

No. 675,175.

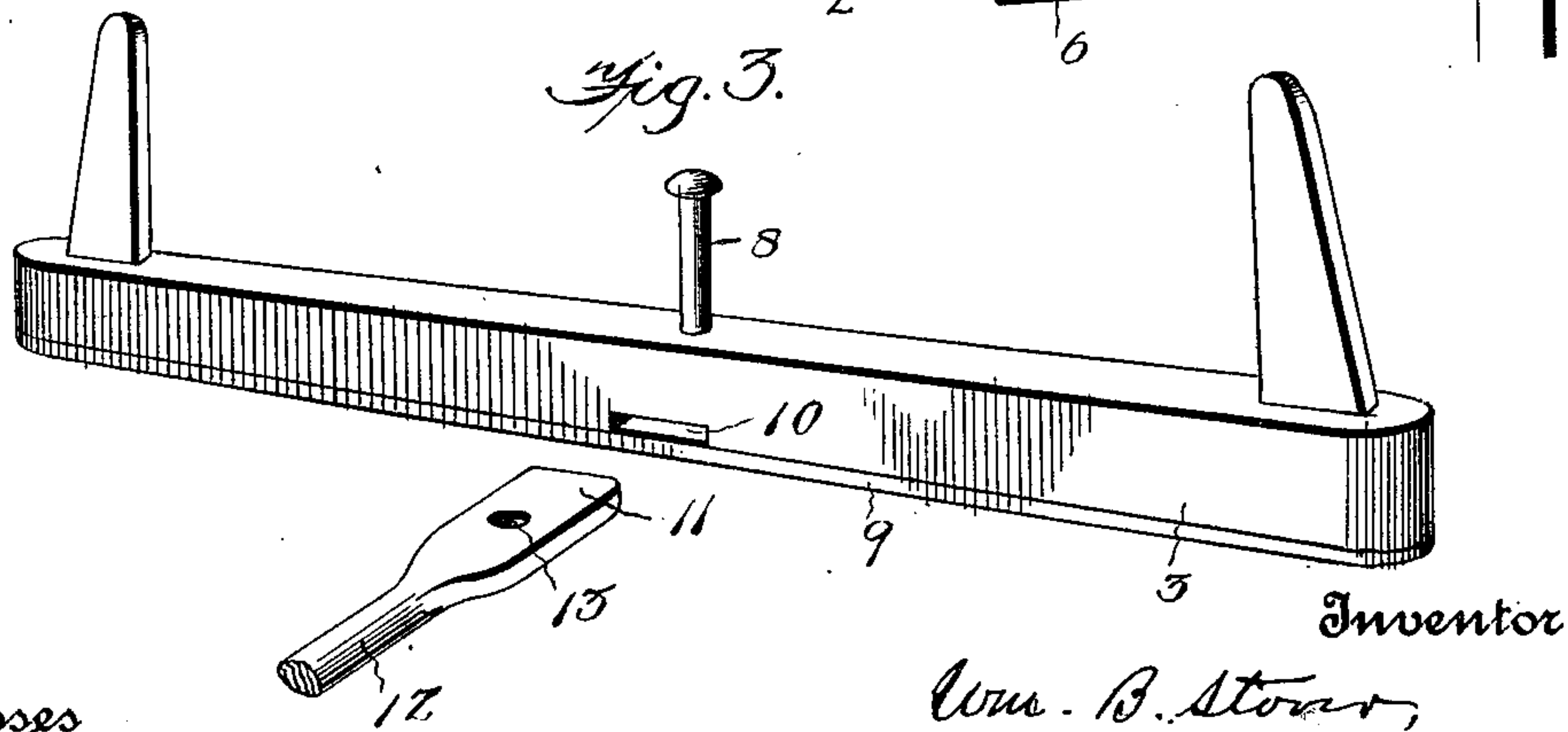
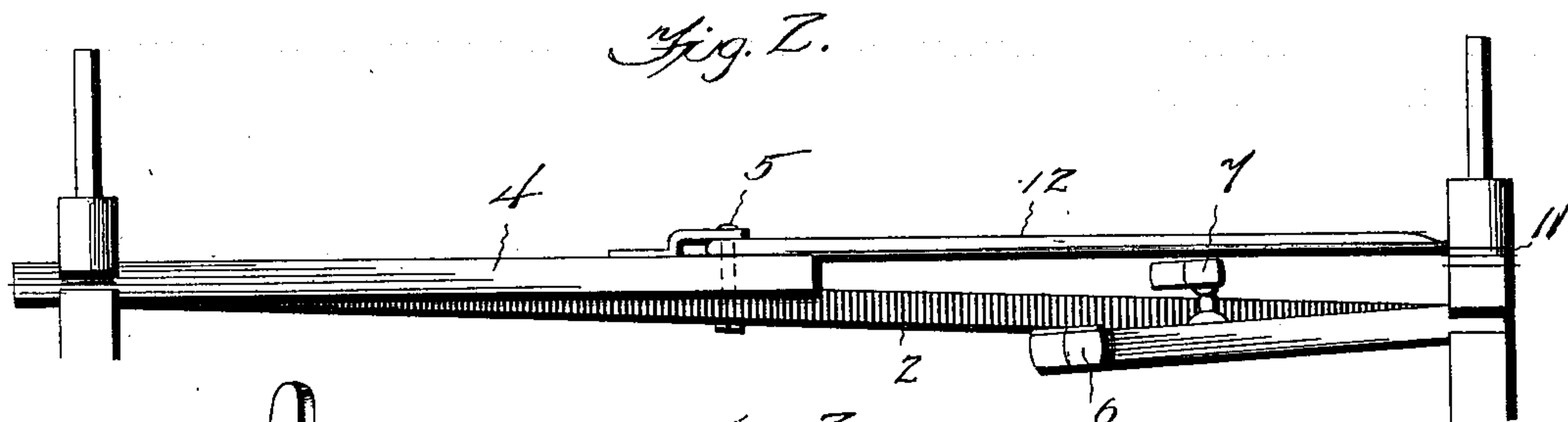
