

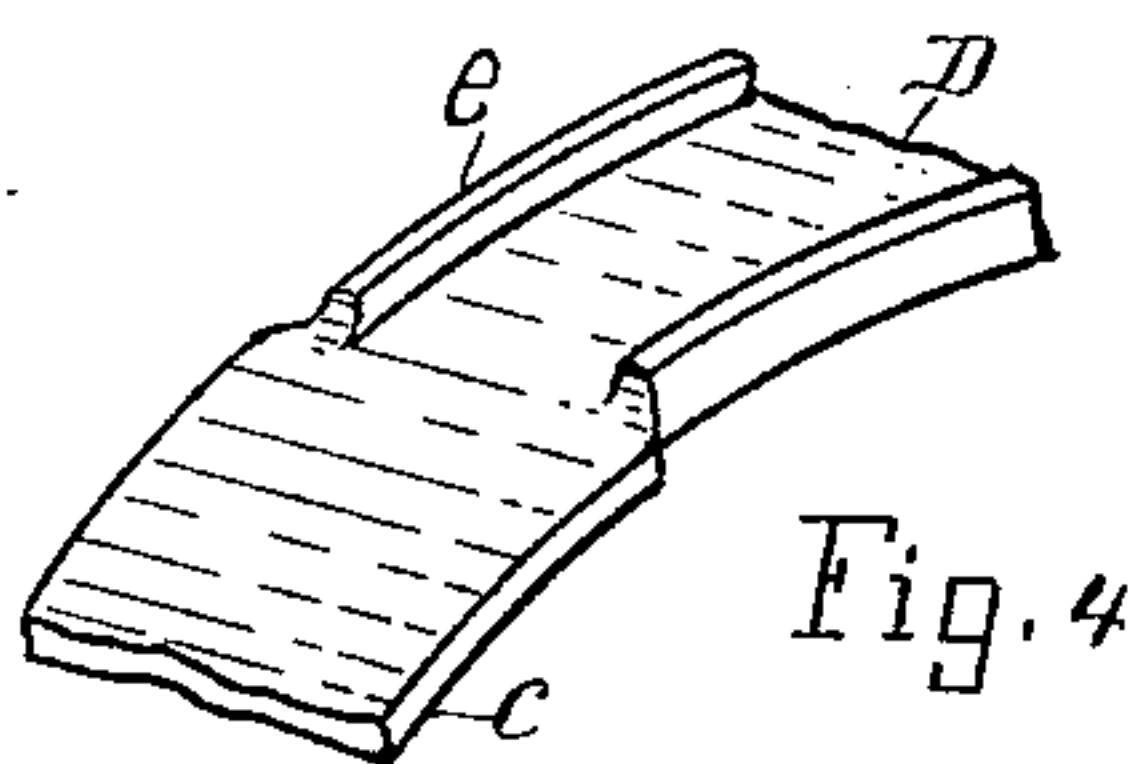
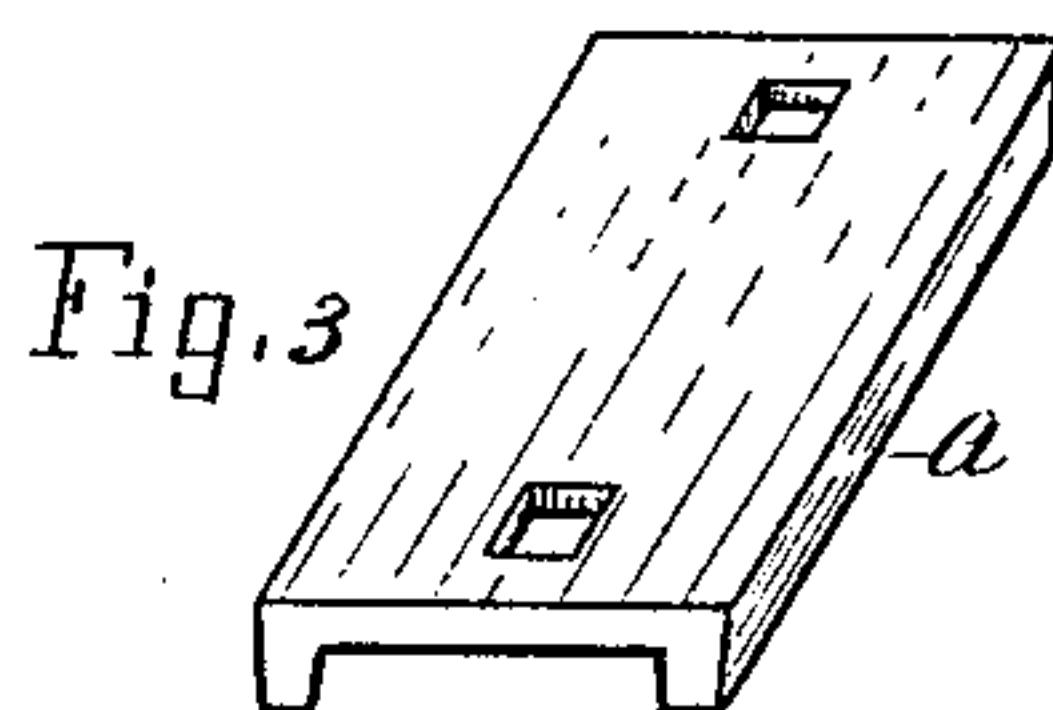
