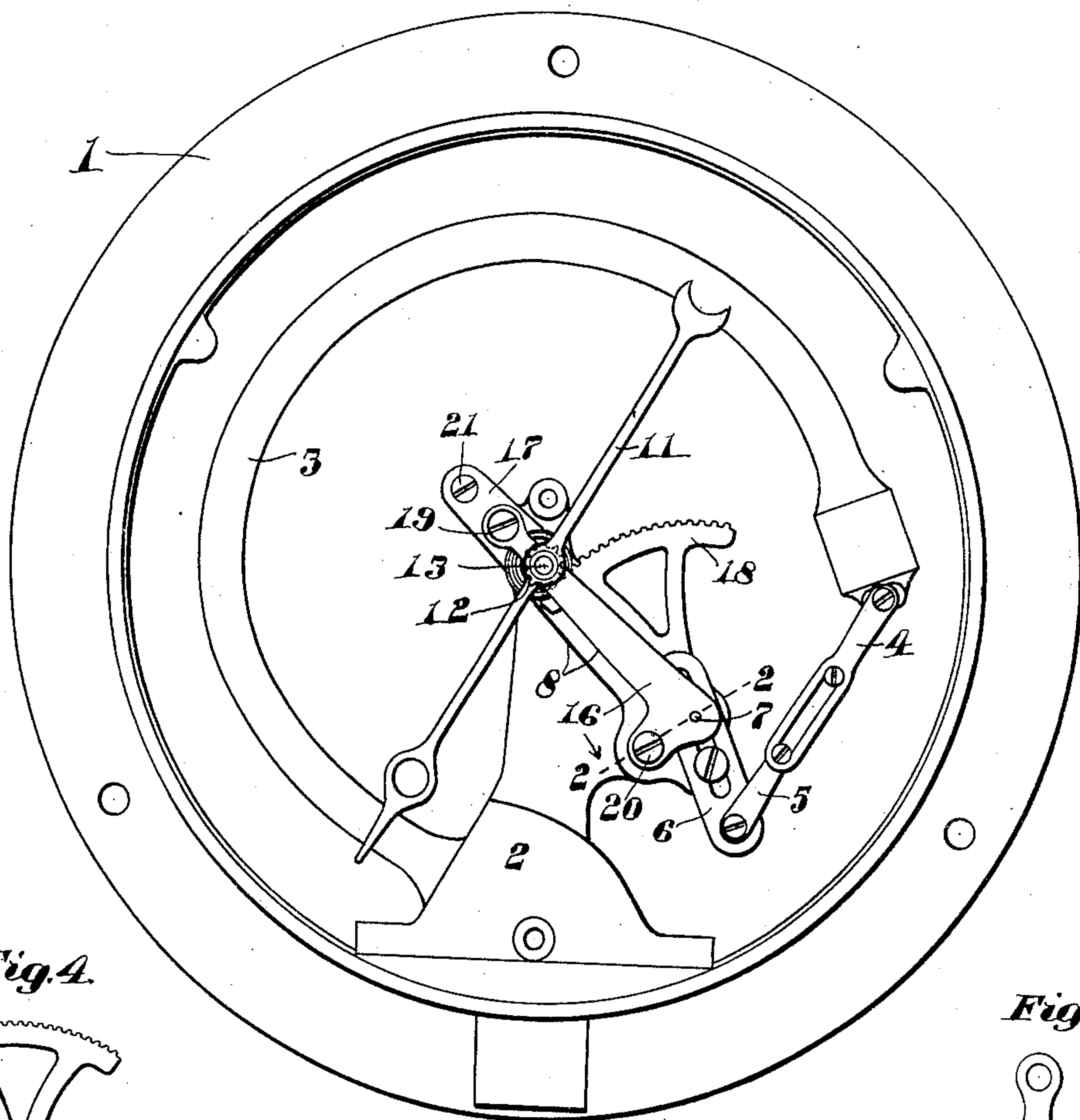


No. 829,553.

