Dec. 28, 1954 J. P. BROWN 2,698,101

METAL HANDLING

Filed April 18, 1952 2 Sheets-Sheet 1

Fig. 1

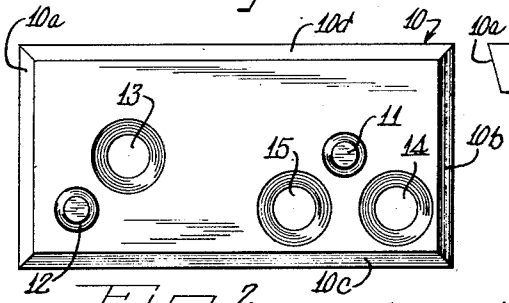


Fig. 2

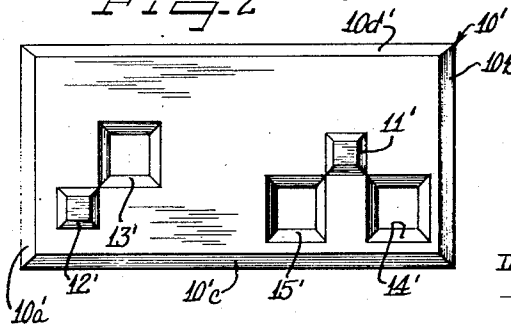


Fig. 3

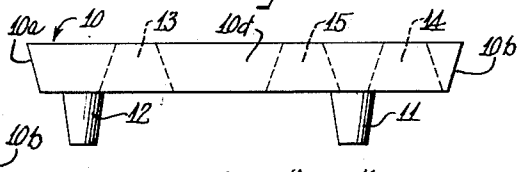


Fig. 4

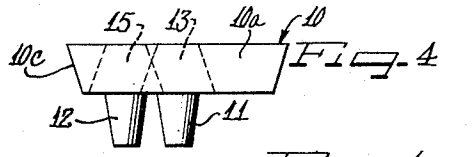


Fig. 6

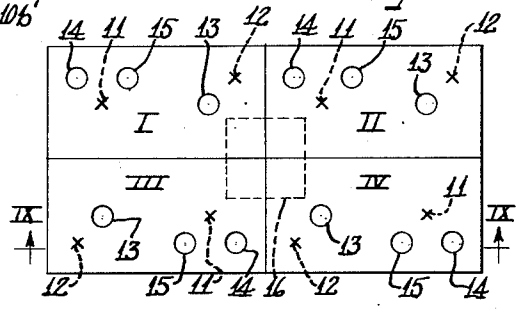


Fig. 7

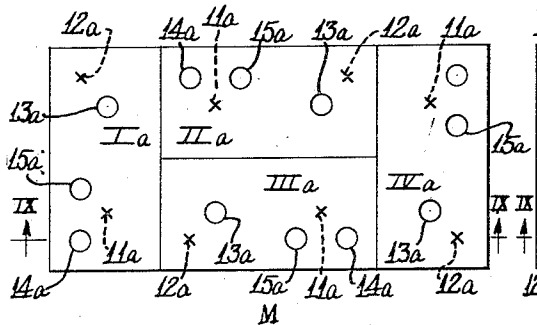


Fig. 8

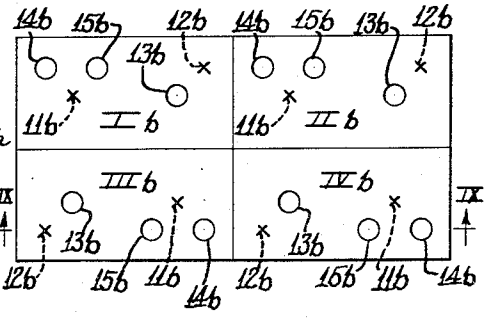
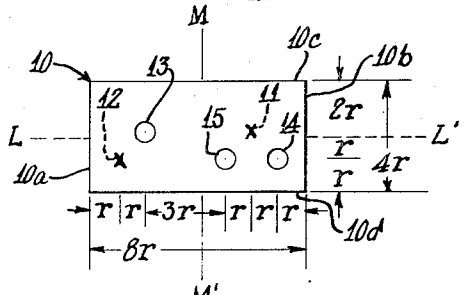


