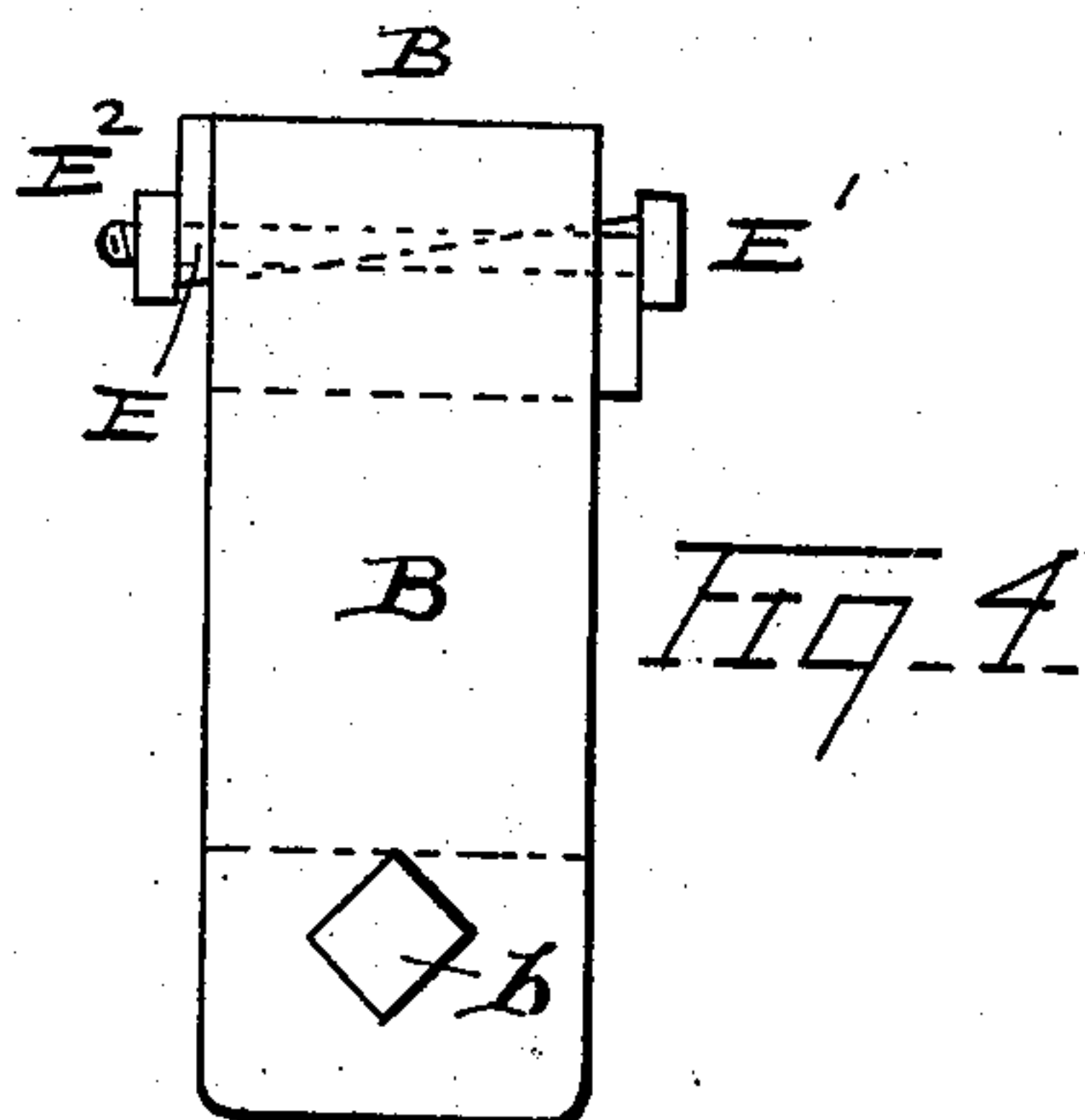
