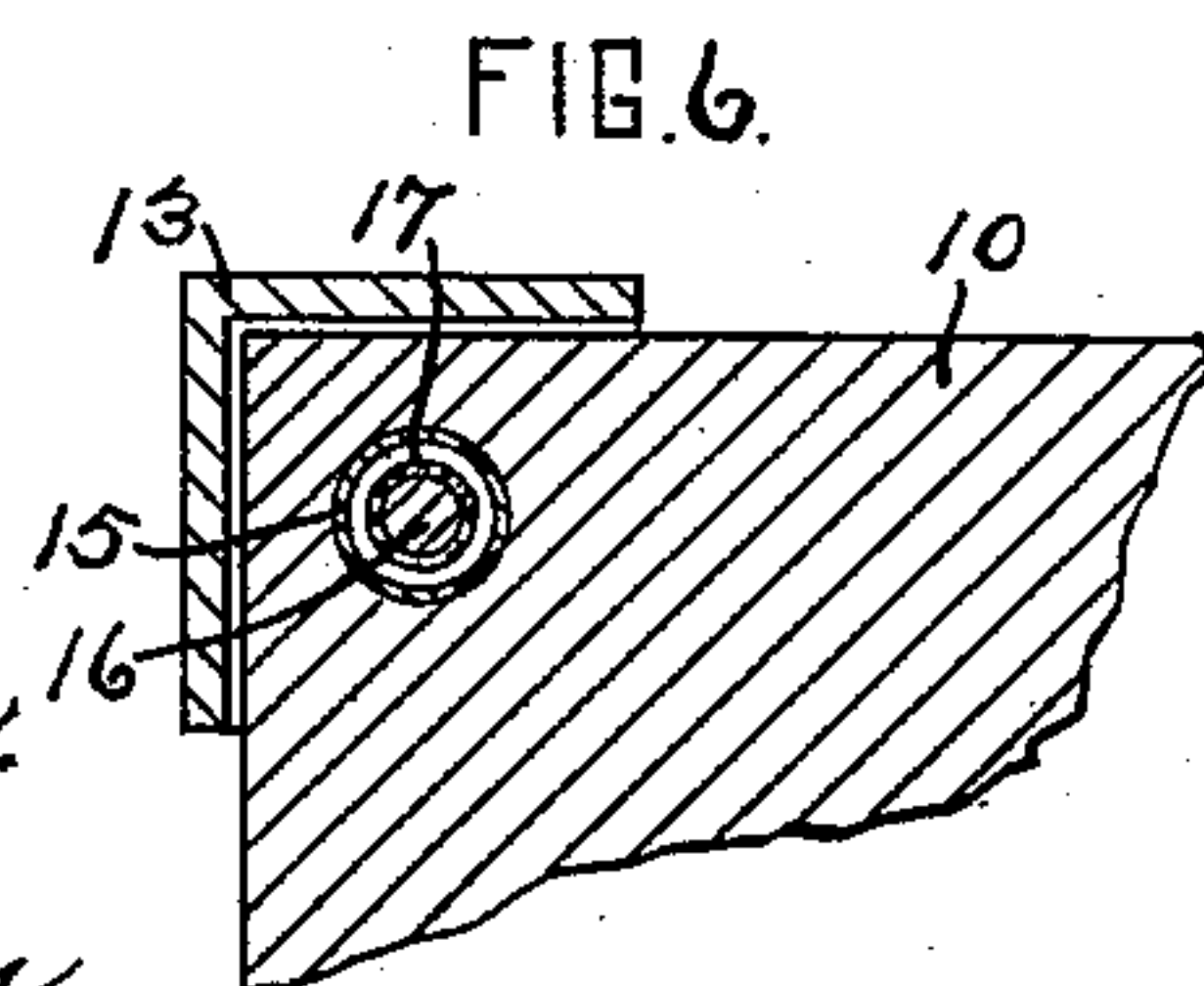