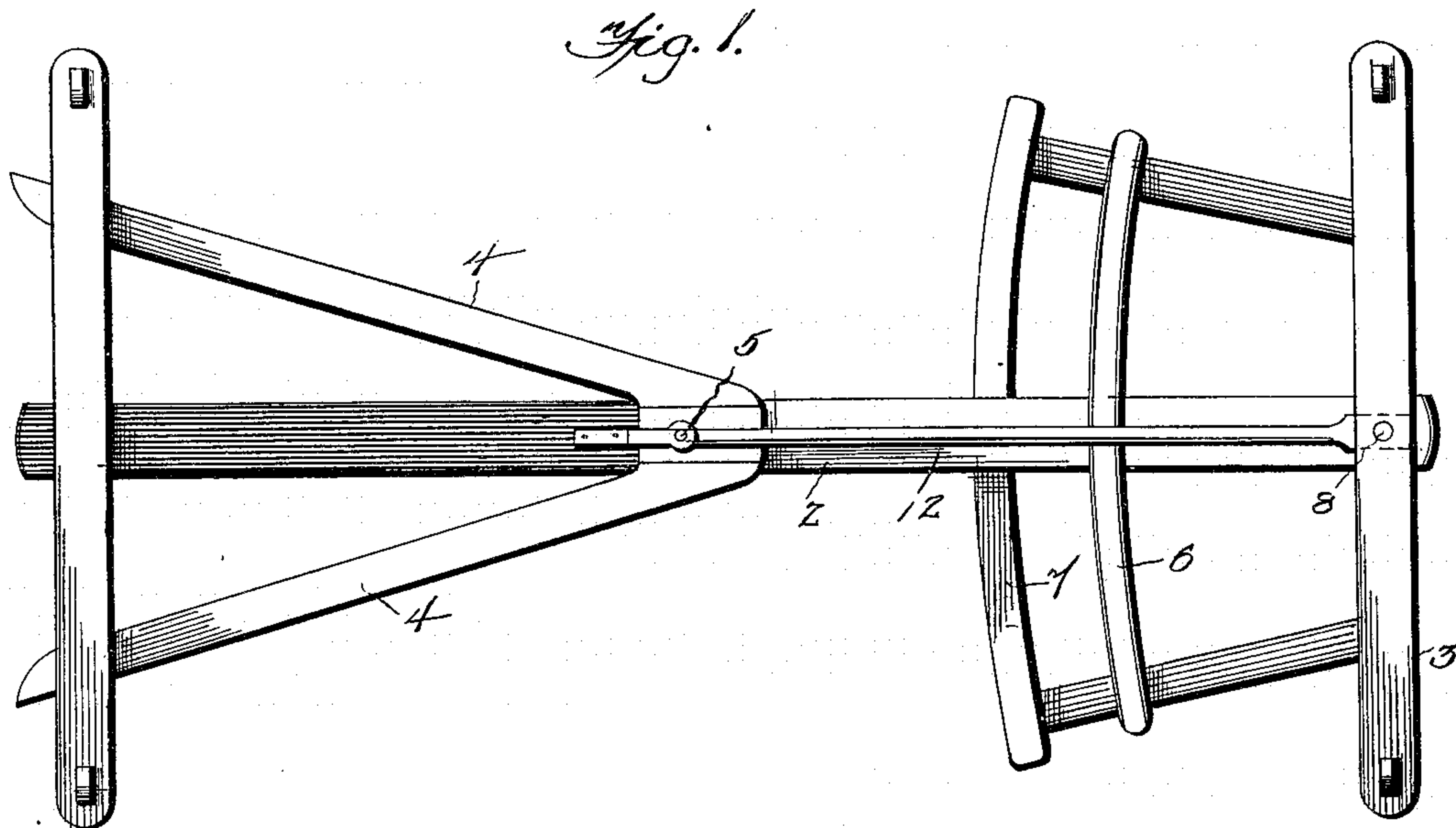
Patented May 28, 1901.

