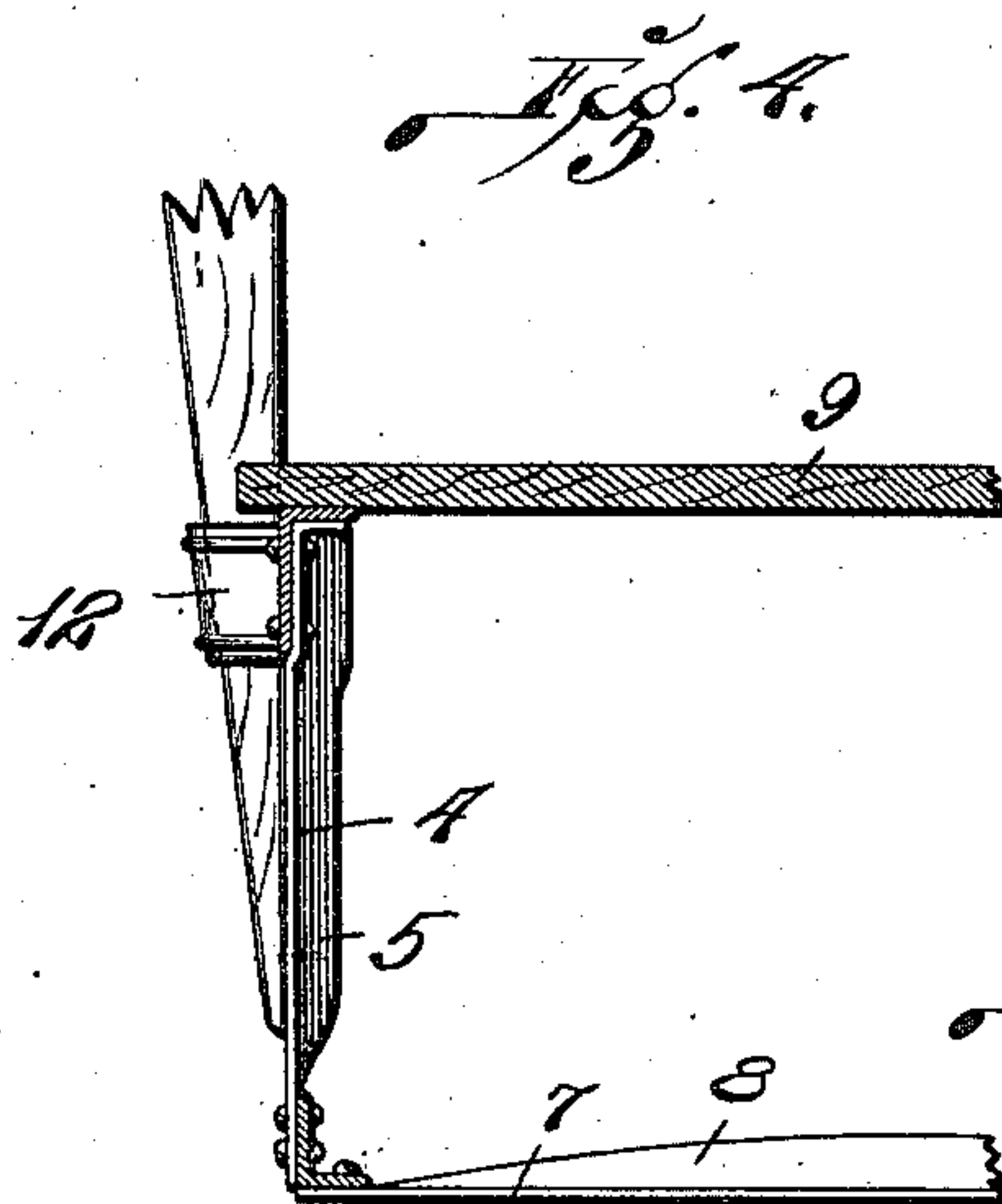
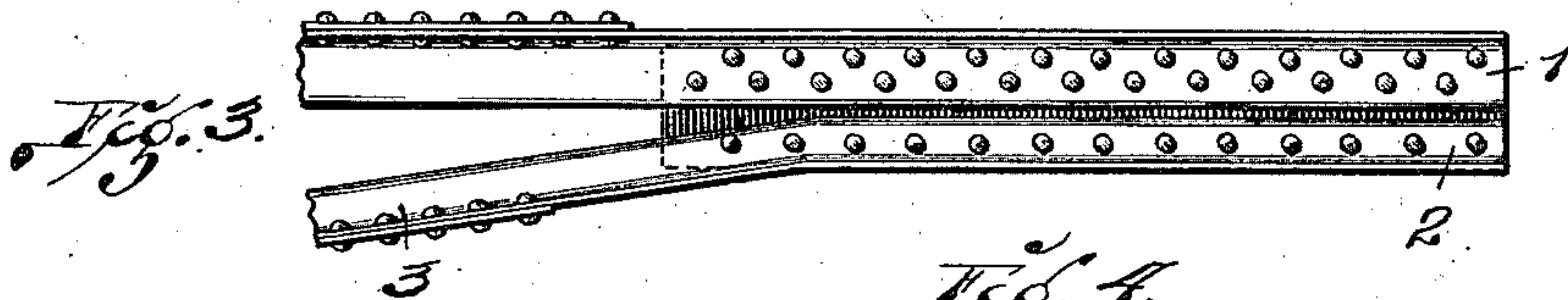
