

March 1, 1927.

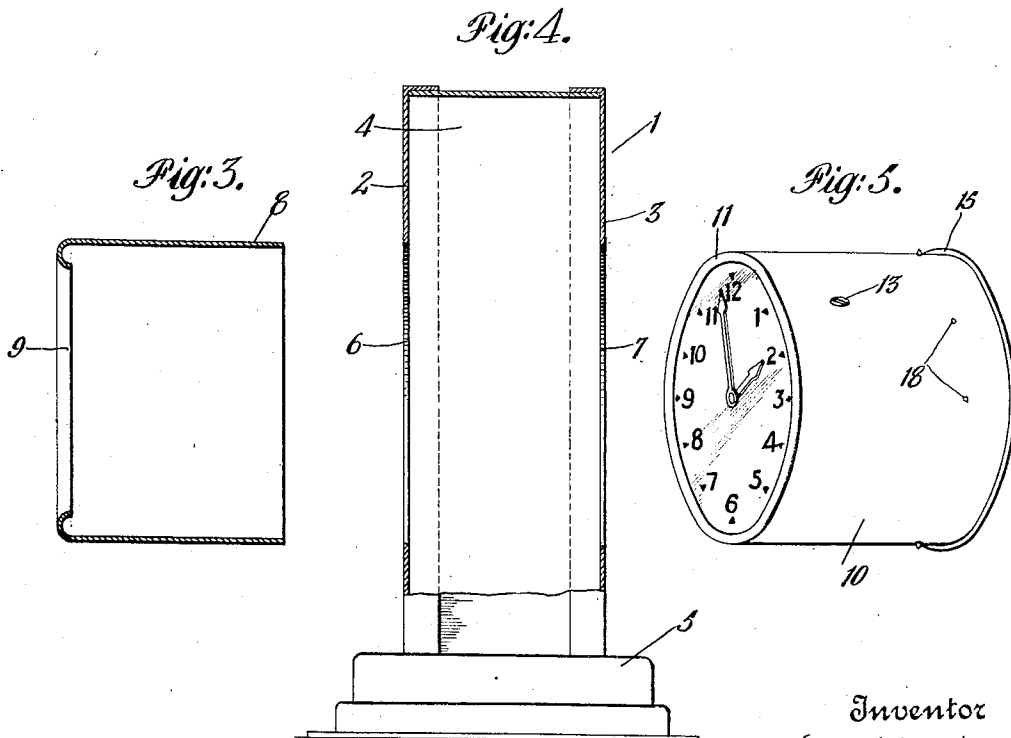
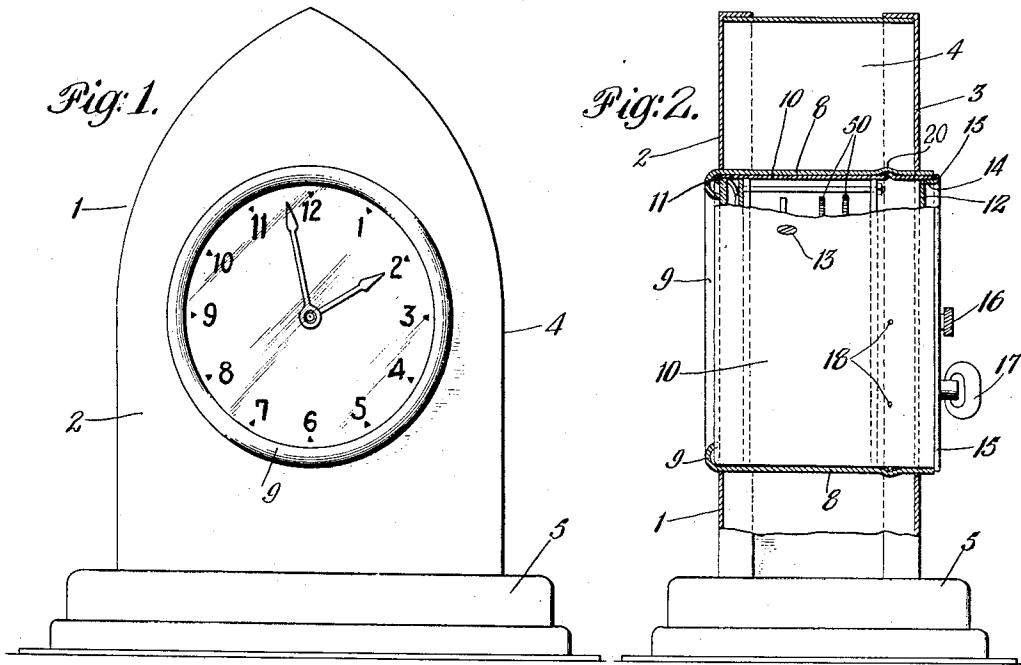
1,619,674

