J. E. PERCY.

SPIKE TOOTH HARROW.

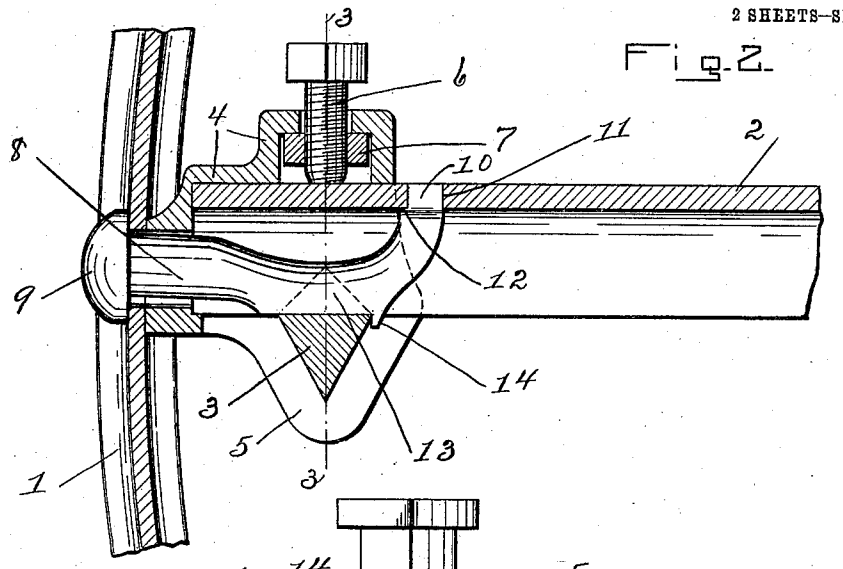
APPLICATION FILED NOV. 30, 1912.

1,054,712.

Patented Mar. 4, 1913.

2 SHEETS—SHEET 1.

Fig. 2.



