Oct. 16, 1951 E. W. NEWMAN 2,571,748

SPROCKET CHAIN PACKAGE

Filed May 14, 1949 2 SHEETS—SHEET 1

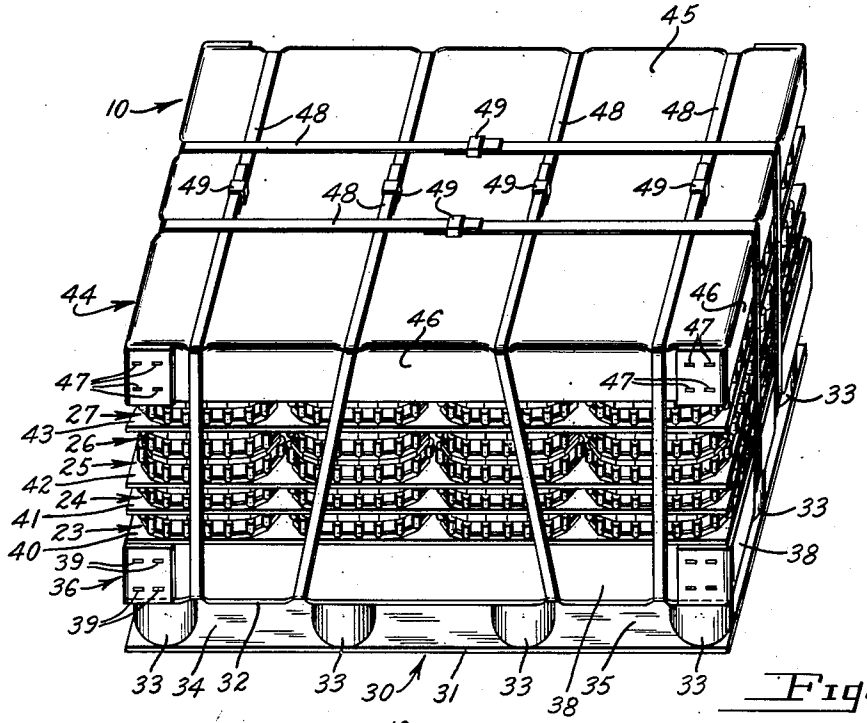


Fig. 1

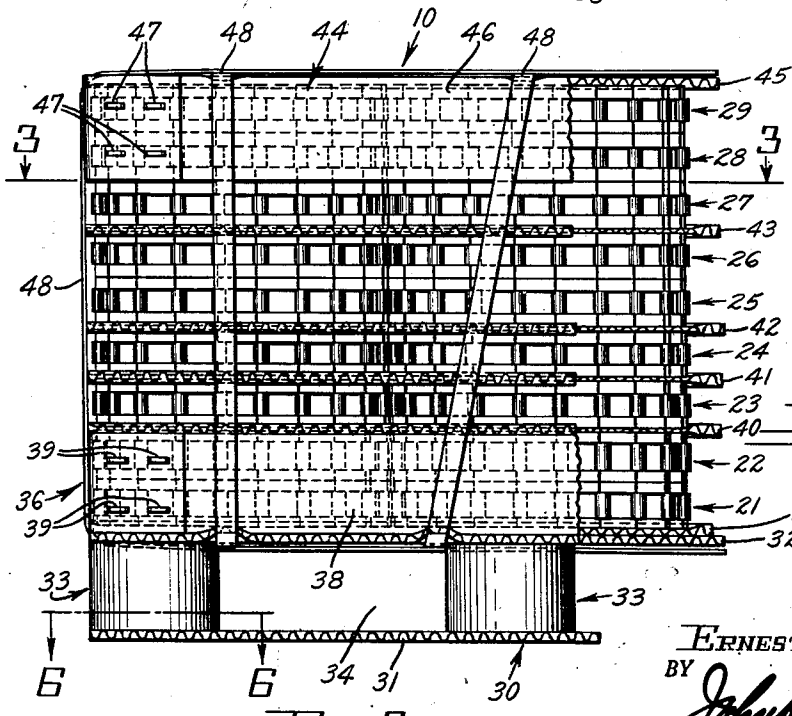


Fig. 2

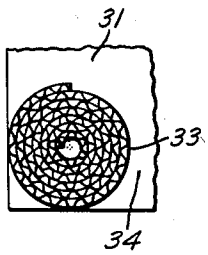


Fig. 6

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SPROCKET CHAIN PACKAGE

Filed May 14, 1949 2 SHEETS—SHEET 2

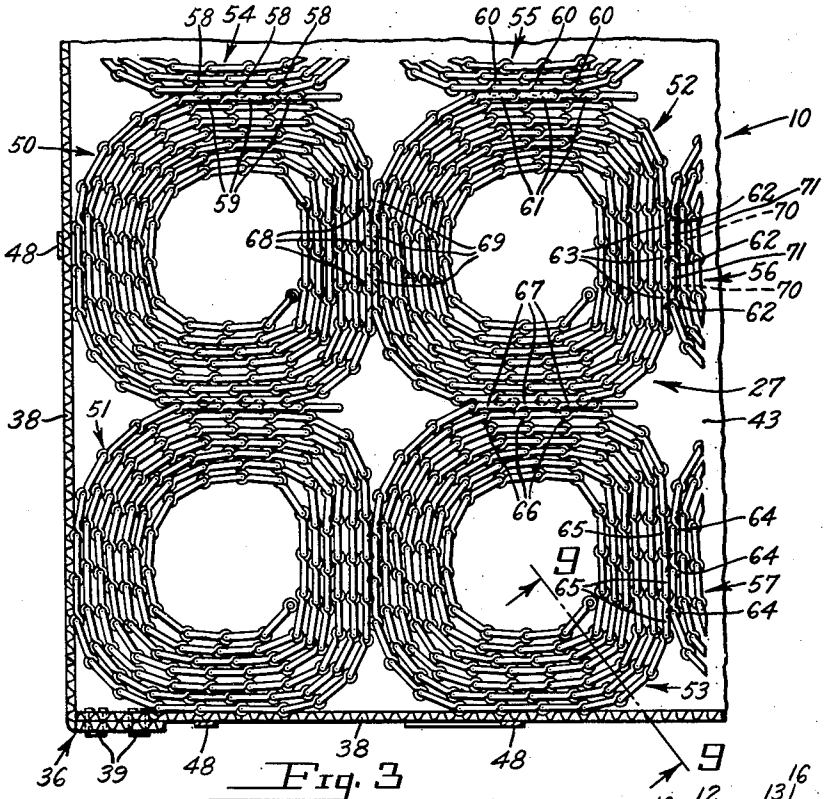


Fig. 3

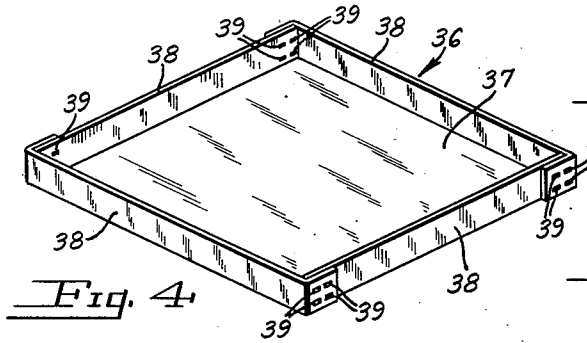


Fig. 4

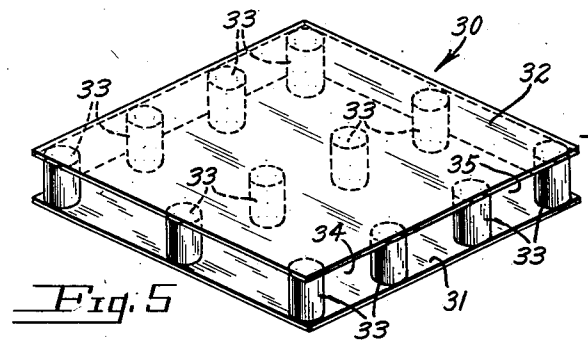


Fig. 5

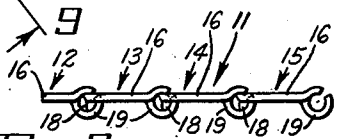


Fig. 7

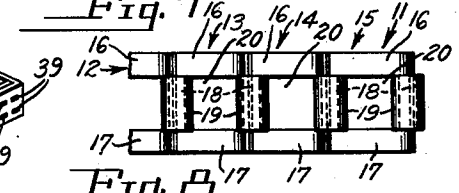


Fig. 8

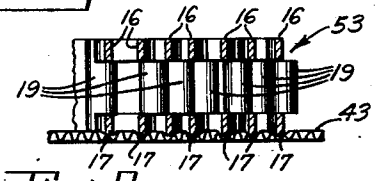


Fig. 9

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Patented Oct. 16, 1951

2,571,748

UNITED STATES PATENT OFFICE

2,571,748

SPROCKET CHAIN PACKAGE

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Application May 14, 1949, Serial No. 93,320

10 Claims. (Cl. 206—65)

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This invention relates to new and useful improvements in packaging and has particular relation to the secure and economical packaging in a single package of a plurality of articles such as lengths of sprocket chain.

An object of the invention is to provide a simple and relatively inexpensive package for the shipment of a number of coiled lengths of sprocket chain, the package including a feature whereby the chain will not uncoil while in transit and yet eliminating the necessity for wiring or otherwise securing the lengths of chain in the individual coils.

