

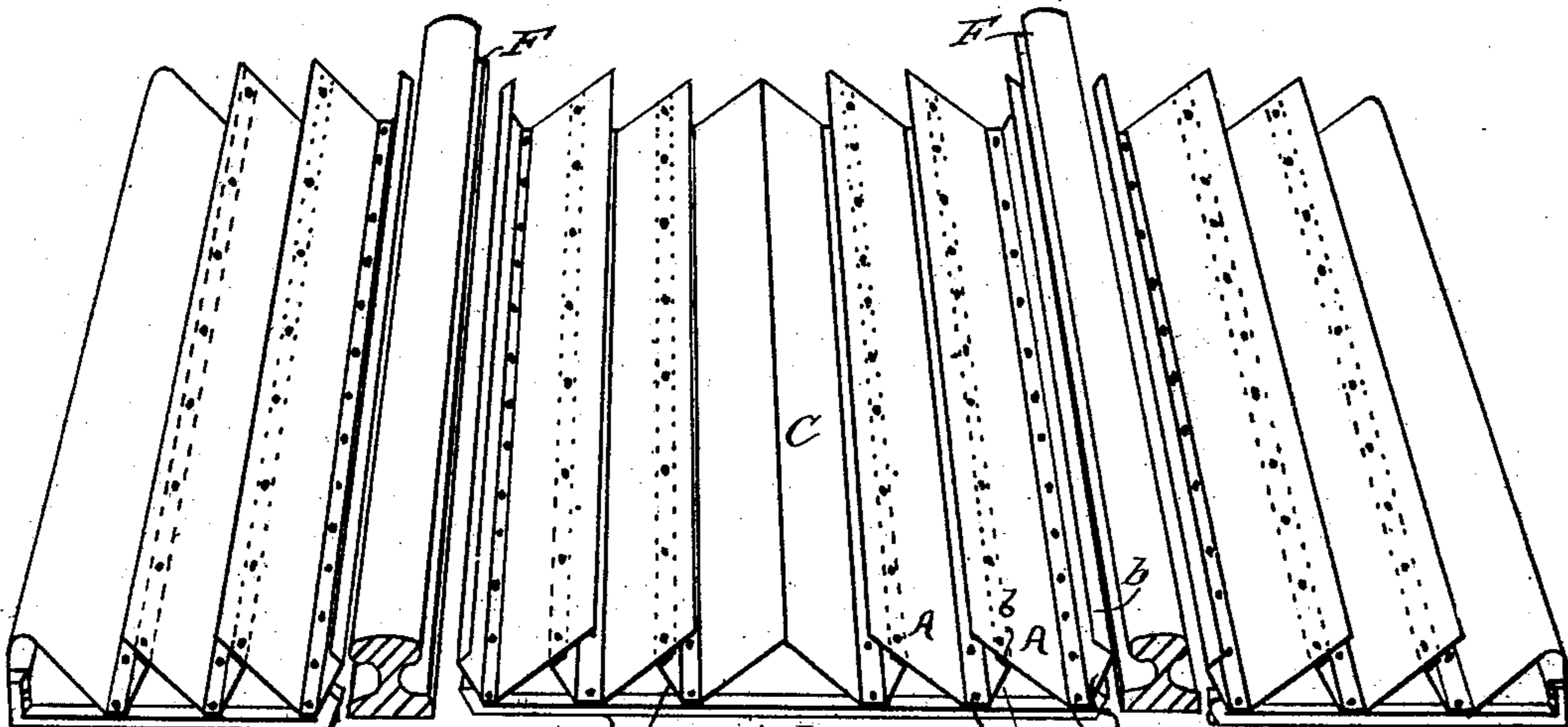
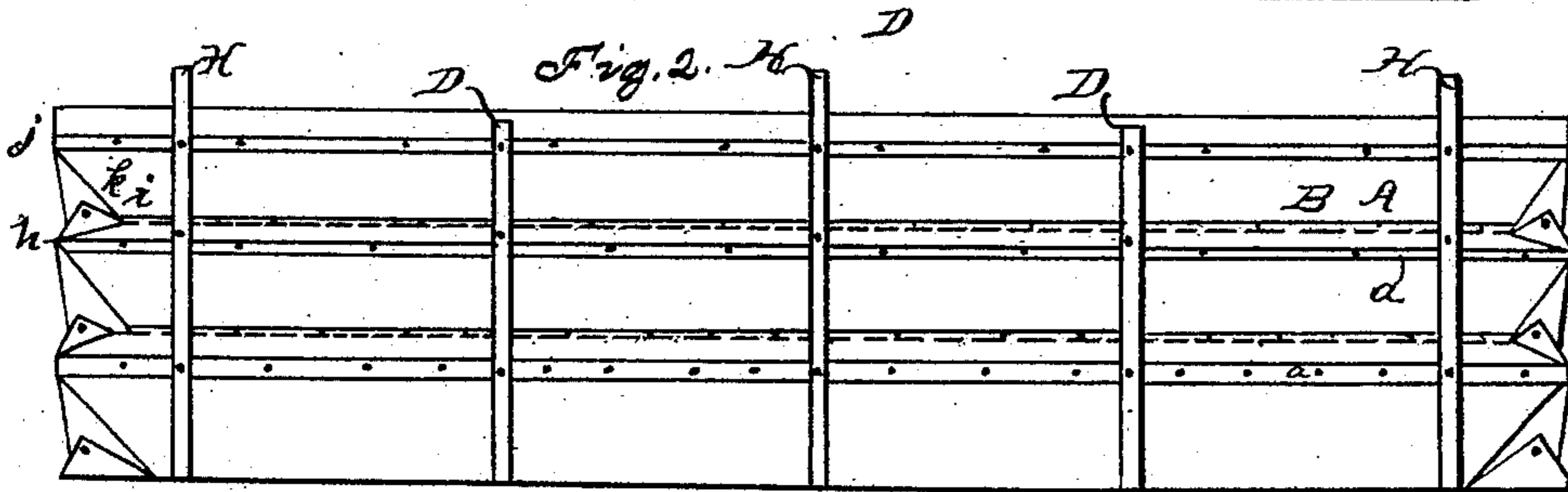