W. B. STOVER.
REACH STIFFENER.

(Application filed Dec. 20, 1900.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses
T. L. Mockler
H. Joseph Doyle

Inventor
Wm. B. Stover,

No. 675,175.

Patented May 28, 1901.

W. B. STOVER.
REACH STIFFENER.

(Application filed Dec. 20, 1900.)

(No Model.)

2 Sheets—Sheet 2.

Fig. 5.

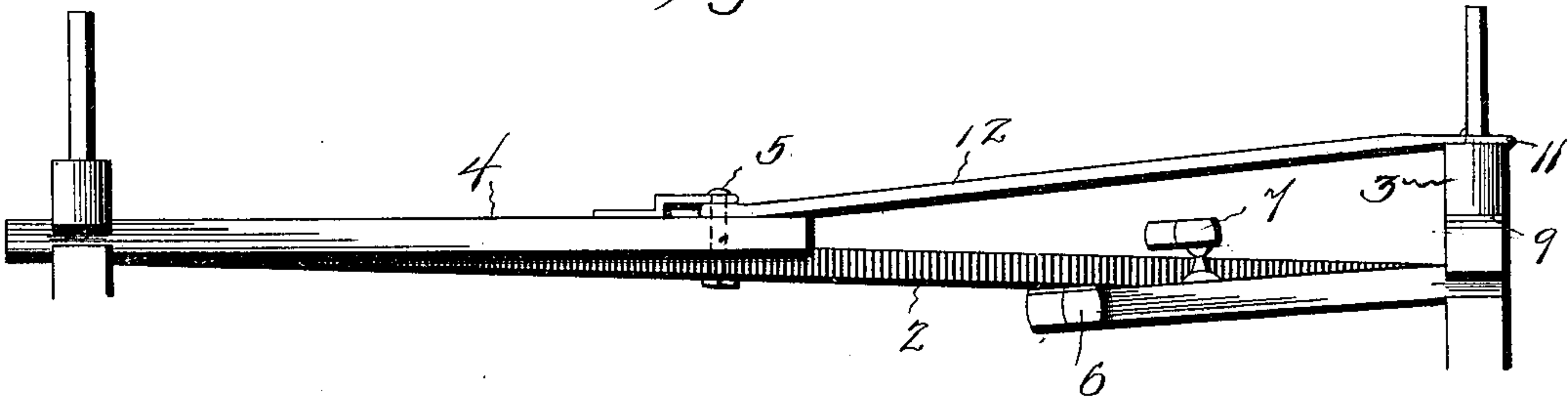


Fig. 6.