Fig. 5



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METAL HANDLING

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Fig. 9

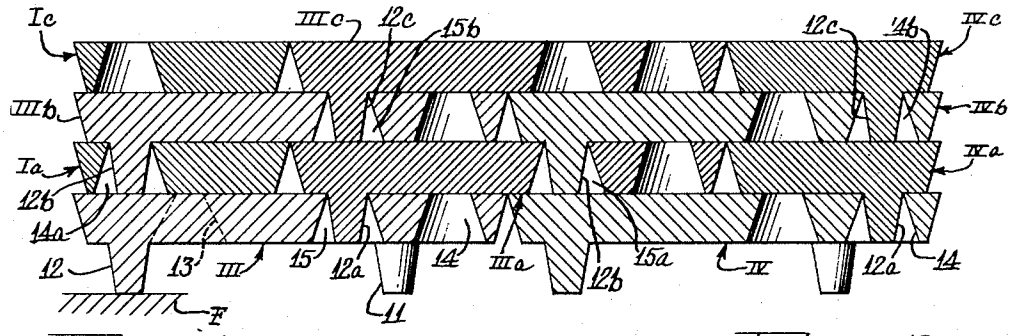


Fig. 10

Fig. 13

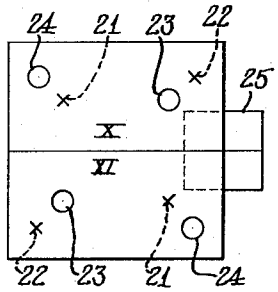


Fig. 11

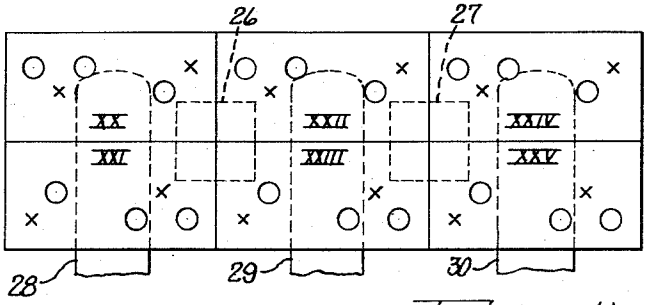


Fig. 14

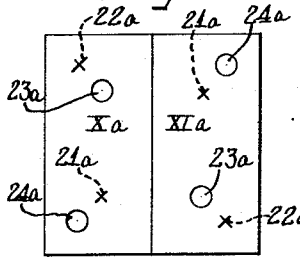


Fig. 12

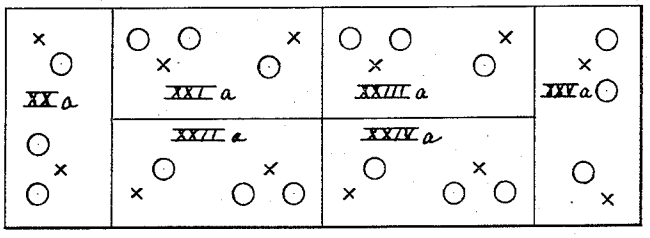
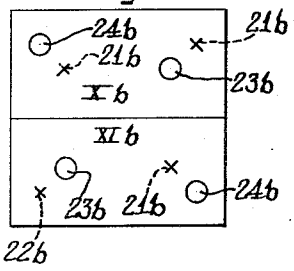
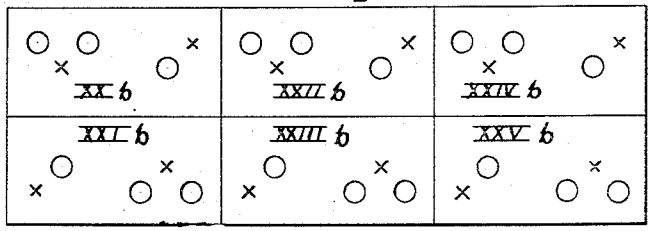


Fig. 15





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John P. Brown

by Hill, Sherman, Meroni, Gross & Simpson Attys

United States Patent Office 2,698,101 Patented Dec. 28, 1954

2,698,101

METAL HANDLING

John P. Brown, Fort Smith, Ark., assignor to The Residue Company, Fort Smith, Ark., a corporation of Arkansas

Application April 18, 1952, Serial No. 283,145

9 Claims. (Cl. 214—10.5)

My invention relates to metal handling, and more particularly, to an improved method for preparing and handling metals for transportation and to improved shipping units of cast metal elements and to improved cast metal ingots for use in such units.