R. V. KOHN

CLOCK CASING

Filed March 7, 1924

2 Sheets-Sheet 1



Inventor
Rudolf Victor Kohn
By his Attorney
Louis Ruess Whitaker

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2 Sheets-Sheet 2

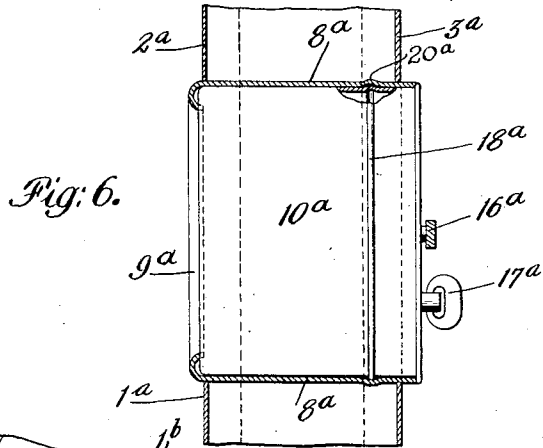


Fig: 6.

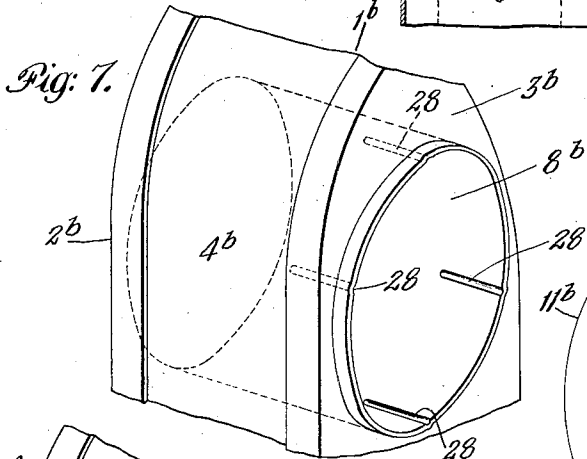


Fig: 7.

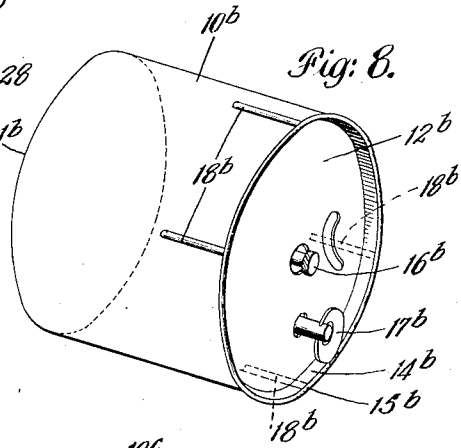


Fig: 8.

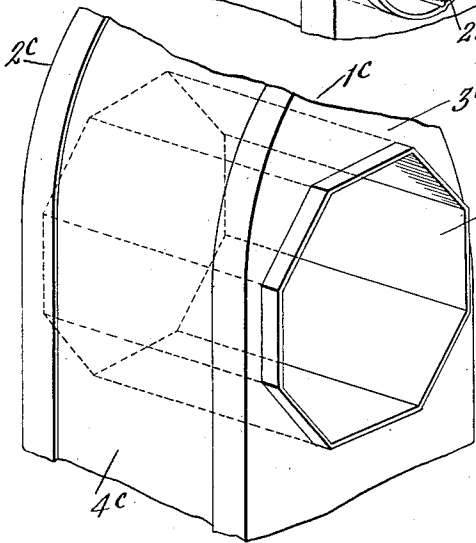


Fig: 9.