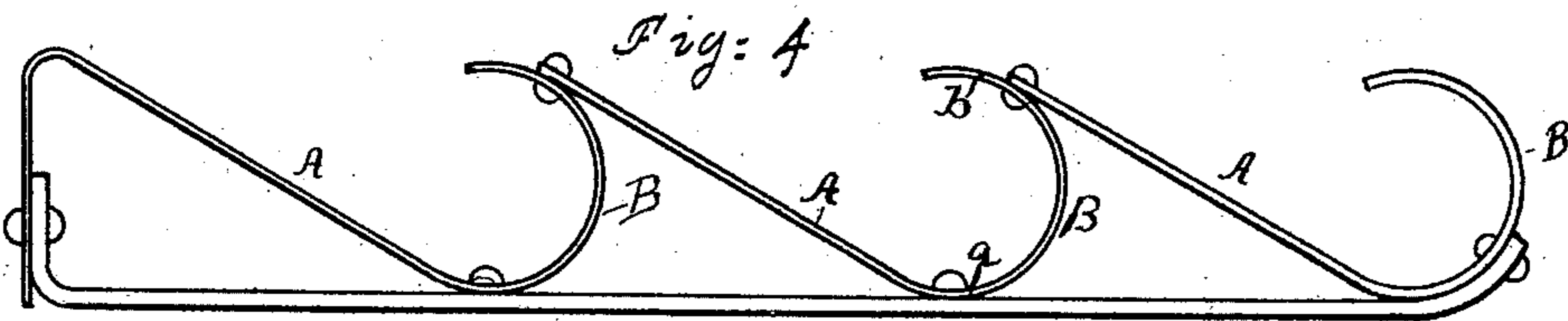
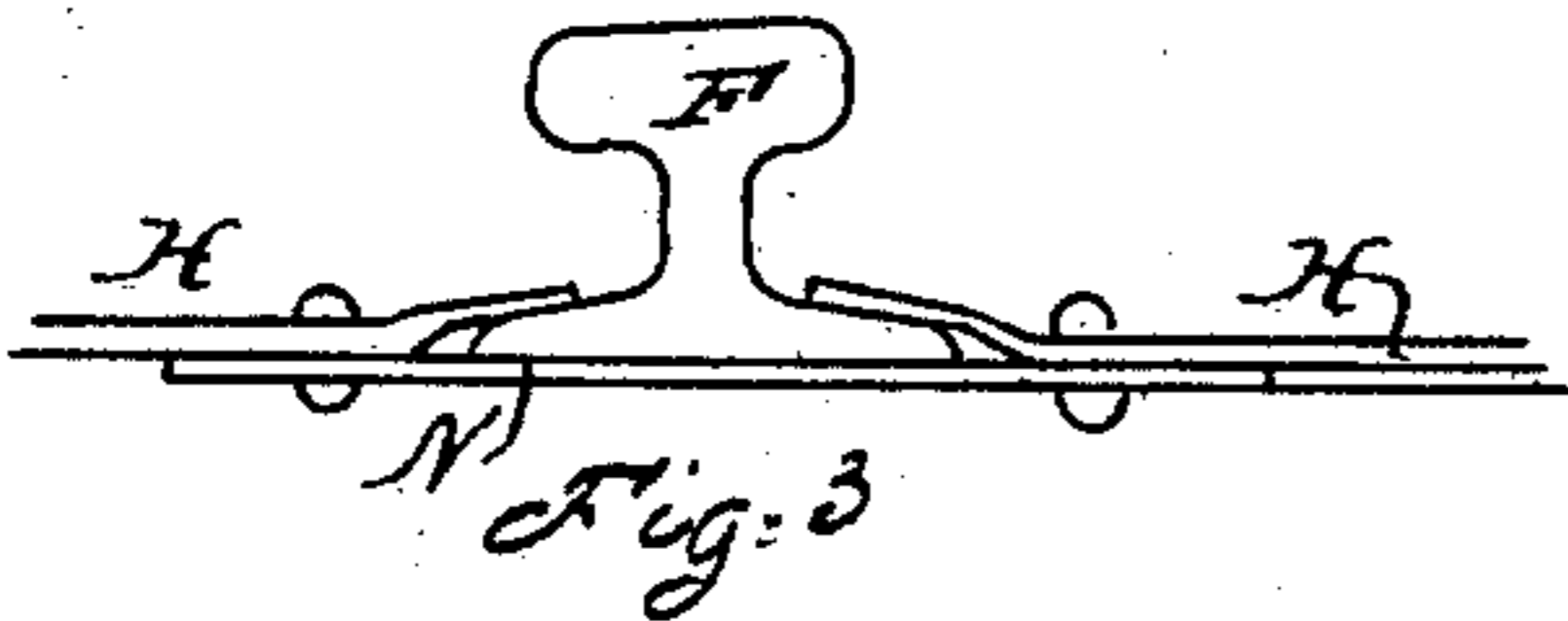