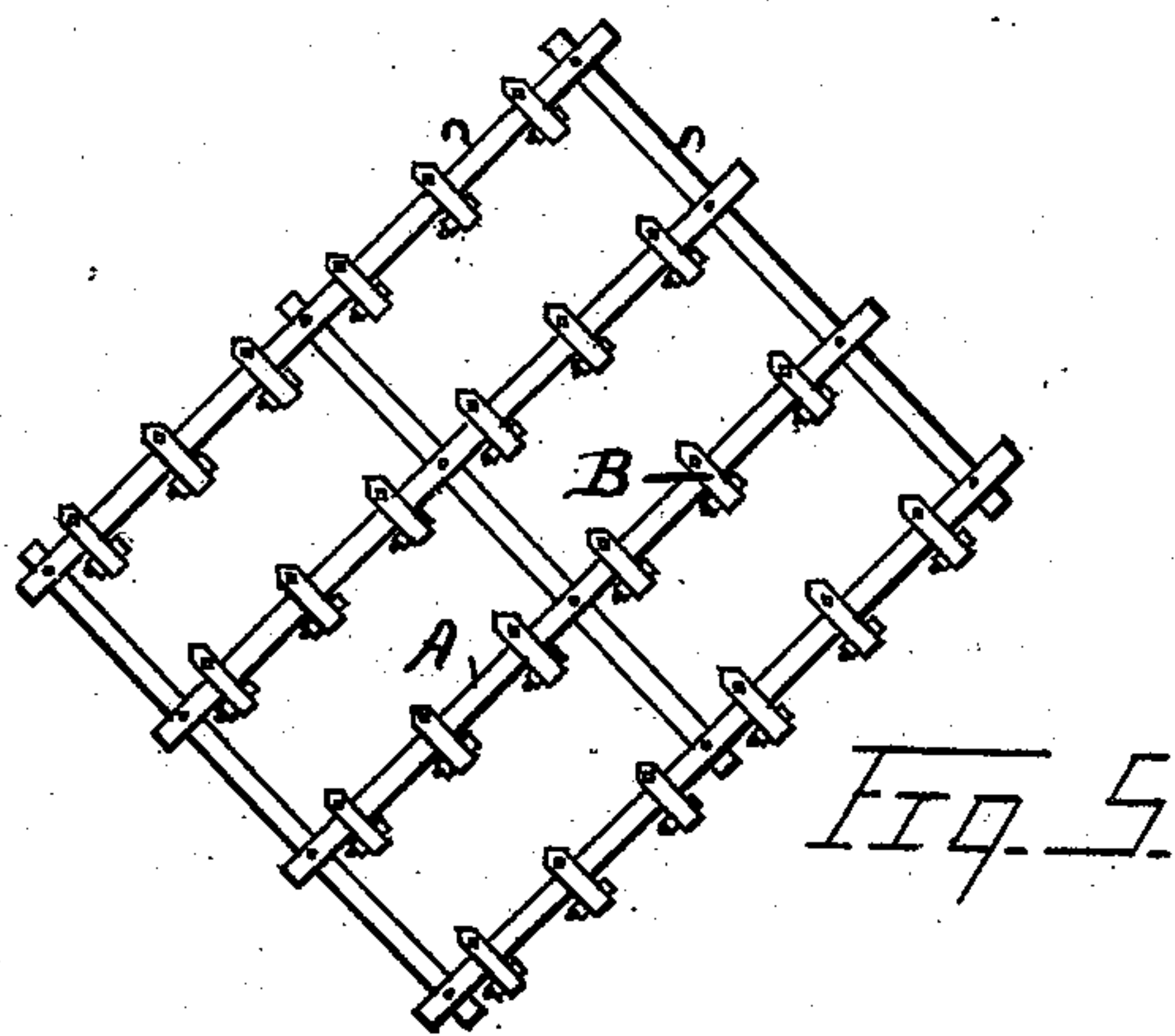
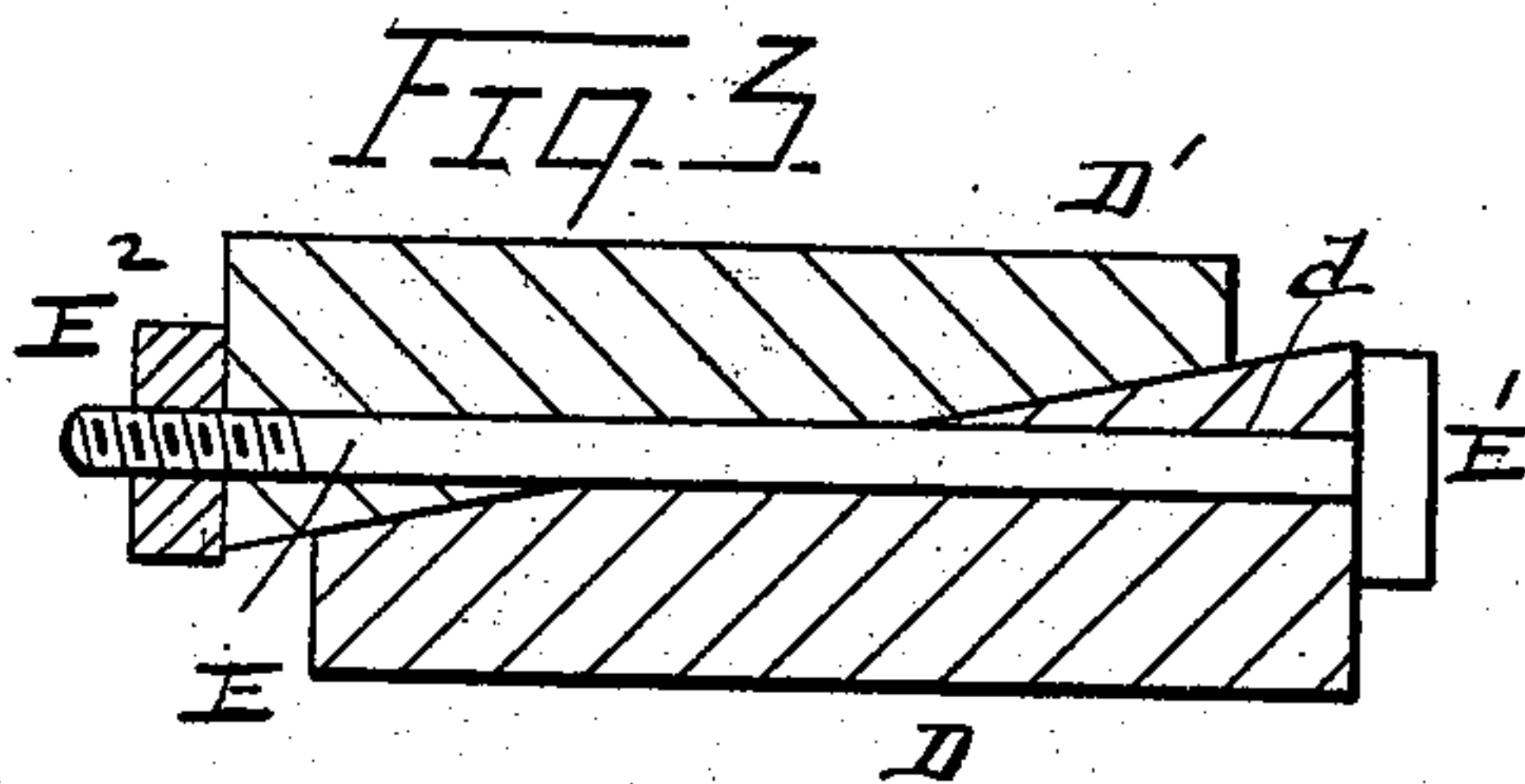
