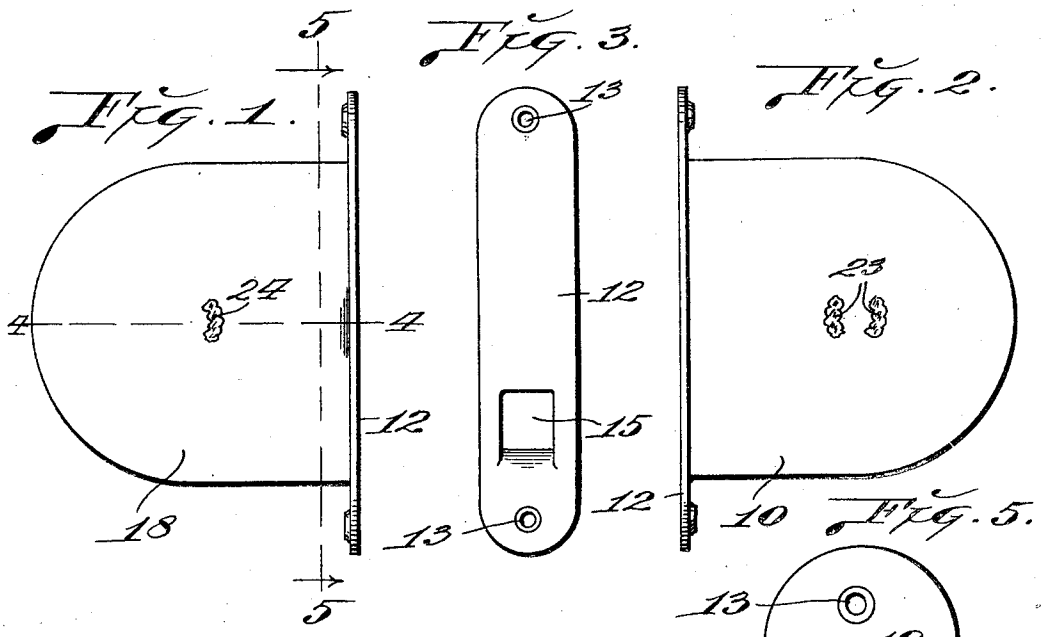
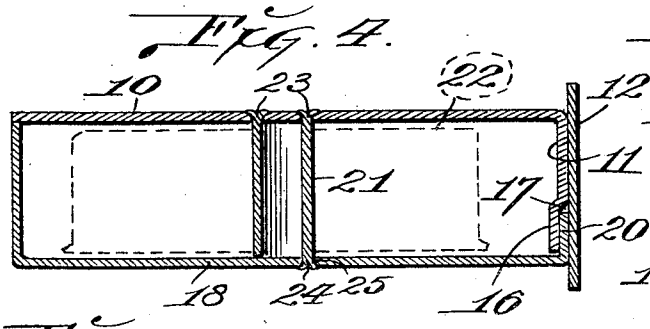
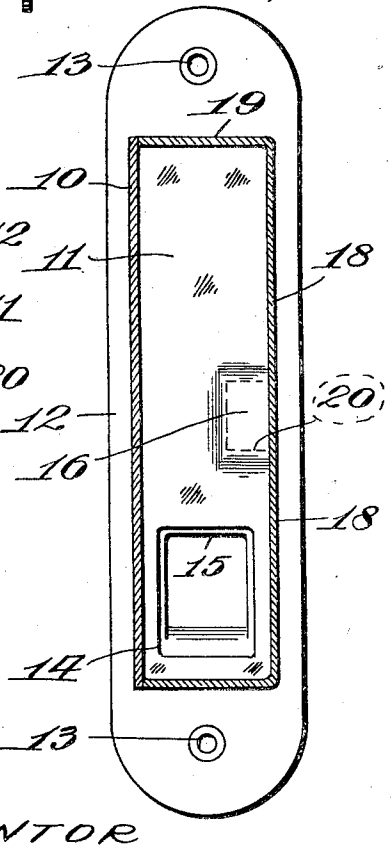
May 9, 1933. A. H. KERSTING 1,907,830

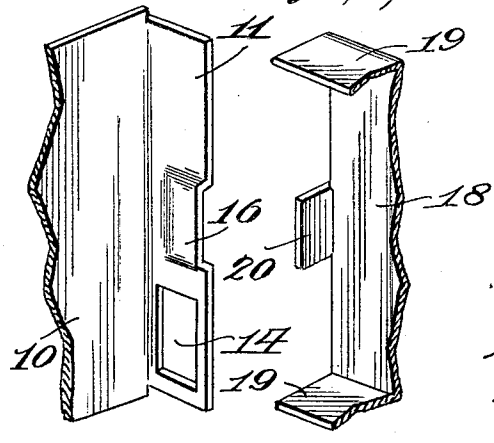
SPRING SASH BALANCE HOUSING

Filed March 25, 1930









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UNITED STATES PATENT OFFICE

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SPRING SASH BALANCE HOUSING

Application filed March 25, 1930. Serial No. 438,691.

My invention relates generally to spring sash balances and more particularly to a housing for containing the spring and the drum upon which the spring is mounted and the principal objects of my invention are, to generally improve upon and simplify the construction of spring sash balance housings and to provide a strong and durable housing that is relatively simple in construction, inexpensive of manufacture, capable of being readily assembled and which is composed of relatively few parts that are retained in assembled relation without the use of screws or other extraneous fastening devices.