Another object is to provide a package of the character outlined and which will facilitate the loading into and the unloading from freight cars, trucks and the like, of large quantities of sprocket chain in individual lengths.

A further object is to provide a package as indicated and including a minimum of separate types of pieces, aside from the goods to be packaged, for the formation of the package and which pieces may be stored in flat condition and in piles to the end that the materials for the formation of a large number of the packages require only a minimum of storage space.

Yet another object is to provide a package of the character indicated and wherein when the package is opened and its contents used, the parts constituting the packaging material are of inexpensive materials and thus of little value and may be readily destroyed by burning or the like and which prior to such destruction or other disposal occupy a relatively small space.

A further object is to provide a package and method of packaging wherein when the package is received at its destination and opened the coiled lengths of chain are in layers easily removed individually from the package and instantly ready for use as they are not wired or otherwise individually bound.

Other objects and advantages of the invention will become apparent from a consideration of the following detailed description taken in connection with the accompanying drawings wherein a satisfactory embodiment of the invention is shown. However, it is to be understood that the invention is not limited to the details disclosed but includes all such variations and modifications as fall within the spirit of the invention and the scope of the appended claims.

In the drawings:

Fig. 1 is an isometric view showing the package of the invention;

Fig. 2 is an elevational view of an end portion

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of one side of the package, the view being on a larger scale;

Fig. 3 is a sectional view taken as along the line 3—3 of Fig. 2;

Fig. 4 is a perspective view of one part or element of a package;

Fig. 5 is a similar view of a pallet employed as part of the package;

Fig. 6 is a detail sectional view taken as along the line 6—6 of Fig. 2;

Fig. 7 is an edge elevational view, on a larger scale, of a short length of chain;

Fig. 8 is a side view of the length of chain of Fig. 7; and

Fig. 9 is a sectional view taken as along the line 9—9 of Fig. 3.

Referring in detail to the drawings, my improved package is generally designated 10 and is specifically illustrated as a shipping package for detachable steel sprocket chain. That the invention may be better understood, the detailed construction of this chain will later be set forth but here it is noted that it is common practise in the trade to ship such chain in the form of flat sided coils.

The sizes of such coils depend on the sizes of the links and also on the number of links in the length or section of chain made into the coil. For example, a manufacturer who utilizes the detachable steel sprocket chain in a particular connection may require many lengths or sections of the chain and he may specify the lengths as by designating the link size and number of links in the chain.