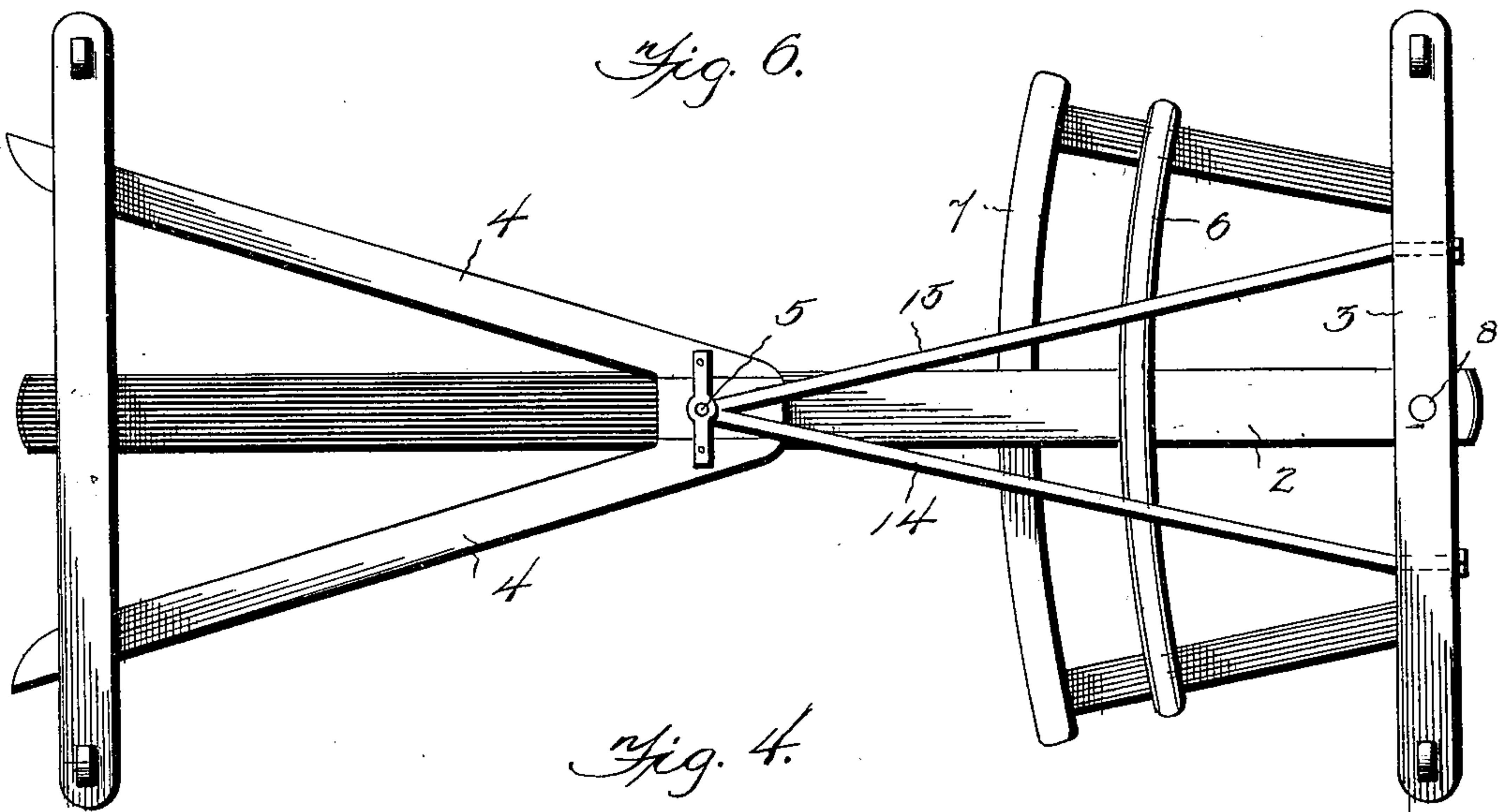