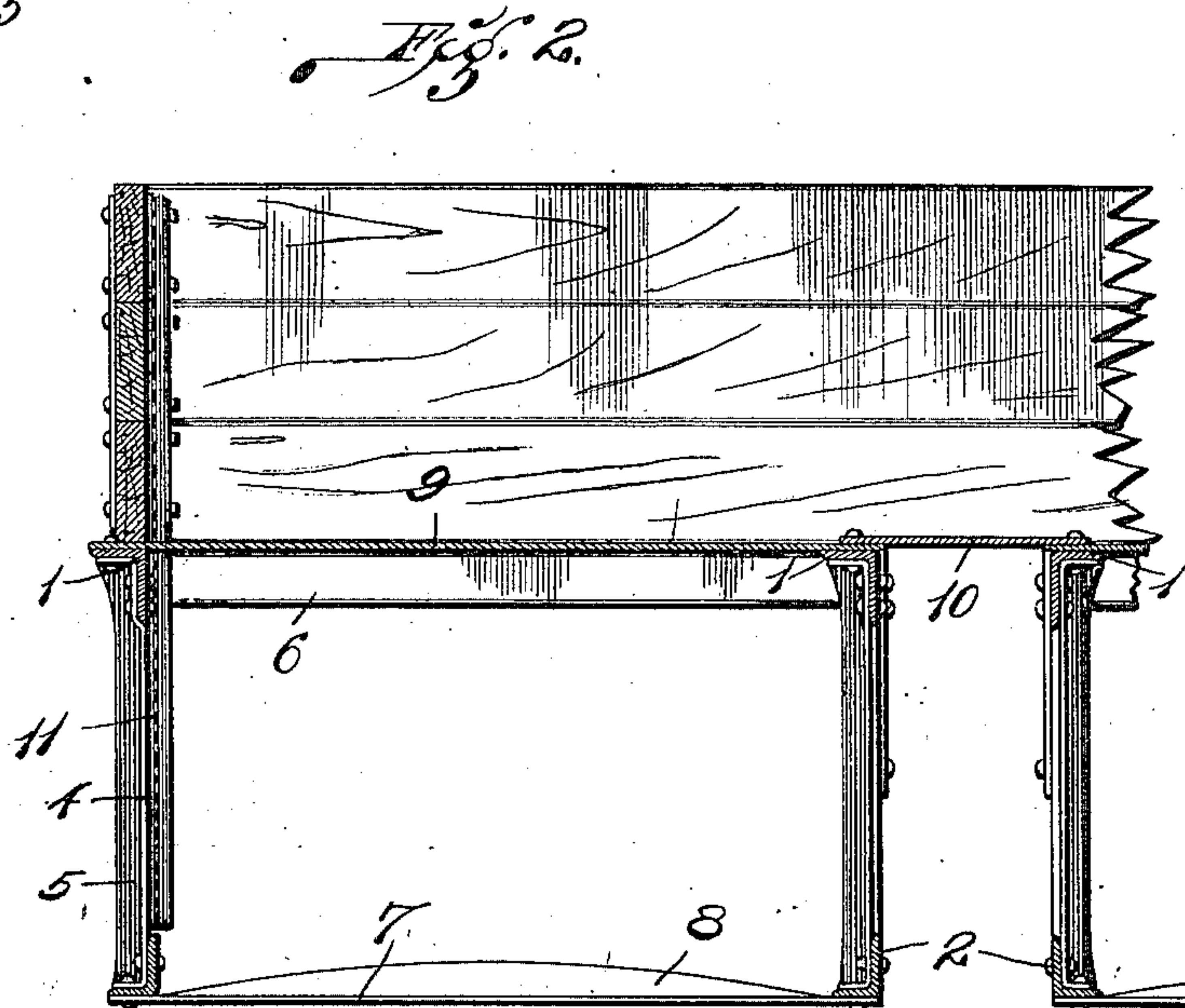
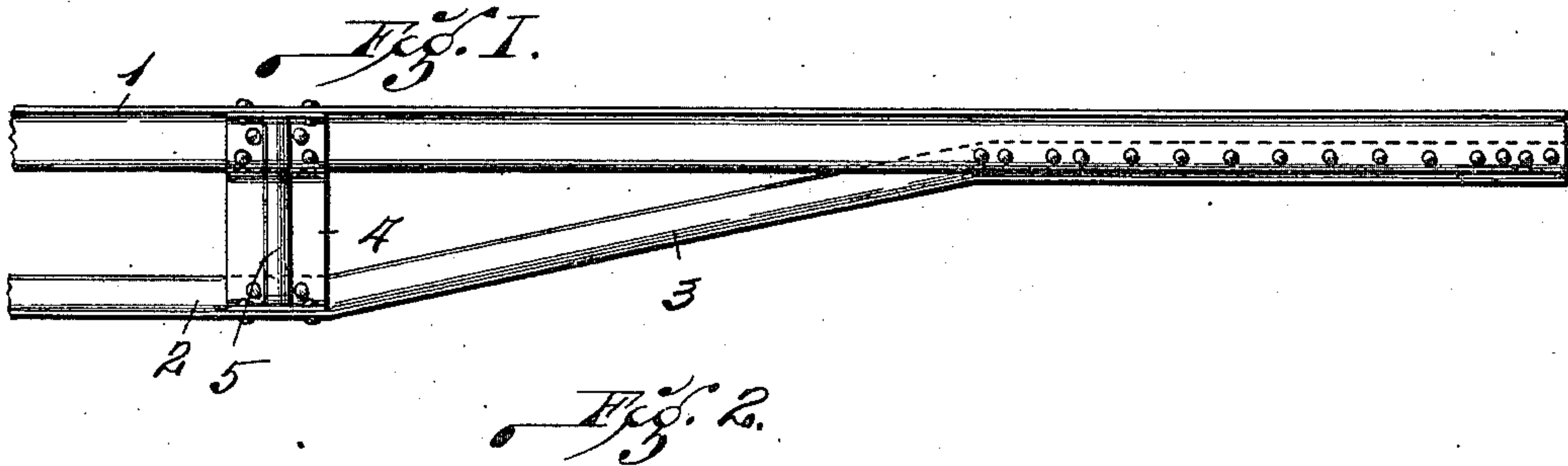