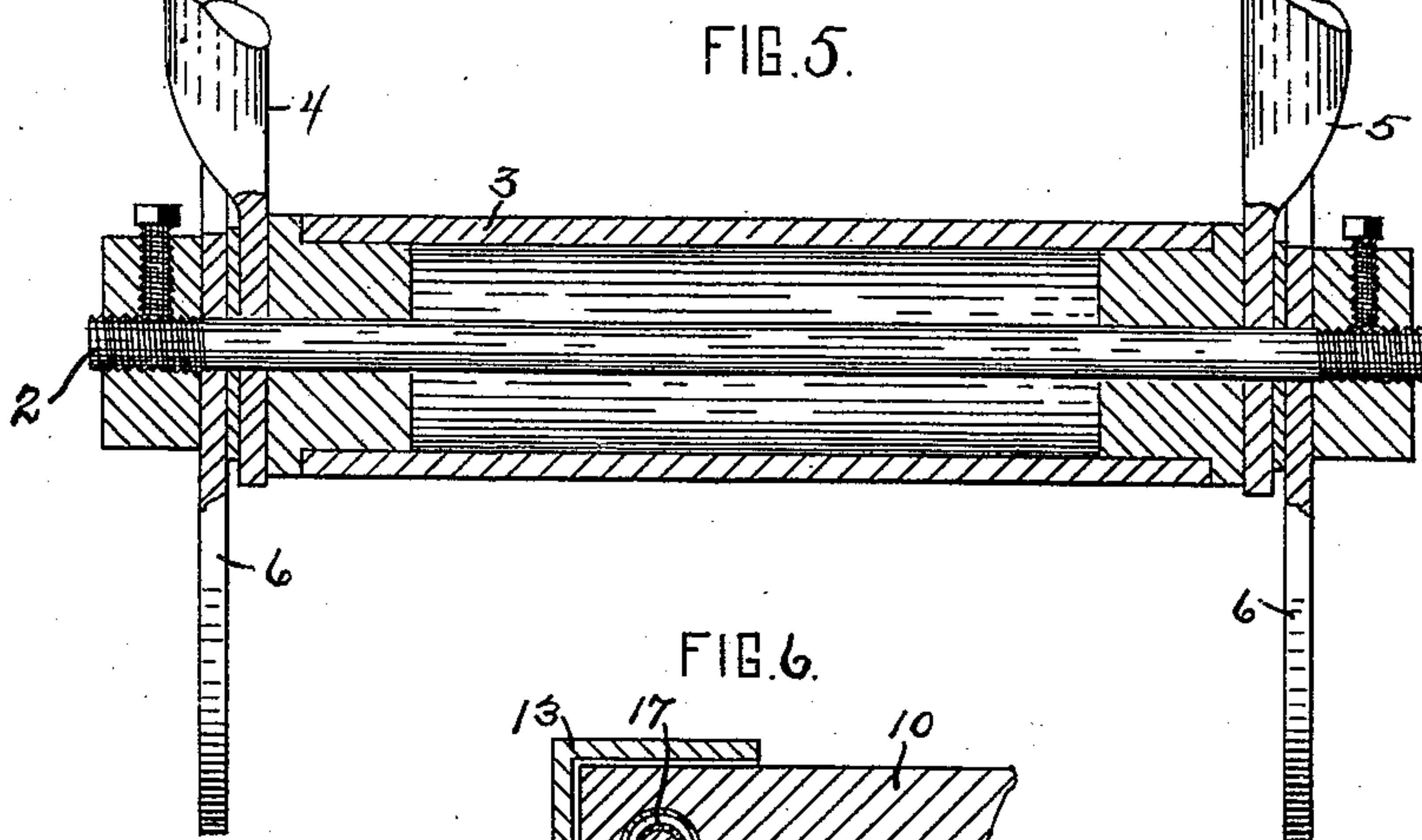
