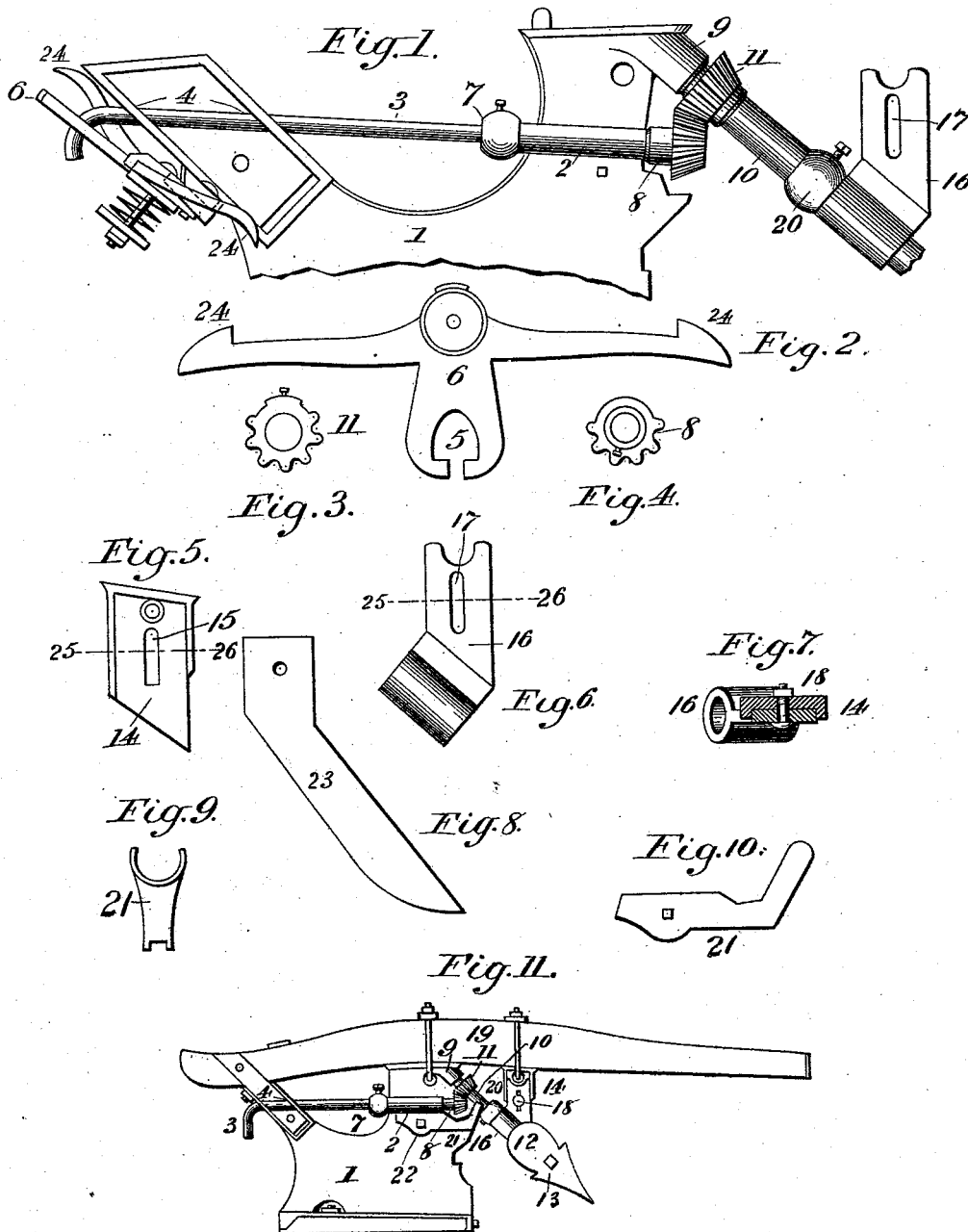


(No Model.)

A. GALE & E. TREMBLAY.
SWIVEL PLOW.

No. 522,341.

Patented July 3, 1894.



Witnesses:

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Inventors:

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UNITED STATES PATENT OFFICE.

ANDREW GALE AND EUCHER TREMBLAY, OF CHICOPEE, MASSACHUSETTS,
ASSIGNORS TO SAID GALE AND THE BELCHER & TAYLOR AGRICULTURAL
TOOL COMPANY, OF SAME PLACE.

SWIVEL-PLOW.

SPECIFICATION forming part of Letters Patent No. 522,341, dated July 3, 1894.

Application filed January 4, 1893. Serial No. 495,684. (No model.)

To all whom it may concern:

Be it known that we, ANDREW GALE and EUCHER TREMBLAY, citizens of the United States, residing at Chicopee, in the county of Hampden and Commonwealth of Massachusetts, have made and invented certain new and useful Improvements in Swivel-Plows, of which the following is a specification.

Our invention relates to such plows as are provided with what is known as a jointer, or a knife, and more particularly to the means and method whereby such jointer and knife are combined with the other parts of the plow.

The object of our invention is to make the jointer more practicable by giving to it a firmer and steadier support than is usually done; to make the jointer adjustable vertically without changing materially the horizontal distance between the point of the plow and that of the jointer; to connect the jointer and foot-latch by mechanism firmer, stronger and more compact than that used in our patent of June 4, 1889; to cover and guard the gearing from sod and other choking material; and to provide means for connecting and adjusting the knife when used without removing or disturbing any part except the jointer and its support.