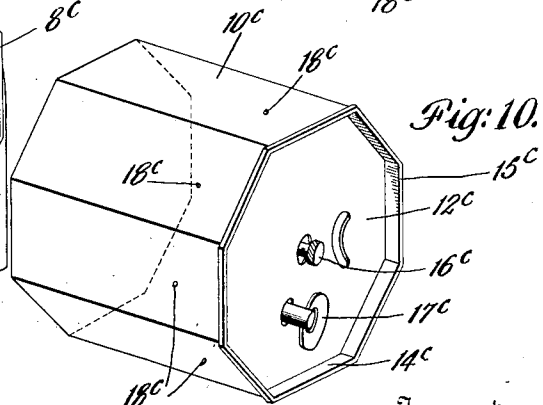


Fig: 10.

Inventor
Rudolf Victor Kohn
By his Attorney
Louis Brewster Whitaker

UNITED STATES PATENT OFFICE.

RUDOLF VICTOR KOHN, OF CEDARHURST, NEW YORK, ASSIGNOR TO THE DE LUXE CLOCK AND MANUFACTURING COMPANY, INC., OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

CLOCK CASING.

Application filed March 7, 1924. Serial No. 697,435.

My invention consists in the novel features hereinafter described, reference being had to the accompanying drawings which show several forms in which I have contemplated embodying my invention selected by me for purposes of illustration and the said invention is fully disclosed in the following description and claims.

The object of my invention is to provide a clock case with an instantly demountable or "slip in" clock movement, which is held in operative relation in the clock case by friction only, and which can be instantly inserted into or removed from the clock case by anyone without the use of tools, and without the necessity of detaching or loosening any form of fastening means. In the construction of ordinary small table or mantel clocks, to which my invention is particularly applicable, the clock movement is ordinarily provided at its front end with a lateral projecting ring to engage the front face of the clock case and at the rear end with rearwardly extending threaded lugs or projections which extend through a back plate engaging the outer surface of the back portion of the case, and nuts are applied to these threaded projections for the purpose of holding the clock movement in the case. In case it is desired to remove the clock movement from the case it is necessary to detach these nuts and separate the movement from the back plate before it can be removed from the case, and any repair to the clock movement necessitates the labor of a skilled clock maker or repair man, at an expense which frequently exceeds the value of the clock itself, especially that of the cheaper varieties of clocks which are most apt to become defective in operation. According to my invention, I provide in the first place, a novel clock movement which is entirely self contained, so that it can be manufactured in quantity, transported and kept for an indefinite period without deterioration. This movement includes among its members, in addition to the clock mechanism and the dial therefor, an enclosing casing, which is preferably of cylindrical form, although it may be made polygonal in cross section if preferred, the exterior of the casing forming a friction surface, to frictionally engage a tubular socket provided for it

within the clock case, the said movement casing being provided at its front end with the usual dial bead to engage the front glass and the rear of the said casing is closed by a back plate secured thereto, frictionally, or in any other desired way, and through apertures in which the usual setting stem and winding stem project. The clock movement is therefore entirely self contained, and enclosed, so that it constitutes a separate unit from the clock case and may be instantly placed in operative position, or removed from any clock case provided with a suitable friction sleeve to receive the same. Secondly, I provide a friction sleeve which is embodied in the clock case and is constructed to receive and frictionally retain in operative position, the demountable movement before referred to. This sleeve may be conveniently made with an integral dial ring at the front end, and passed through the openings in the front and back of the case and secured therein in any desired manner. While theoretically it is possible to so construct the casing of the demountable movement and the friction sleeve of the clock case, so accurately that they will engage with sufficient friction to hold the clock in operative position, and at the same time permit it to be instantly removed, this is not practical commercially, especially where the clocks are to be sold at a very moderate price, as the expense of securing such a fit would be greater than the entire expense of the clock and case. Therefore, according to my invention, I prefer to form the friction sleeve of very thin, yielding, flexible or elastic material, such as thin sheet of tubular celluloid or metal, as brass or tin, for example, or other sheet material, such as card board, book binder's board or the like, and to provide the exterior of the movement casing with outwardly projecting portions to frictionally engage with, and slightly distend the flexible friction sleeve, so as to secure a sufficient grip between the sleeve and the demountable movement under all circumstances to prevent it from endwise movement, and also from rotary movement when winding the clock spring, and at the same time accommodating the slight variations and unavoidable inaccuracies incident to the commercial manufacture of the parts.

