R. I. SCHEUER.

TYPE CASE.

APPLICATION FILED NOV. 22, 1920.

1,420,154.

Patented June 20, 1922.

2 SHEETS—SHEET 1.

Fig. 1.

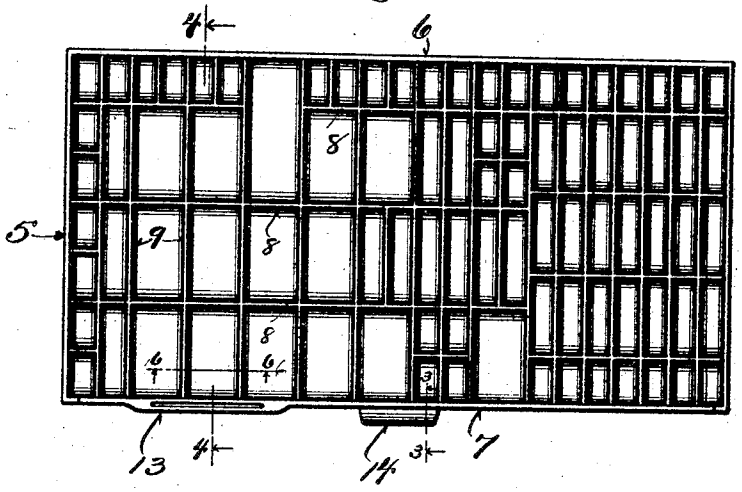


Fig. 2.

Fig. 3.

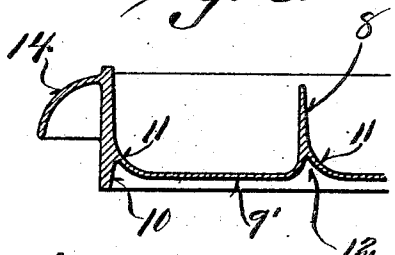


Fig. 4.

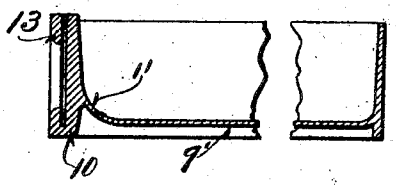
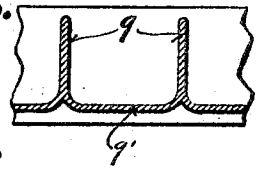


Fig. 6.



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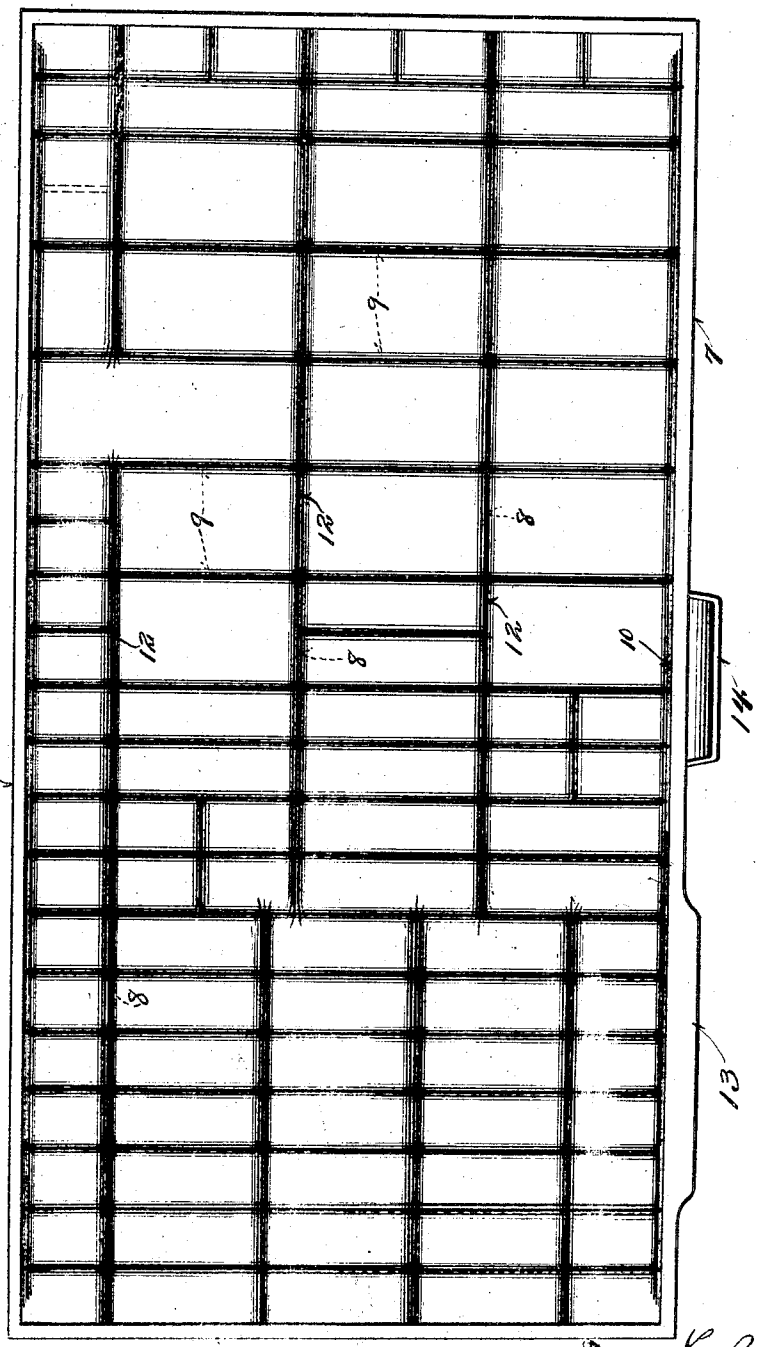
2 SHEETS—SHEET 2.

