

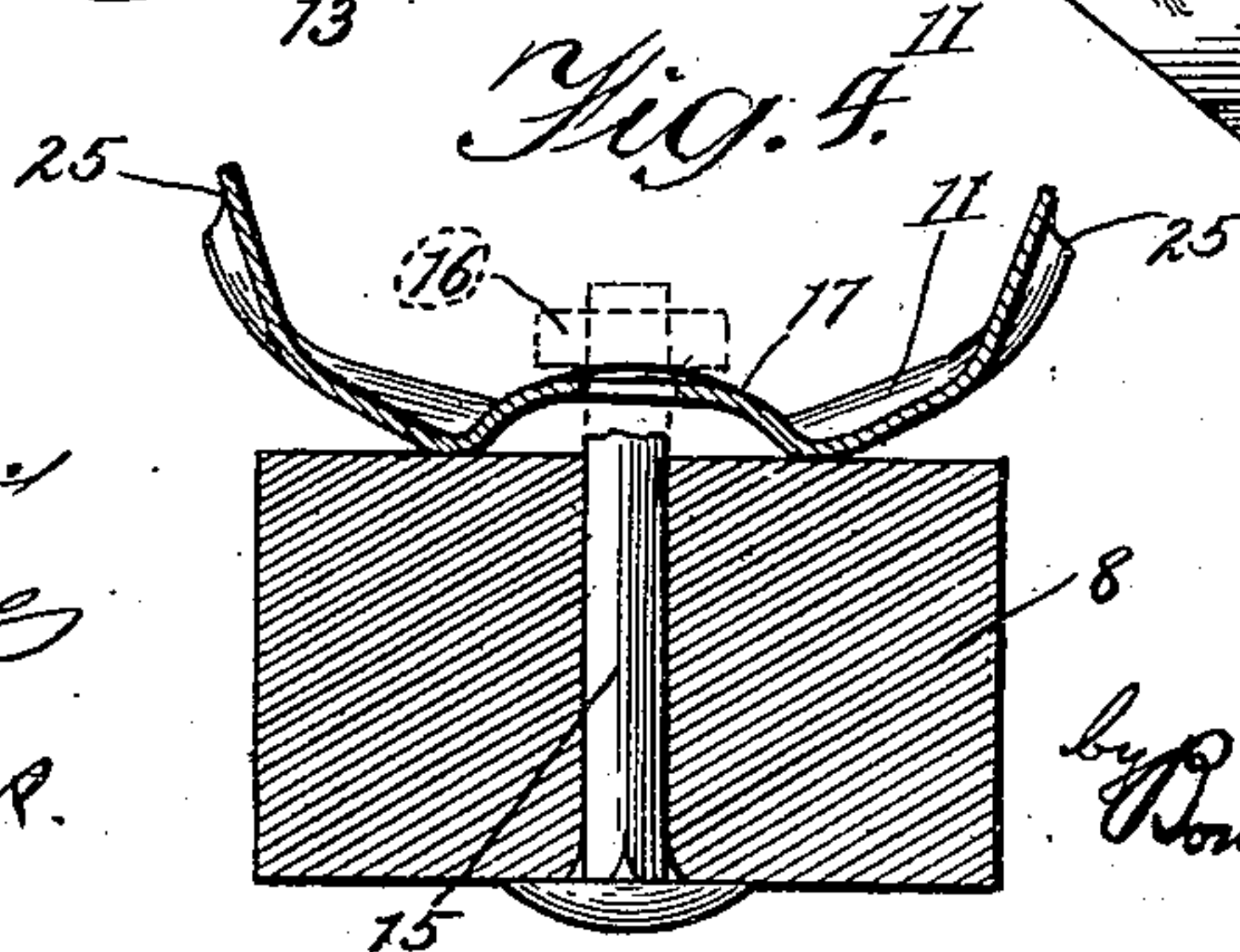