Often it has been found desirable to cast metals in forms of various shapes and sizes for shipment from their places of production to their places of use. In those instances in which the metals are to be remelted, the particular form of the casting is immaterial, and in such instances, it has been the usual procedure to cast the metals in the form of pigs of various shapes, such as in the form of flat slabs, the principal concern being that of producing such pigs or slabs of uniform convenient weight for manual handling.

The formation of such pigs or slabs suitable for convenient manual handling does not present a particularly great problem to the workers in the art, but the shipment of such pigs or slabs generally involves considerable inconvenience and expense. For example, zinc may be cast in the form of flat slabs, each weighing about 50 pounds, which can conveniently be handled manually. In the shipment of such slabs, however, it is necessary to stack slabs in a railroad freight car, for example, individually by hand; and it has also been necessary to provide suitable timber braces and the like to prevent shifting of the piled slabs during transit. The erection of such braces and the like and their subsequent removal at the destination of the shipment, as well as the necessity of manual stacking and unstacking of the slabs during each loading and unloading operation, involves a very burdensome additional expense.

One suggestion for overcoming these difficulties is presented in United States Patent No. 2,119,112, issued to Willard E. Mitchell on May 31, 1938, wherein it is suggested that certain shipping units suitable for convenient handling by truck lifting devices may be prepared. Such units comprise base members of a particular shape of cast metal slab and cast metal slabs of another shape that are adapted to cooperate with the base members and with each other so as to permit the stacking thereof to form such a shipping unit. The base and slab members so described are different in shape but are adapted to interlockingly engage each other by means of cooperation between openings and projections in each.

The instant invention is based upon the discovery of a new cast slab arrangement and shape that permits the use of such slabs in the base layer, as well as any of the superimposed layers of a shipping unit. The instant ingot shape is adapted to a plurality of different stacking arrangements to suit the convenience of the shipper, and the slabs so used may be readily formed by the use of an uncomplicated mold, using only a single mold design for the casting of all of the slab members that are required for the formation of the shipping unit.

It is, therefore, an important object of the instant invention to provide a novel improved method of preparing and handling metals for transportation, forming the same into ingots and stacking such ingots to form shipping units, and to provide improved shipping units and improved ingot or slab design for use therein.

It is a further object of the instant invention to provide a rectangular metal slab having three openings extending therethrough and two mating projections extending outwardly from one face thereof, said slab having its longitudinal dimension substantially equal to twice its lateral dimension, and (*a*) the first opening being centered substantially equi-distant from the sides and one end of the slab, (*b*) the second opening being centered substantially equi-distant from the end opposite said one end, the longitudinal center-line and one side, (*c*) the third opening being centered substantially one-half the lateral dimension from the second opening and substantially equi-distant from said one side and the longitudinal and lateral center-line, (*d*) the first projection being centered substantially equi-distant from said opposite end and the sides, and (*e*) the second projection being centered substantially equi-distant from said one end, said one side and the longitudinal center-line.

It is another object of the instant invention to provide a metal base or skid for use in handling metal slabs comprising a metal slab having supporting leg-projections disposed adjacent its ends to support the slab above a surface in contact with the outer extremities of the projections and to provide a space for the insertion of a lifting or supporting portion or platform of a truck or other lifting device, said slab also having openings therein adapted to receive the leg-projections of like superimposed slabs for interlocking engagement therewith.

It is still a further object of the instant invention to provide an improved shipping unit comprising a metal base and a plurality of metal slabs identical in shape to said base and mounted on and interlocked with the base and with another by means of registering openings and projections formed in and on the base and slabs, said base being provided with legs for supporting the unit above a surface in contact with the outer extremities of the legs and the legs being spaced apart to provide for insertion therebetween of a lifting or supporting portion or platform of a truck or other lifting device.