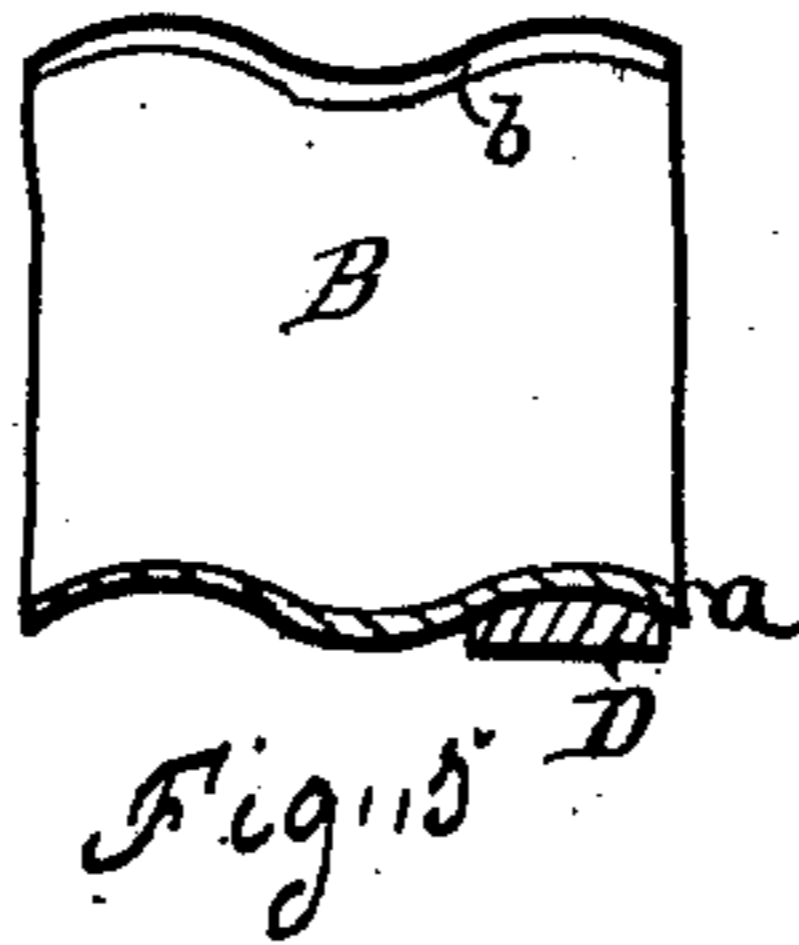
(No Model.)