At present, the manufacturer of the chain provides sections of the desired length and then coils each length of chain upon itself providing a flat and, as far as possible, tightly rolled coil. Then wires are passed through the coils from the edges thereof or radially thereof and brought back over a flat side of the coil and the end portions of each piece of wire are twisted together. These wires are kept tight or made tight so as to lock the convolutions of the coil against one another and make a coil which is quite stiff flatwise. Also, these wires secure the inner and outer ends of the length of chain in place and prevent uncoiling of the length of chain forming the coil.

The flat coils for a shipment having been rolled up and wired are usually manually trucked into a freight car or the like for shipment and there the truck unloaded. At their destination they are in like manner manually removed to a storage room. Then the manufacturer who is going to fabricate the chain into some article or piece

of machinery that he is building must cut or otherwise release the wires above mentioned before he can uncoil or extend the length of chain to place it over sprockets or the like in his machine. It will bee appreciated that the above entails a great deal of manual effort and is slow and expensive.

According to the present invention it is not necessary that the lentghs of chain be wired in their coil formations. The present package provides for the retaining of the lengths in their coiled state. Then when the machine builder or the like receives the package he merely opens it and coils of the desired lengths of chain are exposed in a layer and the workman merely selects the coils or picks them off the layer, carries them to the proper place and trains them over the sprockets or the like on which they are to be used. There are no wires to be cut or other work to be done making the chain lengths available for their intended purpose.

Heretofore it has been proposed to ship these chain lengths in cartons with the coils flat, one on top of the other, the cartons being of the proper transverse internal dimensions. This presents a storage problem for the plant where the chain is packed for shipment and presents a big disposal problem for the plant that has received the shipment. Also, this method is expensive in that a great number of cartons of various sizes, to receive the various sizes of coils, must be provided.

Figs. 7 and 8 show a very short length of the detachable steel sprocket chain and the length of chain in such figures is generally designated 11 and is shown as including links 12, 13, 14 and 15. These links are substantially rectangular and each includes side bars 16 and 17, an end bar 18 and an eye formation 19, the latter being formed of stock lanced and pressed from between the side bars beginning at the end bars 18 and actually is from the space designated 20, such space being an opening entirely through each link. The end bars 18 being received in the eyes 19, the links are pivotally or hingedly connected and it will be noted, particularly with respect to the edge view of Fig. 7, that the eyes 19 extend or project or are located substantially to one side of the main plane of the links of which they are integral parts.

The package herein disclosed contains layers (see particularly Fig. 2) 21, 22, 23, 24, 25, 26, 27, 28 and 29, each layer containing a plurality of coils of detachable steel sprocket chain. Each of these coils is formed from the desired length of such chain, the desired length being that required by the party having placed the order for or having purchased the chain. Package 10, in addition to the mentioned layers of chain, includes a pallet 30 preferably made up of corrugated cardboard although the invention is not limited to such a pallet, as various types or constructions of pallets may be used.

The cardboard pallet shown herein for the purpose of a complete disclosure is to be disposed of after it is received and the contents of the package removed and may be disposed of by burning. Thus, it is desired that the pallet be of an inexpensive construction. However, it must be strong enough to sustain the burden placed on it and for economy reasons it should also be light in weight. The cardboard pallet shown seems to adequately answer these requirements.

Such pallet (see Fig. 5) includes a bottom piece 31 of corrugated cardboard, a top piece 32 of the same material and these pieces are connected together but held in spaced relation by means of intervening pier-like structures 33. Each of these structures (see particularly Fig. 6) is made of a length of corrugated board of the desired width, rolled or coiled upon itself as tightly as is reasonably possible and adhesively secured in such formation. The construction of a pier 33 in the form of a tight spiral winding of a length of corrugated cardboard is clearly shown in Fig. 6.

These piers 33 being constructed as described are designed to withstand a very heavy load (lengthwise) without collapsing. It is noted, particularly with reference to Figs. 1 and 5, that these piers are arranged in rows. The desired number of piers to give a pallet of the desired strength are used but then the piers being in rows, the spaces 34 and 35 between each two outer rows are adapted to receive the fork-like portions of lifting and transporting trucks, such as are used in a factory.