It is still another object of the instant invention to provide an improved method of shipping metal which comprises casting the metal in the form of individual rectangular metal slabs, each having a plurality of openings extending therethrough and a plurality of supporting legs formed integrally therewith and disposed adjacent the ends thereof so arranged as to permit registration of the legs of one slab with the openings of other slabs upon which it is superimposed, and placing the slabs in stacked nested relationship on a suitable conveyance with the outer extremities of the legs of the bottom slabs in contact with the supporting surface of the conveyance and with the openings and legs of the slabs in registration to prevent substantial displacement of the slabs relative to one another by jarring or bumping incident to movement of the conveyance in transportation and to facilitate removal of the stacks of slabs at their destination by insertion between the supporting legs of the bottom slabs of a lifting or supporting portion or platform of a truck or other lifting device.

It is yet a further object of the instant invention to provide an improved metal slab having a plurality of openings extending therethrough and having a plurality of projections extending outwardly from one face thereof at points spaced from the openings, said openings and said projections being so disposed as to permit interlocking with projections and openings, respectively, of other slabs in such manner as to form a stack of interlocked slabs more than two slabs in height.

Other objects, features and advantages of the present invention will become apparent to one skilled in the art from the following description of the preferred embodiments thereof illustrated in the accompanying drawings in which:

Figure 1 is a bottom plan view of a cast slab formed in accordance with the instant invention;

Figure 2 is a bottom plan view of another cast slab formed in accordance with the instant invention;

Figure 3 is a side elevational view of the cast slab of Figure 1;

Figure 4 is an end elevational view of the cast slab of Figure 1;

Figure 5 is a top diagrammatical view of a slab embodying the invention wherein the elements are symmetrical in position to those of the cast slab of Figure 1;

Figure 6 is a top diagrammatical view of a base layer of four slabs in edge-to-edge position;

Figure 7 is a top diagrammatical view of a second layer of four slabs suitably positioned upon the base layer of Figure 6;

Figure 8 is a top diagrammatical view of a third layer of slabs suitably positioned upon the second layer of Figure 7;

Figure 9 is a sectional elevational view of a shipping unit or stack of slabs, stacked according to the arrangement shown in Figures 6, 7 and 8, the sectional view being taken substantially along the line IX—IX of each of the layers shown in Figures 6, 7 and 8;

Figure 10 is a top diagrammatical view of another base layer of slabs, arranged differently from the slabs of Figure 6 and comprising only two slabs in side-by-side position;

Figure 11 is a view of a second layer of slabs superimposed upon the base layer of Figure 10;

Figure 12 is a top diagrammatical view of a third layer of slabs superimposed upon the second layer of slabs of Figure 11;

Figure 13 is a top diagrammatical view of base layer of slabs, in an arrangement different from the arrangements of Figures 6 or 10, and comprising six slabs paired in side-by-side relation;

Figure 14 is a top diagrammatical view of a second layer of slabs superimposed upon the base layer of Figure 13; and

Figure 15 is a top diagrammatical view of a third layer of slabs superimposed upon the second layer of Figure 14.

As shown on the drawings:

In Figures 1, 3 and 4, the reference numeral **10** indicates generally a zinc slab embodying the invention, comprising a relatively thin body of a length or dimension substantially equal to twice its width or lateral dimension and having two relatively large parallel plan faces on the top and bottom thereof. A first projection **11**, of generally circular cross-section and frusto-conical shape formed integrally with the slab **10** extends outwardly (downwardly) from (the bottom) one of the parallel faces. A second projection **12** is shaped similarly to the projection **11**, but positioned near the end edge **10***a* opposite the end edge **10***b* of the slab **10** which is adjacent the first projection **11**. The projections **11** and **12** each extend an equal distance from the same parallel face (or bottom) of the slab **10** and that distance is approximately the slab thickness between the parallel faces.

The slab **10** also has a first opening **13** extending between the parallel faces of the slab and defined by generally frusto-conical walls, matingly contoured with respect to the projections **11** and **12** to the extent that the opening **13** is of sufficient size that it may receive either of the projections **11** or **12**. The height of each of the projections **11** and **12** is substantially the height of the opening **13**, or the distance between the parallel faces of the slab **10**. The first opening **13** is positioned adjacent the end edge **10***a* which is adjacent the second projection **12**.