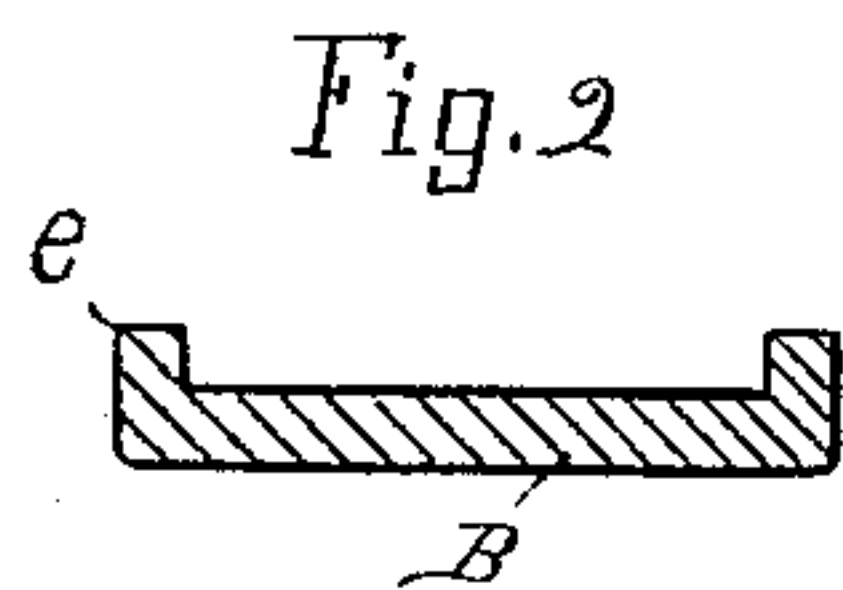
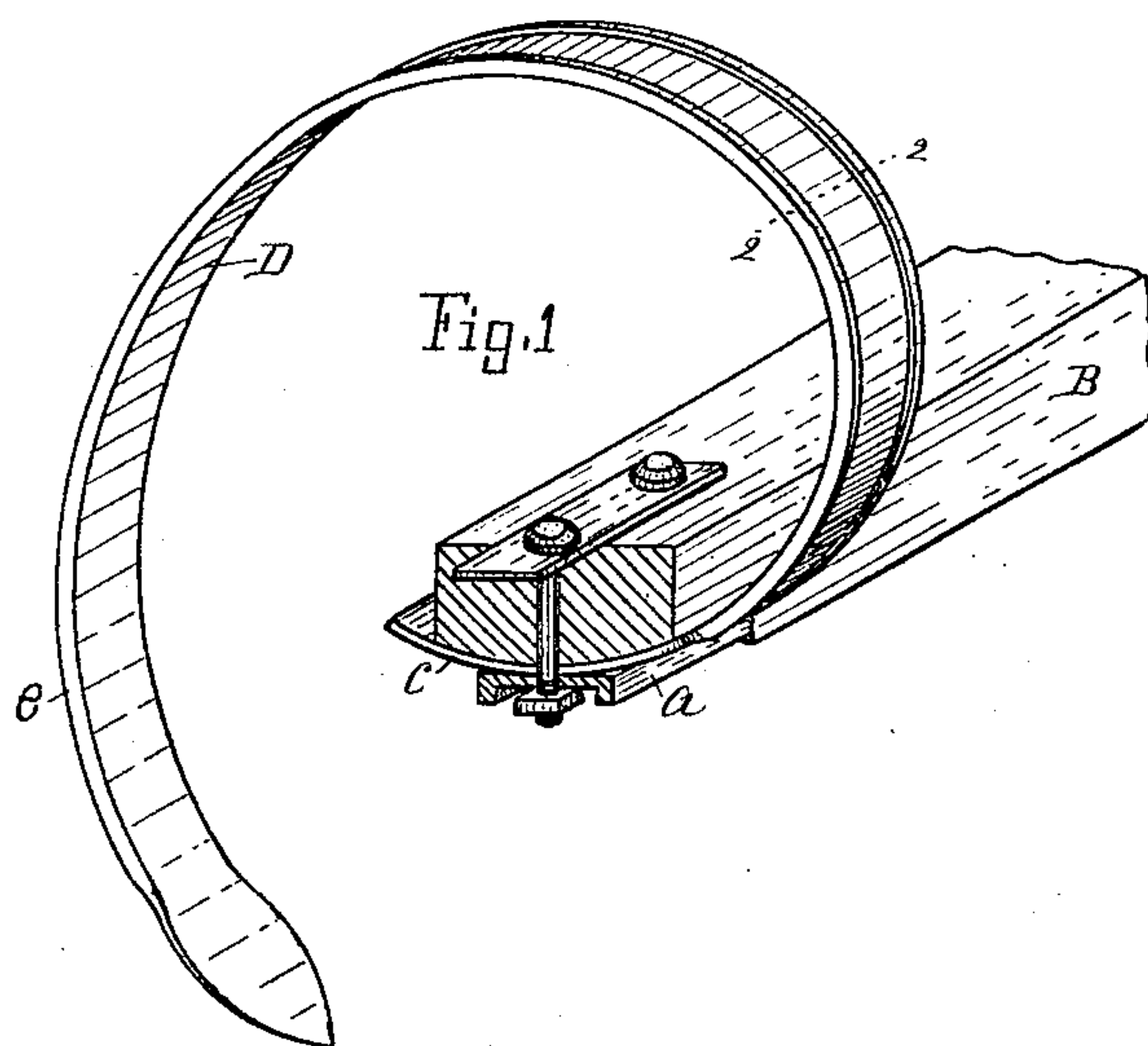
(No Model.)

