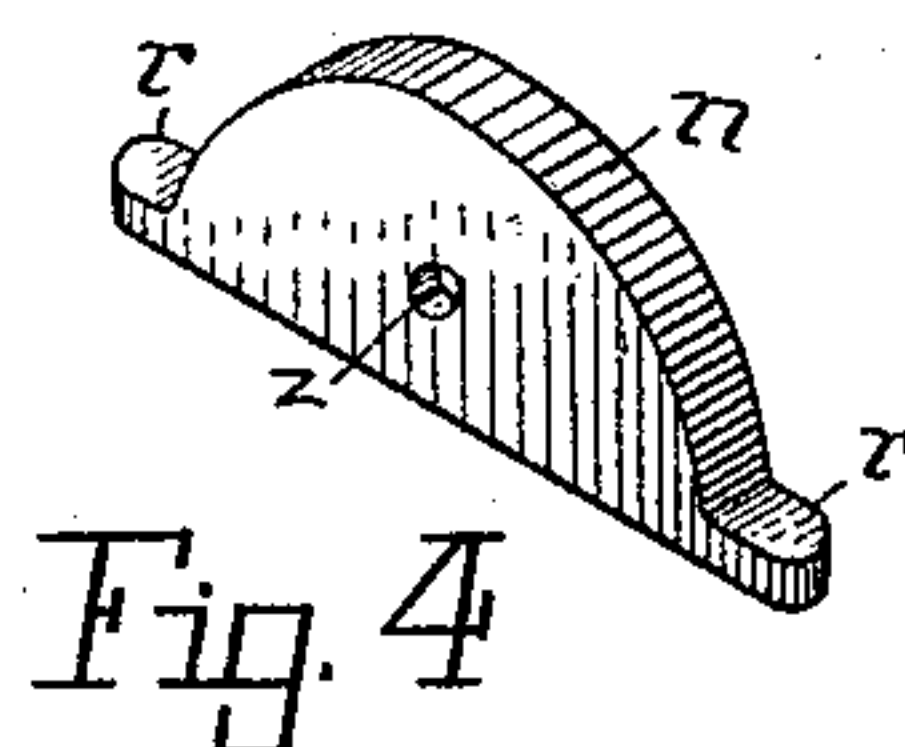
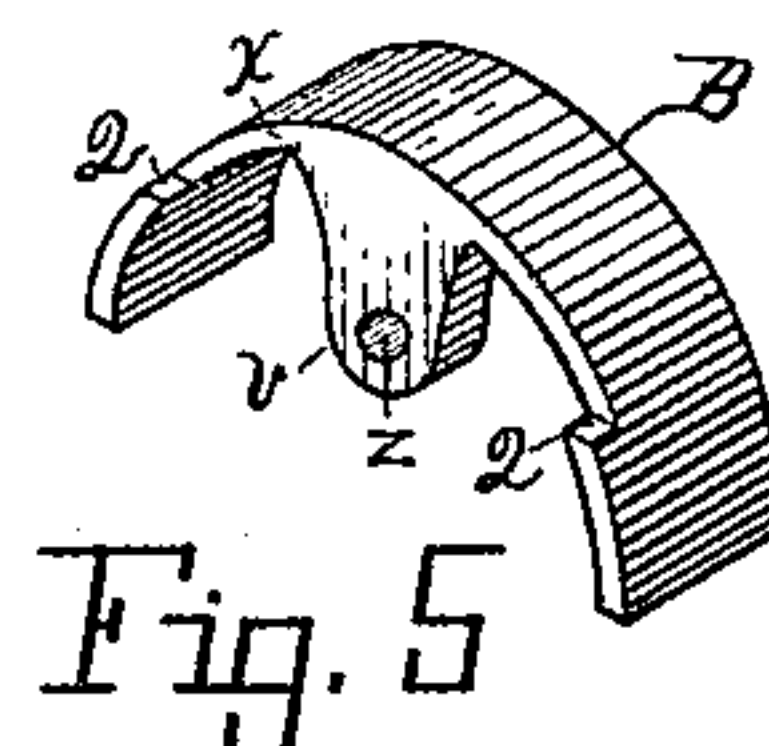