A second opening **14**, similar to size and contour to the opening **13**, is positioned adjacent end edge **10***b* which is also adjacent the first projection **11**; and a third opening **15**, substantially identical in structure and contour to the openings **13** and **14**, is positioned near the second opening **14** and the first projection **11** in the slab **10**.

It will be noted that the slab **10** is preferably tapered or beveled along the end edges **10***a* and **10***b*, as well as the side edges **10***c* and **10***d*, and the projections **11** and **12** and the openings **13**, **14** and **15** are, likewise, tapered in a corresponding manner (i. e., downwardly), so as to facilitate casting of the slab **10** in a suitable mold and the removal of the slab **10** therefrom after it has hardened. Also, it will be noted that the second projection **12** and the second and third openings **14** and **15** are in substantial alignment, longitudinally of the slab **10** and adjacent one side edge **10***c*; whereas the first projection **11** and the first opening **13** are aligned substantially on the longitudinal center line of the slab **10**.

Referring now to Figure 5, which shows diagrammatically a top view of a slab identical in function to that of Figure 1, but having the elements positioned therein symmetrically with respect to the slab of Figure 1, and having a specific arrangement of the openings **13**, **14** and **15** (each designated by a circle), the projections **11** and **12** (each designated by the letter X) and the dimensions (the dimensional unit being designated by letter *r*). As shown in Figure 5, the slab **10** has a longitudinal dimension of 8*r* and a lateral dimension of 4*r*. For reasons hereinafter explained, the longitudinal dimension is preferably an even multiple of the lateral dimension. The first projection **11** is positioned on the slab longitudinal center line LL′ and it is centered equi-distant (i. e., 2*r*) from the side edges **10***c* and **10***d* and from the end edge **10***b*. The second projection **12** is positioned opposite the first projection **11** adjacent the end edge **10***a*, and is positioned equi-distant (i. e., *r*) from the end edge **10***a*, the side edge **10***d* and the slab longitudinal center line LL′. Since Figure 5 is a top view, it will be appreciated that the projections **11** and **12** extending downwardly from the slab bottom would not be visible and are thus pointed out by broken reference lines.

The first opening **13** is positioned directly opposite the first projection **11** and aligned therewith on the slab longitudinal center line LL′, and it is also positioned equidistant (i. e., 2*r*) from the side edges **10***c* and **10***d* and the end edge **10***a*. The second opening **14** is positioned opposite the first opening **13** and adjacent the end edge **10***b*, and it is positioned equi-distant (i. e., *r*) from the end edge **10***b*, the side edge **10***d* and the slab longitudinal center line LL′. The third opening **15** is positioned on the side **10***d* of the slab **10** on which the first projection **11** and the second opening **14** are positioned, and the third opening **15** is positioned one-half the lateral dimension (i. e., 2*r*) from the second opening **14**. The third opening **15** is also positioned substantially equidistant (i. e., *r*) from the side edge **10***d* and the longitudinal center line LL′ and the lateral center line MM′ of the slab **10**. It should also be pointed out that the arrangement of Figure 5 is symmetrical to that of Figures 1, 3 and 4, in that the second projection **12** and the second and third openings **14** and **15** are aligned along the slab side **10***d* instead of the side **10***c*. The equivalence of this arrangement is, of course, apparent.

Referring now to Figure 2, it will be seen that the arrangement of the projections (**11′** and **12′**) and openings (**13′**, **14′** and **15′**) and the general contour thereof, is substantially the same as that shown in Figure 1, except that the outline or cross-sectional shape of each of the projections and openings is non-circular, being rectangular and preferably square, instead of circular as shown in Figure 1. Each of the corresponding elements of the slab **10′** of Figure 2 is designated by a primed reference numeral.

Referring to Figure 6, it will be seen that four identical slabs (designated by the Roman numerals: I, II, III and IV) have been arranged in pairs of side-by-side relationship. Each is positioned (as shown in Figure 5) with projections **11** and **12** extending downwardly to contact at their extremities a supporting surface (not shown). A mounting block **16**, which is merely a spacer having a height equal to the length of the projections **11** and **12**, is centrally positioned so as to support each of the four adjoining corners of the four slabs to temporarily steady the slabs prior to the addition of superimposed layers thereupon. After the next slab layer (Figure 7) is placed thereupon in interlocking engagement, the mounting block **16** is no longer necessary to steady the unit.

