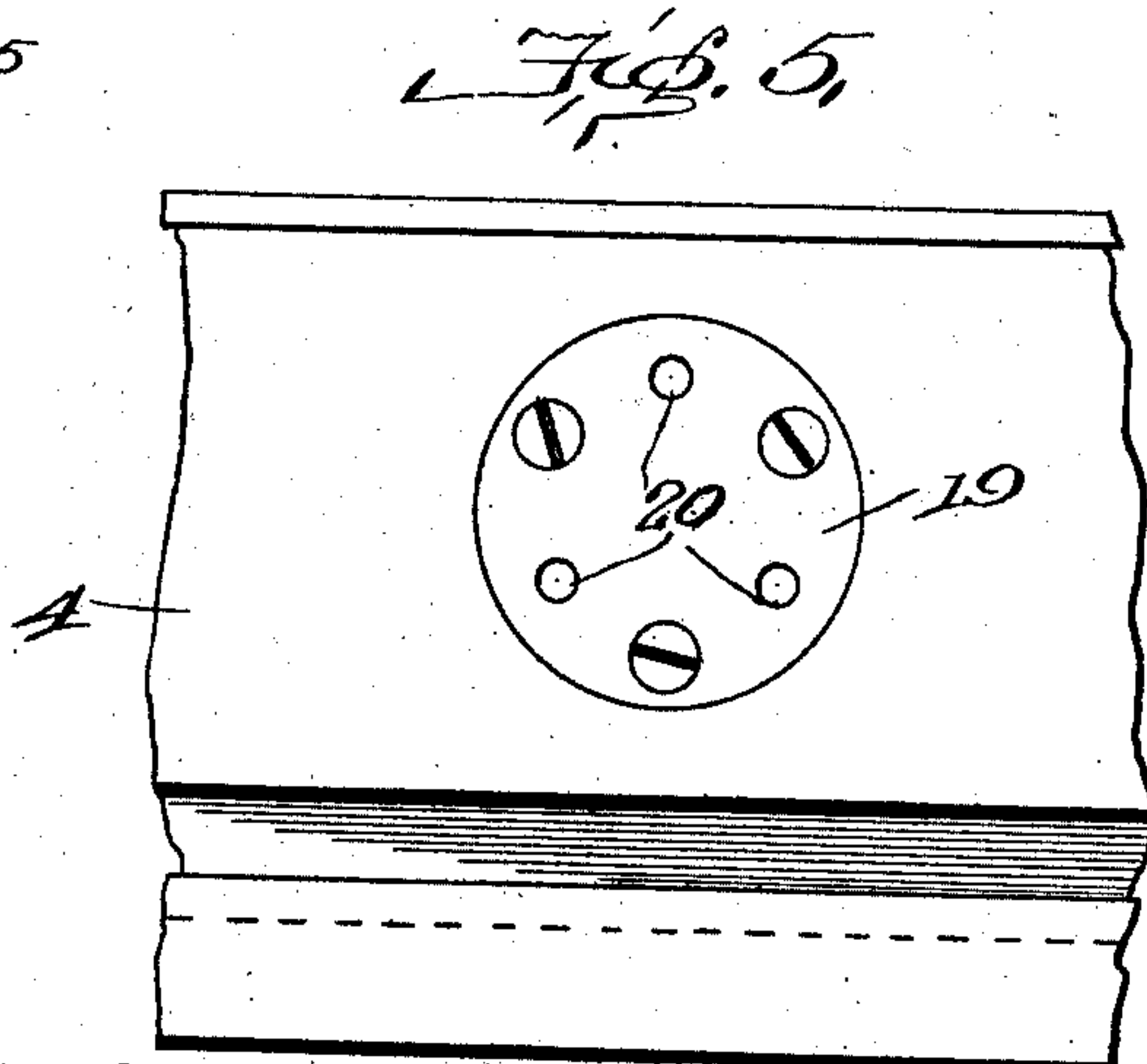
