(No Model.)

W. STRAIT.

HARROW.

No. 457,095. Patented Aug. 4, 1891.

Fig. 1.

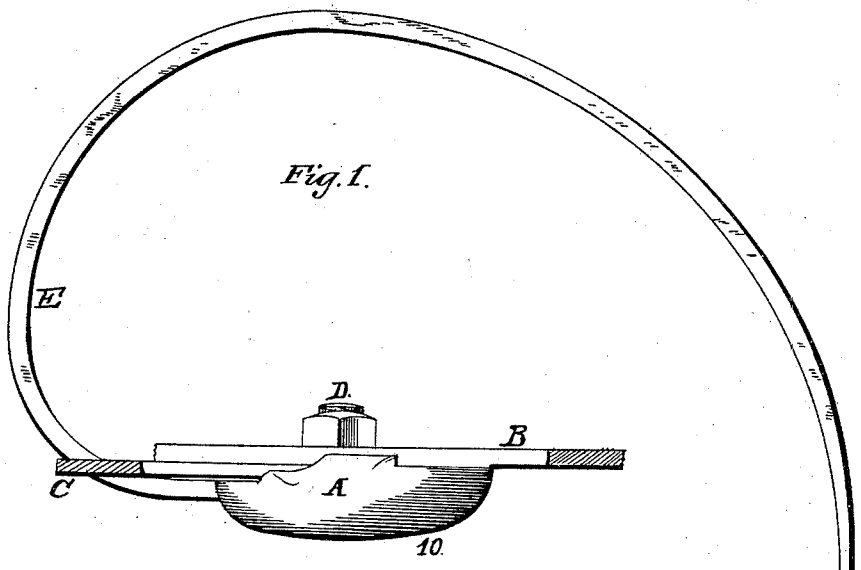


Fig. 2.

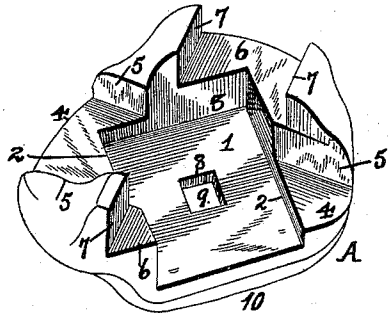
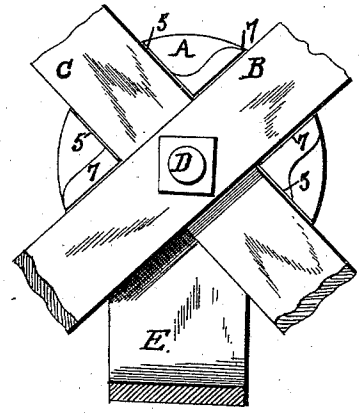


Fig. 3.



Witnesses
J. Wm. Hopkle
Geo. L. Clark

Inventor
William Strait.
by F. B. Brock
Attorney

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

WILLIAM STRAIT, OF ELMIRA, NEW YORK.

HARROW.

SPECIFICATION forming part of Letters Patent No. 457,095, dated August 4, 1891.

Application filed November 25, 1890. Serial No. 372,625. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM STRAIT, a citizen of the United States, residing at Elmira, in the county of Chemung and State of New York, have invented certain new and useful Improvements in Harrows; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings and to the letters and figures of reference marked thereon, which form a part of this specification.

Figure 1 is a side elevation of a coupling embodying my improvements, showing a harrow-tooth and portions of the harrow-frame. Fig. 2 is a perspective view of the tooth and frame coupling, and Fig. 3 is a plan view of the same with portions of the harrow-tooth and frame in position.

My invention relates to harrows.

The objects of my improvements are to produce a combined tooth-holder and harrow-frame coupling, which acts also as a tooth-protecting and tooth-fastening support.