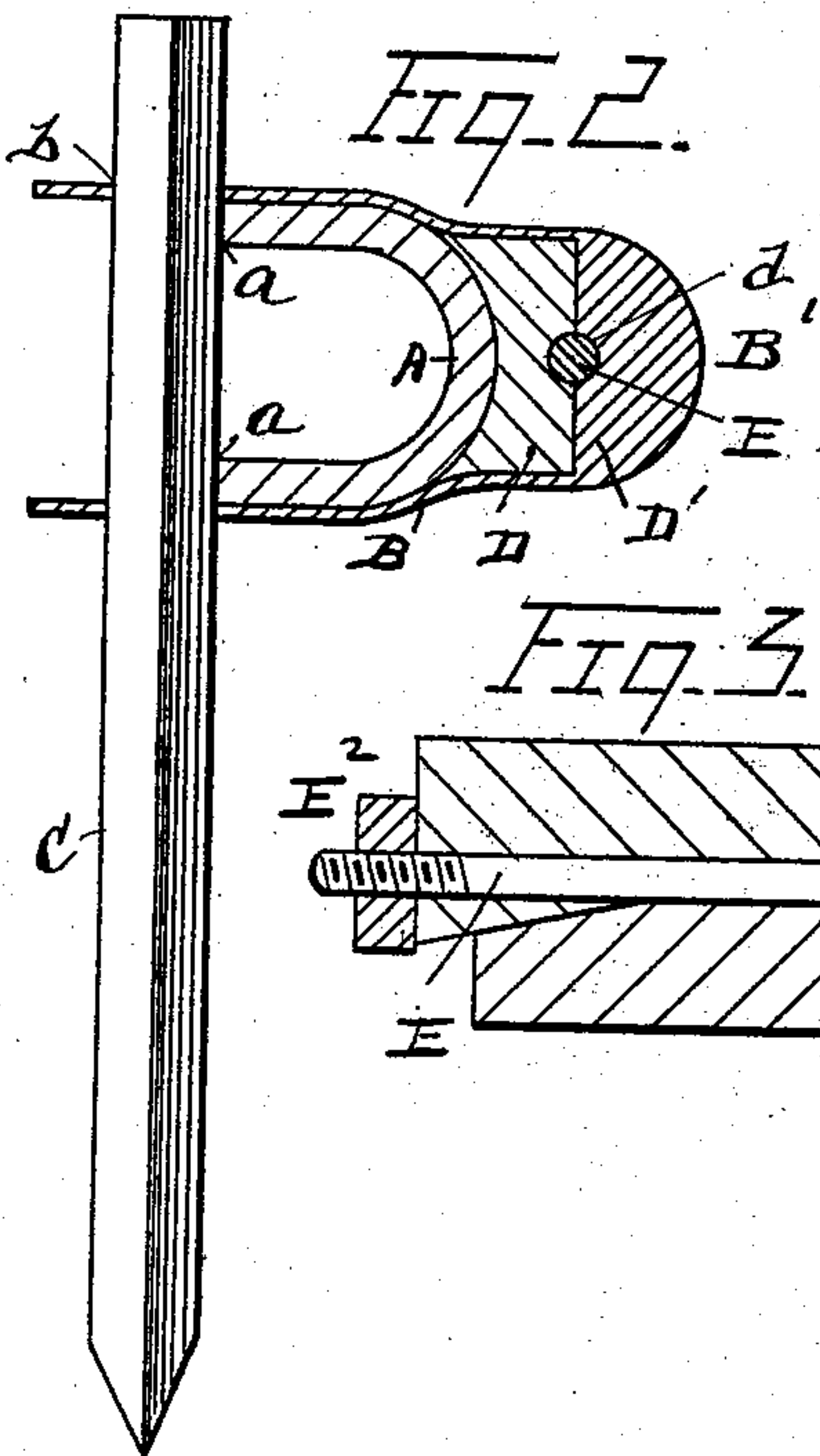