Referring now to Figure 7, it will be seen that four more identical slabs (I*a*, II*a*, III*a* and IV*a*) are arranged in edge-to-edge relationship so as to cover completely the first layer of Figure 6. The corresponding projections and openings in each of the slabs of this layer are designated by the corresponding reference numeral and the subscript *a*. In effecting suitable interlocking engagement between superimposed layers it will be appreciated that the openings (e. g., **13***a*, **14***a* and **15***a*) are positioned to receive projections from above, whereas the first and second projections **11***a* and **12***a*, respectively, extend downwardly into registry with the corresponding slab openings in the first layer shown in Figure 6. It will also be seen that each of the slabs of Figure 7 is so positioned that the lateral center line thereof is aligned with a slab edge (or a pair of adjoining slab edges) of the slab layer of Figure 6, thereby locking together the two lower slabs.

Figure 8 shows a slab arrangement which is substantially the same as that shown in Figure 6 (wherein each reference numeral is followed by the letter *b*), but which is the slab arrangement of the third layer of slabs I*b*, II*b*, III*b* and IV*b*, which third layer is superimposed upon

the second layer of Figure 7. The third layer of Figure 8 is so positioned, like the second layer of Figure 7, that in each case the lateral center-line of each slab of Figure 8 is aligned with a pair of slab edges of the second layer of Figure 7, or the slab layer therebelow with respect to the slab layer of Figure 8, so as to interlock the two lower slabs.

Referring now to Figure 9, which shows a sectional elevational view of a stack of slabs assembled according to the arrangement set forth in Figures 6, 7 and 8, it will be noted that the cross-section is taken substantially along the line IX—IX of each of Figures 6, 7 and 8. In order to facilitate visualization of the correlation between the diagrammatic top views of Figures 6, 7 and 8 and sectional elevational view of Figure 9, each of the slabs in Figure 6 has been designated by the Roman numerals I, II, III and IV, respectively; and the slabs of Figure 7 have been designated correspondingly with the subscript *a*; and the slabs of Figure 8 have been designated correspondingly with the subscript *b*. In Figure 9, a fourth layer (arranged as shown in Figure 7) is also shown, designated with the subscript *c*.

Referring again to Figure 9, it will be noted that at the lower left hand side is the slab III, and at the lower right hand side is the slab IV. The slabs III and IV rest upon the floor F. The slab III has a first projection **11**, a second projection **12**, a second opening **14** and a third opening **15**. (The first opening **13**, which would not be visible in this sectional view, is designated by broken lines in the case of slab III only in Figure 9 and is otherwise not shown in this figure for the purpose of simplification.)

In Figure 9, in the second slab layer, it will be seen that slab I*a* is positioned on the left hand side; slab III*a* may be seen in the middle of the layer; and slab IV*a* is positioned at the right hand side of the layer. In the interlocking arrangement between the first and second layers visible in Figure 9, it will be seen that the second projection **12***a* of the middle slab III*a* extends downwardly into interlocking engagement with the third opening **15** of the slab III of the first layer; and the second projection **12***a* of the right hand slab IV*a* of the second layer extends downwardly into the second opening **14** of the right hand slab IV of the first layer.

Referring now to the third layer in Figure 9, it will be seen that the slab III*b* is positioned on the left hand side of the layer and the slab IV*b* is positioned on the right hand side of the layer. On the left hand side, the second projection **12***b* of the slab III*b* extends downwardly into interlocking engagement with the second opening **14***a* of the left hand slab I*a* on the second layer; and near the middle of the third layer the second projection at **12***b* of the right hand slab IV*b* extends downwardly into interlocking engagement with the third opening **15***a* of the middle slab III*a* of the second layer.

The fourth layer has slabs I*c*, II*c*, III*c* and IV*c*, respectively, positioned substantially in the arrangement shown in Figure 7; and in Figure 9, the slab I*c* is at the left hand side of the third layer; the slab III*c* is at the middle of the layer; and the IV*c* is at the right hand side. The second projection **12***c* of the middle slab III*c* of the fourth layer extends downwardly into interlocking engagement with the third opening **15***b* of the left hand slab of III*b* of the third layer; and on the right hand side the second projection **12***c* of the slab IV*c* extends downwardly into the second opening **14***b* of the left hand slab IV*b* of the third layer, likewise, in interlocking engagement therewith.

