

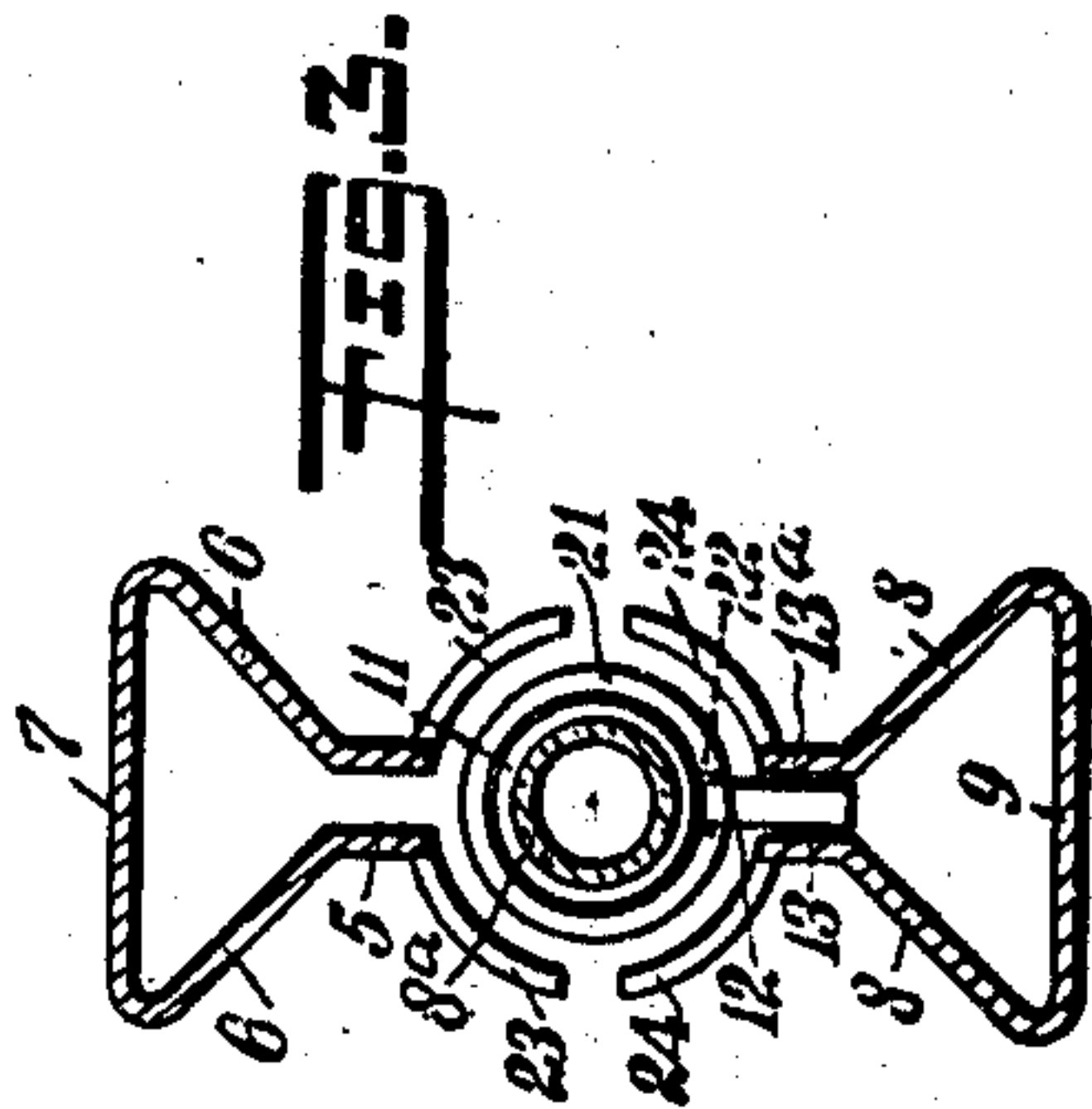