2 Sheets—Sheet 1.

L. S. GARDNER.
RAILWAY SURFACE STOCK GUARD.

No. 472,574.

Patented Apr. 12, 1892.



Witnesses
H. M. G. C. M.
L. J. Johnston

Inventor
L. S. Gardner
by E. J. Sturdevant
his attorney

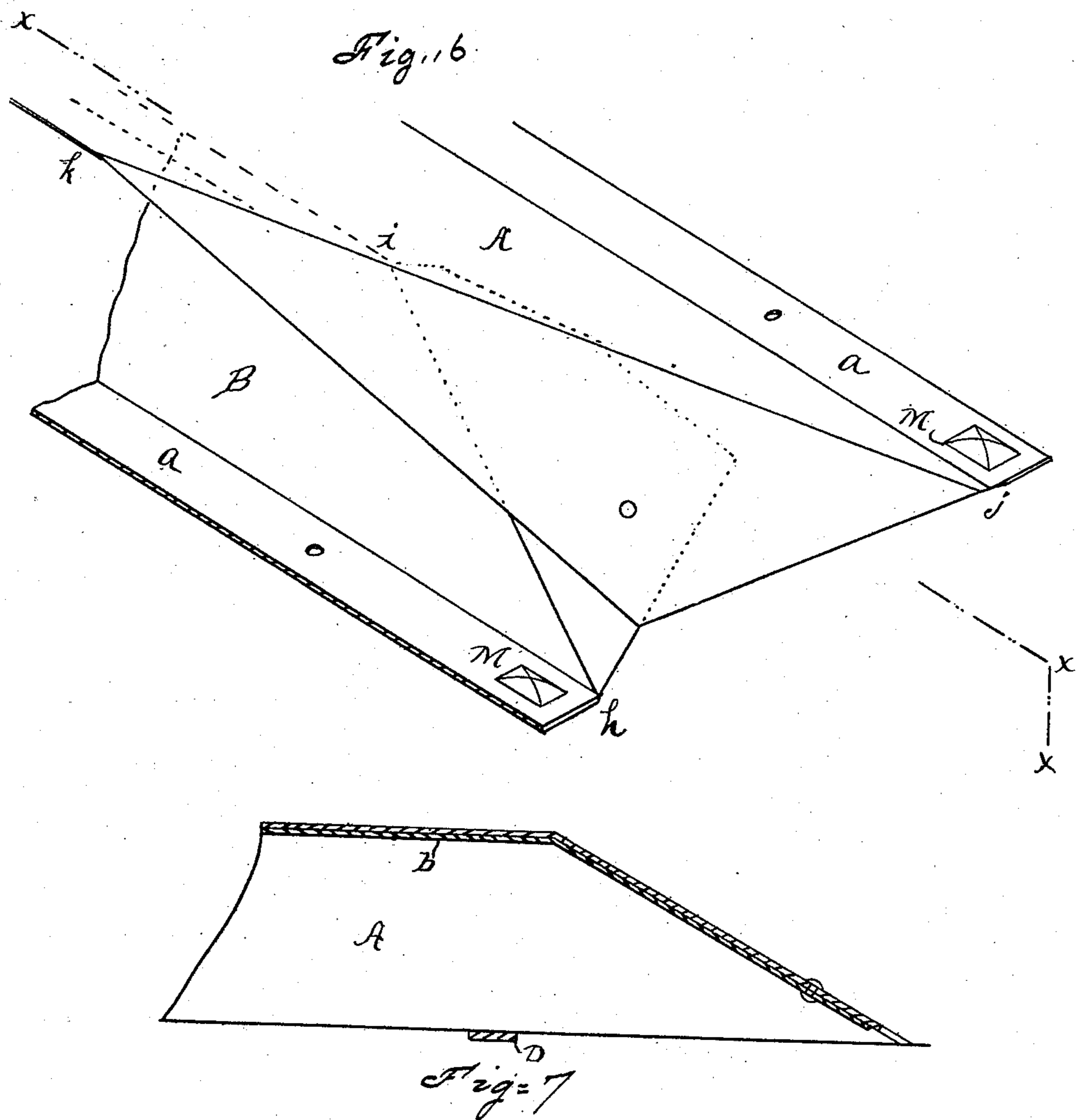
(No Model.)

