Nov. 8, 1927. 1,648,781

J. N. PEPIN

HINGE

Filed Jan. 24, 1924 2 Sheets-Sheet 1

Fig. 1.

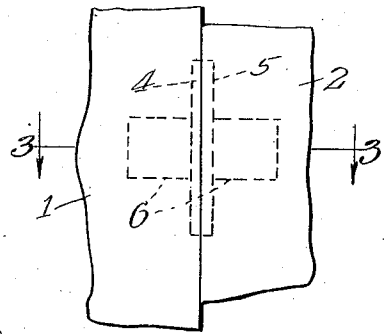


Fig. 2.

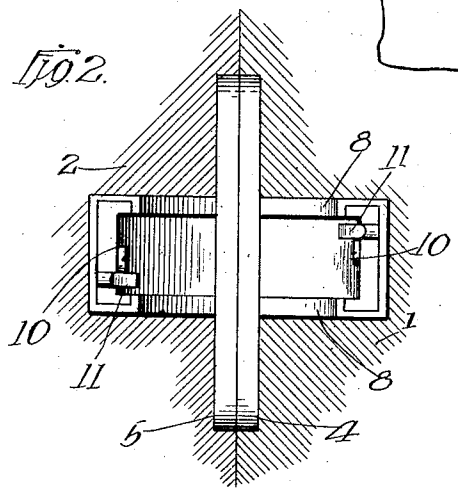


Fig. 3.

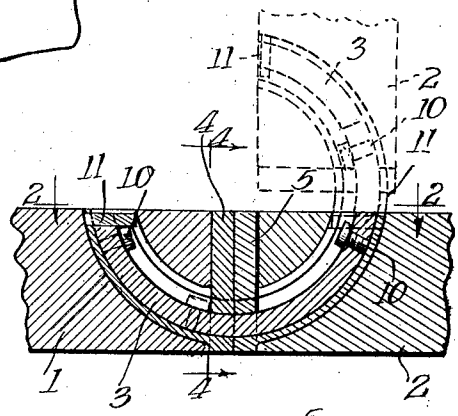


Fig. 4.

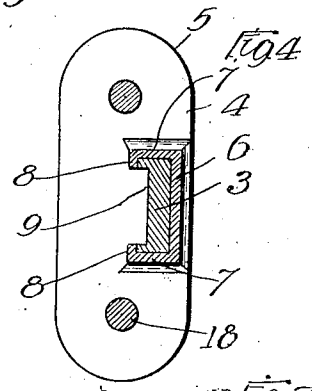


Fig. 5.

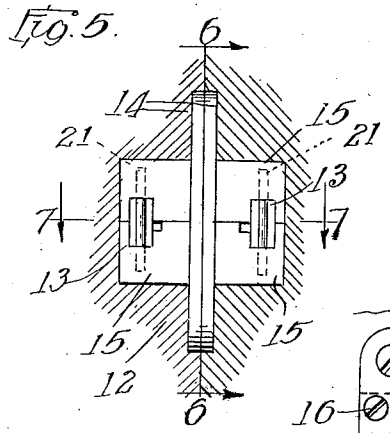


Fig. 6.

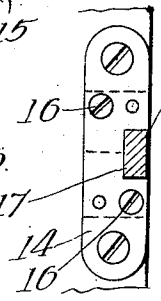
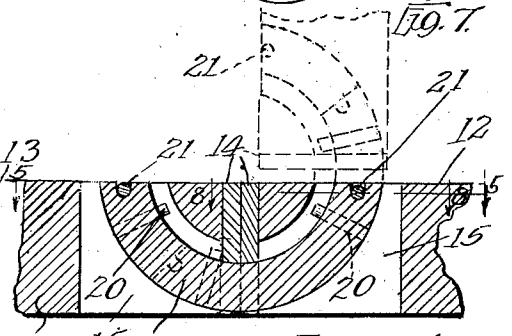


Fig. 7.



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Nov. 8, 1927. 1,648,781

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HINGE

Filed Jan. 24, 1924 2 Sheets-Sheet 2

Fig 8

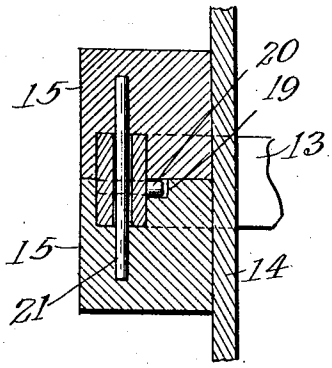


Fig 9.

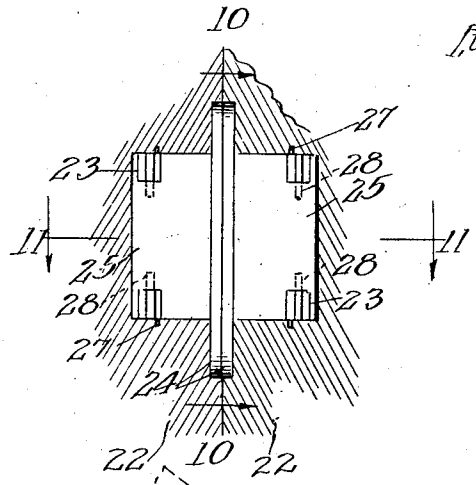


Fig 10.