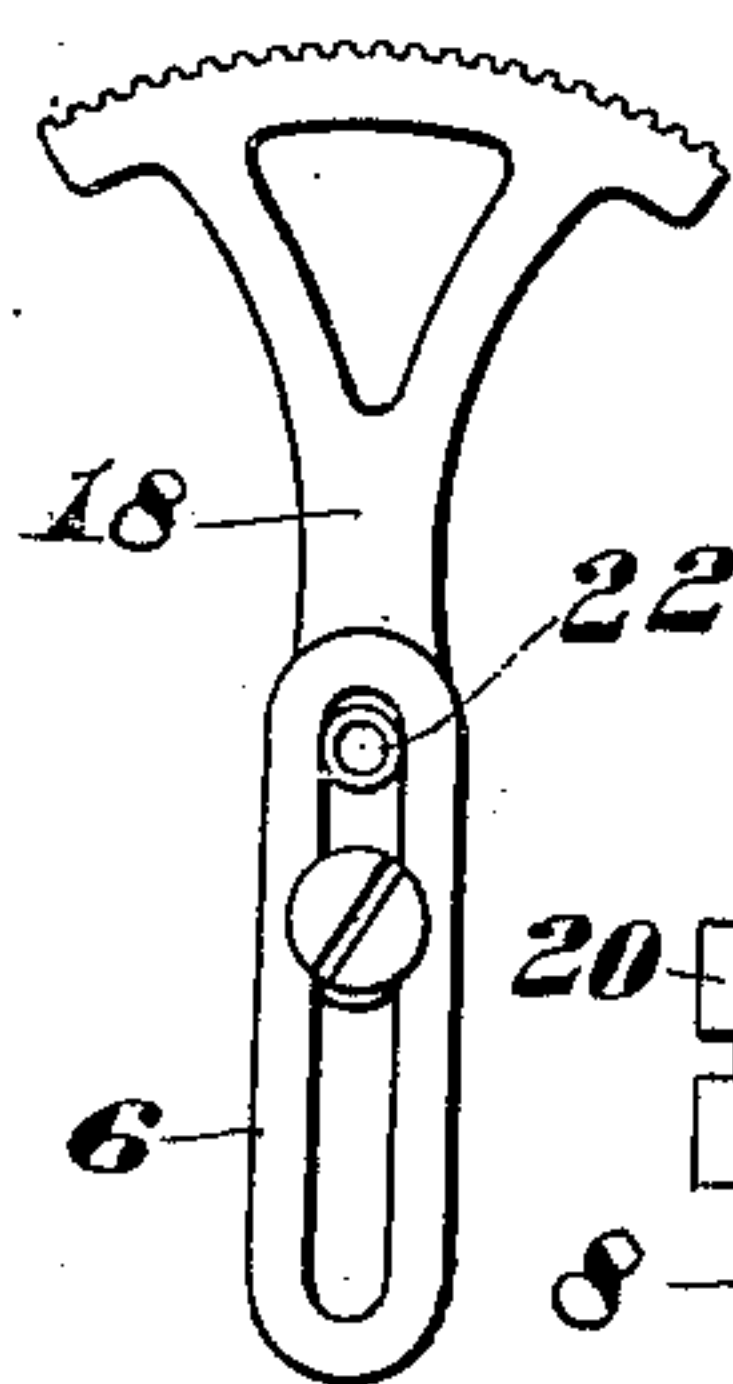
PATENTED AUG. 28, 1906.