H. C. REED & A. CLARK.

SPRING TOOTH HARROW.

No. 388,306.

Patented Aug. 21, 1888.



Witnesses.
John B. Perkins.
John N. Chase.

Inventor.
Heber C. Reed & Asa Clark.
By *Lucius C. West.*
att'y.

UNITED STATES PATENT OFFICE.

HEBER C. REED AND ASA CLARK, OF KALAMAZOO, MICHIGAN, ASSIGNORS
TO D. C. AND H. C. REED & COMPANY, OF SAME PLACE.

SPRING-TOOTH HARROW.

SPECIFICATION forming part of Letters Patent No. 388,306, dated August 21, 1888.

Application filed January 30, 1888. Serial No. 262,354. (No model.)

To all whom it may concern:

Be it known that we, HEBER C. REED and ASA CLARK, citizens of the United States, residing at Kalamazoo, county of Kalamazoo, State of Michigan, have invented a new and useful Spring-Tooth Harrow, of which the following is a specification.

This invention has for its object the construction of an improved spring harrow-tooth and a clip to bind it to the harrow-beam, substantially as below described and claimed.

Referring to the drawings forming a part of this specification, Figure 1 is a perspective view, partly in section; Fig. 2, a section, enlarged, on line 2 2 in Fig. 1. Figs. 3 and 4, enlarged lettered details from Fig. 1, in perspective.

Referring to the letters marked on the drawings, B shows the beam of a harrow-frame, and D the well-known style of curved spring-tooth so far as its general contour is concerned.

Heretofore these teeth have been bent from a strip of flat spring-steel. The tooth herein shown is channeled on the outside throughout its curved portion, or nearly so—that is, it is provided with a rib, *e*, at each edge and at right angles to the face of the tooth, (or it may have any other number of ribs.) The shank *c* of the tooth is not ribbed, as shown in Figs. 1 and 4, but it may be, if desired. The idea is to channel the tooth throughout its bowed elastic portion at least, and the shank is preferably ribbed or channeled; but it may be flat, as here shown, as stated. The working-point may be ribbed or not. The working-point of the tooth is not ribbed, as here shown, that portion of the steel which could have been left turned to form the ribs being spread out lat-

erally when the tooth was struck by the die to make the working-point wider than the ribbed portion of the tooth. For this reason the bowed part of the tooth above the point is narrower than ordinarily, and thus has less frictional contact with the surface of the earth, and yet is as strong as the wider teeth, which have no ribs; hence by forming the elastic curved tooth with ribs much lighter steel may be employed and still have the same degree of elasticity as the old style. Thus better results are attained, and a saving is made in the expense of production, shipping, &c.

The clip *a*, which binds the shank of the tooth to the frame or beam B, is channeled on the under side, so as to stiffen it, and thus require lighter metal, and at the same time protect the bolt-heads, which bolts bind the clip to the beam. The bolt-head or the burr may be in the channel of the clip. As here shown, the burr is in the channel, Fig. 1; but this is a matter of choice.

Having thus described our invention, what we claim is—

The combination of a harrow-beam, a tooth or share, a clip channeled on the under side, and the binding-bolts, substantially as set forth.

In testimony of the foregoing we have hereunto subscribed our names in presence of two witnesses.

HEBER C. REED.
ASA CLARK.

Witnesses:

JOHN C. PERKINS,
MOSES HILL.