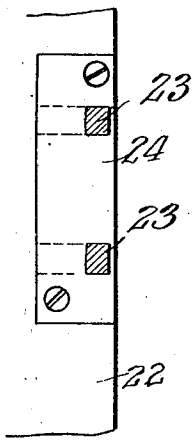


Fig 11.

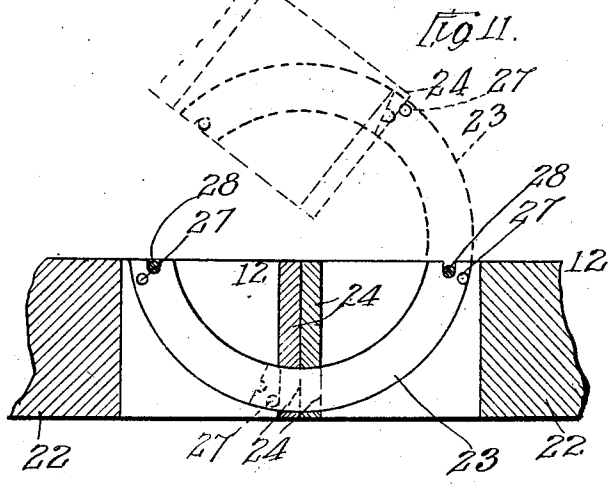
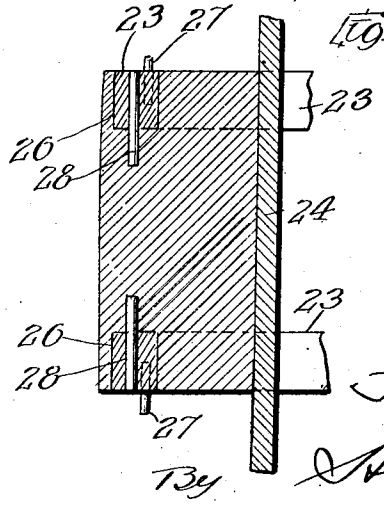


Fig 12.



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Patented Nov. 8, 1927. 1,648,781

UNITED STATES PATENT OFFICE.

JOSEPH N. PEPIN, OF CHICAGO, ILLINOIS.

HINGE.

Application filed January 24, 1924. Serial No. 688,221.

My invention belongs to that general class of devices known as hinges, and relates more particularly to what may be termed a concealed hinge. That is to say, when the same is employed, it will not normally be visible to mar the appearance or appear unsightly on the article upon which the same is used.

The invention has among its objects the production of a device of the kind described that is simple, convenient, compact, durable, efficient, and satisfactory for use wherever found applicable.

More particularly it has as an object the production of a hinge adapted to be employed on high grade work, whether the same be cabinet work or on automobiles or other vehicles or wherever installed.

Many other objects and advantages of the construction herein shown and described will be obvious to those skilled in the art from the disclosures herein given.

To this end my invention consists in the novel construction, arrangement and combination of parts herein shown and described, and more particularly pointed out in the claim.

In the drawings, wherein like reference characters indicate like or corresponding parts:

Fig. 1 is a view in elevation of a portion of two cooperating parts hinged together, the concealed hinge being shown in dotted lines;

Fig. 2 is a sectional view taken substantially on line 2—2 of Fig. 3, showing a view in elevation of the hinge;

Fig. 3 is a sectional view taken substantially on line 3—3 of Fig. 1;

Fig. 4 is a sectional view taken substantially on line 4—4 of Fig. 3;

Fig. 5 is a view similar to Fig. 2, showing a modified construction;

Fig. 6 is a sectional view taken substantially on line 6—6 of Fig. 5;

Fig. 7 is a sectional view taken substantially on line 7—7 of Fig. 5;

Fig. 8 is a sectional view taken substantially on line 8—8 of Fig. 7;

Fig. 9 is a view similar to Fig. 2, showing another modified construction;

Fig. 10 is a sectional view taken substantially on line 10—10 of Fig. 9;

Fig. 11 is a sectional view taken substantially on line 11—11 of Fig. 9; and

Fig. 12 is a sectional view taken substantially on line 12—12 of Fig. 11.

Referring to the drawings, in which several forms of my improved hinge are shown, and first to Figs. 1 to 4, 1 and 2 represent two cooperating parts which it is desired to secure together, preferably so that one or the other can be moved. One of these parts may represent a door, panel or the like carried by the other, the particular construction on which the hinge is employed being immaterial so far as the invention itself is concerned.