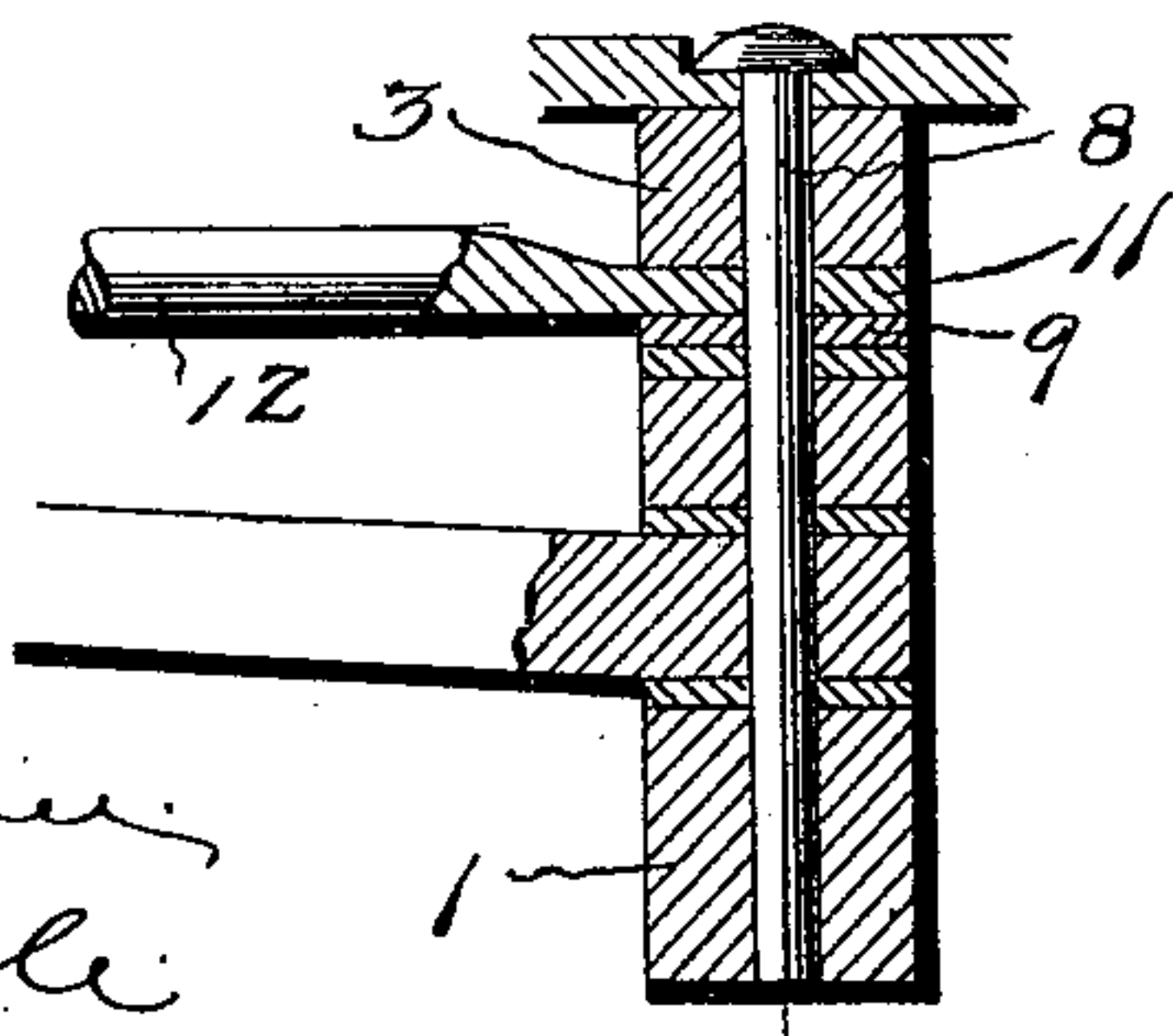