Fig. 5.



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UNITED STATES PATENT OFFICE.

RALPH I. SCHEUER, OF TWO RIVERS, WISCONSIN.

TYPE CASE.

1,420,154. Specification of Letters Patent. Patented June 20, 1922.

Application filed November 22, 1920. Serial No. 425,774.

To all whom it may concern:

Be it known that I, RALPH I. SCHEUER, a citizen of the United States, and resident of Two Rivers, in the county of Manitowoc and State of Wisconsin, have invented certain new and useful Improvements in Type Cases; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention refers to type-cases, and it has for its primary object to provide a simple, light, and durable case of this character, it being formed from suitable metal in one piece.

The specific objects of my invention are:

To provide a one-piece metallic type-case wherein the intersecting partition walls forming the type pockets also form light, reinforcing ribs whereby the device, as a whole, is prevented from warping in casting, and is at the same time of maximum strength.

To provide a rectangular one-piece cast type-case having a comparatively thin bottom and thicker front, rear and side walls, which walls primarily form the main strengthening ribs.

To provide the encasing walls with depending flanges whereby the thin bottom is spaced away from the surface upon which the tray may rest to thus prevent puncture of the comparatively thin bottom, due to loose type which may otherwise force their way through said bottom. Thus the case when resting upon a table or bench is supported entirely by the flanges of the outer encasing walls.

To provide a one-piece type-case of the character described, having longitudinal partition walls for the type pockets which merge into the bottom with uninterrupted curved surfaces, to constitute tracks whereby type may be conveniently extracted from the pockets, these curved surfaces being always toward the front of the tray.

To provide a series of longitudinally disposed channels in the lower face of the bottom, the same being diametrically opposite the longitudinal partition walls to thus reduce the thickness at the point where said longitudinal walls are mergently curved into the upper face of the bottom, whereby the bottom is further strengthened by the arched surfaces, without sacrificing lightness of structure.

With the above and other objects in view, the invention consists in certain peculiarities of construction, as herein set forth with reference to the accompanying drawing and subsequently claimed.

Before entering into a detailed description of the exemplification of my invention as herein set forth, I wish to direct attention to the fact that as a practical type-case manufacturer, I have found serious objections to the standard type-case now manufactured, which case is of wood construction throughout.

The primary advantage of a wood case is that it permits light structure, but the serious objections to such cases are that the life of these trays is comparatively short. As, for example, the history shows that one manufacturer produces approximately one thousand of these cases per day, which shows conclusively the enormous waste of material and the necessary expense in maintaining a supply of wood type-cases.