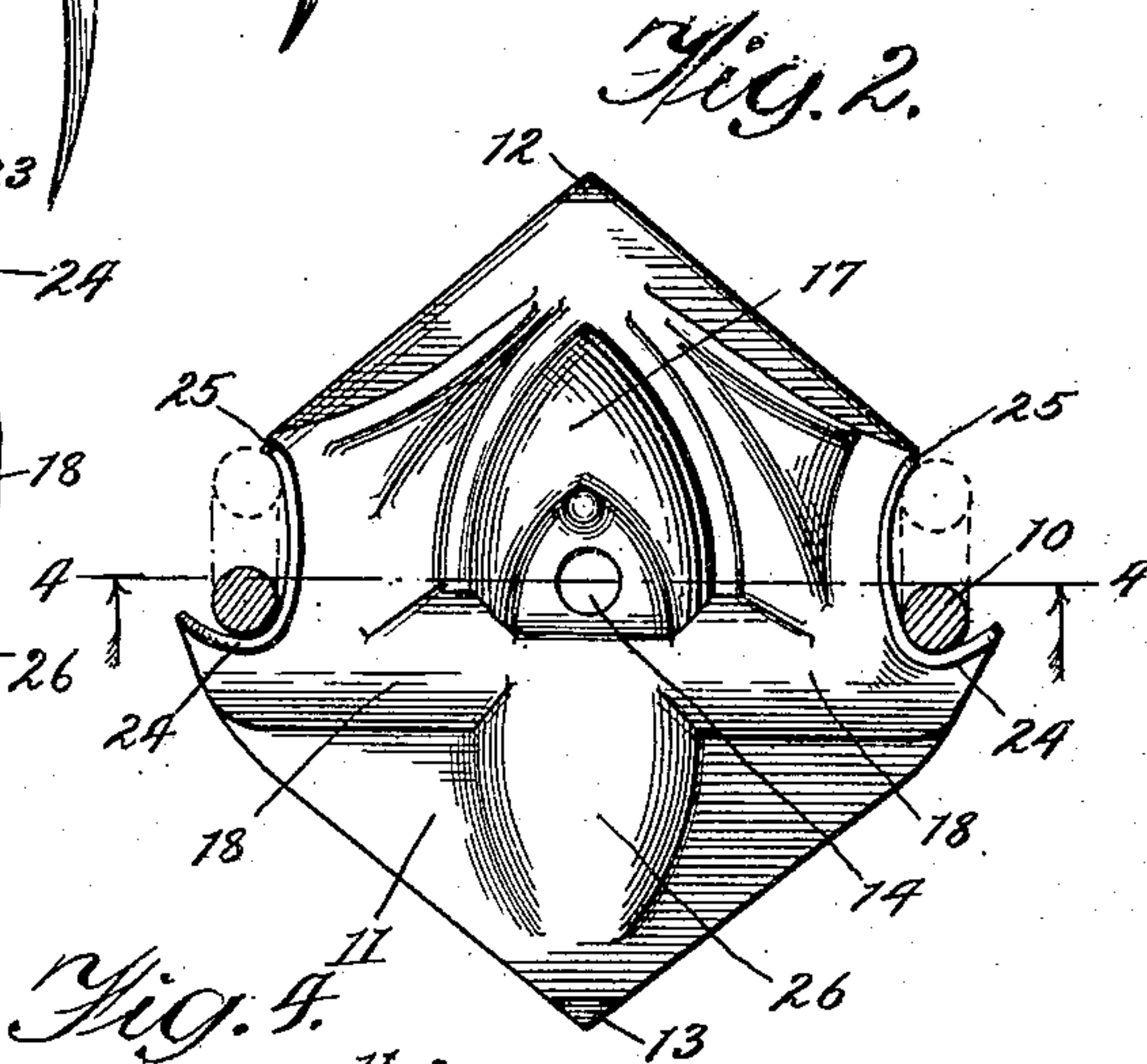