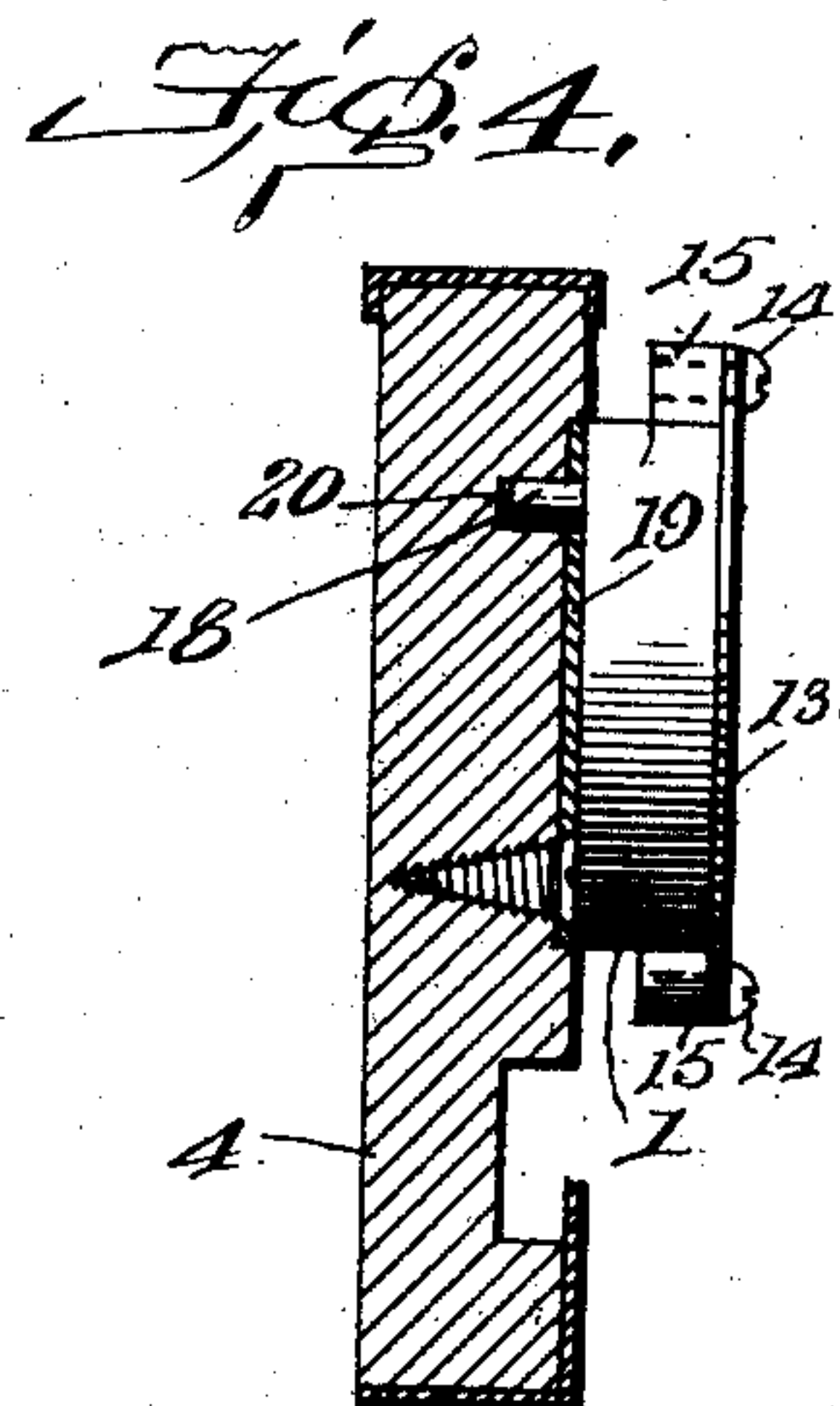
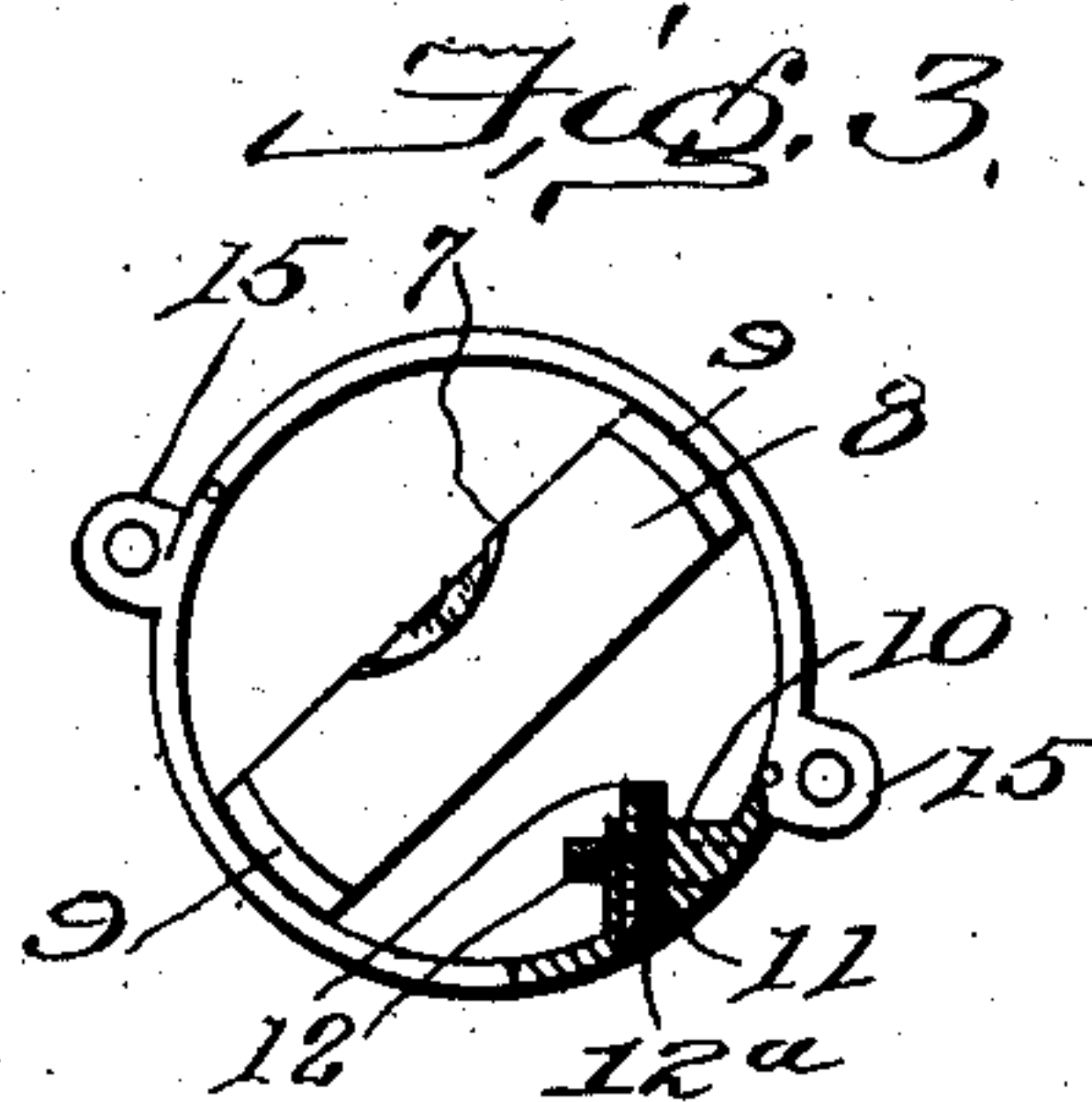