Practice has demonstrated that after a certain period, the weight of the type upon the thin wood bottom will cause it to sag away from the partition walls and thus destroy the hermetic seal between the bottom and such partition walls, whereby the type pockets are rendered useless, due to the fact that the type will then creep from one pocket to the other and destroy the functions of the tray. A further objection to the wood type-case is that the materials are subject to more or less contraction and expansion, due to climatic conditions which is invariably working to deteriorate the tray as a whole. Furthermore the wood trays require a comparatively great amount of labor for assemblage and fine workmanship, which necessarily increases the cost of manufacture, and under the best conditions of material and workmanship, such trays will deteriorate rapidly due to the weight of the type and rough handling, whereby it is a continual expense to the printers' art in renewing wood trays from time to time.

The problems which confronted me in the development of the metallic tray was first to overcome weight without losing strength. This problem has been satisfactorily solved by employing encasing walls of a one-piece metallic tray, having substantial thickness and strength, thus rendering it possible to materially reduce the thickness of the two

series of partition walls which merge into the encasing walls. The bottom of the tray, in practice, has been reduced to a minimum thickness, due to the fact that it is merged into the partition walls and the encasing walls. Hence these walls running in two directions serve as reinforcing fins for the bottom and permit the device, as a whole, to be readily withdrawn from the mold, while at the same time the multiplicity of thin walls or webs running in opposite directions and merging into each other, form a network of bridges, so as to eliminate the possibility of the thin bottom from warping.

Another advantageous strengthening feature solved by me, is the arrangement of the longitudinal and transverse series of channels formed in the bottom, which channels register with the longitudinal and transverse partition walls and in forming these channels another and more important feature had in mind is the provision of curved surfaces between the bottom and all walls of the type pocket to facilitate removal of type. Hence, these curved surfaces have been associated with the bottom channels which parallel the longitudinal and transverse partition walls in such manner that the thickness of the bottom is uniformly maintained at the point under consideration, while at the same time the channels constitute crowned or curved surfaces which will offer the greatest possible resistance against sagging strain or breakage of the tray, it being borne in mind that these trays are of considerable dimensions in proportion to the thinness of the metal walls used.

Obviously the one-piece tray so produced, has met with the approval of the trade and so far as I am aware, all of the objectionable features of the separable parts of a wood tray are eliminated. Particular attention is directed to the importance of the curvatures at the bottoms of the trays, whereby access may be had to the type from the front, and their tendency to nest in sharp corners is overcome. Obviously a tray so made will not separate from the bottom, and it will also be observed that the thin bottom is protected by the outer encasing flanges which raise it from the flat surface upon which it may rest. In practice this is an important feature, because loose type is often strewed about the composing table upon which the tray rests, and if the tray bottom in anyway happens to come into contact with these sharp type, they would puncture it and thus destroy its utility.

In the accompanying drawings I have illustrated one exemplification of my invention wherein:

Figure 1 represents a plan face view of a tray, showing a series of arbitrarily arranged type pockets of different dimensions.

Figure 2 is a front elevation of the same.

Figures 3 and 4 are detail sectional views of the tray respectively indicated by lines 3—3 and 4—4 of Figure 1.

Figure 5 is an inverted or bottom plan view of the tray, the same illustrating a series of longitudinal channels therein, which channels are arranged parallel with the longitudinal partition walls, and

Figure 6 is a detail cross-section, as indicated by line 6—6 of Figure 1.