2 Sheets—Sheet 2.

L. S. GARDNER.
RAILWAY SURFACE STOCK GUARD.

No. 472,574.

Patented Apr. 12, 1892.



Witnesses
My Oath
Cyrus Johnston

Inventor
L. S. Gardner
by Elliott Stoddard
his Atty -

UNITED STATES PATENT OFFICE.

LEVI S. GARDNER, OF DETROIT, MICHIGAN.

RAILWAY SURFACE STOCK-GUARD.

SPECIFICATION forming part of Letters Patent No. 472,574, dated April 12, 1892.

Application filed July 2, 1891. Serial No. 398,213. (No model.)

To all whom it may concern:

Be it known that I, LEVI S. GARDNER, of Detroit, in the county of Wayne and State of Michigan, have invented a new and useful Improvement in Railway Surface Stock-Guards, of which the following is a specification.

My invention relates to railroad surface stock-guards; and it consists in the improvements hereinafter described and claimed.

Referring to the accompanying drawings, Figure 1 is a perspective view of a stock-guard embodying my invention with the ends cut away to show its construction more distinctly. Fig. 2 is a bottom plan view of one of the sections of which said stock-guard is composed. Fig. 3 is a detail view in elevation showing the method of securing the guard to the rail. Fig. 4 is an end elevation of one of the sections, showing a modified form of construction. Fig. 5 is a detail view showing the construction of the device when corrugated sheet metal is used. Fig. 6 is an isometric view illustrating the method of forming and securing the ends. Fig. 7 is a section on the line *x x*, Fig. 6; and Fig. 8 is a detail view illustrating an alternative method of securing the parts together.

Similar letters refer to similar parts throughout the several views.

A B is a strip of sheet metal about nine feet long, bent so that its cross-section has the general form of the letter L. The flange A, forming the longer leg of the letter L in cross-section, and the flange B, forming the shorter leg, extend at right angles to each other, and a flange *b* is turned up at the end of the flange B to extend in a direction parallel to the flange A. The flanges A B are united by a portion *a*, extending in a direction which forms an angle of about thirty degrees with the flange A and about sixty degrees with the flange B. To form the guard a number of these strips are united together, their lengths extending in parallel directions. The flange A of one strip is placed upon the flange *b* of the next strip, so as to overlap and extend a short distance beyond the flange *b*, and is riveted in this position either by rivets in the ordinary way or by striking lugs out of one flange, extending them through holes in the other flange, and clinching them, as shown in Fig. 8.