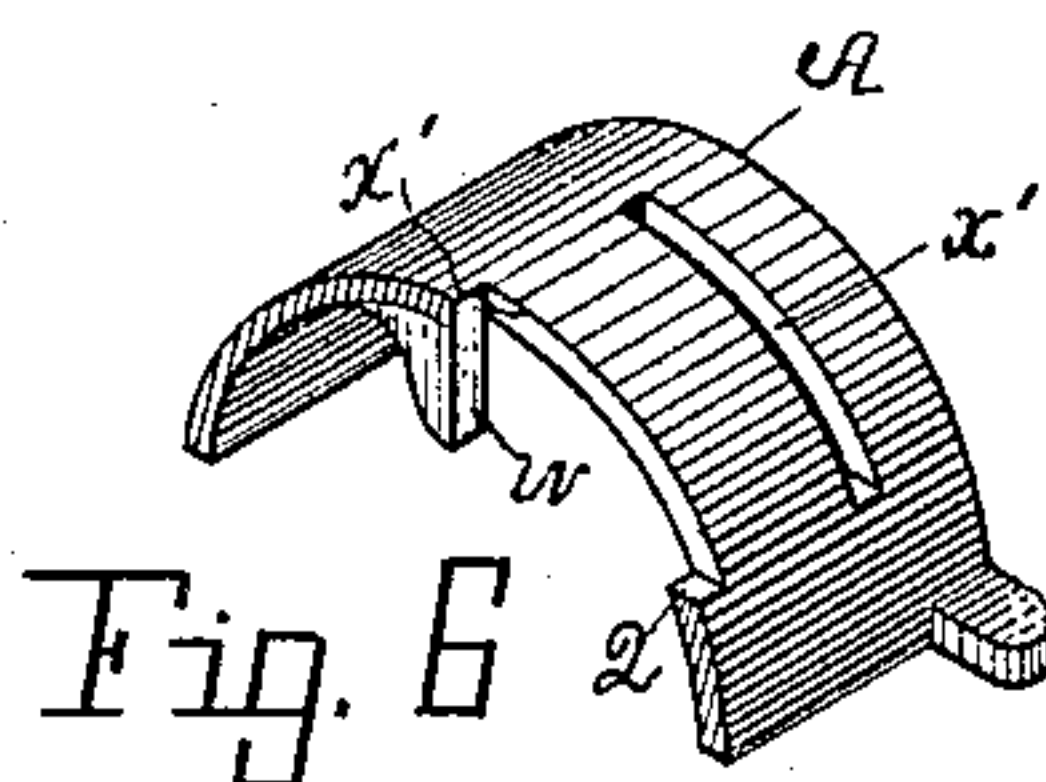