Fig. 4.



Witnesses

G. L. Mockabee
H. Joseph Doyle

Inventor
Wm. B. Stover.

UNITED STATES PATENT OFFICE.

WILLIAM B. STOVER, OF SOUTH BEND, INDIANA.

REACH-STIFFENER.

SPECIFICATION forming part of Letters Patent No. 675,175, dated May 28, 1901.

Application filed December 20, 1900. Serial No. 40,602. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM B. STOVER, a citizen of the United States, residing at South Bend, in the county of St. Joseph and State of Indiana, have invented certain new and useful Improvements in Reach-Stiffeners; and I do declare the following to be a full, clear, and exact description of the invention, 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, and to the figures of reference marked thereon, which form a part of this specification.

The invention herein described relates to improvements in vehicle construction, and refers particularly to means for stiffening the reach and hound construction of the front portion of the wagon.

In the usual wagon construction the reach is connected pivotally to the front axle and the front bolster by means of the king-bolt, the latter passing directly through these parts, and in order to stiffen this portion of the wagon two sway-bars are provided, one above and the other below the reach, each being carried by the axle. Sufficient play must be allowed between the reach and the sway-bars to prevent friction. In this construction, however, there is a pregnant disadvantage present, which results in the extremely rapid wearing of these parts, due to the rubbing. When the loaded wagon is driven on a downgrade, the weight of the load is thrown forward. There is an immediate tendency of the front axle to be rotated in the wheels forwardly, with the result that the lower bar is thrown tightly against the reach, and the rubbing ensues. When the wagon is driven on an upgrade, the same effect is produced, only that the rotatory movement is backward and the upper bar is thrown into contact with the reach. This result is due, primarily, to the fact that the king-bolt connection of the wagon-body and the axle forms substantially a lever connection, the king-bolt serving under the movement of the weight of the wagon-body to act as a lever to impart the rotary movement to the axle. The passing of the king-bolt through the bolster, reach, and axle has a slight tendency to prevent this movement, but avails but little, as evidenced by

the continual movement of the bars against the reach. I have found that the tendency to rotate can be practically eliminated by forming a positive connection between the king-bolt and a fixed and immovable portion of the running-gear additional to the reach, the connection with the king-bolt being at a point on the latter intermediate its headed connection with the body and its connection with the reach and the axle, thus forming a positive stop against this rotatory movement in either direction and necessarily holding the axle at all times in the same position relative to the reach. This connection serves to act to stiffen the reach connection with the axle to cause them to maintain their relative positions, and the invention may therefore be said to reside in a reach-stiffener the primary object of which is to maintain the relative positions of the reach and axle regardless of the load-weight direction.

Other objects are to provide a stiffener which will also serve to maintain the bolster against a pivotal movement on the king-bolt, resulting in maintaining the front and rear bolsters parallel with each other and at direct right angles with the reach.

The invention consists in the improved construction and combination of parts herein-after fully described, illustrated in the drawings, and pointed out in the appended claim.

In the drawings, in which similar numerals of reference indicate similar parts in all of the views, Figure 1 is a top plan view of the running-gear, showing my preferred form of stiffener in position thereon. Fig. 2 is a side elevation of the construction shown in Fig. 1. Fig. 3 is a perspective view of the front bolster, the front end of the stiffener being shown as removed therefrom. Fig. 4 is a cross-sectional view of the bolster, axle, &c., showing the connection between the king-bolt and the stiffener. Fig. 5 is a side elevation of a running-gear with a modified form of stiffener connection. Fig. 6 is a top plan view showing another modification.