In practise, after a package has been formed, one of these hoisting and transporting trucks is brought up to the package with its fork at a level for its prongs to enter the passageways 34 and 35 and then the fork is elevated and the truck driven away with the package 10 and it may be carried directly into a freight car and there disposed either on the floor of the car or on the top of a previously loaded package or on the top of a stack of previously loaded packages, as occasion demands.

On top of the pallet 30 a bottom device 36 is placed. Such bottom device includes a bottom wall 37 and four short upstanding side walls 38 which are integral with the bottom 37 and have their corners overlapped and secured together as by staples 39. The bottom device 36 is also preferably of corrugated cardboard and its bottom wall 37 is coextensive with or substantially coextensive with the upper sheet 32 of the pallet 30. Bottom device 36 having been placed on the pallet 30, the layers 21 of flat coils of detachable steel sprocket chain are place on the bottom wall 37 of the bottom device. From there on, variations may be practised as will later be suggested, but in the present package 10, a second layer of flat coils of detachable sprocket chain is placed directly on the upper side of the layer 21. Such second layer is the layer 22 shown in Fig. 2.

Thereafter, a sheet 40 of corrugated cardboard is placed on the upper side of the layer 22. Next, a layer 23 of coils of detachable steel sprocket chain is placed on the cardboard separator 40. Then in the package 10, another separtor 41 is placed on the upper side of the layer 23 and the single layer 24 of coils of detachable steel sprocket chain is placed on the separator 41. Thereafter, a separator 42 is placed on the upper side of the layers of coils 24. Then a layer 25 of coils is placed on the separator 42 in the same manner that the layer 21 was placed on the upper side of the bottom wall 37 of the bottom device 36. Next the layer 26 of coils is placed directly on the layer 25, the same as the layer 22 was placed directly on the layer 21.

Now, yet another separator 43, also comprising a sheet of corrugated cardboard, is placed on the upper side of the layer 26 and three layers of coils of detachable sprocket chain are placed in the package. Of these, the layer 27 is directly on the separator 43. Then the layer 28 is directly on the layer 27 and layer 29 is directly on the

layer 28. Now a package of the proper height and weight has been developed. Thereafter, a top device generally designated 44 is placed over the upper layers of the chain. This top device is merely one of the bottom devices 36 in reverse position. Thus, the top device includes a top wall 45 and four short depending side walls 46 overlapped and secured together at their corners by staples 47.

Now, binders, preferably in the form of flat strips of metal, are carried through the pallet under the top wall 32 thereof and up the sides and ends of the package and across its top and drawn tight and the ends tied or anchored together. In the drawing, these binders are all designated 48 and their tied or anchored points designated 49. As suggested, particularly in Fig. 1, these binders are drawn very tight, in fact so much so as to cut somewhat into the top 32 of the pallet and into the cover member 44. With this construction, it will be seen that the hoisting and carrying truck may easily be used to raise the package 10, carry it to a desired place and deposit it. The pallet facilitates the handling of the package by such a hoisting and transporting truck. It will be understood that the weight of the package prohibits its manual handling.

In actual practise, at the present time, these packages average about 2500 pounds each. However, they may be easily and quickly handled by the mentioned type of truck and with such a truck handling the packages, a freight car may be quickly loaded or unloaded avoiding demurrage charges and reducing the labor costs as well as delays in filling orders.

It is to be understood that the package of the invention need not be of the size of the package 10 since obviously it is within the concept of the present invention that the package contain a greater number of layers than shown within the package 10 or that the package of the invention contain a smaller number of layers. Further, it will be understood that one of the separators shown may be located between the upper surface of each layer and the lower surface of the next uppermost layer. This will become more evident when the full purpose of the separator is better understood. It has been suggested that these separators, as well as the bottom wall 37 of the bottom device 36, be of corrugated cardboard. Such material is of considerable strength but, in the present instance, its use has an additional purpose. The corrugated cardboard is compressible or deformable in that over an area various spaced portions may be pressed inwardly toward one another.