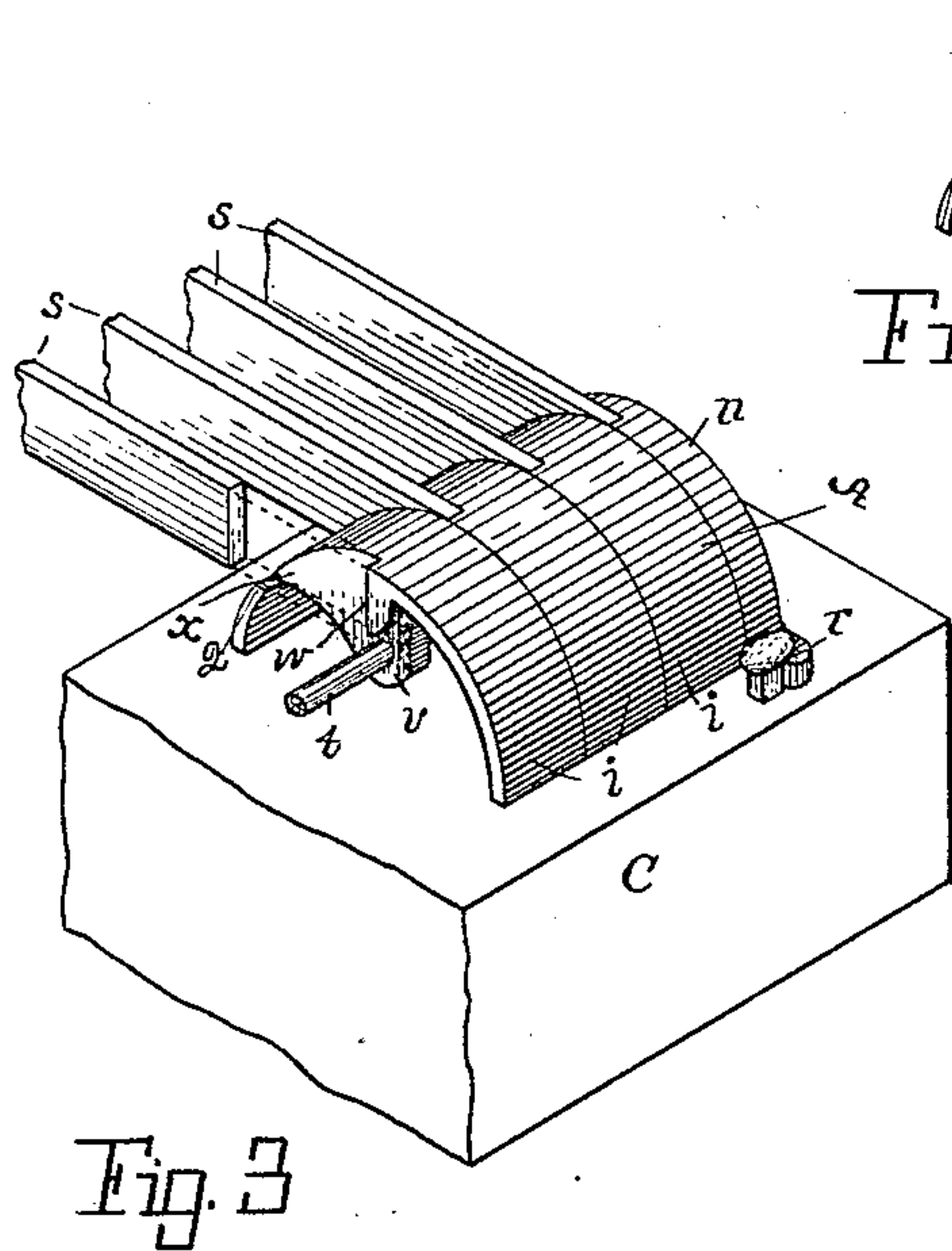
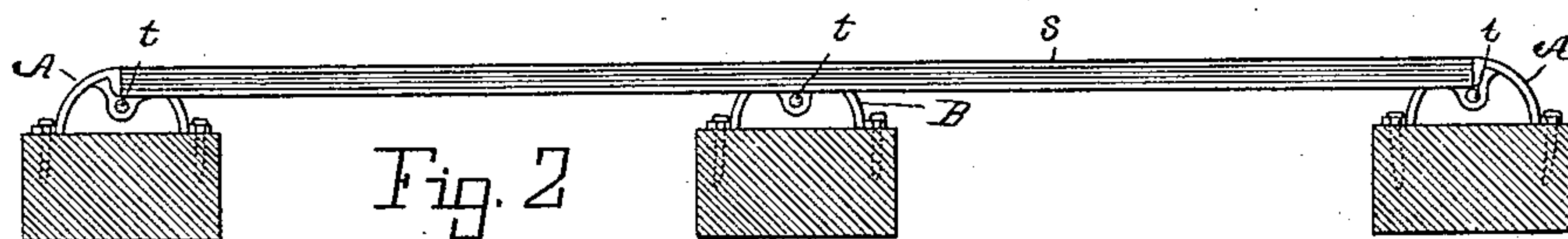
