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W. M. BRADSHAW.

CASING AND TERMINAL BLOCK FOR ELECTRICAL MEASURING INSTRUMENTS.

APPLICATION FILED MAR. 17, 1905.

Fig. 1.

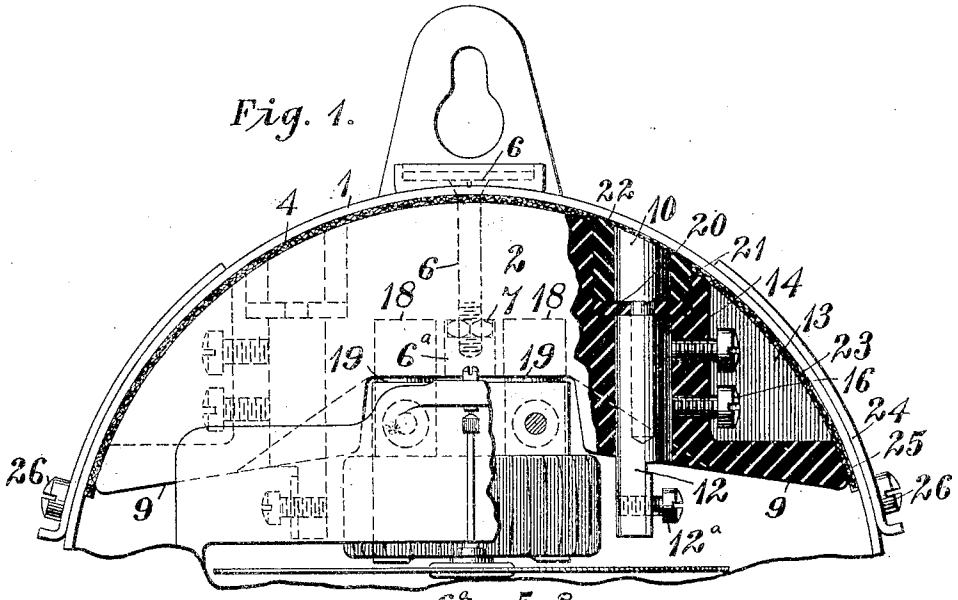


Fig. 2.

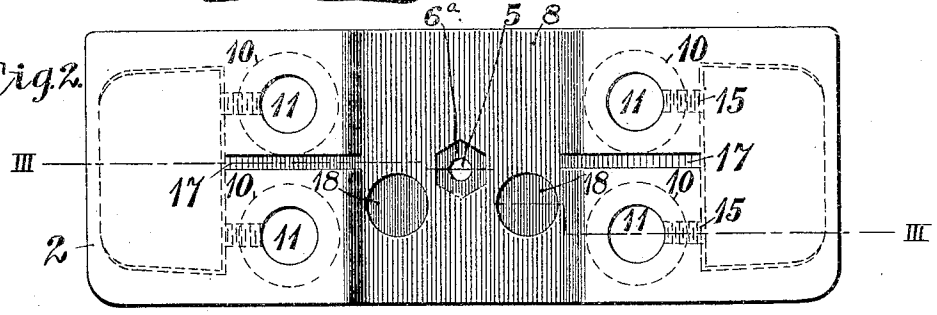


Fig. 3.

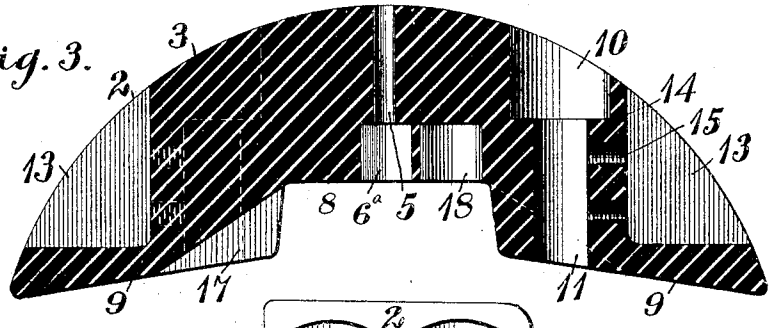
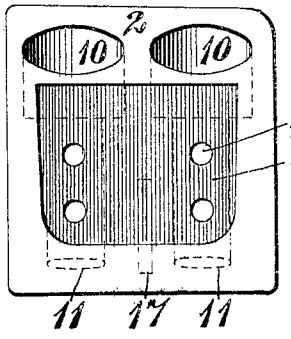


Fig. 4.



