wheel to be lowered with relation to the other. The front axle carries a motor casing 2 and a bearing member 3. A hook 4 is provided to which the track means may be secured.

The frame of the plow has a journal which is rotatable in the bearing 3. A rod 6 is secured to the journal 5 and a share carrier 7 is secured to the rod 6. A handle 8 is provided upon the plowshare.

The shares 9 are mounted upon the carrier 7 by means of the collars 10 which enclose the pins 11 integral with the carrier 7. By this construction the shares 9 are rendered movable with respect to the carrier 7 of the frame.

A shaft 12 mounted in the journal 5 and the bearings 13 and 14 of the frame is driven by the motor. The shaft 12 has mounted thereon a cam track 15 cooperating with the two rollers 16. A roller 16 and cooperating mechanism is provided for each share 9.

Each of the rollers 16 is mounted upon one end of a crank lever 17 whose other end is attached by means of links 18 to a rod 19 constituting the hammer. The rod 19 is slidably mounted in the collars 20 supported on the carrier 7. A spring 21 bears at one end on one of the collars 20 and at the other end on a shoulder 22 provided on the rod 19. An anvil 23 integral with each share 9 is so located as to be struck by the free end of the rod 19. The stroke of the share 9 is directed in the direction of the motion of the plow by means of a damper 24. Each share 9 forms a housing for the parts which constitute the impact and supporting mechanism and thereby prevents any introduction of earth.

In front of each share 9 there is provided a knife 25 which is linked to the journal 5 and is connected to the corresponding share 9 by means of link 26.

When a share 9 is at rest the compression of the spring 21 is prevented by locking the crank lever 17.

The operation of the plow is as follows:

It will be assumed that the entire plow is stationary and that the share 9 is in its furthest backward position with respect to the frame. Upon the motor revolving the cam track 15 the roller 16 will be reciprocated along the longitudinal axis of the plow and such motion of the roller 16 will withdraw the rod or hammer 19 backwardly and thereby compress the spring 21. Upon the termination of the forward motion of a roller 16 due to the cam track 15 there is a release of the roller 16 due to a recess in the cam track. Such release of the roller 16 permits the hammer or rod 19 to be driven forwardly sharply by means of the spring 21. The hammer 19 thus strikes the anvil 23 a sharp blow and forces the share 9 to penetrate the earth.

The share 9 is now in the furthest forward position with respect to the frame. Should the share remain in this position relative to the frame then the impacts of the hammer 19 would exert no further action on the share. However if the

share 9 and the frame members approach one another then the hammer will again come into action.

5 A forward motion of the frame with respect to the share 9 of only a slight amount will permit the hammer to come into action. Such a forward motion of the frame may be secured in various ways. Also the impacts upon the share may be secured by means of a pneumatic or an
10 electric hammer which will operate in accordance with the principles above set forth.

All modifications such as will come within the spirit of the following claims are claimed.

I claim:—

15 1. A plow comprising a frame, a plowshare movably mounted on said frame, a hammer co-operating with said plowshare and guided on said frame, an abutment on said plowshare, elastic means cooperating with said hammer to
20 urge said hammer against said abutment and means for placing said elastic means under tension.

2. A plow comprising a frame, a plowshare movably mounted on said frame, a hammer co-

operating with said plowshare and guided on said frame, an abutment on said plowshare, elastic means cooperating with said hammer to urge said hammer in a direction parallel to the movement of the plow against said abutment and means for placing said elastic means under
5 tension.

3. A plow comprising a frame, a plowshare movably mounted on said frame, a hammer co-operating with said plowshare and guided on
10 said frame, an abutment on said plowshare and means for reciprocating said hammer against said abutment in a direction parallel to the direction of motion of said frame.

4. A plow in accordance with claim 1 in which
15 means are provided for advancing said plow, said means being actuated by the source of power which actuates said means for placing said elastic means under tension.

5. A plow in accordance with claim 1 in which
20 means are provided for bolting said hammer when said plowshare is not in action.

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