In some instances I may provide the exterior of the movement casing with a series of outwardly extending projections, or I may provide it with an annular bead. In some instances I may provide the friction sleeve and movement casing, the one with longitudinal ribs engaging longitudinal grooves in the other, or I may in some instances form both the friction sleeve and the movement casing of corresponding polygonal form to insure against rotary movement in the sleeve, and with projections to prevent the longitudinal movement of the movement unit with respect to said sleeve.

In all these forms it will be understood that the clock movement may be instantly inserted in or removed from the clock case and will be held in operative relation with the case by the frictional engagement between the movement casing and the friction sleeve or socket, which forms the only holding means. As a result of this novel construction, the manufacturer can supply the retailer with these clock movements in any design of case which may be desirable, and may also supply him with a few additional movement units. Should a customer find that the clock sold him was unsatisfactory for any reason, the movement unit can be instantly removed from the case and exchanged for a new unit, which can be as readily inserted in the case. Defective movement units can be returned to the factory to be repaired or exchanged for new movements so that the necessity of an expensive repair at a local clock makers will be entirely unnecessary and the purchaser will be assured of the continued use and correct operation of the clock.

Referring to the accompanying drawings, which illustrate several forms or embodiments of my invention, selected by me for purposes of illustration,

Fig. 1 represents a front view of a clock embodying my invention.

Fig. 2 is a sectional view of the same.

Fig. 3 is a detail sectional view of the friction sleeve or socket, detached from the clock case.

Fig. 4 is a partial sectional view of the clock case with the sleeve and movement unit removed.

Fig. 5 is a perspective view of the instantly demountable clock movement having its casing provided with exterior projections for engaging the friction socket or sleeve.

Fig. 6 is a sectional view of a portion of the clock case, friction sleeve and movement unit, showing the latter provided with an annular bead for engaging the interior of the sleeve.

Fig. 7 is a perspective view of a portion of the clock case, from the rear, showing the friction sleeve provided with longitudinal grooves.

Fig. 8 is a perspective view of a movement unit provided with longitudinal ribs for frictionally engaging the grooves in the friction sleeve illustrated in Fig. 7.

Fig. 9 is a perspective view similar to Fig. 7 showing a friction sleeve of polygonal form in cross section.

Fig. 10 is a view similar to Fig. 9 showing a movement unit having its casing polygonal in cross section, to engage the sleeve shown in Fig. 9.

Referring to the modification of my invention illustrated in Figs. 1 to 5, inclusive, 1, represents the clock case, which may be formed of any suitable material and is provided with a front wall, 2, a rear wall, 3, and lateral walls, 4, supported on a suitable base, 5, it being understood that the clock case may be given any suitable design or configuration desired, within the scope of my invention. The front wall is provided with a circular aperture, 6, and the rear wall with a coaxial aperture 7. 8 represents the friction sleeve or socket, which is preferably made of yielding or elastic material, such as celluloid, sheet metal, card board, or the like, in the form of a tube. The friction sleeve or socket is inserted in the apertures, 6 and 7, of the clock case, and is secured rigidly therein in any usual or desired manner. While it is not essential, I find it convenient to provide the friction sleeve or socket with an integral dial ring, 9, at its forward end, which may be projected slightly from the front face of the clock case to provide the usual finish around the dial, as illustrated herein. Fig. 5 shows a perspective view of one of my improved instantly demountable or "slip in" clock movement units, which comprises the enclosing casing, 10, adapted to frictionally engage the inner surface of the friction sleeve, 8, and provided at its forward end with an annular bead, 11, to engage the usual glass plate, which extends over the dial of the clock, the mechanical parts 50 of which are enclosed within the casing, 10, and are rigidly secured to the casing, or in any usual or desired manner, for example by means of suitable screws, one of which is indicated at 13, the heads of which are brought flush with the outer surface of the movement casing, 10. The rear end of the casing 10, is closed by a back plate, 12, which in this instance is provided with an annular flange, 14, fitting frictionally the interior of the casing, 10, said flange being provided at its outer end with a bead, 15, to engage the end of the movement casing, 10, and limit the extent to which the back plate can be pressed into the same. The back plate may, however, be secured to the movement casing in any other desired manner, and said back plate is provided with suitable apertures through which project the setting stem, 16, and wind-