The following is a specification of our invention, reference being had to the accompanying drawings, in which—

Figure 1 is a side elevation of a detached portion of the land-side or standard of a swivel plow, showing our improved apparatus for supporting and operating the jointer. Fig. 2 is a plan of the foot-latch detached and inverted. Fig. 3 is an elevation of the larger end of the jointer-arbor gear. Fig. 4 is an elevation of the larger end of the foot-latch-spindle gear. Fig. 5 is a side elevation of the upper or beam plate of the adjustable shank. Fig. 6 is a side elevation of the lower or bearing plate of the adjustable shank. Fig. 7 is a cross-section of the two plates last named combined and taken through line 25—26. Fig. 8 is a side elevation of the knife. Fig. 9 is an end elevation of the gearing guard. Fig. 10 is a side elevation of the last named, and Fig. 11 is a side elevation of a swivel plow, provided with

our improved attachments, the handles, foot-latch, mold-board, and point being removed.

In carrying out our invention, the point, mold-board, foot-latch, handles, and all other parts not hereinafter particularly specified are made, constructed and connected in any of the usual and well known ways.

We make the standard 1. in the usual manner, except that we provide the forward or main prong thereof with a bearing 2, through which passes the spindle 3. This spindle also passes through another bearing 4. in the rear or handle prong of the standard. The rear end of spindle 3. is bent nearly at a right angle, so as to pass downward through slot 5 of the foot-latch cam 6. We provide the collar 7. and make the same fast on spindle 3. in rear of bearing 2, and in front of the same bearing we provide and make fast the gear 8; the collar and gear so arranged permit free rotation of the spindle but prevent its moving lengthwise in its bearings. We further provide the forward prong of standard 1. with a socket 9, in which rotates rather loosely the rear end of the jointer arbor 10. We further provide and make fast on arbor 10. the gear 11; which meshes into gear 8; these gears, commonly called bevel, have the faces of their teeth somewhat rounding or oval, not only laterally, but longitudinally, giving a certain amount of play, so as to permit the raising or depressing of the jointer 12. two inches more or less without unshipping or disturbing the operation of the gears. We provide a jointer 12 which is attached to the arbor 10 by bolt 13. or by any other suitable means.

To support arbor and jointer 10 and 12 and render the latter vertically adjustable we provide what we term the shank, composed of an upper or beam plate 14, in which is slot 15, and a lower or bearing plate 16, in which is slot 17. These two plates are connected and firmly bound together by the bolt 18. Plate 14 is made fast to beam 19, by suitable means, as shown—while through the bearing in plate 16. passes the arbor 10 as shown.

To hold arbor 10 in its socket and bearing we provide and make fast on the arbor the shoulder or collar 20. To protect gears 8 and

11 from sod and other choking matter, we provide the shield or guard 21, of which the front portion is so hollowed and pronged as to cover gear 8. and pass up astride the lower half of arbor 10. We make the rear part of such guard forked so as to pass a limb on either side of the standard 1, whereon it is made fast by bolt 22.

For ground not adapted to the use of a jointer we provide a knife 23, so constructed as to be readily connected to plate 14; heretofore to use the knife it has been necessary, not only to unship the jointer but to provide a new and separate device for making the knife fast; by our device the shank plate 14 becomes an adjustable socket wherein the knife is held by bolt 18.

Having connected the jointer and foot-latch by the means above described, we make the gears 8 and 11 of such proportions that when the foot-latch 24, is turned from side to side to lock the mold-board, the jointer is at the same time and by the same movement of the foot-latch turned and held fast in the same relative position as the moldboard.

The advantages of our invention are that the mechanism is firm and compact. As heretofore used the jointer arbor has been much longer than ours, passing back and through the main prong of the standard; and being without our shank or forward support, it was often sprung and bent out of position, rendering it unfit for use. We obviate this by the shorter arbor and shank support; again the point of the jointer has usually been raised or depressed by moving the arbor back or forward in its inclined bearing, so that the point of the jointer would be at one time almost

vertically over the point of the plow, while at another time it would project far in advance of the same. We obviate this by means of the adjustable shank.

The socket 9, located so far forward and directly under the beam gives the jointer a firmness and steadiness not heretofore attained.

The utility of the guard 21 in covering and protecting the gears 8. and 11. from sods and other choking matter is obvious. It is apparent that the shank may be made in one piece and do excellent work, but it would not have the adjustable property that we give it. It is likewise apparent that socket 9, might be made separately from the standard 1. and attached directly to the beam, but this would create unnecessary parts and tend to greater expense and weakness in construction.

What we claim as our invention is—

1. The guard 21, the lower part of which is forked and arranged astride the standard 1, whereto it is made fast by bolt 22,—the forward and upper part of said guard being so hollowed and formed as to protect gears 8 and 11 from sods and other choking matter—as specified.

2. The standard 1 provided with the bearings 2 and 4. and socket 9. in combination with the spindle 3, foot latch 24, gears, 8 and 11, arbor and jointer 10 and 12, shank plates 14 and 16, and beam 19, all substantially as shown and described.

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