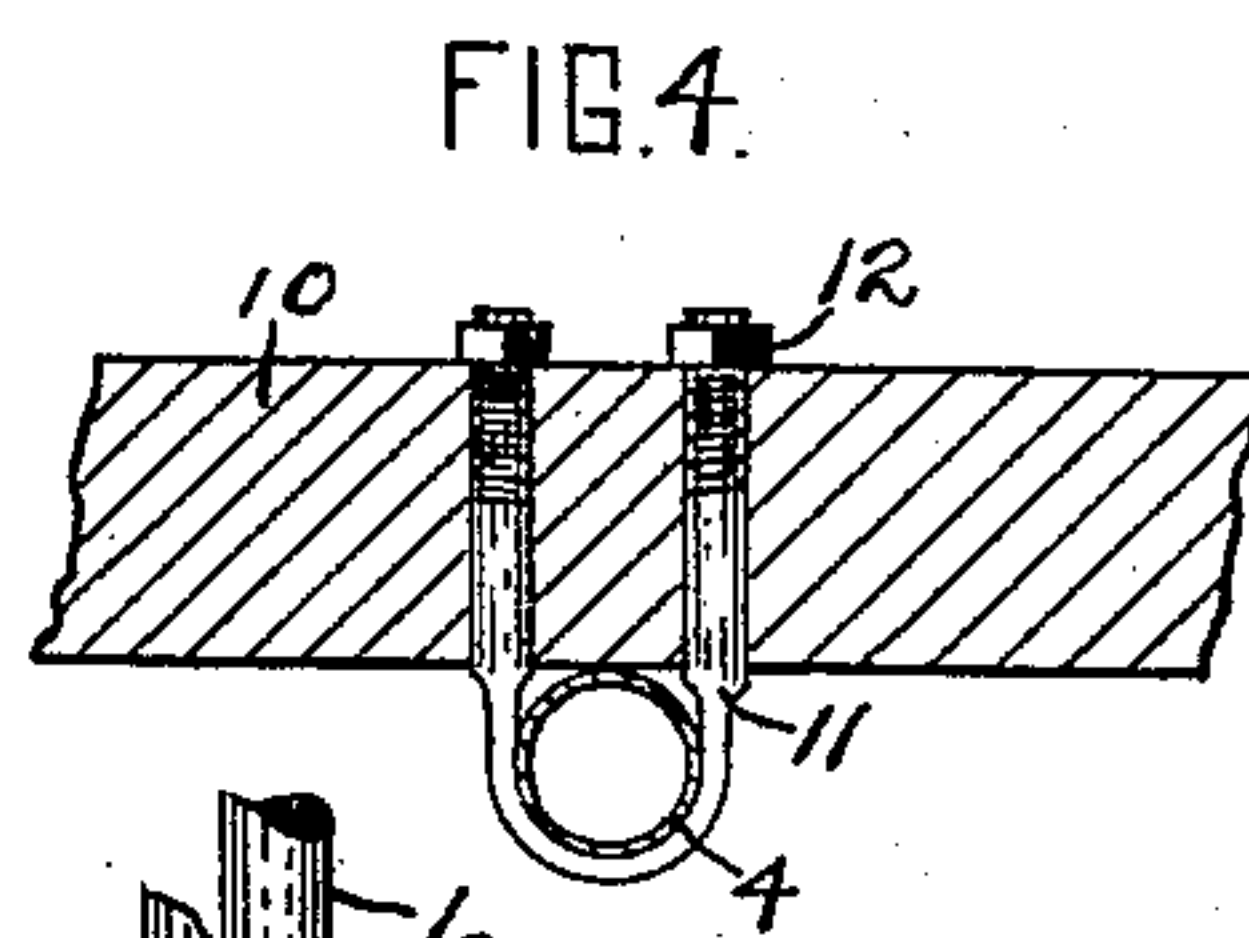