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CASING AND TERMINAL BLOCK FOR ELECTRICAL MEASURING INSTRUMENTS.

No. 807,434. Specification of Letters Patent. Patented Dec. 19, 1905.

Application filed March 17, 1905. Serial No. 250,645.

To all whom it may concern:

Be it known that I, WILLIAM M. BRADSHAW, a citizen of the United States, and a resident of Wilkinsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Casings and Terminal Blocks for Electrical Measuring Instruments, of which the following is a specification.

My invention relates to electrical measuring instruments, and particularly to casings and terminal blocks for such instruments.

The object of my invention is to provide a terminal block of such form, dimensions, and general structural characteristics as shall specially adapt it for the service to be performed and to so mount the same in the casing that the latter shall effectually exclude all dust and other foreign matter. With these ends in view I have devised the block and casing shown in the accompanying drawings, of which—

Figure 1 is a front elevation of a portion of an alternating-current wattmeter, the front cover of the casing being removed and portions of the framework and terminal block being broken away. Fig. 2 is an inverted plan view of the terminal block shown in Fig. 1. Fig. 3 is a sectional view on line III III of Fig. 2, and Fig. 4 is an end elevation of the block shown in the preceding figures.

The casing 1, which is here indicated as the casing of an alternating-current wattmeter, though not necessarily restricted to this particular type of instrument, is of cylindrical contour and the operating parts of the instrument, a portion only of which are shown in Fig. 1, are attached to and supported by the rear portion of the frame or casing.

The terminal block 2 is made of porcelain or other suitable non-conducting material and of such form as to accurately fit the top portion of the interior of the casing 1 in order that there may be a minimum tendency to displacement and also in order to assist in properly assembling and supporting the parts of the instrument and in excluding dust and other foreign matter from the interior of the casing. Interposed between the upper cylindrically-curved face 3 of the block 2 and the corresponding inner surface of the casing 1 is a sheet 4 of felt or other suitable cushioning and dust-excluding material. The block is provided with a central vertical hole 5 for the reception of a screw 6, and this hole terminates at its inner end in a hexagonal recess 6^a, in the bottom of which is located a hexagonal nut 7 to receive the inner end of the screw 6, the two combining to clamp the block to the casing. This nut may be fastened in position in the recess 6^a by any suitable cement or other fastening means, and both recess and nut may be of different form from that shown, if desired.

The bottom face of the block 2 is provided with a relatively wide channel 8, that extends across the face from front to rear, and from the edges of this channel to the ends of the block the lower faces 9 project downwardly at angles to the horizontal.

Extending inwardly from the top face of the block 2 are four vertical cylindrical recesses 10, and extending from the bottom of each of these recesses to the lower face of the block is a cylindrical socket 11 of less diameter than the recess 10, and in each of these sockets is located a tubular terminal post 12, of suitable conducting material, the upper end of which is flush with the base of the recess 10 and the lower end of which is provided with a suitable binding-screw 12^a, by means of which connection is made with the corresponding coil of the instrument.

Each end of the block is provided with a recess 13, that is of triangular shape in cross-section and the inner face of which is substantially parallel to the sockets 11. The wall 14, that is thus formed between each recess 13 and the corresponding sockets 11, is provided with holes 15, in which are located binding-screws 16, which make engagement with the corresponding terminal post 12 and serve both to hold these terminal posts in position and also to clamp therein the ends of the wires or other devices by means of which electrical connection is made to the external circuit.

In order to provide an increased length of path between the adjacent terminal posts 12, and thus minimize the possibility of short circuits, I provide a narrow and relatively deep channel 17 between such terminal posts.

In order to properly locate the block with reference to the framework which directly supports the operating parts of the instrument and to maintain it in proper relative position during the assembling operation, I provide the lower face of the block at the base of

the channel 8 with two cylindrical recesses 18, into which project corresponding studs 19, with which the framework of the operating parts of the instrument is provided.