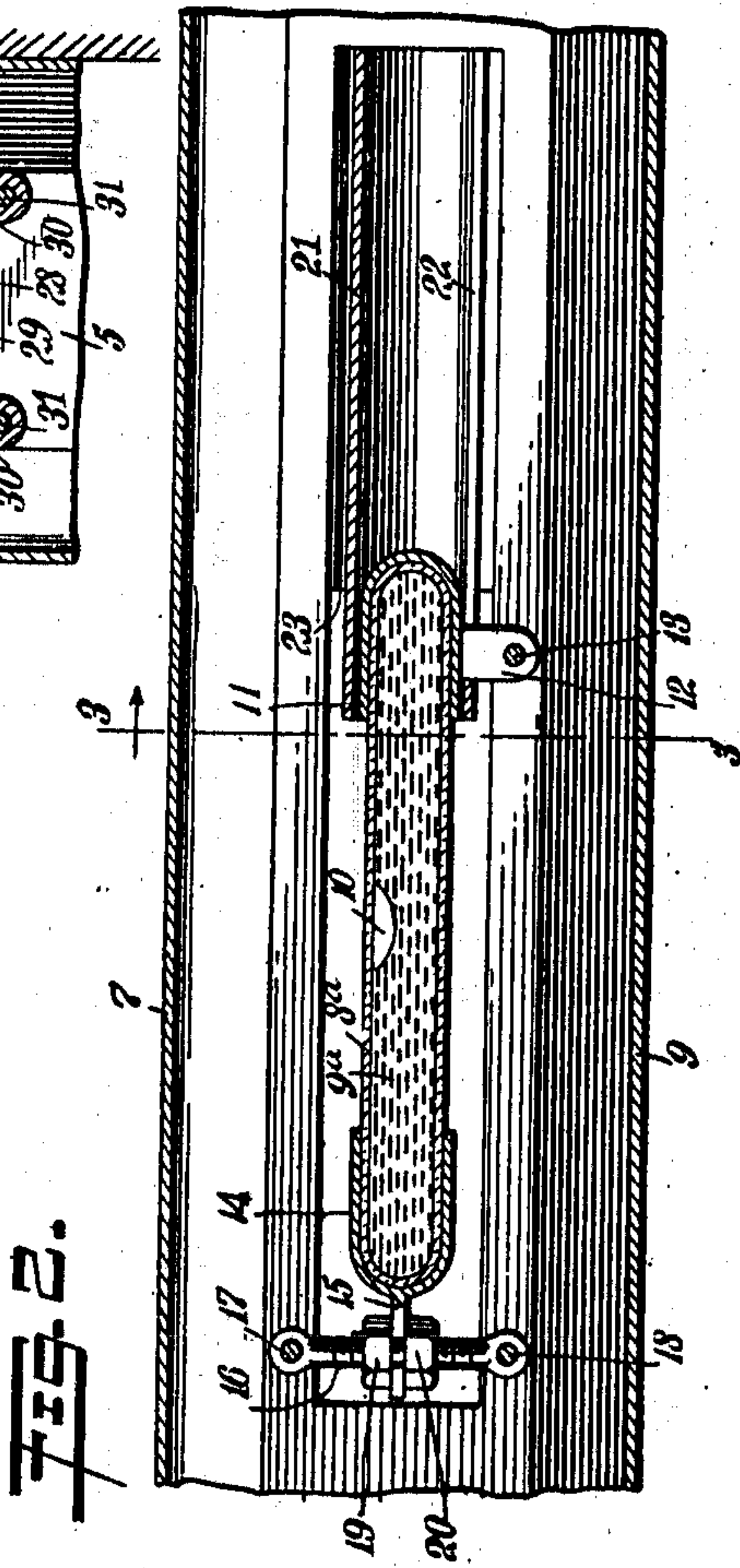
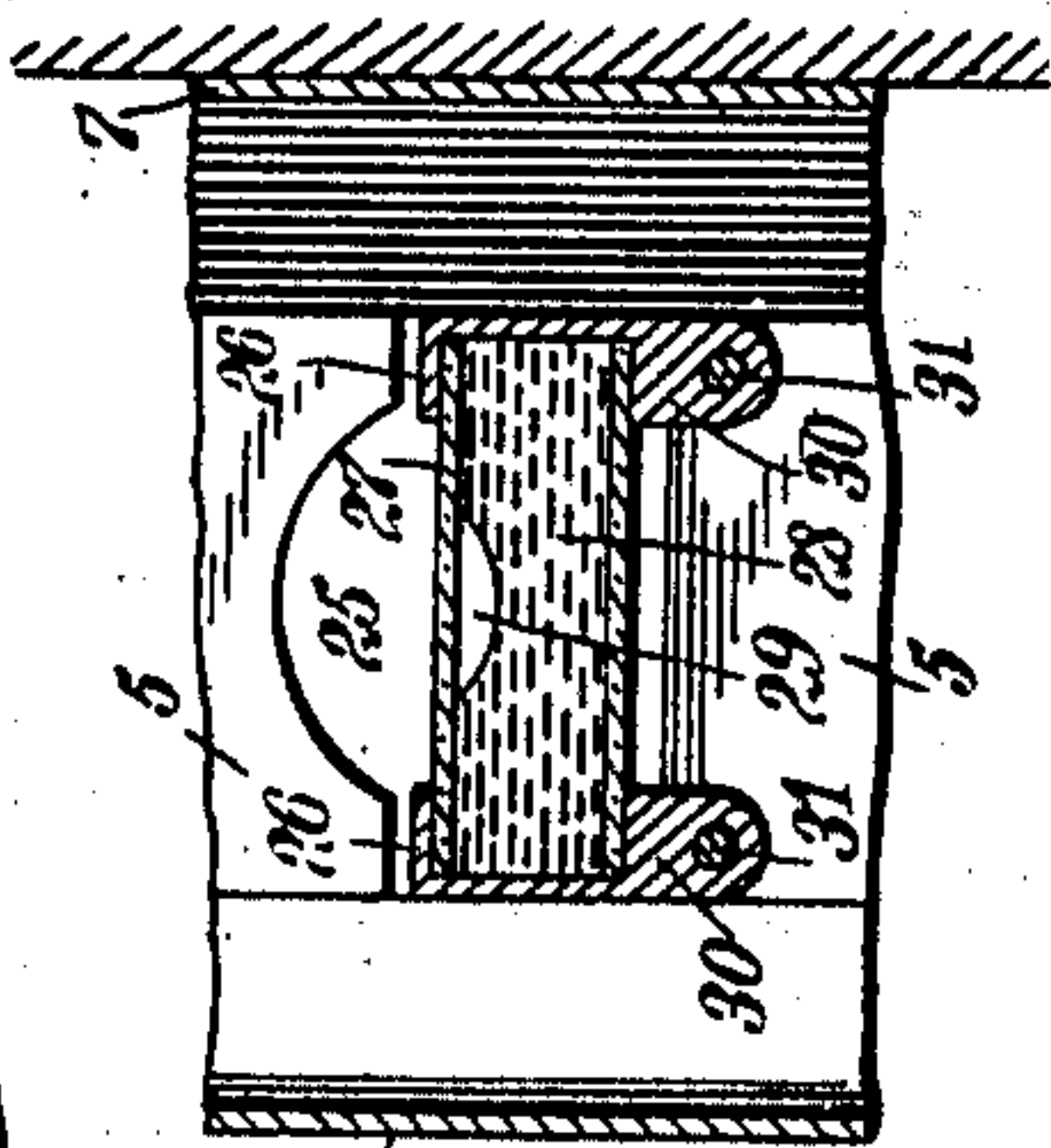