As can be seen from Figure 9, the second and third openings **14** and **15** in each of the slabs **10** are both necessary in the arrangement shown, so that the second projction **12** of each slab may be interlockingly received in all of the positions shown.

Referring now to Figure 10, it will be seen that the third opening **15** is not necessary in an arrangement wherein the slabs are stacked as shown in Figure 10. In such an arrangement, of course, it is possible to lock together only two base members or slabs, instead of the four slabs which were locked together in the arrangement shown in Figures 6, 7 and 8.

Referring to Figure 10 in detail, it will be seen that a pair of slabs, designated X and XI, are positioned side-by-side so as to make a symmetrical arrangement of the openings and projections. The slabs have first and second projections **21** and **22**, respectively, extending downwardly and first and second openings **23** and **24**, respectively. The slabs are temporarily positioned on a mounting block **25**, until the subsequent layers may be placed thereupon to cause interlocking of the slabs, whereupon, as in the case of the arrangement of Figures 6, 7 and 8, the slabs are locked together in the bottom layer (Figure 10) so that the mounting block **25** is no longer needed and the four projections (consisting of the first and second projections **21** and **22** of the slabs X and XI) form a very stable support for the stack.

As is shown in Figure 11, wherein the second layer for the base layer of Figure 10 is shown, it will be seen that the slabs X*a* and XI*a* are placed in side-by-side relation, so as to have a generally symmetrical opening and projection arrangement. The slabs X and XI*a* are placed upon the slabs X and XI of Figure 10, so that the second projection **22***a* of the slab X*a* interlockingly engages the second opening **24** of slab X; and the first projection **21***a* of slab X*a* interlockingly engages the first opening **23** of slab XI of Figure 10. The positioning, as well as the interlocking cooperation of the slabs X*b* and XI*b* of the third layer, as shown in Figure 12, will also be readily understood.

Referring now to Figures 13, 14 and 15, wherein a slab arrangement is shown, employing six slabs per layer, it will be seen clearly from the diagrammatical views how a preferred arrangement of the instant invention is accomplished. In Figure 13 the slabs are arranged in pairs of XX and XXI, XXII and XXIII, XXIV and XXV, each in side-by-side arrangement in pairs which are positioned end-to-end. The mounting blocks **26** and **27** are positioned temporarily at the two places at which there are four adjoining slab corners and the x's and circles designate, respectively, downwardly directed projections and the openings, hereinbefore described.

Those skilled in the art will appreciate the arrangements of the slabs in Figures 14 and 15, in view of the foregoing disclosure, the slab layer of Figure 14 being superimposed on the base layer of Figure 13 and the slab layer of Figure 15 being superimposed on the second slab layer of Figure 14. Again, it will be seen that in each case interlocking engagement is effected by positioning a slab of one layer so that its lateral center line is aligned with the adjoining edges of a pair of slabs immediately therebelow. By this arrangement it is possible to effect such interlocking engagement that the slabs of the bottom layer of a stack, in each case, are so held together by the slabs of the second layer that full benefit of the support of the pair of projections or legs extending downwardly from each such slab is obtained. Once the slabs are so stacked, they may be moved in stacked form by means of suitable lifting elements, for example, as designated at **28**, **29** and **30** in Figure 13, which may be the lifting fork-like members of a truck hoist.

It will, of course, be understood that certain of the foregoing details herein set forth relate specifically to the instant examples described herein, and various of such details may be varied throughout a wide range without departing from the principles of this invention; and it is not, therefore, the purpose to limit the patent granted hereon otherwise than necessitated by the scope of the appended claims.

I claim as my invention:

1. A rectangular metal slab having three circular openings extending therethrough and two matingly circular projections extending outwardly from one face thereof, said slab having its longitudinal dimension substantially equal to twice its lateral dimension and (*a*) the first opening being centered substantially equi-distant from the sides and one end of the slab, (*b*) the second opening being centered substantially equi-distant from the end opposite said one end, the longitudinal center-line and one side, (*c*) the third opening being centered substantially one-half the lateral dimension from the second opening and substantially equi-distant from said one side and the longitudinal and lateral center-lines, (*d*) the first projection being centered substantially equi-distant from said opposite end and the sides, and (*e*) the second projection being centered substantially equi-distant from said one end. said one side and the longitudinal center-line.

