S. J. ATKINS.

PLOW BOLT.

APPLICATION FILED JUNE 2, 1908.

919,303. Patented Apr. 27, 1909.

FIG. 1.

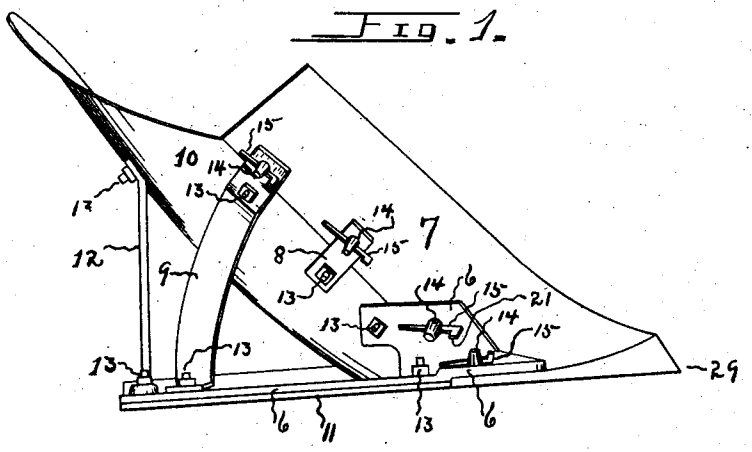


FIG. 2.

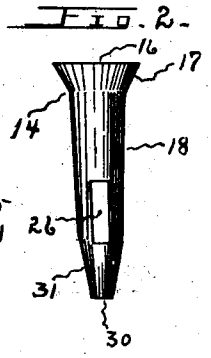


FIG. 3.

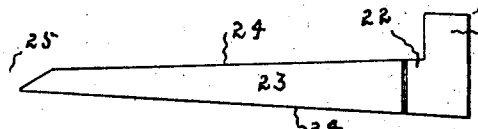


FIG. 4.

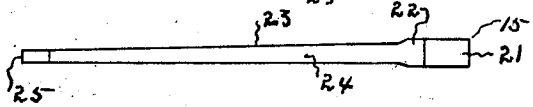
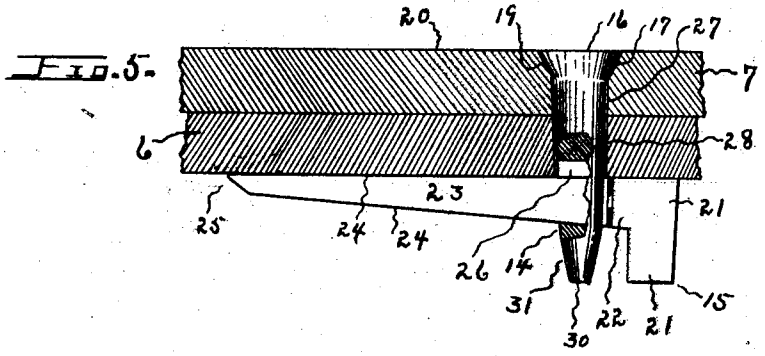


FIG. 5.



Witnesses

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PLOW-BOLT.

No. 919,303. Specification of Letters Patent. Patented April 27, 1909.

Application filed June 2, 1908. Serial No. 436,290.

To all whom it may concern:

Be it known that I, STONEWALL J. ATKINS, a citizen of the United States, residing at Cando, in the county of Towner and State of North Dakota, have invented certain new and useful Improvements in Plow-Bolts, of which the following is a specification.

This invention relates to improvements in plow bolts, and has for its object the provision of a bolt and a keeper for securing together the detachable parts of a plow, which will be reliable in operation as a fastening means, and which may be conveniently placed in position and may readily be removed.

There are many objections to plow bolts heretofore used. Plow shares or lays require frequent changing, as their removal from the stock is required for sharpening; the threaded bolt and nut become rusty, and when removing the share they often break before yielding to the use of the wrench; also when using a wrench, the bolt and nut, from the effect of rust, will often turn, as a unit, thereby causing delay and inconvenience. Certain plow bolts have fins beneath their heads to fit within recesses, intended to prevent turning of the bolt; the recesses soon become worn or filled with rust, or the fins become flattened, and, since the head of the bolt is countersunk, there is no means for screwing on or removing the bolt.

These plow bolts are used to secure landsides, mold boards and plow shares to the stock. Since all of these parts are fastened at the bottom of the plow, the plow bolts are subjected to moisture at all times; one of the purposes of the invention is to provide a securing means for these parts, which will not be injured by this exposure.

Another objection to plow bolts heretofore used, is that the threads of the bolt become damaged when the bolt is driven through the openings of the share and stock. It often happens that these openings are not in alinement; the bolt, however, must be driven through the openings, and coming in contact with the walls of the openings, the threads become defaced, and the nut, thereafter, will not travel on the bolt. The present invention provides a tapered bolt, without threads, which may be driven without injury.

A threaded bolt is also objectionable for use in securing the detachable parts to the stock, for the reason that the inner or exposed end of the bolt sometimes becomes bent from striking against obstacles, thereby preventing removal of the bur. By use of the herein described bolt it may be released from its keeper as readily when bent, as otherwise, since no threads or burs are employed.

The detachable parts mentioned are found upon the bottoms of all plows, and it is quite necessary that they be provided with a firm seating upon the stock, since the stresses and shocks are sustained by these parts.