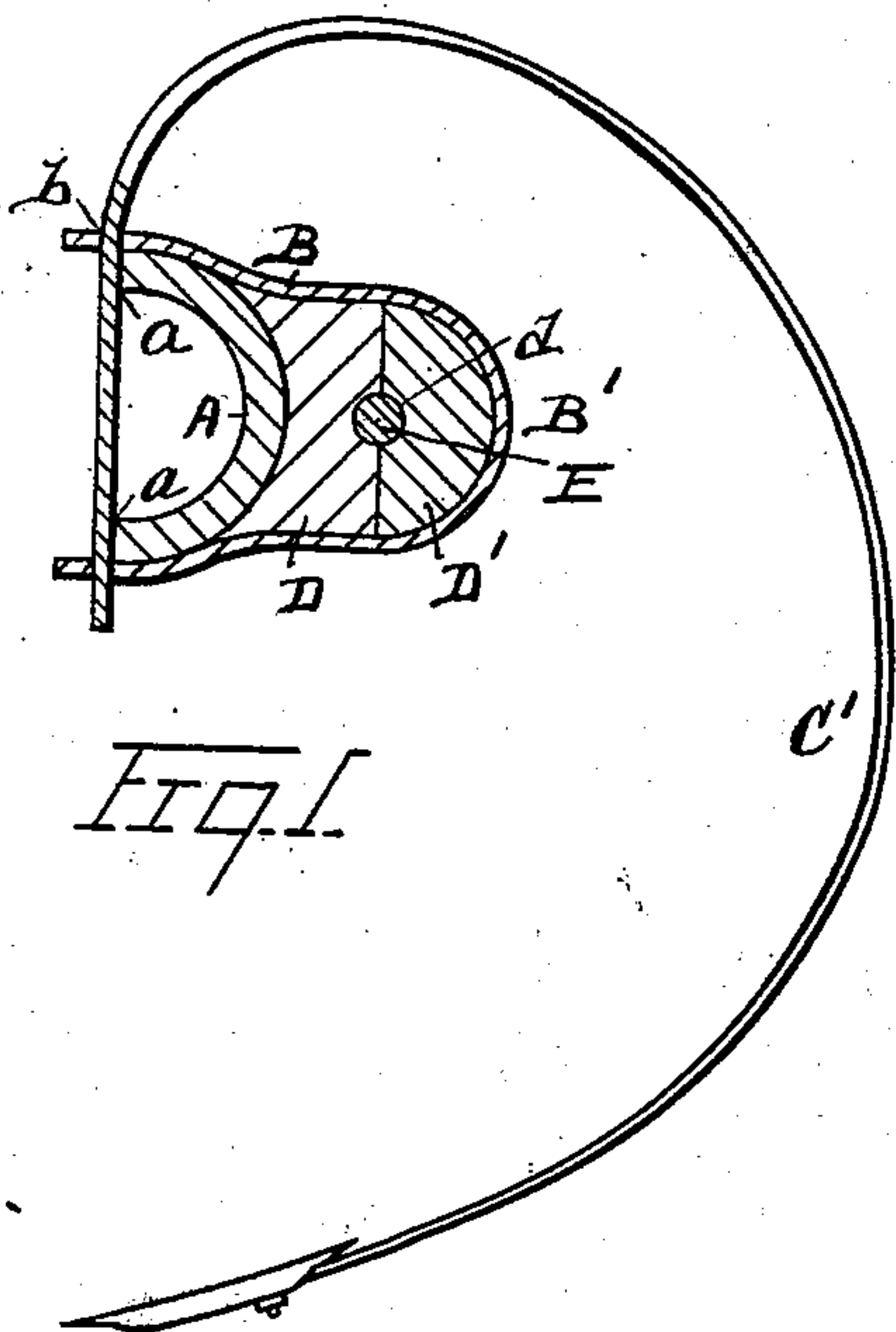