ing stem, 17, etc. It will be noted that the demountable movement unit is entirely self contained and entirely enclosed, so that the works of the clock within the same are protected. These units can be manufactured in quantities quite independently of the cases, as any unit can be instantly inserted in or removed from any clock case provided with a corresponding friction sleeve or socket. In order to accommodate the necessary minute variations in the size of the movement casing and the friction sleeve, or socket, and to secure such a frictional grip between the same as will retain the movement unit against accidental movement longitudinally, or in a rotary direction, the movement unit is herein shown as provided with a plurality of outwardly extending projections, 18, which are preferably arranged in a circular series extending around the movement casing. These projections may be very conveniently formed by denting the movement casing, 10, from the inside outwardly, or they may be formed by applying a minute projection of solder to the exterior of the movement casing, or in any other desired manner, and these projecting portions are preferably located just inside of the rear opening, 7, of the clock case. When a movement unit is inserted into the friction sleeve of the clock case, these exterior projections, 18, tend to very slightly distend the yielding or elastic friction sleeve, 8, as illustrated in an exaggerated manner in the drawing at 20, Fig. 2, for clearness, which will have the effect of causing other portions of the friction sleeve to grip the casing of the movement more firmly than they otherwise would, and will thus insure a sufficient friction grip between the parts to prevent the accidental movement of the clock movement unit either longitudinally or in a rotary direction, without the necessity of having these parts fitted with microscopic exactness. In this manner the parts can be made in the usual commercially practical and economical manner without undue expense, and an efficient frictional engagement between the friction sleeve and movement unit secured. It will be readily understood that the demountable movement unit can be instantly inserted in or removed from the clock case without the necessity of using any tools, and without the necessity of resorting to any additional securing means, and that the movement will be maintained in operative relation with the clock casing when in engagement with the friction sleeve thereof, and held against accidental disengagement or movement with respect thereto.

In some instances, instead of using a plurality of projections arranged annularly around the movement casing, I may employ an annular bead, 18^a, as illustrated in Fig. 6, in which the movement casing is indicated

at 10^a, and the friction sleeve, at 8^a. The other parts shown in this figure which correspond with those previously described, and given the same numerals, with the letter "a" added.

In Figs. 7 and 8 I have shown another slight modification of my invention, in which the friction sleeve, here indicated at 8^b, is provided with a plurality of longitudinally disposed grooves, 28, which may be formed by indenting the material of which the friction sleeve is formed, or by cutting such grooves on the inner face of the same, as preferred, and the demountable movement unit has its casing, 10^b, provided with longitudinally disposed ribs, 18^b, projecting therefrom, and which, in like manner, may be formed by pressing the same in the material of the movement casing, or by soldering narrow inverted V-shaped projections upon the exterior surface thereof, as preferred, the said ribs being so located and constructed as to engage the grooves, 28, in the sleeve, 8^b, and slightly distend the sleeve, while at the same time the interengagement of the ribs and grooves will lock the movement casing against any possibility of movement in a rotary direction. The said ribs and grooves will be so arranged as to hold the clock movement with its dial in the proper position within the dial ring. In this form of my invention, the engagement of the ribs and grooves performs the double function of preventing rotary movement of the clock unit, as well as longitudinal movement thereof, with respect to the friction sleeve. The other parts shown in these Figs. 7 and 8, which correspond with those previously described are given the same numerals with the letter "b" added.