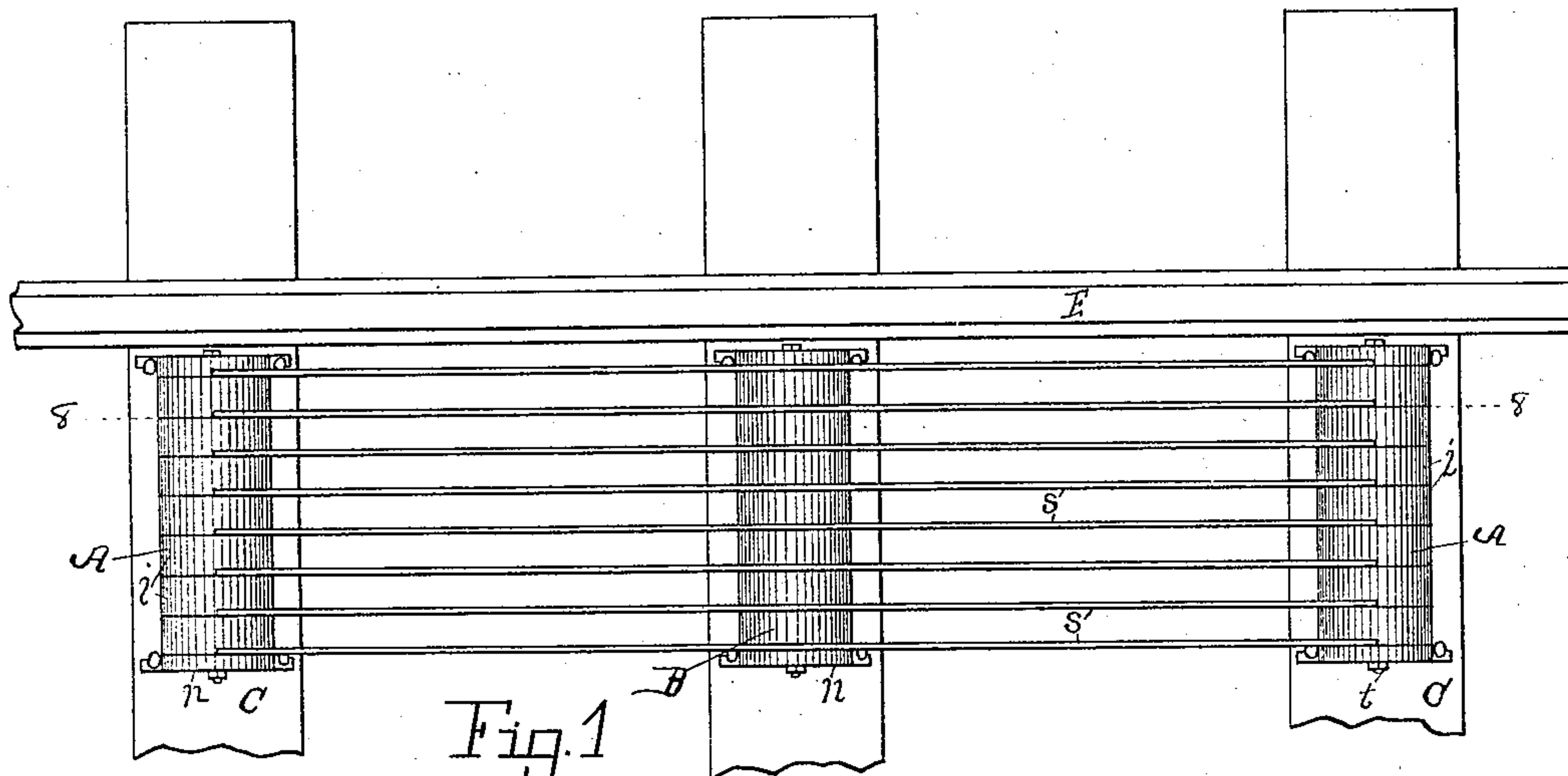