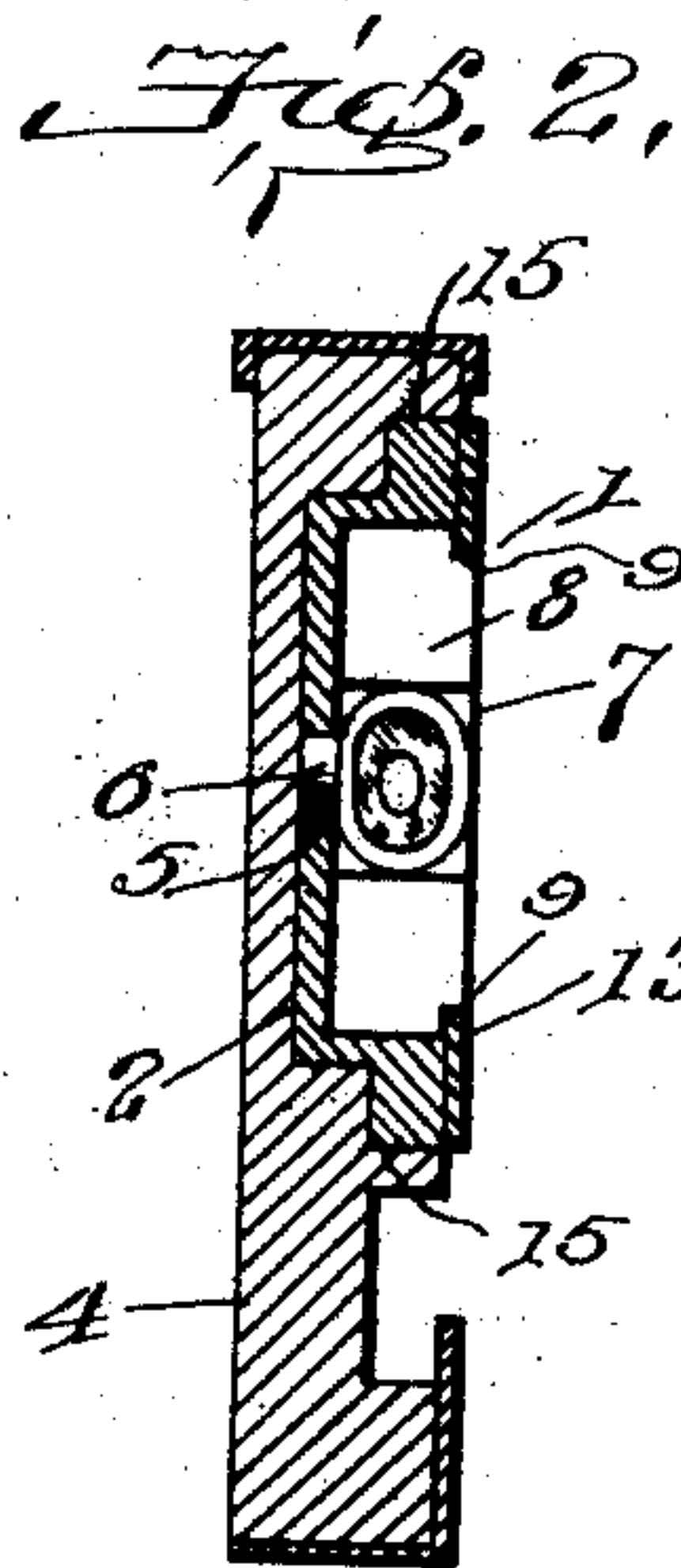