A further object of my invention is, to provide a spring sash balance housing composed of three parts, two of which are rigidly connected by being spot welded and the third part which includes one of the side walls of the housing being constructed so that its front edge is very firmly interlocked with the face plate portion of the housing so as to effectively resist all strains and stresses that are impressed upon the housing while the same is in service.

A further object of my invention is, to provide a relatively simple and practical spring sash balance housing that is constructed so as to materially reduce production costs and likewise the cost of assembly and installation.

With the foregoing and other objects in view, my invention consists in certain novel features of construction and arrangement of parts that will hereinafter be more fully described and claimed and illustrated in the accompanying drawing, in which:

Fig. 1 is a side elevational view of a spring sash balance housing embodying the principles of my invention.

Fig. 2 is an elevational view of the opposite side of the housing.

Fig. 3 is an elevational view of the face plate that forms a part of the housing.

Fig. 4 is an enlarged horizontal section taken on the line 4—4 of Fig. 1.

Fig. 5 is an enlarged vertical cross section taken on the line 5—5 of Fig. 1.

Fig. 6 is a perspective view of the front portion of one of the side walls of the housing.

Fig. 7 is a perspective view of the front portion of the other side wall of the housing.

Referring by numerals to the accompanying drawing which illustrates a practical embodiment of my invention, 10 designates one of the side walls of the housing, which side wall is preferably stamped from suitable sheet metal with a semi-circular rear edge and the front portion of the side wall is bent laterally at right angles to form a vertically disposed plate 11 that is rigidly fixed in any suitable manner, preferably by spot welding, to the inner face of a face plate 12. This face plate is formed from a strip of sheet metal and is provided adjacent to its ends with apertures 13 for the reception of screws or the like and which are utilized for securing the housing to the window frame.

Formed in the lower portion of the end plate 11 is a substantially rectangular opening 14 that registers with a slightly smaller opening 15 that is formed in the lower portion of the face plate 12 and which openings are for the accommodation of the steel tape that is connected to the window sash and which winds onto and from the spring carrying drum that is journaled within the housing.

A substantially rectangular portion 16 of the plate 11 at or near the vertical center thereof and on the opposite edge from the side wall 10 is pressed outwardly from the face plate to which said plate 12 is spot welded, thereby forming a relatively narrow pocket 17 between the outwardly pressed portion and the face plate 12.

The other one of the side walls of the housing comprises a plate 18 of sheet metal that is identical in size and shape with plate 10 and formed integral with the upper and lower edges of said plate 18 and its semi-circular rear edge is a flange 19, which constitutes the marginal wall of the housing between the plates 10 and 18.

When the two parts of the housing are assembled the free edge of flange 19 lies directly against the inner face of plate 10 immediately adjacent to the edge thereof and the ends of said flange 19 overlie the upper and lower edges of plate 12.

In order to firmly retain the two plates

forming the housing in assembled relation, an ear 20 is formed with and projects laterally from the front edge of side plate 18 at a point midway between the upper and lower edges thereof and this ear occupies the pocket 17 when the parts of the housing are assembled. As a result of this construction the front edge of plate 18 that forms one of the side walls is very effectively secured to the face plate of the housing and as a result, a strong and substantial structure is produced.

One end of a tubular member 21, that functions as a bearing for the drum 22, that operates within the housing, is provided with projecting arcuate portions 23 that extend through corresponding openings formed in the side wall 10 and the outer ends of these projecting portions are riveted down against the outer face of the side wall 10, thereby rigidly securing the tubular bearing member to said side wall.

The opposite end of this tubular member 21 is provided with a short arcuate extension 24 and formed in the central portion of side wall 18 is an aperture 25 that receives the extension 24 when the parts of the housing are assembled and to rigidly secure said parts, the outer end of the extension 24 is riveted down against the outer face of side wall 18.

In the event that it becomes necessary to take the housing apart for the purpose of inspection, adjustment or repair of the drum and associated parts, it is only necessary to upset the riveted end of the extension 24 and when this is done the side wall 18 and parts that are formed integral therewith may be readily removed.

By forming the member 20 integral with the forward edge of the side wall 18 and engaging the same in the pocket 17 and utilizing the tubular member 21 as a connection between the central portions of the side walls all screws, rivets and like fastening devices are eliminated, thereby minimizing the time, labor and expense involved in the construction and assembly of the housing and a very strong, rigid and substantial structure is produced.

It will be understood that minor changes in the size, form and construction of the various parts of my improved spring sash balance housing may be made and substituted for those herein shown and described without departing from the spirit of my invention, the scope of which is set forth in the appended claim.

I claim as my invention:

As an article of manufacture, a spring sash balance housing comprising a face plate having an opening therein, a side wall plate permanently affixed to said face plate by a flange extending laterally from the front edge of said side wall plate, an opening in said flange coincident with the opening in said face plate, an inwardly pressed portion along the free edge of said flange forming a narrow pocket between said flange and said face plate, a second side wall plate, a laterally extending tongue formed on the front edge thereof and adapted for insertion in said pocket, a laterally extending marginal flange formed on the remaining edges of said second side wall plate to hold said plate in spaced parallel relation to said first side wall plate and a member connecting the central portions of the said side wall plates and adapted to lock said plates together.

In testimony whereof I affix my signature.

ALBERT H. KERSTING.