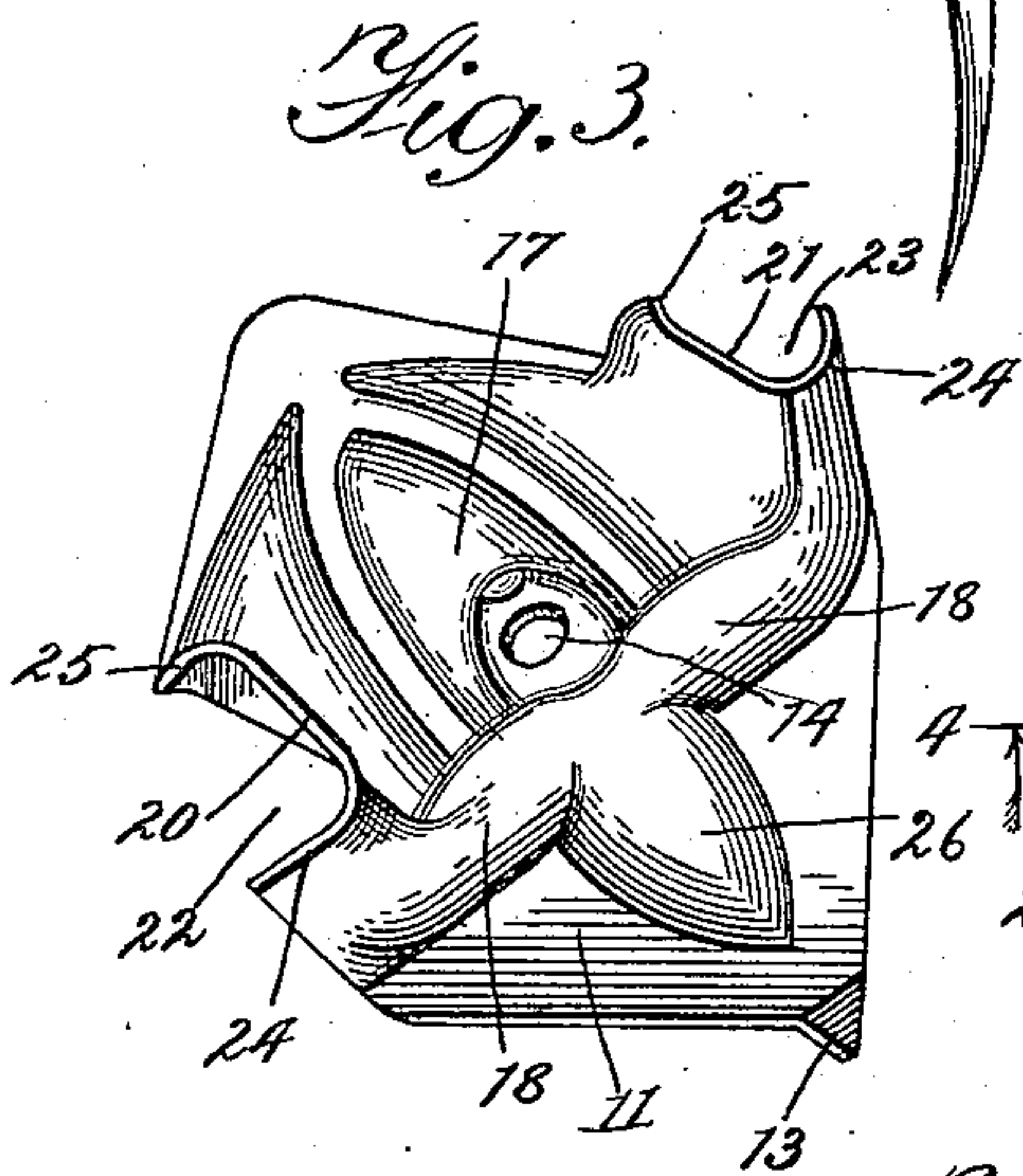