G. SPENCER.  
PRESSURE GAGE.  
APPLICATION FILED MAR. 31, 1905.

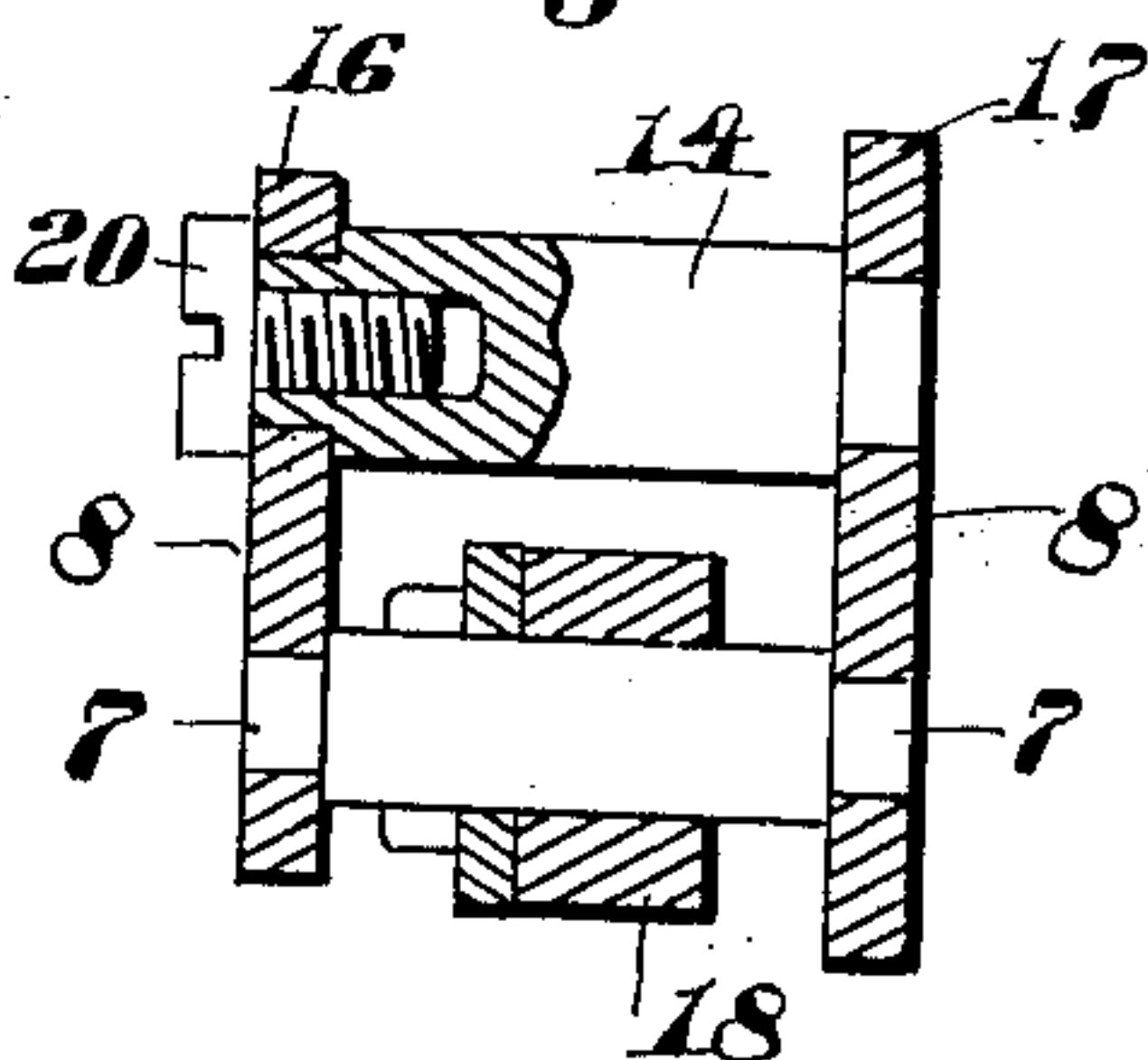
*Fig. 1.*