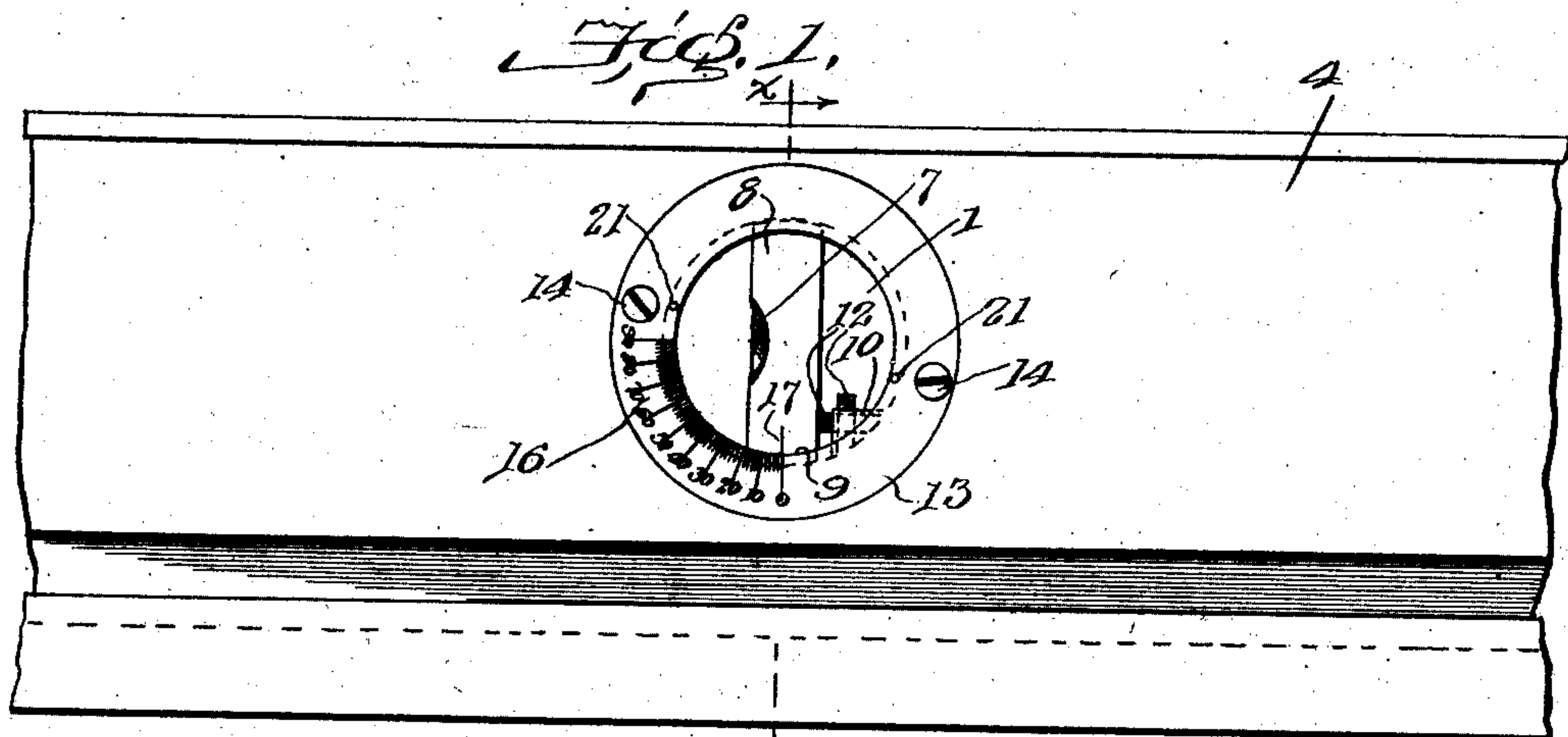