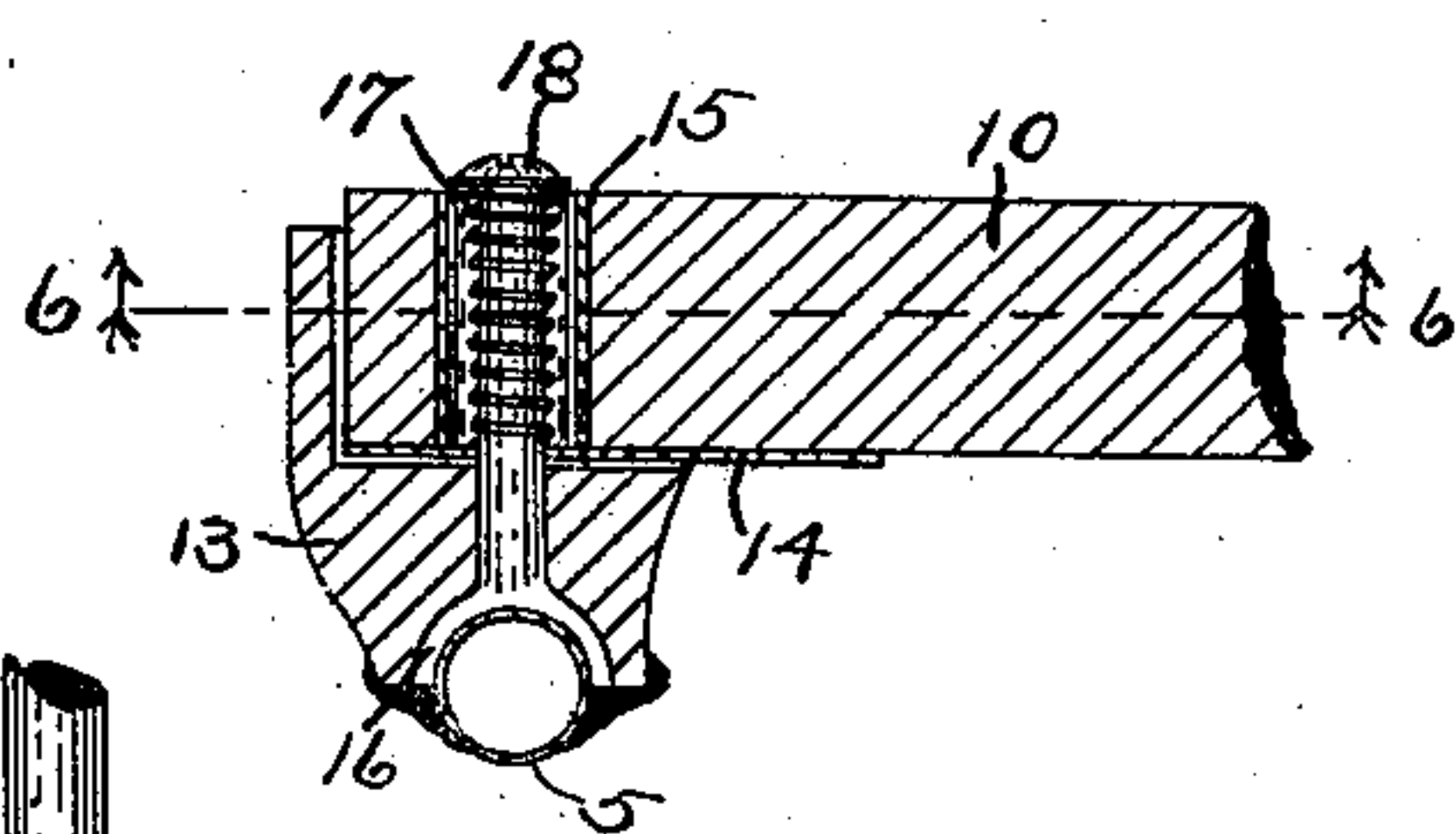