To attain these objects my invention consists in a tooth-holder and frame-coupling having a tooth-seat provided with upwardly-extending flanges, a frame-bar seat disposed at an angle to the tooth-seat immediately above and contiguous to said tooth-seat, also having upwardly-projecting flanges, and a third seat for a frame-bar disposed at an angle to both the lower seats and being also immediately above and contiguous to the lower seats and having upwardly-projecting flanges, the whole tooth-holder and coupling being in one piece and open at the top, so that each frame-bar and the tooth may be lifted out vertically, and being closed at the bottom, so that a tooth-protecting and tooth-fastening support is provided. This construction enables me to bring the tooth and frame-bars all into rigid contact with each other at each intersection in the harrow-frame.

In the drawings, A represents my improved tooth-holder and frame-bar coupling.

1 represents the horizontal tooth-seat formed therein and opening upwardly.

2 are the side flanges of the tooth-seat, and 3 the rear or end flange thereof.

4 is a frame-bar seat disposed at an angle across the tooth-seat and immediately above and contiguous thereto.

5 are the side flanges of the frame-seat 4 and extend upwardly.

6 represents the second bar-frame seat arranged immediately above and contiguous to the lower frame and tooth seats and disposed at an angle to and across the said seats.

7 are side flanges of the frame-seat 6 and project upwardly.

8 is a bolt-hole passing centrally through the tooth-seat 1.

9 is a recessed or countersunk hole below the bolt-hole to protect the bolt-head.

The bottom of the holder and frame-coupling A is formed into a shoe 10, which serves to protect the tooth and its fastening against wear and injury.

The holder and coupling A, while closed at the bottom, is entirely open at the top, so that the tooth and both frame-bars are in immediate contact with one another, and all may be raised up vertically out of their seats or placed within their seats in a similar manner.

B is a section of one of the harrow-frame bars. C is a similar portion of one of the intersecting frame-bars.

D is the connecting and locking bolt for the tooth, coupling, and frame-bars at each intersection.

The tooth E of the harrow in this instance is non-adjustable and is held rigidly in its bearings. The tooth-seat is horizontal and opens laterally, so that the tooth may be inserted from the side of the holder and coupling A, while the opposite side of the holder tooth-seat is preferably closed at 3. This rear flange 3 is important, in that it acts as a basis for the flanges 5 and 7 of both the frame-bar seats and for the frame-seats 4 and 6.

It will be seen that a single hole is pierced through each of the frame-bars B and C and the holder A, and that but a single bolt D is necessary to rigidly secure all the parts A B C against vertical, longitudinal, or lateral movement. As a result of this construction, I am enabled to make an all-steel frame and spring-tooth harrow at a remarkably cheap cost, and at the same time put on the market a strong, well-built, and very effective work-

ing harrow, which is due almost entirely to the cheapness, simplicity, and effectiveness of the tooth-holder and frame-coupling.

It will be understood that the coupling A is closed upon one side and open at the other, that the tooth-seat and both frame-seats each have flanges and adjoin each other, so that all the seats open outwardly at one side, whereby the tooth and frame bars may be inserted into one side of the coupling and held in contact with each other, whether the coupling be used one side up or the other.

I claim—

1. In a harrow, a tooth and frame coupling closed upon one side and open upon the other, said coupling being provided with a tooth-seat opening outwardly and having flanges, a frame-seat opening outwardly and adjoining the tooth-seat and having flanges, and a second frame-seat opening outwardly and adjoining the first frame-seat and having flanges, all the said seats being open at the one side and communicating with one another, whereby the tooth and both frame-bars are inserted into one side of the coupling and held in contact with each other.

2. In a harrow, a tooth and frame coupling closed upon one side and open upon the other, said coupling being provided with a tooth-seat open in front and having flanges at the sides and rear opening outwardly, and a frame-seat opening outwardly adjoining the tooth-seat and having flanges, both seats being open at the one side and communicating with each other.

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

WILLIAM STRAIT.

Witnesses:
F. B. BROCK,
GEO. L. CLARK.