No. 883,743.

PATENTED APR. 7, 1908.

C. T. RIDGELY.  
SPIRIT LEVEL.

APPLICATION FILED JULY 16, 1906.



Witnesses

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# UNITED STATES PATENT OFFICE

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## SPIRIT-LEVEL.

No. 883,743.

Specification of Letters Patent.

Patented April 7, 1908.

Application filed July 16, 1906. Serial No. 326,377.

*To all whom it may concern:*

Be it known that I, CHARLES T. RIDGELY, a citizen of the United States, residing at Springfield, in the county of Clark and State of Ohio, have invented certain new and useful Improvements in Spirit-Levels, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to spirit-levels, and more particularly to that class of levels which are adapted to be mounted in or secured to a straight-edge or trimmer board, and has for its object the production of a level of this character which can be used either vertically or horizontally, which can be easily adjusted to maintain it in a true position, and which can, if desired, be removed from the straight-edge.

With these objects in view my invention consists in the construction hereinafter described, and more particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a plan view of a straight-edge having a spirit-level constructed in accordance with my invention attached thereto; Fig. 2 is a transverse section taken through the casing and showing the spirit-level in elevation; Fig. 3 is a plan view of the spirit-level with the face plate removed; Fig. 4 shows a modification of the spirit-level which is adapted to be removably attached to the straight-edge; and Fig. 5 is a plan view of the straight-edge provided with the securing plate adapted to receive the level shown in Fig. 4.

In carrying out my invention I provide a casing 1 which may be of any suitable construction and material, but which, in the form shown in the drawings, consists of a brass casting having its inner face turned down to form a true cylindrical surface and having a central aperture 5 in the bottom thereof which is adapted to receive a pivot lug 6 on one side of the spirit-level 7. The level 7 is the usual spirit-level and is mounted in a block 8, of brass or other suitable material, having its ends rounded to conform to an arc of the circle formed by the cylindrical sides of the casing 1. The outer face of the block 8 is recessed at its opposite ends, as shown at 9, to receive the edge of the face plate, as will be hereinafter described.

Near the bottom of the cylindrical casing 1 and preferably formed integral therewith

is a lug 10 having vertical and horizontal screw-threaded passages 11 adapted to receive the screws 12 which, in turn, are adapted to engage the opposite ends of the block 8 containing the spirit-level when the same is in its vertical and horizontal positions, respectively. These screws are provided with suitable means for moving the same, such as the usual screw-driver slot, as shown at 12<sup>a</sup>, and, by adjusting these screws relatively to the casing, the spirit-level can be adjusted to maintain the same in a preferably true position. A face plate 13, which is preferably in the form of a flat metal ring, the inner diameter of which is less than the diameter of the cylindrical casing 1, is secured to said casing by means of screws 14 engaging lugs 15 on the casing and extending through the same into the body of the trimmer board 4 for securing the casing to the same. The inner diameter of this ring being less than the inner diameter of the casing 1 and consequently less than the length of the block 8, causes the ring to extend in beyond the edge of the casing and engage the recessed ends 9 of the block, thereby retaining the same within the casing and allowing it to turn freely on the pivot 6 within the limits of the stop screws 12. The face plate 13 is provided for a portion of its length with a scale 16 giving the degree of inclination from zero to 90 degrees and being so located relatively to the level and the stop screws 12 that when the block carrying the spirit-level is in vertical position the center mark 17 on said block will register with the zero indication on the scale and when the same is in a true horizontal position the said mark will register with the 90 degree indication on said scale.