When it is desired to form the portion of the guard which lies between the rails F F of one piece, the middle strip C is formed so that in cross-section it has the form of two letters L, the longer legs of which are united at their ends, so as to extend in directions which form an angle of about one hundred and twenty degrees with each other, as shown in Fig. 1. I prefer, however, for convenience in handling, to form the guard in sections having a width equal to about one-half the distance between the rails, so that the entire space to be guarded will be occupied by one section placed upon each side of the track and two sections between the rails. When thus constructed in sections, that one of the sheet-metal strips of which the guard is composed, which is at that side of the section at which the flange A comes upon the outside, has said flange extended and bent downward into a vertical position, as shown in Fig. 1, in the sections outside the rails. That side of the sections at which the flange B comes at the outside should be placed next to the rails.

D is a metal rod passing under the strips A B *a b*, of which the guard is composed, turned up at the ends, and bolted to the outside flanges of the guard and riveted between the ends to the portions *a* of said strips.

H are metal rods similar to the metal rods D and similarly fastened, except that the ends which come toward the rails when the guard is in position are not bent up or bolted to the guard. Holes are formed through the portions *a* of the strips of which the guard is composed to allow rain-water to escape.

In order that brake-chains, hooks, or other things depending from a passing train may not catch upon the guard, the ends of the strips A B *a b* are turned down, as shown in Fig. 6, so as to present a surface sloping in the direction of the length of said strips. The corner of the flange B is turned down along the line *h i*. The corner of the adjacent flange A is then turned down along the line *j k* upon the turned-down corner of the flange B and riveted thereto.

The ends of the sections of the guard may be secured in place by driving spikes M M through the portions *a* of the strips A B *a b* into the ties.

I secure the sections of the guard to the

rails by placing the unsecured ends of the metal rods H above the lower flanges of the rails and uniting the end of a rod H upon the outside section of the guard, with the end of
 5 the corresponding rod upon the inside section, by a rod N, which passes under the rail and is riveted to each of said rods H H, as shown in Fig. 3.

In localities where the stock-guard will be
 10 subjected to very hard usage I form my improved guard of corrugated sheet metal. In this case the strips A B *a b* will have the same general form as that above described, but will be bent into curved lines, as shown in Fig. 4,
 15 so that its cross-section will have rather the form of a letter J than of a letter L, and the flange B will extend beyond the flange A of the adjacent strip. When corrugated metal is used, the upper surface of the rods D H
 20 will be curved in cross-section to fit into the corrugations of the strips, as shown in Fig. 5.

The operation of the above-described device is as follows: Should an animal attempt to cross the guard it would place its hoof upon the inclined flange A and the inclination of the
 25 flange would cause the animal's hoof to slide downward, thus bringing its leg forcibly against the narrow projecting edge of the adjacent flange A, or, where the form shown in
 30 Fig. 4 is used, against the edge of the flange B, thus causing the animal to draw back.

I am aware that surface stock-guards have been proposed in which inclined surfaces have been employed, and I therefore do not claim
 35 such construction broadly; but I am not aware that a structure has hitherto been devised which may be made of sheet metal and yet form a light, rigid, and durable apparatus
 40 caught by a chain or other thing depending

from a passing train and that shall permit the draft caused by a passing train to sweep out leaves or other matter which would otherwise accumulate between the ridges and render the guard useless.

A surface stock-guard constructed as above described has the above-named advantages.

Having fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. A railway surface stock-guard consisting of sheet metal bent into ridges so that the upper corner of one ridge shall overhang the lower part of the adjacent side of the next ridge and having the general shape in cross-
 5: section shown and the rods securing the lower portions of said ridges together, substantially as shown and described.

2. A railway surface stock-guard consisting of a number of strips of sheet metal A B
 60 *a b* bent so that their cross-section has the general form shown, a flange A of one of said strips being secured to a flange B of the adjacent strip, and a rod uniting the ridges thus formed, substantially as shown and described.

3. A railway surface stock-guard consisting of a number of strips of sheet metal A B
 70 *a b* bent so that their cross-section shall have the general form shown, a flange A of one of said strips being secured to a flange B of the adjacent strip so that the edge of one of said flanges shall extend beyond the edge of the other of said strips, and a rod passing beneath and uniting the lower portions of the ridges thus formed, substantially as shown and de-
 75 scribed.

LEVI S. GARDNER.

Witnesses:

ALONZO EATON,
 ELLIOTT J. STODDARD.