G. I. KING.
CAR UNDERFRAME.
APPLICATION FILED DEC. 2, 1909.

989,850.

Patented Apr. 18, 1911.



WITNESSES.
E. M. Harrington.
J. M. James.

INVENTOR.
GEORGE I. KING.
By J. P. Conway.
ATTY.

UNITED STATES PATENT OFFICE.

GEORGE I. KING, OF MIDDLETOWN, PENNSYLVANIA, ASSIGNOR TO AMERICAN CAR & FOUNDRY COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW JERSEY.

CAR-UNDERFRAME.

989,850.

Specification of Letters Patent.

Patented Apr. 18, 1911.

Application filed December 2, 1909. Serial No. 530,959.

To all whom it may concern:

Be it known that I, GEORGE I. KING, a citizen of the United States, residing at Middletown, Pennsylvania, have invented a certain new and useful Improvement in Car-Underframes, of which the following is a full, clear, and exact description, 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, forming part of this specification, in which—

Figure 1 is an elevation of the end portion of one of the open web fish belly sills made use of in my improved underframe; Fig. 2 is a fragmentary cross section of a gondola having an underframe of my improved construction; Fig. 3 is an elevation of the end portion of a modified form of the open web sill; Fig. 4 is a section similar to Fig. 2, and showing the form of underframe used in connection with a flat car.

My invention relates generally to car underframes, and more particularly to the sills thereof, the principal object of my invention being to construct an open web sill, the central portion of which is extended downward in fish belly form, and which type of sill while especially applicable for use on comparatively light weight cars, can be advantageously used with any kind of superstructure, or with any type of trucks.