In Figs. 9 and 10 I have shown another modification of my invention, in which the friction sleeve, here indicated at 8^c, is shown as being polygonal in cross section, and the clock movement unit is provided with a casing, 10^c, of corresponding polygonal form, so that the engagement of the casing, 10^c, with the friction sleeve, 8^c, positively precludes the possibility of any rotary movement of the movement unit within the sleeve and clock case. In this instance I have also shown the casing, 10^c, of the movement unit, provided with exterior projections, 18^c, on some or all of its lateral faces, for the purpose of engaging the corresponding inner faces of the friction sleeve, and slightly distending the same, so as to insure the grip of the friction sleeve on the movement unit. In this case the polygonal form of the friction sleeve and movement unit casing serves to hold the latter against rotary movement while the projections, 18^c, in this instance merely serve to prevent the longitudinal movement of the movement unit with respect to the friction sleeve. The other parts

shown in Figs. 9 and 10 which correspond with those previously described are indicated by the same reference numerals with the letter "c" added.

5 From the foregoing description it will be clear that the demountable self contained movement units can be manufactured in quantity and will be adapted to be inserted in any one of a great variety of styles or
10 designs of clock cases which can likewise be made up and provided with corresponding friction sleeves to support and grip the demountable movement units. Any one of these movement units can be instantly inserted in or removed from any of the clock cases provided with corresponding friction sleeves and will be firmly retained therein by friction against accidental displacement, and against rotation in winding the clock
20 mechanism. This construction greatly facilitates the filling of orders, as it would be unnecessary to keep a large stock of all the different styles of cases equipped with movements, as the movement units can be stored separately and inserted in the cases, as ordered. Also, as hereinbefore stated, should anything occur to interfere with the proper and accurate operation of the clock movement, so that a customer becomes dissatisfied, he can instantly remove the movement unit by pressing on the front glass and take it to the retailer from whom he purchased it to be exchanged for another movement, which can be as readily inserted, and defective
35 movements can be readily returned to the factory for repair or exchange, thus eliminating the annoyance, delay and expense of employing a skilled local clock maker, who would not ordinarily be supplied with the necessary spare parts for repairing the same.

40 It will be understood that the clock case may be made of celluloid, wood, metal, composition, or of any other material ordinarily used or suitable for use in the manufacture of clock cases, and supplied with the friction sleeve for supporting and holding the instantly demountable clock movement.

What I claim and desire to secure by Letters Patent is:—

50 1. An instantly demountable, self-contained movement unit provided with an enclosing casing having a back plate, secured thereto, said casing having an exterior friction surface for engaging a friction socket in a supporting clock case, with sufficient
55 friction to hold it in position therein while permitting it to be instantly demounted by the fingers, without the use of tools.

60 2. An instantly demountable, self-contained movement unit provided with an enclosing casing having a back plate secured thereto, said casing having an exterior friction surface provided with projecting portions for engaging a friction socket in a supporting clock case with sufficient friction
65

to hold it in position therein, while permitting it to be instantly demounted by the fingers without the use of tools.

3. In a clock, the combination with a clock case, provided with a supporting sleeve, 70 rigidly connected therewith and having an interior friction surface, of an instantly demountable self-contained movement unit provided with a casing constructed to fit said sleeve and to engage the same with sufficient 75 friction to hold the movement unit operatively therein, and forming the only means for securing said movement unit in the clock case, while permitting the movement unit to be instantly demounted by the fingers with- 80 out the use of tools.

4. In a clock, the combination with a clock case, provided with a supporting sleeve, rigidly connected therewith and having an interior friction surface, of an instantly demountable self-contained movement unit 85 provided with a casing constructed to fit said sleeve and to engage the same with sufficient friction to hold the movement unit operatively therein, and forming the only 90 means for securing said movement unit in the clock case, while permitting the movement unit to be instantly demounted by the fingers without the use of tools, the exterior surface of the movement unit and the interior surface of the said sleeve being provided the one with projections to engage the other to compensate for slight variations in the sleeve or unit casing.

5. In a clock, the combination with a supporting sleeve having yielding walls, and having an interior friction surface, and an instantly demountable, self-contained movement unit, provided with an enclosing casing having an exterior friction surface to 105 engage the friction surface of said sleeve, and provided with projecting portions to engage and slightly distend the walls of said sleeve, for holding the movement unit with sufficient friction to prevent accidental 110 movement longitudinally, or in a rotary direction, while permitting said movement unit to be instantly demounted by pressure of the fingers without the use of tools.