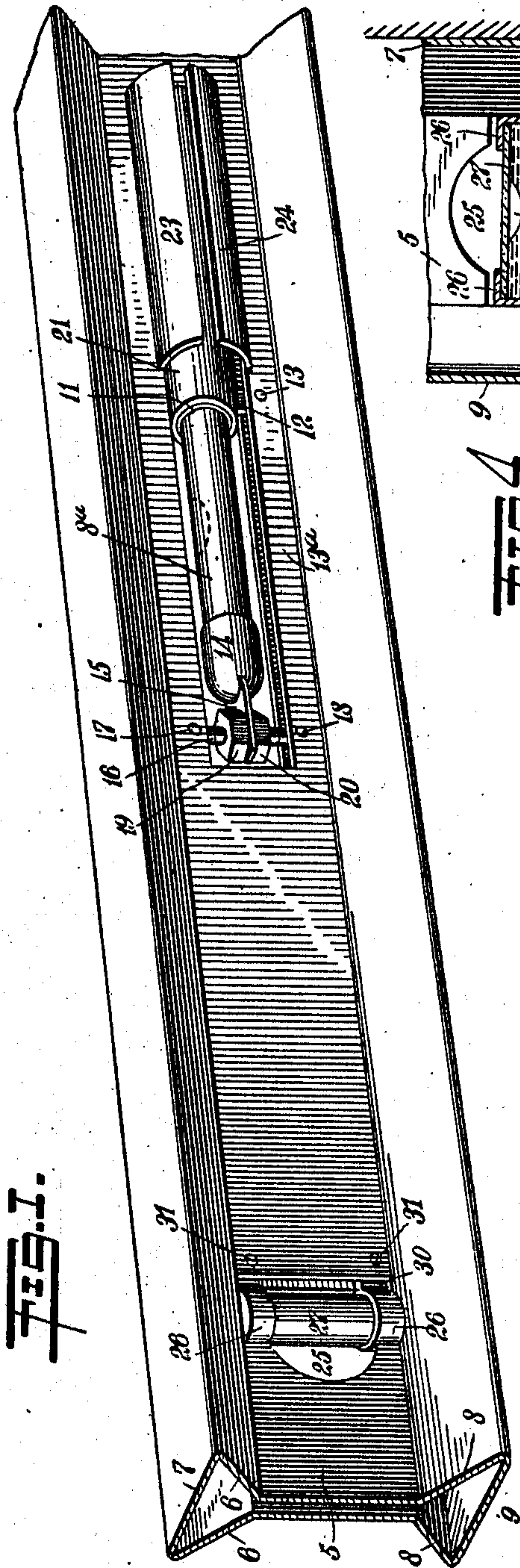
H. O. EARMAN.