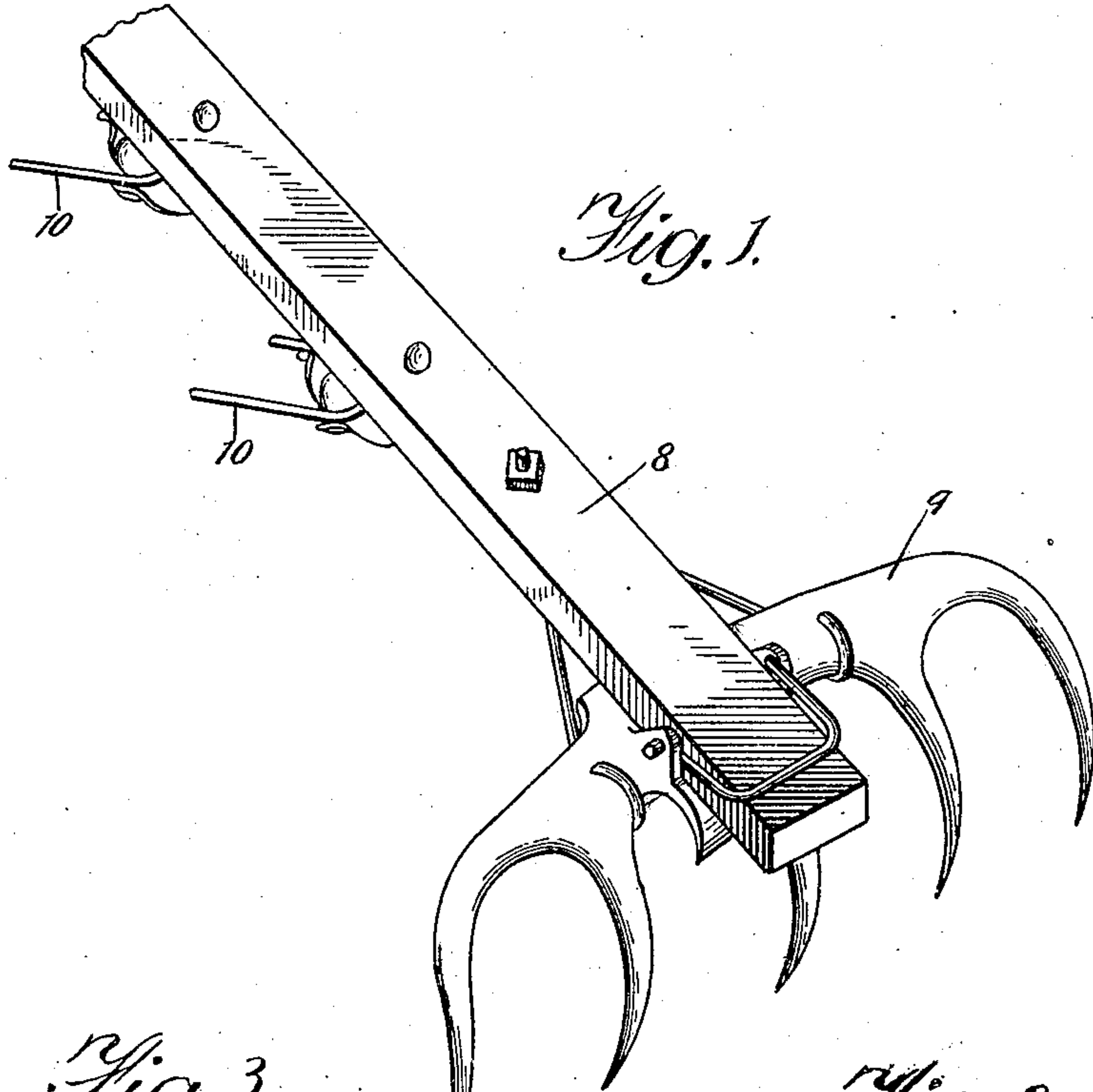
No. 880,634.