Referring to the drawings, 1 designates the front axle, 2 the wagon-reach, and 3 the bolster. These may be formed in the usual or any preferred form of construction, and each is the same in the various forms.

4 designates the rear hounds, to the front

end of which the reach is connected by the usual bolt 5, the rear portion of the running-gear being of any preferred construction, it forming no part of the present invention.

5 6 and 7 designate the upper and lower sway-bars, respectively, while 8 designates the king-bolt passing through the bolster, reach, and axle.

10 In the construction shown in Figs. 1 to 4 the bolster, which is provided with the usual bottom plate 9, has an opening 10 extending across the bolster adjacent to the plate 9 and crossing the usual king-bolt opening. This opening is to receive the front flattened end 15 11 of the stiffener 12, said end having an opening 13 for the passage of the king-bolt. The rear end of the stiffener is connected to the bolt 5 in suitable manner. As shown, the end 11 substantially fits the opening 10, and being elongated and resting between the plate 20 9 and the upper wall of the opening 10 forms independently of the connection of the stiffener and king-bolt a positive stop against a rocking movement of the bolster on the king- 25 bolt. By this construction there is formed a stiffener which serves as an auxiliary reach, in that the stiffener connects the king-bolt and rear portion of the running-gear; but in function it serves to stiffen the reach by forming a fixed connection between the bolt 5 to 30 the king-bolt at a point above the reach, thus forming a double connection, both fixed as to distance, between the bolt 5 and the king-bolt, each serving as a check on the other and 35 forming an extended bearing for the king-bolt. Furthermore, as the front end of the stiffener 12 is flattened and enlarged laterally, as shown, and substantially fits within the opening 10 the bolster will be prevented 40 from having a pivotal movement relatively to the stiffener, this movement being prevented by the shape of the front end of the stiffener and the cooperating opening 11. As the stiffener retains at all times a relative po- 45 sition to the reach, it will be understood that the bolster will be held by the stiffener at substantially right angles to the reach, thereby causing the wagon-body to remain in parallelism with the reach regardless of the move- 50 ment of the front axle.

In the construction shown in Fig. 5 the front end of the stiffener is located on the up-

per side of the bolster, thus practically extending the bearing for the king-bolt formed by the stiffener and the reach.

55 In the modification shown in Fig. 6 two rods 14 and 15 are shown extending forward from the bolt 5 in a direction oblique to the reach and having their front ends secured directly to the bolster by suitable means, such 60 as bolts or nuts secured on the front ends of the rods. As this construction firmly holds the bolster both from a pivotal movement on the king-bolt and a rocking movement, it provides a construction equivalent to the other 65 form shown, in that the bolster serves with the reach to form the extended bearing of the remaining structures, and for this reason the reach-stiffener in this form comprises the 70 two bars and the bolster, combining to form the positive connection or auxiliary reach of the remaining forms, and it is to be understood that the term "auxiliary reach" in- 75 cludes each combined structure.

The advantages have been pointed out, and 75 are not therefore repeated at this point, excepting that by forming the extended bearing described and the means for preventing the pivotal movement the bolster is main- 80 tained in fixed relation to the reach, and thus prevents the load from having an effect on the king-bolt.

Having thus described my invention, what I claim as new is—

85 In a vehicle running-gear, the combination with the front axle, reach, and bolster, pivotally connected by the king-bolt, the bolster having an opening crossing the king-bolt openings, and sway-bars located on opposite 90 sides of the reach, of a reach-stiffener, having a flattened front end fitting said opening and carried by the king-bolt, the rear end being secured to a fixed part of the running-gear, forming a rigid connection between the rear 95 portion of the gear and the bolt, the upper sway-bar being located between said reach and reach-stiffener.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM B. STOVER.

Witnesses:

JAMES DUSHANE,
FRED RUSS.