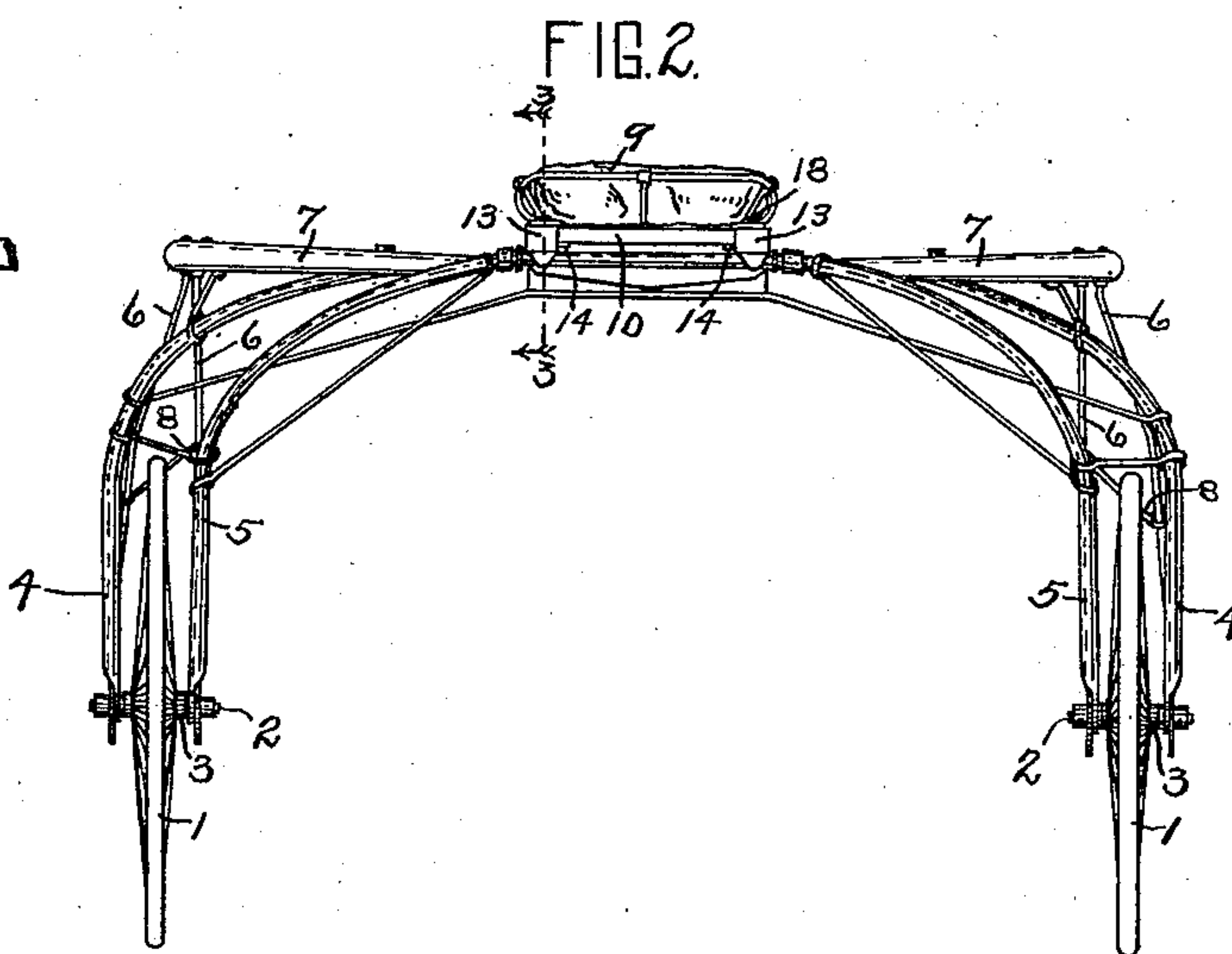