PATENTED MAR. 3, 1908.

J. DAIN.  
RAKER BAR.

APPLICATION FILED MAR. 24, 1906.

2 SHEETS-SHEET 1.



Witnesses:  
Ed. Perry  
G. V. Donarum.

Inventor:  
Joseph Dain,  
by Bond & Sons, Inc.,  
his Attys.

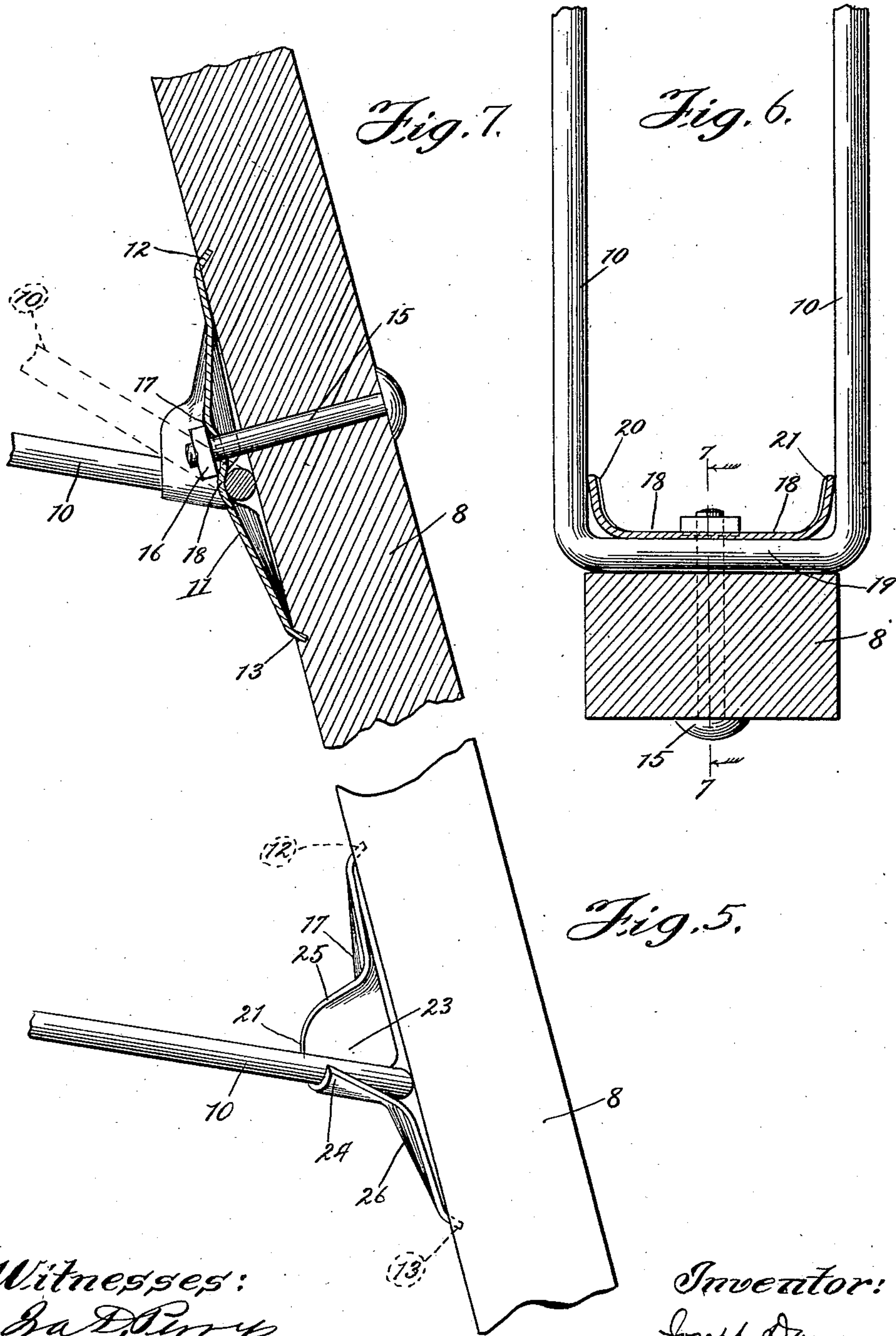
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2 SHEETS—SHEET 2.