To the above purposes, my invention consists in certain novel features of construction and arrangement of parts hereinafter more fully described and claimed.

My improved underframe as shown, is preferably made up of a pair of center sills, and a pair of side sills, all of which sills are alike in construction. Each sill comprises a compression member 1, preferably in the form of a commercially rolled angle, and which is continuous from one end of the frame to the other.

The lower tension member 2 of the sill, is preferably in the form of a commercially rolled angle, the central portion of which is arranged a suitable distance below the upper member 1, and the end portions of said member 2 are bent upward on inclined lines as designated by 3. The extreme outer end portions of the tension member are fixed to the end portions of the compression mem-

ber 1 by means of rivets, or in any suitable manner.

Arranged between the members 1 and 2 adjacent the point where the member 2 is bent upward to meet said member 1, are spacing plates 4, preferably formed of pressed steel, and the ends of these plates are rigidly fixed to the members 1 and 2 by means of the rivets, or in any suitable manner. Each plate is preferably provided with a centrally arranged vertically disposed strengthening rib 5, which is pressed from the material of which said plate is formed. Arranged between the members 1 of each corresponding pair of center and side sills, are transversely disposed floor braces 6, of any suitable construction, and the ends of said braces are fixed to the member 1 in any suitable manner. Uniting the member 2 of each corresponding pair of center and side sills, are transversely disposed tie-plates 7, of any suitable form, and preferably provided with longitudinally disposed strengthening ribs such as 8. Thus each pair of center and side sills are united by braces and tie-plates, and the upper portion of the frame so formed, is further strengthened and braced by floor sheets 9, which are laid directly upon the member 1, and the floor braces 6. Arranged above the space between the pair of center sills is a floor plate 10, the edges of which are fixed in any suitable manner to the members 1 of the center sill. Where my improved underframe is utilized in connection with gondolas, a stake 11 preferably in the form of a channel is rigidly fixed to the inner faces of each spacing plate 4, and these stakes extend a sufficient distance above the floor sheets to accommodate the plates or timbers forming the side walls of the gondola. Intermediate stakes for supporting the side walls can be riveted to the upper member 1 of the side sills.

It will be noted that the horizontal legs of the angles forming the compression and tension members of the sills, utilized in the underframe for gondolas, project outward away from the longitudinal center of the frame, but where an underframe is constructed for a flat car as shown in Fig. 4, the compression and tension members of the sills are arranged so that their horizontal flanges project inward, and stake pockets

12 of suitable construction, are riveted to the outer faces of the vertical legs of the compression members 1. One of these stake pockets is arranged on the member 1, directly opposite each spacing plate 4, and thus the lower portion of the stakes arranged in these pockets, can be extended downward, and have an extra long bearing against the spacing plates, the said stakes resting in the recesses formed by the strengthening ribs 5.

Where the strut has its vertically disposed pocket facing inwardly as shown in Fig. 1, the parts in alinement with the pocket may be cut away so that the stake may be fitted in the pocket; and when the pocket faces outwardly as shown in Fig. 4, the usual stake pocket 12 may be secured to the upper end of the strut to receive the stake, whose lower end fits into the vertically disposed outwardly opening pocket of the strut, holding the strut rigidly in its vertical position.

In some instances, I may find it desirable to unite the ends of the members 1 and 2 by means of a riveted plate as shown in Fig. 3 instead of riveting the ends of said members directly together as shown in Fig. 1.

Thus it will be seen how I have provided an improved underframe for cars, wherein

open web fish belly sills are made use of, and which underframe combines great strength and rigidity with minimum weight, and can be cheaply produced by reason of the use of plain structural shapes and plates only, and said frames being particularly desirable in the manufacture of comparatively light weight flat, box and gondola cars.

I claim:

1. A longitudinal trussed sill for car frames, the strut of which is in the form of a plate embossed to form a mid-rib and to provide a vertically disposed pocket.

2. In a car frame, two parallel trussed longitudinal sills connected together at their upper and lower edges, a pair of said connected sills being arranged at each side of the car, and being connected together at their upper edges only.

3. A strut for a longitudinal car sill having a vertically embossed mid-rib forming a pocket, and a stake in said pocket.

In testimony whereof I hereunto affix my signature in the presence of two witnesses, this 24th day of November, 1909.

GEORGE I. KING.

Witnesses:

G. A. BAUSMAN,
H. B. BAUMBACH.