(No Model.)

L. J. STRAIT.
SURFACE CATTLE GUARD.

No. 451,141.

Patented Apr. 28, 1891.



Witnesses:

Walter S. Wood
James Baumann.

Inventor.

Lucille J. Strait
By Lucius C. West
Att'y.

UNITED STATES PATENT OFFICE.

LACELLE J. STRAIT, OF KALAMAZOO, MICHIGAN.

SURFACE CATTLE-GUARD.

SPECIFICATION forming part of Letters Patent No. 451,141, dated April 28, 1891.

Application filed August 21, 1890. Serial No. 362,659. (No model.)

To all whom it may concern:

Be it known that I, LACELLE J. STRAIT, a citizen of the United States, residing at Kalamazoo, county of Kalamazoo, State of Michigan, have invented a new and useful Surface Cattle-Guard, of which the following is a specification.

This invention relates to that class of sectional surface cattle-guards the sections of which consist of transverse supporting-bars mounted upon the ties and separated longitudinal bars parallel with the rails of the track.

One of the features of the invention consists in making the transverse bars from a series of peculiarly-formed cast sections, alternating with the longitudinal bars.

Another feature consists in providing the transverse bars with open seats, in which the ends of the longitudinal bars are placed, said seats and longitudinal bars being so formed in relation to each other that said longitudinal bars are detachable by raising them upward, whereby greater convenience in shipping, handling, and placing the guards is secured, and the bars will be readily lifted out of their seats by the effort of an animal to free itself in case its feet should get caught between the bars.

In the drawings forming a part of this specification, Figure 1 is a broken plan view showing a plan of one of the sections. Fig. 2 is a sectional elevation on line 8 8 in Fig. 1. Fig. 3 is a broken perspective of enlarged lettered details. Fig. 4 shows a perspective of a lettered part, taken from Fig. 3. Fig. 5 is an enlarged perspective of a lettered detail from Fig. 1; and Fig. 6 is a perspective view of a modification below described, being in section on line 8 8 in Fig. 1, but the transverse bars being solid or all in one piece.

Referring to the lettered parts of the drawings, C C are the ties of the track, (shown broken in Fig. 1,) and E illustrates one of the rails of the track. By the side of this rail is shown one of the sections of the guard, as many of said sections of course being employed outside and between the rails of the track as desired. The transverse bars A at each end of the section consist of a series of castings *i i*, Figs. 1 and 3, having open mortises *x* in a like end of each, so that when

these castings are fitted against each other, as in Figs. 1 and 3, the recess for the reception of the ends of the longitudinal bars S will appear like the open seat *x'* in Fig. 6—that is to say, when the sections *i i* are bolted together, as in Fig. 3, the seats in the bars appear like the seat *x'* in Fig. 6, but Fig. 6 is designed to show that the transverse bars A may be made all solid, and not in sections, as in Fig. 3, Fig. 6 of course showing only one end of a solid bar, or a bar made all in one piece. These open seats are provided with a shoulder *w*, against which the ends of the longitudinal bars come in contact to prevent endwise displacement, and they are provided with a shoulder 2, upon which said bars rest, so as to prevent their dropping below the desired point—that is, so that their upper edge will be on a level with the apex of the transverse bars A; also, by means of the shoulder *w* the end of any longitudinal bar is prevented from catching under the transverse bar in case the other end of said bar should be raised, for the reason that said bars S cannot move endwise. The castings *i* are preferably half-round and hollow on the under side, where they are provided with a thickened portion or lug *v*, through which is made a bolt-hole *z*. These castings are all strung upon a rod *t*, and are bound firmly together by a nut, as in Figs. 1 and 3.

The castings at the ends of the transverse bars are preferably made as at *n* in Figs. 1, 3, and 4, and are provided with lateral lugs *r r*, by means of which they are fastened to the ties C by the ordinary railroad-spikes, as here shown.

The design is that the open seats in the transverse bars shall be a little larger than the ends of the longitudinal bars, so that when the transverse bars are fixed in place the longitudinal bars can be readily dropped into their seats, and, as before stated, will be readily detachable in case an animal should get its feet caught between the bars, and also in case of repairs which necessitate taking up a portion of the guard. The central transverse bar B is made just like the other bars described, except that the open seats *x* pass entirely and transversely through it, and have the shoulders 2 2, as in Fig. 5, to prevent the sagging of the bars S in the center.

Fig. 2 will serve to illustrate the relation of all the transverse bars to the longitudinal bars and the position the former occupy in the recesses of the latter.

5 A guard thus made is more convenient to handle and requires less strength, as contrasted with a guard-section made as a complete whole ready to place on the track.

10 Having thus described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. A surface cattle-guard consisting of the transverse bars composed of a series of castings bolted together end for end and provided
15 with the open seats, and longitudinal bars

having their ends in said seats, substantially as set forth.

2. The combination of transverse bars having the open seats and the shoulders to prevent endwise and vertical displacement, and the longitudinal bars having their ends detachable in said seats, substantially as set forth. 20

In testimony of the foregoing I have hereunto subscribed my name in presence of two
25 witnesses.

LACELLE J. STRAIT.

Witnesses:

HARLEY J. FREEMAN,
JAMES BAUMANN.