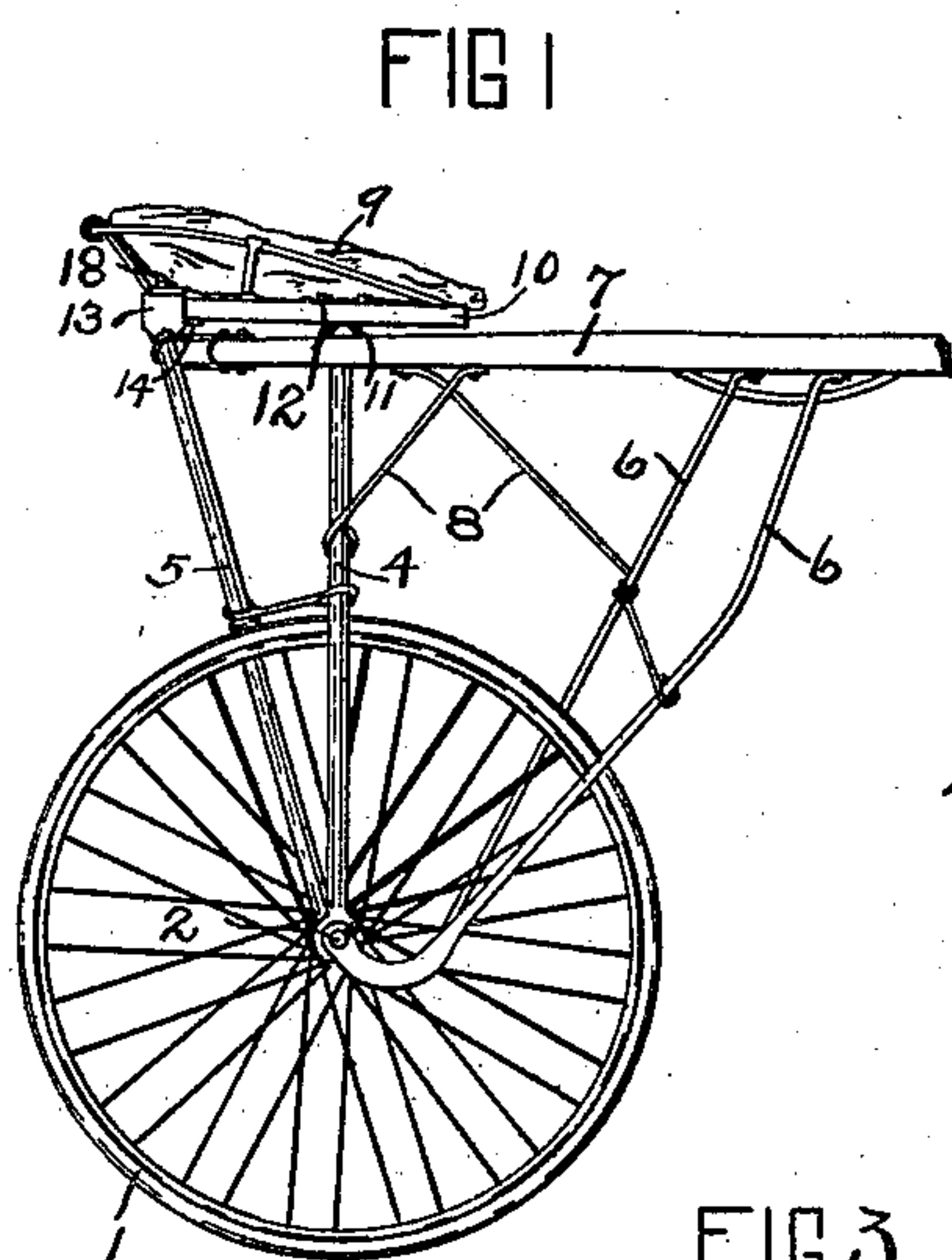