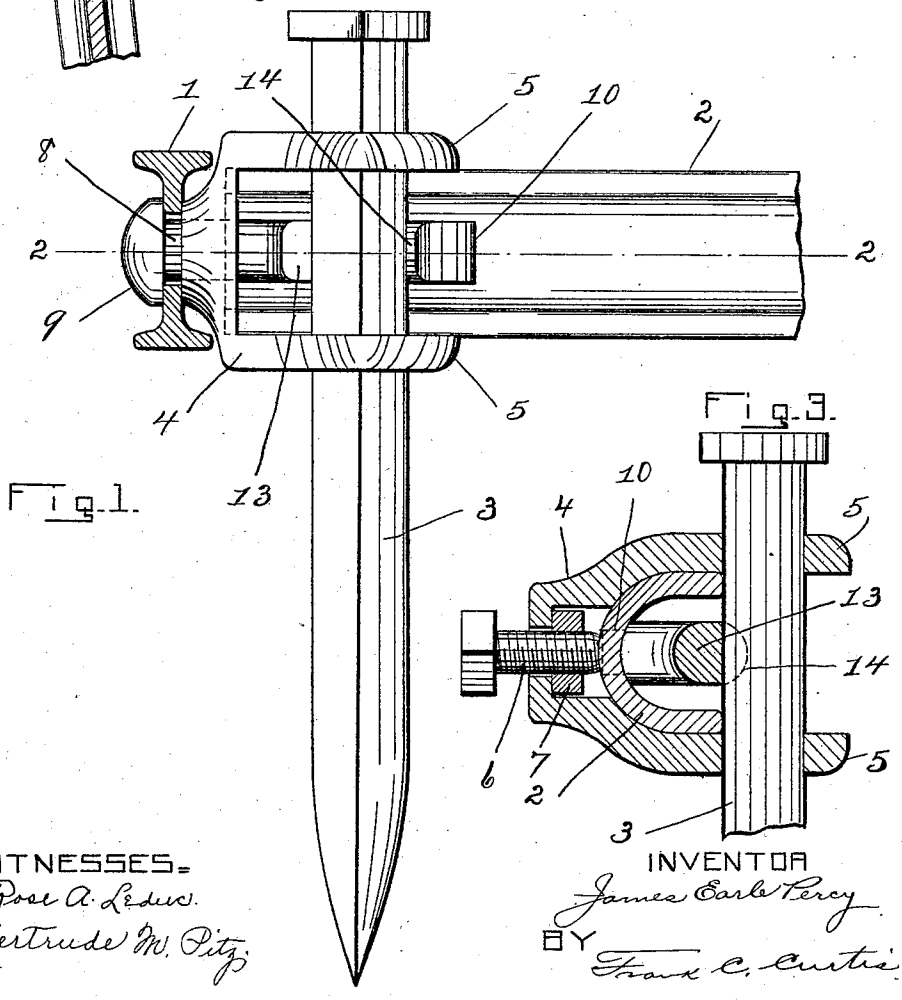


Fig. 1.

Fig. 3.

WITNESSES:

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2 SHEETS—SHEET 2.

Fig. 4.

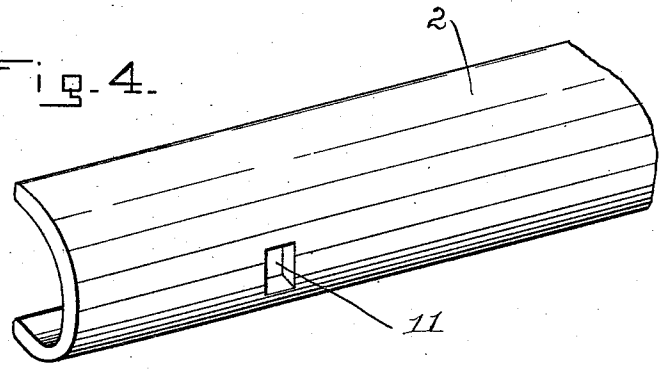


Fig. 5.

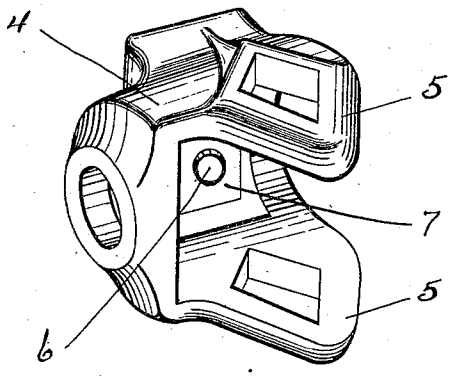
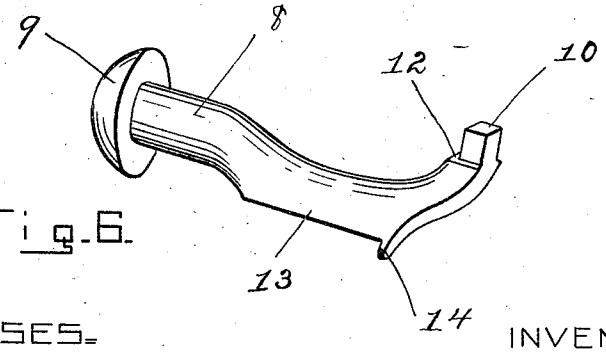


Fig. 6.



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UNITED STATES PATENT OFFICE.

JAMES EARLE PERCY, OF HOOSICK FALLS, NEW YORK, ASSIGNOR TO WALTER A. WOOD MOWING AND REAPING MACHINE COMPANY, OF HOOSICK FALLS, NEW YORK, A CORPORATION OF NEW YORK.

SPIKE-TOOTH HARROW.

1,054,712. Specification of Letters Patent. Patented Mar. 4, 1913.

Application filed November 30, 1912. Serial No. 734,318.

To all whom it may concern:

Be it known that I, JAMES EARLE PERCY, a citizen of the United States, residing at Hoosick Falls, county of Rensselaer, State of New York, have invented certain new and useful Improvements in Spike-Tooth Harrows, of which the following is a specification.