(No Model.)

O. R. BALDWIN.
FASTENING DEVICE FOR HARROW TEETH.

No. 506,654.

Patented Oct. 17, 1893.



Witnesses
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UNITED STATES PATENT OFFICE.

ORRIN R. BALDWIN, OF DETROIT, MICHIGAN.

FASTENING DEVICE FOR HARROW-TEETH.

SPECIFICATION forming part of Letters Patent No. 506,654, dated October 17, 1893.

Application filed December 5, 1892. Serial No. 454,102. (No model.)

To all whom it may concern:

Be it known that I, ORRIN R. BALDWIN, a citizen of the United States, residing at Detroit, county of Wayne, State of Michigan, have invented a certain new and useful Improvement in Fastening Devices for Harrow-Teeth; and I 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, which form a part of this specification.

My invention relates to an improved harrow tooth attachment, my object being to provide a simple, economical and efficient means of securing a harrow tooth to the bars of the frame, whereby the tooth will be held in place firmly in a ready and superior manner.

It is the aim of my invention to provide such an attachment, whereby either a spring harrow tooth or an ordinary square tooth may be engaged upon the harrow frame, with but a trifling modification of construction.

To these ends my invention consists of the devices and appliances, their construction, combination and arrangement, as hereinafter described and claimed, and illustrated in the accompanying drawings, in which—

Figure 1 is a view in vertical section, illustrating my invention. Fig. 2 is a similar view, illustrating a modification. Fig. 3 is a longitudinal vertical section through the wedges. Fig. 4 is a plan view of the fastening device. Fig. 5 is a plan view of a harrow.

The desirability of a simple and cheap means of fastening a harrow tooth to the frame, and whereby the attaching mechanism may be securely locked in place, is evident. My invention is designed to effectually secure these ends.

I carry out my invention as follows: A represents a bar of a harrow frame of ordinary form, that shown consisting of a bar of metal substantially U-shaped in cross section.

B is an attaching band or clip of metal, partially encircling said bar, the extremities of said band projecting past the marginal edges "a" "a" of said bar, as shown. These projecting extremities of said band are constructed with orifices, as at "b," shaped to cor-

respond to the shape of the tooth, to be engaged thereby.

C represents an ordinary square tooth, passed through the extremities of said band, and bearing against the marginal edges of said bar. In this case the orifices "b" will conform to the squared form of the tooth C.

C' denotes an ordinary spring tooth having its spring bar similarly engaged in the extremities of said band. In the latter case the orifices "b" will be elongated, to correspond to the shape of the spring bar of the tooth C'.

The band B is constructed preferably to form a loop B' projecting from the face of the bar A, opposite its marginal edges.

