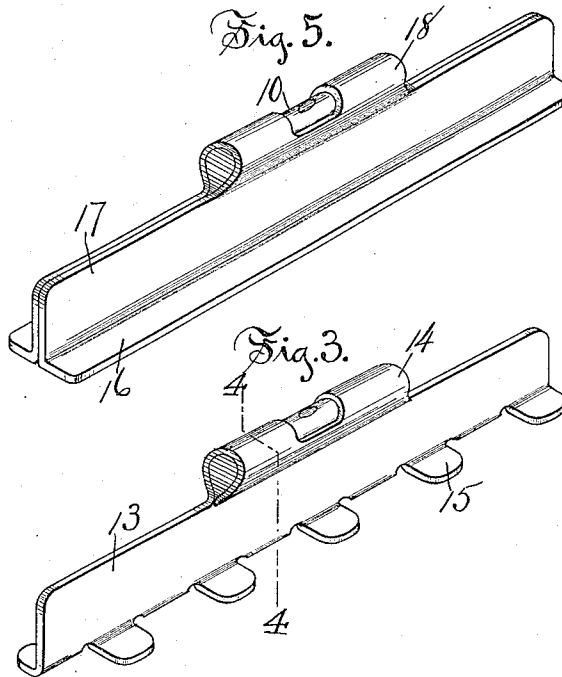
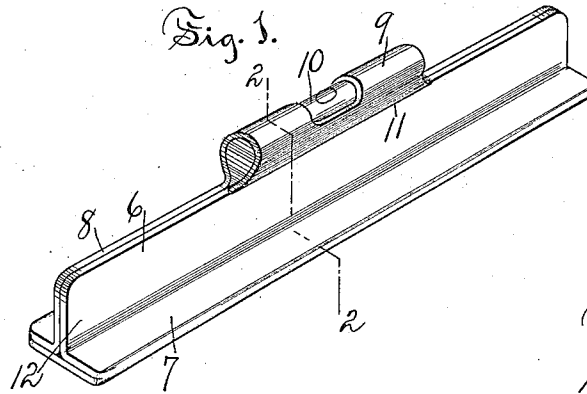


F. B. MILLER.
LEVEL.

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1,159,522.

Patented Nov. 9, 1915.



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LEVEL.

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To all whom it may concern:

Be it known that I, FRANK B. MILLER, a citizen of the United States, and a resident of Unionville, in the county of Hartford and State of Connecticut, have invented a new and Improved Level, of which the following is a specification.

My invention relates to the class of implements that are commonly used for the purpose of determining horizontal planes or levels, and an object of my invention, among others, is to provide a device of this class that shall be durable and efficient in operation, neat and attractive in appearance and inexpensive in construction.

One form of device embodying my invention and in the construction and use of which the objects herein set out, as well as others, may be attained, is illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of a level embodying my invention. Fig. 2 is a detail view in cross section through the same on plane denoted by dotted line 2—2 of Fig. 1. Fig. 3 is a perspective view of a level embodying my invention and of slightly different construction from that shown in Fig. 1. Fig. 4 is a view in cross section on plane denoted by dotted line 4—4 of Fig. 3. Fig. 5 is a perspective view of a level of still another slightly different form.

It is the purpose of the present invention to produce a level from thin sheet metal, and one that while light and attractive in appearance shall at the same time possess sufficient strength and rigidity to render it efficient and accurate in use.

My invention also contemplates the formation of the entire device with the exception of the bubble glass of a single piece of sheet metal.

In the devices shown in the accompanying drawings each structure comprises a stock or beam having a flange or rest at the bottom edge and a socket for a bubble glass at the upper edge. These parts are all formed of a single piece of metal stamped to proper form and then bent to shape suitable for a level.