In the type first referred to, the two parts are connected together by one or more bars or hinge members 3 suitably secured to the two parts and designed for the particular installation, that is, the size of the parts, as well as movement desired and strength required. The member 3 shown is of arcuate construction and slidably connected to each of the parts so that a maximum movement is permitted even though the material making up the panels or doors, etc., is comparatively narrow or thin and the hinge parts contained therein.

Referring particularly to Fig. 3, there is provided plates 4 and 5 which may be secured to the parts 1 and 2 by screws or the like in any suitable manner. The plates 4 and 5 shown may be provided with arcuate guides or housings 6 for the member 3, (see Fig. 4) the same being preferably flanged as indicated at 7 and 8, so as to overlie and form guide-ways for the part 3, which may be channelled or grooved as indicated at 9, if desired. Movement of the hinge member 3 through the plates 4 and 5 is limited by the stops 10 or their equivalents. I have provided very simple forms of stops 10 in the device illustrated consisting of screws projecting sufficiently to engage with the plate when the parts move to their desired extent of movement in the open position, as indicated by the dotted lines in Fig. 3. I also prefer to provide stops 11 of the desired construction to limit the sliding movement of the member 3 into the plates thereby preventing displacement of the parts.

The plates 4 and 5 may be made of slightly less width than the parts 1 and 2, so that when the door is closed, as indicated in the full lines in Fig. 3, the hinge is entirely concealed. When the door is open, only the part 3 and the plates 4 and 5 will be visible, and these may be finished in a manner to harmonize with the finish of the cabinet so that the same are not conspicuous. The

hinge is very compact, and is likewise very rigid, and may be constructed with but very slight play.

In applying the device, the parts 1 and 2 are recessed to receive the housings 6, but the construction is such that the parts 1 or 2 are not in any way weakened. This particular device may be constructed in any suitable manner, and either cast, stamped or otherwise constructed. The proportions of the various parts will of course depend upon the particular installation. Those to be employed on automobile doors or doors of some weight are much heavier and stronger than those employed on small work such as victrola cabinet doors, radio cabinets, bookcases and the like.

While I have shown but one bar 3, obviously there may be any number, as will be hereinafter referred to in one of the modified forms, it being immaterial as to how many bars or members 3 are provided in each hinge or hinges in the door.

The construction shown in Figs. 5, 6, 7 and 8 is very similar, except that the guide or housing is modified, as are the stops, for limiting the movement of the hinge member through the plates. Referring to these figures, 14—14 represents the plates provided with housings 15, the same being secured to the structure by the screws 16 or equivalent means. In this case the housing members 14 and 15 are grooved or chambered as indicated at 17. The bar in this case is provided with stop pins 20 arranged to engage with the plates 19 by a groove in the housing. Pins 21 abutting the ends of the member 13 correspond with the stops 11 shown in the other construction. In this particular case, the cabinet or like parts 12—12 are shown recessed to receive the housings 15, the operation of the hinge being similar to that previously described.

In Figs. 9, 10, 11 and 12, 22—22 represents the parts to be secured together, and 23 the arcuate hinge bars. In this embodiment, the plates 24 are provided with housings 25 grooved as indicated at 26 to receive the members 23. A pin 27 at each end of each member 23 limits the opening movement of the door, while pins 28 or their equivalents prevent displacement of the parts and projection of the ends of members 23 when the doors are closed.

All of the constructions are similar, with the exception of slight variations in the housings and perhaps shapes of the part, and all permit easy swinging of the movable part. In all of the constructions, the hinge is practically concealed when the door is closed, as well as to a large extent concealed when the door is open. This makes the device particularly adapted for fine work where an attractive appearance is desired. It likewise conceals the hinge so that it may not be tampered with, making the same particularly desirable for cash boxes and the like. The construction may also be embodied in safe constructions, as the hinge being concealed, cannot be tampered with, nor is its location obvious from the exterior appearance.

The materials employed, the methods of making up the hinges and their sizes, as well as the particular designs, depend upon the intended installation. The bars and guides may be varied to produce the desired result.

Having thus described my invention, it is obvious that various immaterial modifications may be made in the same without departing from the spirit of my invention; hence I do not wish to be understood as limiting myself to the exact form, construction, arrangement and combination of parts herein shown and described or uses mentioned.

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

A hinge of the character described for securing two elements to each other, said hinge comprising two substantially identical housing members embedded in said elements, plates formed integral with said housing members at one end thereof and adapted to abut each other, said housing members having aligned arcuate grooves, an arcuate member slidably engaging said grooves, spaced stop members projecting from one face of the arcuate member with one stop member arranged adjacent each end of the arcuate member and engageable with said plates to limit angular displacement of the housing members away from each other, said plates being of less width than the housing, and means projecting into said grooves and engageable with said arcuate member for retaining it in said grooves when said hinge is in its closed position and limiting the sliding movement of the arcuate member in one direction.

In testimony whereof, I have hereunto signed my name.

JOSEPH N. PEPIN.