LEVEL.

APPLICATION FILED DEC. 15, 1909.

970,897.

Patented Sept. 20, 1910.



WITNESSES:

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LEVEL.

970,897.

Specification of Letters Patent. Patented Sept. 20, 1910.

Application filed December 15, 1909. Serial No. 533,136.

To all whom it may concern:

Be it known that I, HIRAM O. EARMAN, a citizen of the United States, and a resident of Manhasset, in the county of Nassau and State of New York, have invented a new and Improved Level, of which the following is a full, clear, and exact description.

My invention relates to levels, my purpose being to provide a level having a stock made practically of sheet metal so formed as to accommodate itself to the various parts to be supported.

My invention further relates to various details of mechanism, the general purpose of which is to improve the general efficiency of the level.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a fragmentary perspective view showing my level; Fig. 2 is a fragmentary section through one of the leveling tubes and mechanism for adjusting the same relatively to the stock; Fig. 3 is a vertical section on the line 3—3 of Fig. 2, looking in the direction of the arrow; and Fig. 4 is a substantially central section through another leveling tube carried by the level.

The stock or frame of the level comprises a body portion 5 of sheet metal having portions 6 bent obliquely outward and connected together by a panel 7, these parts all being integral. Connected with the body portion 5 of sheet metal are also portions 8 bent obliquely outward and connected together by a panel 9, these last mentioned portions being also integral, so that the stock or frame is formed practically of one piece of sheet metal. At 8^a is a leveling tube of transparent material, preferably glass. It is filled with a volume of liquid 9^a colored, preferably red, this liquid containing an air bubble 10. The leveling tube 8^a is supported at one end by a thimble shaped clip 11 which is mounted upon a stem 12. A pin 13 extends through the stem 12 and also through convenient portions 13^a of the stock. Another clip 14, also thimble shaped, engages the opposite end of the leveling tube 8^a and is provided with a fin 15. A screw 16 extends directly through the fin 15 and

is connected by aid of pins 17, 18 with the stock.

Revolubly mounted upon the screw 16 are nuts 19, 20 disposed upon opposite sides of the fin. By turning these nuts 19, 20 the fin 15 is raised or lowered, and consequently the leveling tube 8^a is adjusted relatively to the stock, as may be understood from Fig. 2. A shield 21, having generally a cylindrical form, is provided with a slot 22, this shield thus being in effect a split cylinder. At 23, 24 are wings of substantially arcuate form struck up directly from the sheet metal of which the stock is formed. The shield is slidable relatively to the leveling tube 8^a.

By moving the shield in the general direction of its own longitudinal axis, it may be moved on or off of the leveling tube. The shield 21, when moved to its limit in one direction, fits neatly around the clips 11, 14, thereby protecting the leveling tube from injury, and when moved into the position indicated in Fig. 2, exposes the leveling tube in order to permit observation of the latter.

The stock is provided with an opening 25 in which are clips 26, and mounted within the latter is a leveling tube 27 containing a colored liquid 28 and an air bubble 29. The clips 26 are provided with stems 30 through which extend pins 31, these pins being connected rigidly with the stock.

The leveling tube shown in Fig. 4 is employed when the level is used in connection with vertical reckoning, such as vertically disposed walls, the leveling tube appearing in Fig. 2 being employed for leveling horizontal objects. It will be noted that the wings 23, 24 (see Figs. 1 and 3) form a housing for the shield 21 when the latter is not in use for protecting the leveling tube 8^a.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. In a level, the combination of a leveling tube, a stock for supporting the same, said stock being provided with wings so shaped as to form a housing, and a shield movable relatively to said housing and to said leveling tube, said shield being adapted to be moved by hand so as to cover said leveling tube or to be hidden within said housing.

2. In a level, the combination of a stock provided with a housing of substantially cy-

lindrical form, a leveling tube also of substantially cylindrical form disposed substantially in axial alinement with said housing, a shield having a cylindrical form and slidable in the general direction of its axis relatively to said leveling tube and to said housing.

3. In a level, the combination of a leveling member, and a stock for supporting the same, said stock comprising a body portion of sheet metal bent upon itself so as to form

two panels disposed oppositely to each other, and portions integral with said panels and extending obliquely inward therefrom.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

HIRAM OWEN EARMAN.

Witnesses:

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F. M. PELER.