The invention relates to such improvements and consists of the novel construction and combinations of parts hereinafter described and subsequently claimed.

Reference may be had to the accompanying drawings, and the reference characters marked thereon, which form a part of this specification.

Similar characters refer to similar parts in the several figures therein.

Figure 1 of the drawings is a vertical cross-section of one of the side bars of a spike-tooth harrow, showing in front elevation a spike-tooth, one end of a tooth-bar, and the thimble and trunnion-bolt, whereby the tooth-bar is rockably mounted upon the side bar. Fig. 2 is a horizontal section of the same taken on the broken line 2—2 in Fig. 1. Fig. 3 is a vertical cross-section of the same taken on the broken line 3—3 in Fig. 2. Fig. 4 is a view in perspective of a broken-away portion of the tooth-bar. Fig. 5 is a view in perspective of the thimble detached. Fig. 6 is a view in perspective of the trunnion-bolt detached.

Certain objects of the invention are to provide a strong, durable and efficient trunnion-mounting for the tooth-bars of a spike-tooth harrow; to facilitate the mounting of the tooth-bars upon the side bars or frame of the harrow; and to positively connect the tooth-bars with the side bars or frame.

In carrying out my invention in its preferred form, I rockably mount the several ends of the tooth-bar upon the side bars or frame by means of a thimble, whereby a spike-tooth is clamped upon the tooth-bar in the usual manner, and a separate trunnion-bolt secured in positive engagement with both the tooth-bar and the spike-tooth.

Referring to the drawings wherein the invention is shown in preferred form, 1 is the side bar or frame of a spike-tooth harrow, 2 is one of the tooth-bars, and 3 is a spike-tooth mounted upon the tooth-bar. The tooth-bar is U-shape in cross-section, as shown in Fig. 3, and the end of the tooth-bar is inserted within a thimble, 4, which receives and supports the end of the tooth-bar in the usual manner. The thimble, 4, has a pair of apertured clamp-arms, 5, which project forwardly beyond the tooth-bar, above and below the same, through the apertures in which arms the spike-tooth, 3, passes, the tooth being clamped upon the bar, 2, by means of a screw, 6, mounted upon the thimble in position to engage the rear side of the tooth-bar, as shown in Figs. 2 and 3. The screw, 6, is mounted upon the thimble by means of a nut, 7, through which the thrust of the screw is transmitted to the thimble. The end of the thimble is provided with a trunnion-bolt aperture, and the side bar, 1, is provided with a similar trunnion-bolt aperture, said apertures being adapted to receive a removable trunnion-bolt, 8, inwardly insertible therethrough and having a head, 9, adapted to engage the outer side of the side-bar or frame. The bearing portion of the trunnion-bolt, adjacent to its head, is straight and cylindrical, while the inner end of the shank of the bolt is offset in the form of a hook, 10, adapted to engage an aperture, 11, in the rear wall of the tooth-bar, whereby the tooth-bar is positively connected with the side-bar, 1, so that longitudinal movement of the tooth-bar relatively to the side-bar is prevented. The inner hook-end of the trunnion-bolt is formed with a shoulder, 12, which abuts against the inner side of the rear wall of the tooth-bar to limit the rearward movement of the hook-end of the trunnion-bolt. Intermediately of its ends the trunnion-bolt is forwardly offset at 13 to bear against the rear side of the spike-tooth, 3, said offset portion being formed with a shoulder, 14, adapted to engage the inner rear corner of the spike-tooth, as shown in Fig. 2.