Witnesses:  
Ed. Perry  
G. V. Dorman.

Inventor:  
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# UNITED STATES PATENT OFFICE.

JOSEPH DAIN, OF OTTUMWA, IOWA.

## RAKER-BAR.

No. 880,634.

Specification of Letters Patent.

Patented March 3, 1908.

Application filed March 24, 1905. Serial No. 251,714.

*To all whom it may concern:*

Be it known that I, JOSEPH DAIN, a citizen of the United States, residing at Ottumwa, in the county of Wapello and State of Iowa, have invented certain new and useful Improvements in Raker-Bars for Hay-Loaders, of which the following is a specification, reference being had to the accompanying drawings.

10 My invention relates to hay loaders, and has particularly to do with the devices for securing the raker-bar teeth to the raker-bars by which the hay is caused to pass up over the elevator-frame.

15 The object of my invention is to provide a new and improved device by which the raker-bar teeth may be properly secured in position and their movement confined within proper limits.

20 To this end it consists in an improved clip adapted to be secured to the raker-bar and so arranged as to form a bearing for the tooth as well as a stop to limit the movement of the tooth.

25 It further consists in so constructing the clip that it serves as a nut-lock for the nut of the bolt which secures the clip in place.

It also consists in so constructing the clip that it positively engages the raker-bar in 30 such manner as to prevent accidental displacement of the clip.

It still further consists in forming the clip of an integral piece of elastic sheet metal.

In the accompanying drawings, Figure 1 35 is a perspective view of the lower portion of a raker-bar to which my improved clip is applied; Fig. 2 is an under side view of the clip, the raker-bar tooth being in section; Fig. 3 is a perspective view of the under side of the clip; Fig. 4 is a cross section on line 4—4 of 40 Fig. 2; Fig. 5 is a side elevation of a part of a raker-bar with my invention applied thereto; Fig. 6 is a cross section thereof; and Fig. 7 is a longitudinal section on line 7—7 of Fig. 6.

45 Referring to the drawings,—8 indicates the raker-bar, and 9 the usual rake-head carried at the lower end thereof.

10 indicates the raker-bar teeth, which, as best shown in Fig. 6, are U-shaped rods. As 50 shown in Figs. 5 and 7, the tooth 10 is fitted to the under surface of the raker-bar,—its free ends projecting at an angle therefrom. It will be understood, of course, that the raker-bars extend upward over the elevator-frame of the loader, the teeth 10 projecting 55 to near the surface of the elevator-frame, so

that as the raker-bars are reciprocated the hay is carried up by the teeth. The teeth are arranged to swing slightly upward from the position shown in full lines in Fig. 7, but 60 cannot swing backward or downward beyond such position. The object of permitting the teeth to fold to the position indicated in dotted lines in Fig. 7 is so that they may more readily pass down over the hay on 65 the return movement of the raker-bar.

11 indicates my improved clip, the outlines of which, as shown in Fig. 2, are in general diamond shaped or square. Two of the opposite corners, which will be hereinafter referred to as the upper and lower corners, are 70 made comparatively sharp, and are deflected slightly inwardly, as shown at 12 and 13 in Figs. 2, 3 and 7, so that they are adapted to slightly penetrate or indent the raker-bar 75 when the clip is tightly secured thereto,—thereby preventing the clip from shifting its position.

14 indicates a central orifice for the passage of the end of a bolt 15, which passes 80 through the raker-bar and serves to hold the clip in place.