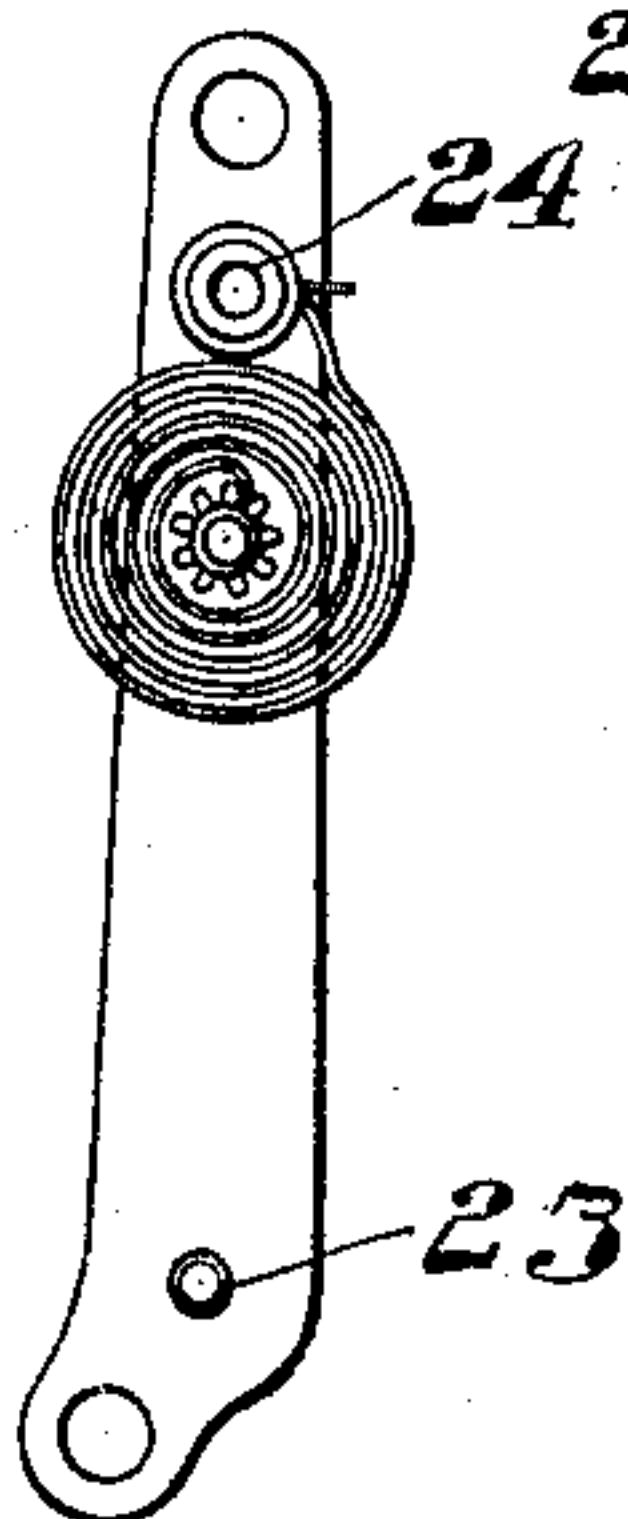
*Fig. 4.*



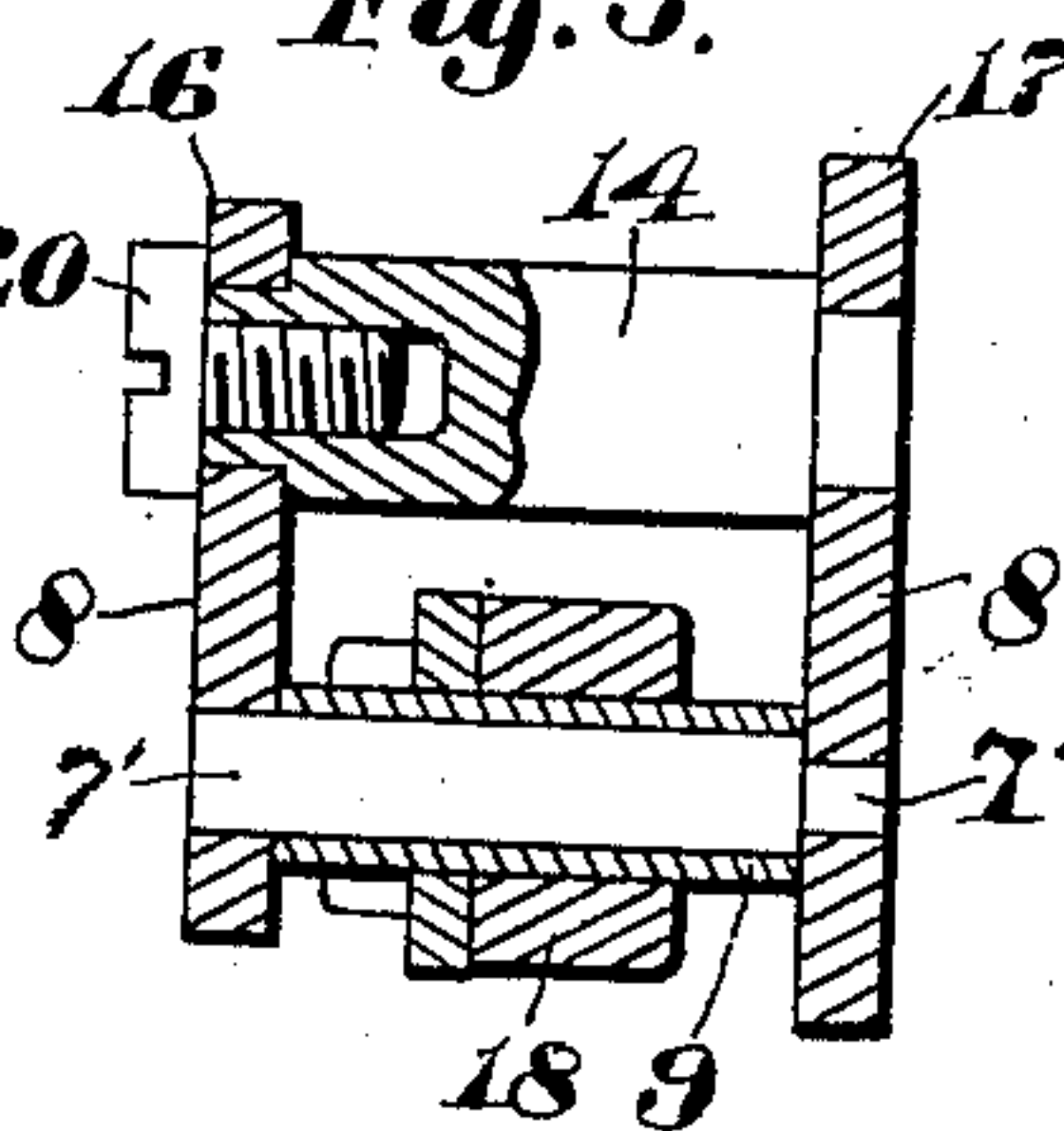
*Fig. 2.*



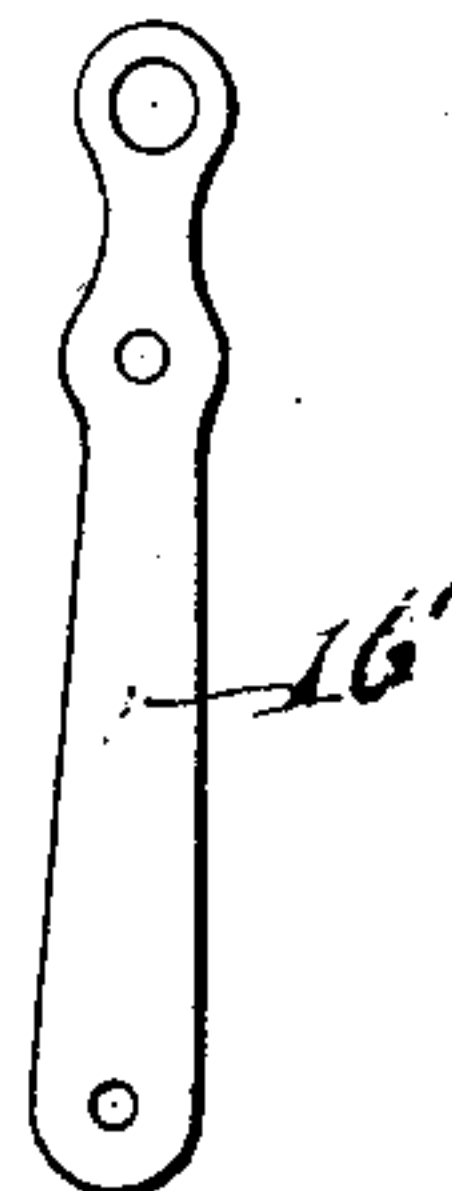
*Fig. 5.*



*Fig. 3.*



*Fig. 6.*



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# UNITED STATES PATENT OFFICE.