In the form of device shown in Fig. 1 the flange or rest 7 is formed by bending the metal backward upon itself from opposite edges and then upturning the metal at the center of the flange and at right angles

thereto to form the stock or beam 6, said up-
turned parts resting snugly one against the
other. When the blank is stamped out a
projection is formed near the lengthwise
center at one edge and in forming the level
this projection, extending from the upturned
side 8, is bent to form a socket 9 for the
bubble glass 10, the latter being secured
within this socket in any suitable manner.
The formation of the base by bending the
metal backward upon itself from opposite
edges provides the bottom for the rest.
without seam or projection and upon which
the instrument is supported, so that there is
little liability of the implement becoming
uneven or bent out of shape. In bending the
projection to form the socket 9, the edge 11
of this projection is set down close against
the upper edge of the side 12 of the stock or
beam, thus securing the sides firmly in contact one with the other and providing a
structure that is extremely rigid and particularly free from liability to distortion.

In the form of device shown in Fig. 3 the stock or beam 13 is formed of a single piece of metal and the socket 14 is made in the same manner as that herein above set out with respect to Fig. 1. In the form of the device shown in this figure the flanges constituting the rest are composed of tabs 15 which are formed on the bottom edge of the stock or beam and are bent out alternately in opposite directions.

In the structure shown in Fig. 5 the flanges constituting the rest 16 are bent outwardly in opposite directions from the stock or beam 17, the latter being composed of two side parts resting one against the other, as in the device shown in Fig. 1, and the socket 18 for the bubble glass is formed from a narrow piece connecting the two side parts 17 when the blank that this form of the device is made from, is stamped out, this narrow piece being bent into socket form, as will be readily understood by an examination of Fig. 5 of the drawings.

In all of the structures herein shown and described a proper opening is made in the socket through which the bubble may be observed for the purpose of operating the implement.

While I have shown and described herein satisfactory constructions of implements embodying my ideas, these may be departed

from to a greater or lesser degree and yet be within the spirit and intent of the invention.

I claim—

5 1. A level body formed from a single piece of sheet metal and comprising a stock having a rest composed of flanges extending in opposite directions from the lower edge of the stock, the sheet metal being bent at the upper edge of the stock to form a socket
10 to receive a bubble glass.

2. A level body formed from a single piece of sheet metal and comprising a stock having flanges formed at its lower edge and extending in opposite directions to form a rest, the sheet metal having the portion
15 near its upper edge bent into socket form to receive a bubble glass, such edge resting against the upper edge of the stock proper.

20 3. A level body formed from a single piece of sheet metal and comprising a stock having at its lower edge flanges extending in opposite directions from the stock to form a rest, the bottom of which is smooth and without seam, and the sheet metal near the
25 upper edge of the stock being bent into socket form to receive a bubble glass.

4. A level body formed from a single piece of sheet metal comprising a stock, a rest comprising two thicknesses of sheet metal, one thickness consisting of such metal bent in opposite directions from the lower edge of the stock, and a socket formed by bending the metal above the upper edge of
30 the stock into tubular form to receive a bubble glass.

5. A level body formed from a single

piece of sheet metal comprising a stock of two thicknesses of such sheet metal extending in opposite directions near their lower edges to form a rest, and a part of which
40 rest is bent to comprise two thicknesses of metal, and the portion of the metal near the upper edge of the stock being bent into socket form to receive a bubble glass.

6. A level body formed from a single piece of sheet metal comprising a stock of two thicknesses of such sheet metal extending in opposite directions near their lower edges to form a rest, and a part of which is bent to comprise two thicknesses of metal,
45 and a portion of one thickness of the metal near the upper edge of the stock being bent into socket form to receive a bubble glass, the free edge of such sheet metal comprising said socket resting against the upper edge of the other thickness of the metal comprising
50 the stock.

7. A level body formed from a single piece of sheet metal and comprising a stock of two thicknesses of such metal resting
60 firmly against one another, a rest comprising flanges extending in opposite directions from the lower edge of the stock, and a socket piece formed from a projection of one thickness of the stock, such projection being bent into tubular form with its edge resting against the upper edge of the other side piece of the stock.
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Witnesses:

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."