6. In a clock, the combination of a clock case, provided with coaxial apertures in its front and back walls, a separately formed friction sleeve of elastic material, coaxial with said apertures, secured in said case and extending into the interior of the case, said sleeve being open at its rear end, and an instantly demountable clock movement unit having an enclosing casing constructed to frictionally engage the interior of said sleeve, so as to hold said unit operatively in the case while permitting it to be instantly demounted therefrom by the fingers without the use of tools, said unit being provided at its front end with a dial and at its rear end with a closing plate, one of said frictionally 130

engaging parts being provided with annularly disposed projecting portions for slightly distending the sleeve and increasing the frictional grip of the sleeve upon the movement casing, the frictional engagement between said sleeve and the movement casing forming the only means for retaining the clock movement unit in said case.

7. In a clock, the combination of a clock case, provided with coaxial apertures in its front and back walls, a separately formed cylindrical friction sleeve of elastic material coaxial with and engaging said apertures, secured to said case around the edges of the aperture in the back wall thereof, said sleeve being open at its rear end, and an instantly demountable clock movement, provided with a cylindrical casing, adapted to frictionally engage said sleeve, and having a dial at its front end, said movement casing being provided with annularly arranged projecting portions for slightly distending the walls of said sleeve, said projecting portions being so located as to engage the portion of the sleeve within the rear wall of the clock case when the movement is in operative position in said case, to hold the movement unit in operative position alone, while permitting it to be instantly demounted by the fingers without the use of tools.

8. In a clock, the combination of a clock case provided with coaxial apertures in its front and back walls, a separately formed friction sleeve engaging said apertures and extending through the clock case and provided with an interior friction surface, said sleeve being provided at its front end with an integral dial ring adapted to project beyond the front face of the front wall of the clock, and an instantly demountable movement unit provided with a casing adapted to frictionally engage said sleeve, and having a dial at its front end and a closing plate at its rear end, said movement unit engaging said sleeve with sufficient friction to hold it in operative position by said friction alone, while permitting it to be instantly demounted by the fingers without the use of tools, said casing being provided with exterior projecting portions for engaging the friction surface of said sleeve to increase the grip of the sleeve upon the movement unit and prevent the accidental movement of said unit with respect to the sleeve longitudinally, or in a rotary direction.

9. In a clock, the combination of a clock

case provided with coaxial apertures in its front and back walls, a separately formed supporting sleeve mounted in said clock case coaxial with said apertures, an instantly demountable clock movement unit provided with a casing for engaging said sleeve with sufficient friction to hold said movement unit in operative position by friction alone, while permitting it to be instantly demounted by the fingers without the use of tools, said unit casing having a dial at its front end, and a closing plate at its rear end, said sleeve and said movement unit being provided with interengaging longitudinally disposed portions for preventing the rotation of the movement unit within said sleeve.

10. In a clock, the combination of a clock case, provided with coaxial apertures in its front and back walls, a separately formed supporting sleeve mounted in said clock case coaxial with said apertures, an instantly demountable clock movement unit provided with a casing for frictionally engaging said sleeve, said casing having a dial at its front end, and a closing plate at its rear end, said sleeve and said movement unit being provided with interengaging longitudinally disposed portions for preventing the rotation of the movement unit within said sleeve, and said casing having exterior projecting portions for engaging the interior surface of said sleeve, to prevent the accidental longitudinal movement of the said unit with respect to said sleeve, said movement unit being held in operative position by friction alone, while permitting it to be instantly demounted by the fingers, without the use of tools.

11. A clock casing provided with a sleeve portion constructed to receive and support therein a self-contained instantly demountable clock movement, and fitting the casing of said movement so tightly as to hold it in operative position by friction alone, while permitting the movement to be instantly demounted therefrom.

12. A clock casing having a movement supporting friction sleeve rigidly connected to and extending into the casing, said sleeve being constructed to frictionally engage and support the movement and hold it in operative position by friction only, while permitting the movement to be instantly demounted therefrom.

In testimony whereof I affix my signature.

RUDOLF VICTOR KOHN.