16 indicates the nut of the bolt 15, which, as shown in Fig. 7, bears against the outer surface of the clip which is pressed out so as 85 to lie at a distance from the under surface of the raker-bar, as shown in Fig. 7. Thus, when the nut 16 is screwed tightly upon the bolt over the clip, the clip may yield slightly, and its elasticity causes it to bear against the 90 nut so as to hold it to a considerable extent against rotation. In order to further lock the nut against rotation, the surface of the clip is pressed up, as shown at 17—18 in Fig. 7,—such bulged portions of the clip being ar- 95 ranged to engage opposite edge portions of the nut when it is turned to the position shown in Fig. 7, thereby preventing its accidental rotation. The bulged portion 18 extends entirely across the clip, as shown in 100 Figs. 2, 3, 6 and 7, thereby forming a channel, which extends transversely of the clip and serves to receive the transverse portion 19 of the tooth, as shown in Fig. 6, forming a bearing in which the tooth may rock. The side 105 portions of the clip immediately above the bulged portion 18 are bent outward or away from the raker-bar, as shown at 20 and 21 in Fig. 3, forming pockets 22—23 which receive the teeth 10. The lower margins 24 of said 110 pockets extend across the path of the teeth, forming stops to limit downward movement



thereof, while the upper margins 25 thereof form stops to limit the upward movement of the teeth. By this construction the clip not only forms a retaining device for the tooth, 5 but also provides a bearing therefor, and serves as a limit stop to prevent excessive movement thereof in either direction. To further strengthen the clip a bulge 26 is provided below the bulge 18 and substantially 10 perpendicular thereto, as shown in Figs. 2 and 3. The entire clip is stamped from a piece of sheet steel, or other suitable material, and may consequently be very economically manufactured. A further advantage of my 15 improved clip lies in the fact that the parts may be very readily assembled or taken apart.

While my improved clip is designed primarily for use in connection with hay-loader 20 raker-bars of substantially the construction illustrated in my application, Serial Number 112,621, filed June 21, 1902, it may be employed in any situation for which it is adapted.

25 What I claim as my invention and desire to secure by Letters Patent is,—

1. A clip for raker-bar teeth, comprising an elastic sheet metal plate bulged intermediately so as to lie away from the adjacent 30 surface of the raker-bar and having a transverse channel adapted to form a bearing for the rake tooth.

2. A clip for raker-bar teeth, comprising an elastic sheet metal plate bulged intermediately so as to lie away from the adjacent 35 surface of the raker-bar and having a transverse channel adapted to form a bearing for

the rake tooth, and having means formed integral therewith for limiting the movement of the rake tooth. 40

3. A clip for raker-bar tooth, comprising an elastic sheet metal plate bulged intermediately so as to lie away from the adjacent surface of the raker-bar and having a transverse channel having pockets formed integral therewith near the ends of said channel 45 for receiving the projecting portions of the rake tooth.

4. A clip for raker-bars, comprising an elastic sheet metal plate polygonal in form 50 and having one of its corners deflected to engage the raker-bar, said plate being bulged intermediately so as to lie away from the adjacent surface of the raker-bar, and having a channel to receive the rake tooth. 55

5. The combination of a raker-bar, a clip having a bulged portion opposite the adjacent surface of the raker-bar, a bolt extending through said raker-bar and the bulged portion of the clip, and a nut on said bolt and 60 bearing against the bulged portion of the clip.

6. The combination of a raker-bar, a clip having a bulged portion opposite the adjacent surface of the raker-bar, a bolt extending through said raker-bar and the bulged 65 portion of the clip, and a nut on said bolt and bearing against the bulged portion of the clip, said clip having one or more projections adapted to engage the nut to prevent accidental turning thereof.

JOSEPH DAIN.

Witnesses:

W. G. DUFFIELD,  
C. A. LASSER.