In order to provide a level of this character which can be readily attached to and removed from a straight-edge or trimmer board, I employ the spirit-level and its casing as hereinbefore described and provide lugs 18 on the bottom of the casing, and a separate base plate 19 is secured to the straight-edge 4. In this base plate are recesses 20 adapted to register with the lug 18, the recesses 20 being of such a size that the lugs 18 fit tightly therein and serve to retain the casing 1 firmly upon the face of the straight-edge.

In the first described construction it is sometimes desirable to secure the face plate to the casing proper in such a manner that



the casing can be easily removed from the straight-edge without removing the face plate from the casing. In order to accomplish this I secure the face plate to the casing  
5 by means of pins 21 driven through the face plate into the casing thereby securing the face plate to the casing independently of the screws 14.

The operation of the device is obvious  
10 from the foregoing description. The screws 12, carried by the casing, are adjusted to limit the movement of the block 8 carrying the spirit-level 17 so that when the block is in engagement with one of said screws, it  
15 will be in a true horizontal position when the straight-edge is in a vertical position, and when the block is in engagement with the other screw, it will be in a true horizontal position with the straight-edge likewise in a  
20 horizontal position. When it is desired to obtain any angle of inclination, the block is turned to bring the pointer 17 on the same to register with the proper angle indication on the scale 16, and, when the spirit-level  
25 indicates a true level, the straight-edge will have assumed the desired angle.

While I have described my invention in detail, I wish it be distinctly understood that the same is not limited to the details  
30 of construction herein set forth, as the same may be varied without departing from the principle of my invention.

Having thus fully described my invention, what I claim as new and desire to secure by  
35 Letters Patent, is:—

1. The combination, with a straight-edge, of a casing carried by said straight-edge and having a central aperture, an elongated block carrying a spirit-level, a pivot lug centrally  
40 arranged on said block and loosely mounted in the aperture in said casing, a face plate for said casing extending over the ends of said block to retain said pivot lug within said aperture, and a scale on said face plate, sub-  
45 stantially as described.

2. The combination, with a straight-edge, of a cylindrical casing, having a central bearing aperture in the bottom thereof, an elongated block carrying a spirit-level, a centrally  
50 arranged pivot lug on one side of said block and engaging said bearing aperture, the ends of said block being rounded to conform to the sides of said casing, said block having its face

recessed at the ends thereof, and a face plate having a central opening of less diameter  
55 than said casing and adapted to be secured to said casing and to engage the recessed ends of said block, substantially as described.

3. The combination, with a straight-edge, of a casing, a spirit-level pivotally mounted  
60 therein and adapted to move freely about its pivotal center, a lug formed on the inner wall of said casing, and adjustable means carried by said lug for limiting the movement of said spirit-level in either direction, substantially  
65 as described.

4. The combination, with a straight-edge, of a casing, a spirit-level pivotally mounted in said casing, a lug formed on the inner wall of said casing, apertures through said lug  
70 arranged at right angles to each other, and screws mounted in said apertures to limit the movement of said spirit-level, substantially as described.

5. The combination, with a straight-edge, 75 a casing, and a spirit-level pivotally mounted within said casing of coöperating members carried by said straight-edge and said casing and adapted to engage one with the other to detachably connect the casing to the straight-  
80 edge.

6. The combination, with a straight-edge provided with a socket, of a casing provided with a lug adapted to engage said socket and secure said casing to said straight-edge and a  
85 spirit level pivotally mounted in said casing.

7. The combination, with a straight-edge having a plurality of recesses therein, of a casing having a central bearing aperture and provided with lugs adapted to frictionally en-  
90 gage said recesses, and a spirit-level mounted in said casing and having a central pivot lug adapted to engage the aperture therein, substantially as described.

8. The combination, with a straight-edge 95 and an apertured plate secured thereto, of a casing having a lug adapted to frictionally engage the aperture in said plate, and a spirit level pivotally mounted in said casing.

In testimony whereof I affix my signature 100 in presence of two witnesses.

CHARLES T. RIDGELY.

Witnesses:

F. M. HAGAN,  
EDWARD F. REED.