When the parts are assembled in the relative positions shown in Figs. 2 and 3, and the set-screw, 6, is tightened, the spike will be securely clamped upon the tooth-bar; the tooth-bar will be clamped upon the thimble; longitudinal movement of the tooth-bar will be positively prevented by the hook-end, 10, of the trunnion-bolt; while the tooth-bar, spike-tooth, thimble and trunnion-bolt will be rockably mounted upon the side-bar or frame, 1. The offset middle portion, 13, and

hook-shaped end portion, 10, of the trunnion-bolt are of such shape and dimensions as to permit the bolt to be inserted inwardly through the respective apertures in the side-bar, 1, and the thimble, 4, before the tooth-bar, 2, and spike-tooth, 3, are placed in position. After the trunnion-bolt has been inwardly inserted through the side-bar and thimble and before the spike-tooth is inserted through the clamp-arms, 5, the side-bar, 2, can be readily inserted within the thimble in position to receive the hook-end, 10, of the trunnion-bolt, after which the spike-tooth, 3, is inserted and the parts clamped together by means of the screw, 6.

What I claim as new and desire to secure by Letters Patent is—

1. In a spike-tooth harrow, the combination with a side-bar provided with a trunnion-aperture; of a thimble; a tooth-bar; a spike-tooth; a trunnion-bolt inwardly insertible through the trunnion-aperture in said side-bar, having a head engageable with the outer side of the side-bar and a bearing portion occupying said aperture; and means for detachably clamping together said trunnion-bolt, thimble, tooth-bar and spike-tooth.

2. In a spike-tooth harrow, the combination with a side-bar provided with a trunnion-aperture; of a thimble; a tooth-bar; a spike-tooth; means for clamping together said thimble, tooth-bar and spike-tooth; and a trunnion-bolt inserted through the trunnion-aperture in said side-bar, having on its outer end a head engageable with the outer side of the side-bar and having its inner end offset and secured in engagement with said tooth-bar and said spike-tooth.

3. In a spike-tooth harrow, the combination with a side-bar provided with a trunnion-aperture; of a thimble provided with a trunnion-aperture and having apertured clamp-arms; a tooth-bar having its end inserted within said thimble; a spike-tooth inserted through the apertured clamp-arms of the thimble in engagement with one side of said tooth-bar; screw-mechanism mounted upon said thimble engageable with the opposite side of said tooth-bar; and a trunnion-bolt inwardly insertible through the respective trunnion-apertures in the side-bar and thimble, said trunnion-bolt having a head adapted to engage the outer side of said side-bar and a bearing-portion adjacent to said head adapted to occupy the trunnion-aperture in said side-bar and having its shank inserted through the trunnion-aperture in said thimble and secured within the thimble.

4. In a spike-tooth harrow, the combination with a side-bar provided with a trunnion-aperture; of a thimble provided with a trunnion-aperture, and having apertured clamp-arms; a tooth-bar having its end inserted within said thimble and provided with a hook-aperture; a spike-tooth inserted through the apertured clamp-arms of the thimble in engagement with one side of said tooth-bar; screw-mechanism mounted upon said thimble engageable with the opposite side of said tooth-bar; and a trunnion-bolt having a head adapted to engage the outer side of said side-bar and a bearing-portion adjacent to said head adapted to occupy the trunnion-aperture in said side-bar and having its shank inserted through the trunnion-aperture in said thimble and terminating in a hook secured in the hook-aperture in the tooth-bar.

5. In a spike-tooth harrow, the combination with a side-bar provided with a trunnion-aperture; of a thimble provided with a trunnion-aperture and having apertured clamp-arms; a tooth-bar having its end inserted within said thimble and provided with an aperture; a spike-tooth inserted through said apertured clamp-arms in engagement with one side of said tooth-bar; screw-mechanism mounted on said thimble engageable with the opposite side of said tooth-bar and a trunnion-bolt inserted through the respective trunnion-apertures in said side-bar and said thimble, having a head engageable with the outer side of said side-bar, and a shank offset to engage said spike-tooth and terminating in a shouldered hook adapted to engage the aperture in said tooth-bar, said shank being of such shape and dimensions as to be insertible inwardly through said trunnion-apertures.

In testimony whereof, I have hereunto set my hand this 20th day of November, 1912.

J. EARLE PERCY.

Witnesses:
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F. B. TUTTLE.