Referring by numerals to the drawings, 5 indicates the side walls, 6 the rear wall and 7 the front wall. 8, 8 represent longitudinally disposed partition walls, which are merged into the encasing walls as shown and 9 represents the transverse partition walls which are merged into the front and rear walls of the case. Certain of the longitudinal and transverse partition walls are interrupted to permit forming type pockets of different dimensions as shown, and obviously these intermediate walls intersecting each other and merging into the outer walls, together constitute a net work of reinforcing fins, it being observed that the rectangular encasing walls of the tray are of greater thickness than the intermediate partition walls to thus serve as a primary support for the entire series, whereby sagging, due to weight, is eliminated and at the same time tendency of the tray to warp when molded is avoided. The one-piece structure is preferably cast from aluminum or analogous light metal wherein a certain amount of strength is also required. The bottom 9′ of the type-case is of comparatively thin material and as shown, intersects the encasing walls 5, 6 and 7 at a predetermined distance from the lower edge thereof, whereby said encasing walls constitute a supporting flange 10 for the structure, as a whole, so that when the tray rests upon a flat plane, the bottom 9′ is disposed at a predetermined distance from the surface to protect it and prevent puncture which might occur should any metal parts or type be within the field of the tray when it is put into position upon its support.

As will be observed, particularly with reference to Figures 3, 4 and 6, the walls of each type pocket are mergently curved as at 11 into the vertical front encasing wall 7 and also the partition walls 8 and 9. This curved surface forms a track or throat in each type pocket, to facilitate the picking up of type singly from said compartment, by drawing them from the bottom of the pocket upwardly about the uninterrupted curve 11 to the associated flange whereby they may be readily removed.

In order to obtain this curved track surface for the pockets, without adding weight to the structure, as best shown in Figures 3, 4, 5 and 6, I have formed the bottom of the tray with a plurality of channels 12, which channels are arranged directly under the en-

casing walls and partition walls 8 and 9 to coincide with the curved surfaces 11 of the pockets, whereby the bottom is thus maintained uniform in thickness, while at the same time said channels constitute upwardly bowed or arched surfaces to materially increase the rigidity and lightness of the structure without sacrificing the strength, it being borne in mind that these channels also serve to prevent warping of the device in molding.

The front wall of the type-case is provided with a vertical recess 13 into which is fitted a suitable index card, an opening being provided in said wall through which to view the index. The front wall of the type-case is also formed with a pull-hood 14 as shown. The type-case is preferably molded from aluminum metal, which is non-corrosive, or in some instances it may be plated or otherwise suitably treated to prevent corrosion. Thus it will be seen that a one-piece type-case is formed which is not susceptible to climatic conditions, and obviously it has no tendency to check or warp in any part thereof, which is a natural defect in a wood tray. It follows that there can be no liability of the bottom separating from its partition wall or from one another, as in the case of a wood tray.

While I have described particularly that the one-piece tray is preferably cast, obviously I may, without departing from the spirit of my invention, form the one piece as a stamping or die casting product.

I claim:

1. As a new article of manufacture, an all metal type-case cast in one piece comprising a partitioned rectangular tray having a thin solid bottom, upstanding front, rear and side walls, the same being of greater thickness than the bottom and projecting therebelow to form a projecting support for said bottom, and intersecting longitudinal and transverse partition walls connecting the tray, and encasing walls forming type pockets, the walls of each pocket being mergently curved into the tray bottom to form an uninterrupted track for conveniently extracting type from said pockets.

2. As a new article of manufacture, an all metal type-case cast in one piece comprising a partitioned rectangular tray having a solid bottom, upstanding front, rear and side walls, the same being extended below the bottom to form a support therefor, series of intersecting longitudinal and transverse partition walls connecting the tray, and encasing walls forming type pockets, the lower surfaces of the walls of each pocket being mergently curved into the bottom to form an uninterrupted track for conveniently extracting type from said pockets, a series of channels in the lower face of the bottom, the same being diametrically opposite the partition walls to reduce the thickness at the point where said walls are mergently curved into said bottom.

3. As a new article of manufacture, an all metal type-case in one piece comprising a partitioned rectangular tray having a solid bottom, upstanding front, rear and side walls intersecting longitudinal transverse and partition walls connecting the tray and encasing walls forming type pockets, the lower surfaces of the walls of each pocket being mergently curved into the tray bottom to form an uninterrupted track for conveniently extracting type from said pockets, and a series of channels in the lower face of the bottom, the same being diametrically opposite the longitudinal and transverse partition walls to reduce the thickness at the point where said walls are mergently curved into said bottom.

In testimony that I claim the foregoing I have hereunto set my hand at Two Rivers, in the county of Manitowoc and State of Wisconsin.

RALPH I. SCHEUER.