(No Model.)

G. L. WELLS.  
SULKY.

No. 577,339.

Patented Feb. 16, 1897.



WITNESSES:  
*Honore B. Jones*  
*Jula Green*

INVENTOR  
*George L. Wells*  
BY  
*J. H. Lockwood*  
His ATTORNEY.



# UNITED STATES PATENT OFFICE.

GEORGE L. WELLS, OF INDIANAPOLIS, INDIANA.

## SULKY.

SPECIFICATION forming part of Letters Patent No. 577,339, dated February 16, 1897.

Application filed November 23, 1896. Serial No. 613,065. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE L. WELLS, of Indianapolis, county of Marion, and State of Indiana, have invented a certain new and useful Sulky; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which like numerals refer to like parts.

10 The object of my invention is to prevent the transmission of the rocking or jerking motion of a sulky to the driver or seat. This is effected by two features that will be understood from the accompanying drawings and the description and claims following.

15 In the drawings, Figure 1 is a side elevation of the sulky with the front portion of the thills broken away. Fig. 2 is a rear view of the sulky. Fig. 3 is a section on the line 3 3 of Fig. 2. Fig. 4 shows the pivoting of the seat to the frame. Fig. 5 is a longitudinal section of one of the hubs. Fig. 6 is a section on the line 6 6 of Fig. 3.

20 I take ordinary bicycle-shaped wheels 1, provided with a stub-axle 2, extending through the hub 3. The frame is comprised chiefly of the central and main bow 4, the inner and rear bow 5, the front braces 6, and the curved rear portion of the thills 7, arranged as shown. The ends of the bows 4 and 5, as well as the braces 6, are flat and perforated, so as to be mounted on the axle, as seen in Fig. 5. These parts of the framework are connected and braced by the metallic braces 8. The main or central bow 4 extends up between the thills flush with the same, its top portion being directly over the axles of the wheels when the sulky is attached to the horse. The rear or inner bow 5 is attached at its upper end to the rear portion of the thills and likewise extends up flush with the thills. A suitable foot-rest is provided and means for attaching the harness to the sulky.

45 My invention consists in pivotally mounting the seat 9 on the central bow 4, as seen in Figs. 1 and 4. There 10 is the seat-frame, and through it the ends of the metallic strap 11 extend, the strap passing under and about the bow 4. The nuts 12 hold the strap 11 in place. By this means the seat can tilt. This

pivotal attachment is located slightly forward of the center portion of the seat on its under side.

The rear portion of the seat is supported 55 by the following mechanism: At each rear corner of the seat-frame 10 I secure to the upper portion of the bow 5 a box 13, which has a flange extending up to the rear and also to the side, as seen in Figs. 3 and 6, forming 60 an angular recess to receive the corner of the seat-frame 10. The corner of the seat-frame is perforated and provided with a metallic plate 14, forming the base of such perforation, and the barrel 15 enters the perforation, 65 as seen in Fig. 3. I perforate the base-plate 14, but the diameter of such perforation is somewhat less than the diameter of the barrel 15.

70 There is a bolt 16 secured to the upper part of the bow 5, that extends upward through the box 13, the perforations in the base-plate 14, and the barrel 15. The upper end of the bolt 16 is preferably flush with the top of the seat-frame when it is down in the position 75 shown in Fig. 3. About the upper end of this bolt 16 I slip a spiral spring 17. The lower end of the spiral spring rests upon the base-plate 14, and the spring is prevented from escaping from the rod 16 by the cap- 80 screw 18, that screws into the upper end of such rod. By this construction it is obvious that the tilting of the thills or sulky-frame is not transmitted to the seat or rider, because the seat oscillates on the central bow 4, the 85 spring 17 permitting the rear brace 5, or, what is the same thing, the rear portion of the thills, to move up and down independent of the seat. This independent movement of the seat and rear portion of the frame is permitted by the spring 17. When the front portion of the thills is elevated three or four inches, the rear portion of the thills will be depressed about a quarter of an inch, but this depression of the rear portion of the sulky is 95 not transmitted to the seat because of said spring. The seat is held in a horizontal position regardless of the rocking of the sulky by the occupant's body. The legs of the rider bear upon the front edge of the seat heavily, 100 and in use his body is usually thrown forward, so that there would be a tendency to



depress the front portion of the seat and elevate the rear portion thereof away from the supports 13. Normally, therefore, while the sulky is in use the rear portion of the seat is  
 5 elevated by such tipping of the seat away from the rear support, as far away as the springs permit. This allows for a reasonable independent vertical movement of the rear end of the seat and the rear bow or portion of  
 10 the thills.