GEORGE SPENCER, OF MEDFORD, MASSACHUSETTS, ASSIGNOR TO CROSBY STEAM GAGE AND VALVE COMPANY, OF BOSTON, MASSACHUSETTS, A CORPORATION OF MASSACHUSETTS.

## PRESSURE-GAGE.

No. 829,553.

Specification of Letters Patent.

Patented Aug. 28, 1906.

Application filed March 31, 1905. Serial No. 253,093.

*To all whom it may concern:*

Be it known that I, GEORGE SPENCER, a citizen of the United States, and a resident of Medford, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Pressure-Gages, of which the following is a specification.

My invention relates to pressure or vacuum gages employing a Bourdon-tube spring, and more particularly to the toothed sector employed in such gages to actuate the pinion carrying the index-hand. Its object is to secure a simpler, more durable, and better mounting of such sector.

The invention is illustrated by the accompanying drawings, in which—

Figure 1 is a plan view of a pressure-gage employing such sector. Fig. 2 is an enlarged sectional view on the line 2 2, Fig. 1. Fig. 3 is an enlarged sectional view similar to Fig. 2, showing my improvement. Figs. 4, 5, and 6 are plan views showing the sector and frame in detail.

Similar characters refer to similar parts in the several drawings.

Fig. 1 shows a pressure-gage inclosed within the case 1 and having the gage mechanism mounted upon the gage-socket 2. The Bourdon-tube spring 3 has its inner end affixed to such socket, and to its free outer end is attached the slotted link 4, adjustable longitudinally on the slotted link 5, pivoted to the slotted link 6, adjustable longitudinally on the arm of the sector 18, which is mounted in the frame 8 and engages the pinion 12, (dotted lines,) on whose shaft 13 is mounted the index-hand 11. In this construction the sector-shaft 7 is journaled in bearings in the frame 8, and these bearings wear out rapidly, leaving the shaft loose and wobbly, causing injury to the mechanism and impairing the accuracy of the index-hand 11. Various attempts have been made to overcome this difficulty by thickening the plates 16 and 17 or bushing them so as to enlarge and strengthen the bearings of the shaft 7, but without success. To obviate the trouble, I employ the arrangement shown in section in

Fig. 3, furnishing the sector 18 with a fixed sleeve-axle 9, which is rigidly attached to said sector, being driven through the lower end thereof or secured thereto in any other way and held by friction, or screws, or otherwise, and this sleeve-axle 9 is rotatably mounted upon an axial shaft 7', fixed to the frame 8 and constituting a pillar of said frame. This construction strengthens the mechanism and insures accuracy and durability by furnishing one long bearing between the fixed axial shaft 7' and the rotating sleeve-axle 9 in place of the two small bearings of the sector-shaft 7. The frame 8 comprises top and bottom plates 16 17, fastened together by pillars (see 14, Figs. 2 and 3,) and pillar-screws 19 20, the frame being fixed to the gage-socket 2 by screws. (See 21, Fig. 1.) In this particular arrangement the axial shaft 10 furnishes an additional support for the frame-plates and strengthens the frame.

In the simplest form of my invention the sector, with the sleeve-axle, is mounted upon one of the pillars of the frame, as illustrated in Figs. 4, 5, and 6, of which Fig. 4 shows the sector 18 with the adjustable link 6 fixed to its arm, Fig. 5 shows the bottom plate member of the frame with the pillars 23 and 24, and Fig. 6 shows the top member 16' of the frame, the sleeve-axle 22, Fig. 4, in this case being mounted upon the pillar 23, Fig. 5.

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

In a pressure-gage as described the combination, with the gage mechanism, of a frame comprising top and bottom plates supported by pillars extending from one plate to the other and fixed rigidly to said plates, one of said pillars constituting an axial shaft, and a sector having a sleeve-axle rotatably mounted upon said axial shaft; substantially as described.

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

GEORGE SPENCER.

Witnesses:

RALPH W. FOSTER,  
IRENE M. LYALL.