In order to prevent the entrance of dust, moisture, or other foreign matter to the interior of the casing through the sockets 11, I provide a washer 20, of rubber or other suitable material, having a central hole 21 of the proper size to receive the terminal wire or other device, and locate such washer in the bottom of each cylindrical recess. I provide also an annular lining 22 for each of the recesses, which may be of rubber or other similar or suitable material and the internal diameter of which may correspond to the external diameter of the terminal piece which is inserted therein.

In assembling the parts the block 2 is first mounted upon the frame of the operating parts of the instrument, with the studs 19 in the recess 18, and the entire structure is then inserted in the casing, and the frame is clamped to the base of the casing by any suitable clamping device, the screw 6 being then inserted and screwed into the nuts 6 to clamp the block against the felt lining 4.

In order to make the proper electrical attachments to the external circuit, I provide an opening 23 in the casing just above each recess 13, and over this opening I place a movable cover 24, between the edges of which and the casing I preferably provide felt strips 25, the covers being fastened in position by means of screws 26, so that by loosening the screws the covers may be moved to one side and ready access be thereby secured to the binding-screws 16 in order to make the proper connections. When such connections have been completed, the covers may be replaced and the clamps secured in position, thus securely closing the casing in such manner as to prevent the ingress of dust or other foreign substances.

While the form, dimensions, and relations of parts that have been specifically shown and described are especially adapted for the purpose for which they were designed, I desire it to be understood that variations from what is specifically shown and described that do not change the mode of operation or result are within the scope of my invention.

I claim as my invention—

1. A terminal block for electrical measuring instruments having a plurality of cylindrical sockets, terminal posts in said sockets, triangular recesses adjacent to said sockets and binding-screws projecting through the walls of said recesses and into said posts.

2. A terminal block for electrical measuring instruments having a plurality of cylindrical sockets, tubular terminal posts in said sockets, triangular recesses adjacent to said sockets and binding-screws projecting through the walls of said recesses and into said posts.

3. The combination with a cylindrical instrument-casing, of a terminal block having a curved face to fit the casing, cylindrical sockets, tubular posts in said sockets, triangular recesses adjacent to said sockets and binding-screws that project through the walls of the recesses and into the posts.

4. A cylindrical instrument-casing provided with a segmental terminal block having, removable, tubular terminal posts and a single nut-and-screw bolt for attaching the block to the casing.

5. A segmental terminal block for electrical measuring instruments having recesses for the reception of supporting-studs, cylindrical sockets for terminal posts and recesses at the bases of said sockets having linings of insulating material.

6. A terminal block for measuring instruments having a curved top face and channels in its bottom face, terminal-post sockets extending between its top and bottom faces and triangular recesses in its top face and adjacent to the post-sockets.

7. A casing for electrical measuring instruments, a terminal block having recesses in its ends, a sheet of fabric between the casing and the block and movable plates that normally cover the end recesses in the terminal block.

8. A terminal block for measuring instruments having a curved upper face, terminal-post sockets and binding-screw recesses, a casing having a sheet of fabric between its upper, inner face and the upper face of the block and a screw for clamping the block against said fabric.

9. A porcelain terminal block for electrical measuring instruments having terminal-post sockets and adjacent recesses, in combination with tubular terminal posts seated in said sockets and binding-screws that project from said recesses into said terminal posts.

10. A segmental terminal block for electrical measuring instruments having cylindrical sockets for terminal posts and recesses at the bases of said sockets having dust-excluding linings.

11. A casing for electrical measuring instruments provided with a terminal block having recesses in its ends, a sheet of fabric between the casing and the block and movable plates that normally cover the end recesses in the terminal block and have dust-excluding packing-strips.

12. A terminal block for measuring instruments having a curved upper face, terminal-post sockets and binding-screw recesses in combination with a casing having a sheet of dust-excluding fabric between its upper, inner face and the upper face of the block and a screw for clamping the block against said fabric.

13. The combination with a terminal block having terminal-wire recesses provided with dust-excluding linings, of a casing the inter-

nal contour of which conforms to the external contour of the block, a cushioning and dust-excluding lining between the block and the casing.

14. An electrical instrument-casing having a terminal block provided with recesses for terminal wires and binding-screws, linings for the wire-terminal recesses, a lining between the block and the casing and movable covers for the binding-screw recesses.

In testimony whereof I have hereunto subscribed my name this 9th day of March, 1905.

WILLIAM M. BRADSHAW.

Witnesses:

L. C. COUTCHER,

BIRNEY HINES.