However, to assist the means already described for preventing the transmission of the jerking movement of the sulky to the seat, and also to prevent the forward jerking of the  
 15 wheels, which is always noticeable in ordinary sulkies, I change the form of the front braces 6 from straight braces, as they have heretofore been made to run directly from the thill to the axle, to the crooked braces shown.  
 20 These braces at their lower ends are curved, as seen in Fig. 1. They are seen on each side of each hub, both extending up, and are secured to the thill one slightly in front of the other. The outer one is bent inward at its  
 25 upper end, as seen in Figs. 1 and 2, to enable it to be attached to the thill. At their lower ends they are mounted loosely on the axle, so that they can revolve freely thereon.

It is obvious that in the use of a sulky with  
 30 the kind of forward braces just described much of the jerking movement is taken up by such braces, so that when the thills are suddenly elevated a few inches the wheels are not jerked forward. The frame is caused  
 35 to rotate somewhat on the axles, and the change in movement is distributed between the wheels and the framework, so that no unpleasant sensations to the rider can arise therefrom. The jerking movement is further  
 40 distributed to the parts by merely wrapping the braces 8 around the parts of the frame, so that they yield somewhat at their connections instead of being rigid.

From my experience with this sulky I have  
 45 found that, for the reasons above stated, the rider and seat are carried as smoothly as on a four-wheeled vehicle, there being no jerking of the wheels or tipping of the seat.

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

1. In a sulky, the combination with the frame thereof, of a seat pivoted near its mid-

dle portion, and a spring controlling one extremity thereof.

2. In a sulky, the combination of the frame 55 having a central and a rear bow or cross-bar, a seat-frame pivoted on the central bow or cross-bar, and a spring connection between the rear bow or cross-bar and the seat, whereby the rear bow or cross-bar may have a vertical 60 movement independent of the seat.

3. In a sulky, the combination with a frame provided with a central and a rear bow or cross-bar, of a seat-frame pivoted to such central bow or cross-bar, boxes secured to the 65 rear bow or cross-bar provided with upward rear and lateral extensions to receive the corner of the seat, and a spring connection between the rear bow or cross-bar and the seat, whereby the seat will be prevented from hav- 70 ing rearward or lateral movement but will be permitted to have vertical movement relative to the rear bow or cross-bar.

4. In a sulky, the combination with the thill, framework and wheels thereof, of a brace ex- 75 tending from the thill to the axle of the wheel that at its lower end is curved downward below such axle, substantially as and for the purpose shown and described.

5. In a sulky, suitable wheels, suitable bows 80 mounted on the axles of the wheels, a thill carried by such bows, front braces extending from the thills to the axles of the wheels that are curved at their lower ends to a point below the axles as shown, and metallic braces 85 extending from the thills and wrapped about the bows and front braces, substantially as and for the purpose shown and described.

6. In a sulky, the combination with the wheels, a central and a rear bow mounted on 90 the axles of said wheels, and thills carried by said bows, of a seat pivotally mounted on the central bow, a spring connection between the rear bow and the seat, and front braces extending from the thills to the axles of the 95 wheels that are curved at their lower ends below said axles, substantially as and for the purpose shown and described.

In witness whereof I have hereunto set my hand this 17th day of November, 1896.

GEORGE L. WELLS.

Witnesses:

V. H. LOCKWOOD,  
 ZULA GREEN.