To bind the harrow tooth firmly against the marginal edges "a" "a" of the bar A, so as to hold the tooth firmly in place, I provide wedges D and D', to be forced in opposite directions, into the loop B', said wedges binding upon the bar A, and the adjacent portion of the band or loop. These wedges may be channeled on their adjacent faces longitudinally to form a bolt hole "d." E is a fastening bolt engaged in said bolt hole.

E' is the head of the bolt, and E² is a nut located on the opposite end. Washers may be located between the head and nut of the bolt and the adjacent ends of said wedges, if preferred, although the washers may be omitted. The head of the bolt should bear upon the thick end of one wedge, while the nut should bear upon the thick end of the opposite wedge. The wedges should be so constructed, the one relative to the other, that when in locked position the thick end of each wedge will project outward past the thin end of the other wedge, or in other words, the two adjacent ends of the wedges, which may be of equal length, should not come flush together, thus affording opportunity to more thoroughly tighten the wedges in place as the nut is drawn up. Such a construction is shown in the drawings. It is evident that should the two adjacent ends of the wedges be brought flush or evenly together, the tightening of the nut could no longer tighten the wedges in place, but by allowing the one wedge to fall short of having its ends drawn flush up to the ends of the other wedge, there is always a provision for tightening the two wedges more firmly

should they become worn, by simply tightening up the nut.

Instead of employing two separate and independent wedges, it is evident that one of the wedges, as the wedge D', may be formed integral with the band or clip B, or be permanently engaged therewith. This would be preferred when the band is made of a malleable casting, for example. The principle in either case would be identically the same.

The employment of a wedge or key alone, for analogous purposes is well understood to be a common device, but the passage longitudinally therethrough of a headed bolt, and the employment of a nut to tighten and lock the wedges in place is believed to be a novel feature. It is evident that whether the two wedges are made separate and independent of the attaching band, or whether one of them is in permanent engagement or integral with the band, two wedges or wedging faces are employed, and I would have it understood that in the following claims, the term "wedges" is intended to embody the two wedges whether made both separate and independent or otherwise. The two wedges may be first driven into place, and the fastening bolt then engaged therewith and tightened up, or the parts will be drawn into a tightened position, by simply screwing up the nut. In this manner the wedges when tightened up, will be firmly held in place and locked and the tooth will be bound tightly against the edges of the bar.

I do not limit myself to this precise construction or shape of the bar A, as my improved attachment might be used upon any other form of bar, which might be desired.

What I claim as my invention is—

1. The combination with a bar of a harrow frame, of a band partially surrounding said bar, a tooth engaged in the extremities of said band and bearing against said bar, wedges to tighten said tooth upon said bar, and a bolt and nut arranged to tighten and lock said wedges in place, substantially as described.

2. The combination with a bar of a harrow frame, of a band partially surrounding said bar, a tooth engaged in the extremities

of said band and bearing against said bar, wedges located between said band and bar to tighten the tooth upon the band, and a bolt and nut to tighten and lock said wedges in place, substantially as described.

3. The combination with a bar of a harrow frame, of a band partially surrounding said bar, a tooth engaged in the extremities of said band and bearing against said bar, wedges located between said band and bar to tighten the tooth upon the bar, a bolt extended longitudinally of said wedges, and a nut upon said bolt to tighten and lock said wedges in place, substantially as described.

4. The combination with a bar of a harrow frame, of a band partially surrounding said bar, a tooth engaged in the extremities of said band and bearing against said bar, wedges located between said band and bar to tighten the tooth upon the bar, a bolt extended longitudinally of said wedges, the head of the bolt bearing against the thicker end of one wedge and the nut bearing against the thicker end of the other wedge, the thicker end of each wedge projecting outward past the adjacent thin edge of the corresponding wedge substantially as and for the purpose described.

5. The combination with a bar of a harrow frame, of a band partially surrounding said bar, a tooth engaged in the extremities of said band and bearing against said bar, wedges located between said band and bar to tighten the tooth upon the bar, a bolt extended longitudinally of said wedges, the head of the bolt bearing against the thicker end of one wedge and the nut bearing against the thicker end of the other wedge, the thicker end of each wedge projecting outward past the adjacent thin edge of the corresponding wedge one of said wedges permanently engaged with said band, substantially as and for the purpose described.

In testimony whereof I sign this specification in the presence of two witnesses.

ORRIN R. BALDWIN.

Witnesses:

N. S. WRIGHT,

H. LEONARD WILTON.