It is the purpose of the present invention to provide the adequate holding means required, and to avoid the objectionable features pointed out, and with these and other objects in view the invention presents a novel combination and arrangement of parts, fully described herein and in the appended claims, and illustrated in the accompanying drawing, wherein,—

Figure 1 is a plan view of the bottom of a plow, the plow handles and plow beam being removed, and showing the use of plow bolts embodying my invention. Figs. 2 and 3 are side views, respectively, of my improved plow bolt and keeper or key therefor. Fig. 4 is a plan view of the keeper shown by Fig. 3. Fig. 5 is a sectional view of portions of a plow share and stock, with my improved plow bolt and keeper mounted thereon, said bolt being partly in section.

Referring now to the drawing for a more particular description, numeral 6 indicates a plow stock having mounted thereon a plow share 7. At 8 and 9 are shown straps for connecting the mold board 10 and share 7 so that they will be rigid with stock 6 and landside 11. For the purpose, however, of clearly illustrating the parts in the drawing, straps 8 and 9 are shown. At 12 a brace is shown, mounted between the stock and mold board, and at 13 are shown screw bolts which illustrate the old method of securing the several, detachable parts to the stock.

In the present instance I construct a plow bolt 14, to be used in connection with the keeper, wedge or key 15 for securing upon the stock 6, the detachable parts of a plow, as the plow share, landside or mold board. Bolt 14 is provided with an annular head 16 with an outwardly flaring wall 17 from its round tapered body 18; recess 19 is formed in the share 7 so that the head may be countersunk and may be seated flush with the outer wall 20 of the plow share.

The keeper 15 is formed as an L-shaped key, its head 21 and neck portion or exten-

sion 22 being of equal thickness, and this thickness being greater than its body 23. The body 23 of the key or keeper is rectangular in cross section, and its upper and lower sides 24 are tapered from neck portion 22 to its terminal 25.

I provide the aperture 26 in bolt 14, having rectangularly formed walls; the length of the aperture, considered longitudinally of the bolt, is somewhat greater than the greater width of the body 23 of the key, but its width is less than the thickness of portion 22 of the key.

In operation, the bolt may be placed or driven through apertures 27 and 28, respectively, of the share and stock; keeper or key 15 is then inserted, and by pounding upon head 21, is driven within aperture 26, and the share will be closely and securely fastened upon the stock, by reason of the tapered form of the key, and by reason of the fact that the width of body 23 of the key is less than the height of aperture 26. It will be noted that this operation will require very little time as compared with the same operation when screw bolts are employed.

It is considered important that the body portion of the bolt be tapered as described in order that the plow share, or other detachable part, may be securely held upon the stock. It will be understood that there is a plurality of openings in the stock and in each detachable part. When the latter come from the foundry the apertures are not always perfectly placed. Openings 27 and 28 are, therefore, often out of alinement, and in such instances bolts with a uniform diameter do not operate as satisfactory as where the body of the bolt is tapered, as shown. Also, by reason of the bolts being tapered, they are more readily disengaged from their seatings, when separating the detachable parts from the stock.

The keys are disposed, at the time they are driven, with their heads directed toward the point 29 of the share, or toward the front of the plow, and, while the plow is used, if an obstruction makes contact with the key, the latter may be driven to cause a more firm contact of the share and stock.

Since the greatest width of the key is less than that of aperature 26 of the bolt, these bolts may be used in connection with plow shares, regardless of the thickness of such shares.

Since portion 22 of the bolt has a thickness greater than the lesser width of aperture 26, it is apparent that head 21, when the parts are mounted, will not closely approach the bolt; this is a desired feature and is one of the functions of portion 22. The key is removed by blows delivered outwardly upon the inner side of the angularly projecting part of the head, adjacent the terminal 30 of the bolt. Another function for portion 22 is that of strengthening the connection between the head and body of the bolt, since it has a thickness equal to that of head 21.

Since the body of the bolt is tapered, as described, it may be driven through openings 27 and 28 of the share and stock without injury, should these openings fail to be in alinement; the tapered walls of the bolts operate, in a measure, as wedges for producing a close contact of parts; where threaded bolts are employed, the threads at this time frequently become injured. I provide the tapered wall 31 between aperture 26 and terminal 30 of the bolt; this has a greater inclination than wall 18 of said bolt; the purpose of the inclination of wall 31 is to operate as a wedge when the bolt is passing apertures not in alinement; also so that the bolt will be less obtrusive when striking the head 21, as mentioned, for removal of the bolt from the share.

Where plow bolts and the keys therefor are constructed in accordance with the description given, they operate as a convenient and effective holding means for the purposes described, and it will be seen that the tension is sustained by the bolt upon the key, in a manner that the parts are adequately held together. The parts may be readily assembled or separated, and the objectionable features of the threaded bolt are avoided.

Having fully described my invention, what I claim as new and desire to secure by Letters Patent, is,—

1. A plow bolt having a flaring head, a transversely disposed aperture, a tapering body portion which extends from the flaring head to the outer end of the aperture and a sharper tapered end in combination with a tapering keeper having a wedge shaped body portion, a head extending transversely from said body portion and a portion wider than the wedge shaped body portion which lies between said body portion and said head to limit the movement of said head toward said bolt.

2. A device for the purpose described, comprising a bolt having an apertured body formed tapering from its head to its distal end; a keeper formed as a pin with an angular head, a tapered body and an enlarged portion intermediate its head and body; said keeper adapted to have a seating within the aperture of the bolt, a part of its tapered body and said enlarged portion being disposed, respectively, upon opposite sides of said bolt.

In testimony whereof I have affixed my signature in presence of two witnesses.

STONEWALL J. ATKINS.

Witnesses:
W. J. Evans,
Alex Lakie.