2. A base or skid for use in handling metal slabs comprising a rectangular metal slab having a longitudinal dimension of substantially twice its lateral dimension, and having (*a*) a first opening extending therethrough and being disposed adjacent one end and centered substantially equi-distant from the sides and said one end, (*b*)

a first projection extending outwardly from one face thereof and being disposed adjacent the end opposite said one end and centered substantially equi-distant from the sides and said opposite end, (*c*) a second projection extending outwardly from said one face and being disposed adjacent said one end and centered substantially equi-distant from one side, said one end and the slab longitudinal center-line, and (*d*) a second opening extending therethrough and disposed adjacent said opposite end and centered substantially equi-distant from said opposite end, said one side and the slab longitudinal center-line, said first and second projections being adapted to support the slab above a surface in contact with the outer extremities thereof and to provide a space for insertion of a lifting or supporting portion or platform of a truck or other lifting device.

3. A shipping unit comprising a base layer of four rectangular metal slabs, each of a length substantially equal to twice its width, and each having (*a*) a first opening extending therethrough and being disposed adjacent one end and centered substantially equi-distant from the sides and said one end and (*b*) a second opening disposed adjacent the opposite end and being centered substantially equi-distant from said opposite end, one side and the slab longitudinal center-line, and each being provided with (*c*) supporting legs formed integrally therewith and disposed adjacent the ends thereof, and a plurality of layers of metal slabs each identical in shape to the slabs of the base layer and each layer comprising four of such metal slabs superimposed upon the layer therebelow with the slab openings of the layer therebelow in registry with and in interlocking engagement with the legs of the respective superimposed layer, and each slab in said plurality of layers having its lateral center-line aligned with edges of the slabs immediately thereabove and therebelow.

4. A metal slab as claimed in claim 2 wherein the openings and projections are non-circular.

5. A metal slab as claimed in claim 4 wherein the openings and projections are rectangular.

6. A metal slab as claimed in claim 2 wherein the openings and projections are circular.

7. A rectangular metal slab having a longitudinal dimension of substantially twice its lateral dimension, and having (*a*) a first opening extending therethrough and being disposed adjacent one end and centered substantially equi-distant from the sides and said one end, (*b*) a first projection extending outwardly from one face thereof and being disposed adjacent the end opposite said one end and centered substantially equi-distant from the sides and said opposite end, (*c*) a second projection

extending outwardly from said one face and being disposed adjacent said one end and centered substantially equi-distant from one side, said one end and the slab longitudinal center-line, and (*d*) a second and (*e*) a third opening extending therethrough and disposed adjacent said opposite end, said second opening (*d*) being centered substantially equi-distant from said opposite end, said one side and the slab longitudinal center-line and said third opening (*e*) being centered substantially equi-distant from said one side and the slab longitudinal and lateral center lines.

8. A metal base of skid assembly for use in handling metal slabs comprising a first layer formed of a plurality of the slabs of claim 1 disposed side by side and having their projections extending downwardly to support each other on a surface in contact with the outer extremities of the projections and to provide a space for the insertion of a lifting or supporting portion or platform of a truck or other lifting device, and a second layer of like slabs superimposed upon the first so that each half of each superimposed slab overlies adjacent halves of different first layer slabs and the projections thereof extend downwardly in registry with an opening in a first layer slab.

9. A rectangular metal slab having three rectangular openings extending therethrough and two matingly rectangular projections extending outwardly from one face thereof, said slab having its longitudinal dimension substantially equal to twice its lateral dimension and (*a*) the first opening being centered substantially equi-distant from the sides and one end of the slab, (*b*) the second opening being centered substantially equi-distant from the end opposite said one end, the longitudinal center-line and one side, (*c*) the third opening being centered substantially one-half the lateral dimension from the second opening and substantially equi-distant from said one side and the longitudinal and lateral center-lines, (*d*) the first projection being centered substantially equi-distant from said opposite end and the sides, and (*e*) the second projection being centered substantially equi-distant from said one end, said one side and the longitudinal center-line.

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