In the present instance, the work to be shipped comprises essentially flat edge portions, such edge portions comprising either of the side bars 17 or 16 of the assembled links. The eyes 19 of the links insure that in the coiled links the side bars of the links of one convolution will not be flat against the side bars of the links of adjacent convolutions but that such side bars will be slightly spaced laterally. This means that on its upper and lower flat surface each coil of the detachable steel sprocket chain is irregular in that there are spaces between the side bars of the links of one convolution and the side bars of the links of the next adjacent convolution. When the coils are placed on one another portions of the links of each coil enter into the spaces between the links of the other coil and thus the superimposed coils may not slide on one another and are, in fact, prevented from sliding movement on one another.

To move the coils relatively laterally one must be picked up off the other and then moved laterally. These spaces are kept at the minimum possible for the saving of space and also to have each coil tightly wound and laterally or sidewise stiff so the inner convolutions do not tend to move laterally out of the outer convolutions into a cone-like formation.

These upper and lower surfaces being rough or irregular as described, when one of the coils is placed on a corrugated or other compressible piece, as the bottom wall 37 or one of the separators 40, 41, 42 or 43, the lower edges of the individual links tend to sink into the compressible material and the under surfaces of the separators are compressed and dug into by the upper edges of the link of coils on which the separators are disposed. Therefore, the coils are held against any tendency to edgewise sliding movement. In addition, this slight embedding of the lower edges of the links into the separators or the wall 37 and of the upper edges of the links into the separators and the top wall 45 of the top device 44 serves to hold the coils against expanding or uncoiling so that they may be shipped without being wired whether in the manner above suggested or otherwise.

It is further noted that when one layer of coils is placed on a previous layer, the irregular or rough lower sides of the top layer of coils overlap or interengage with the irregular or rough upper sides of the bottom layer of coils. Thus, the layers 21 and 22 of coils are interengaged in their adjacent or meeting sides so that one layer may not shift edgewise relative to the other. The same is true with respect to the layers 25 and 26.

Of the layers 27, 28 and 29, the coils of layer 28 will be held in place by the coils of layer 27 and will assist in holding the latter in place and further the coils of layer 28 will be holding the coils of layer 29 against edgewise movement. Additionally the coils of the latter layer, together with the coils of the layer 27, will by the described interengaging relation with the upper and lower surfaces, respectively, of the coils of layer 28 secure such latter coils against edgewise movement.

For the purpose of further description, reference is especially had to Fig. 3 showing four complete coils 50, 51, 52 and 53 and fragments 54, 55, 56 and 57 of four other coils, all of the layer 27. These coils are resting on the separator 43. There it is noted that the coils are packed or positioned so that at least one edge of each coil is against an edge of another coil. That is, all the coils of the layers are packed close together so that each coil is in engagement on as many sides as possible with adjacent coils in each layer (see Fig. 3) the coils at the outer edge of the layer are arranged with the free or outer ends of the chain lengths, comprising the coils, against an edge of another coil of the layer to prevent unwinding. The coils may be somewhat deformed where that gives an advantage in packing as to have them fit into an odd shaped space or the like although in the drawing the coils are shown as rather uniform. Generally, they will be uniform as to the size of the links or as to the coil diameter since as a rule each coil in a layer is made up of the same length of chain and all the links of the chain in the coils of a layer are preferably of the same size.

With this in mind, it is noted in Fig. 3 with respect to the coils 50 and 54, that a portion of the eyes 58 of the outer links of the coil 54 are partially entering between the side arms or bars 16

and 17 of certain outer links 59 of the coil 50. Similarly, portions of the eyes 60 of certain outer links of the coil 55 enter between the side bars 16 and 17 of the links 61 of the coil 52. Also, eyes 62 of certain outer links of the coil 56 enter between the side bars of certain outer links 63 of coil 52 while portions of eyes 64 of certain outer links of the coil 57 enter between side bars of certain outer links 65 of the coil 53. Additionally, portions of eyes 66 of outer links of the coil 53 enter between the side bars of links 67 of coil 52 and the eyes 68 of outer links of the coil 50 enter between the side bars of outer links 69 of the coil 52.

These particular eyes, where the eyes of the outer links of one coil enter between the side bars 16 and 17 of the outer links of the next adjacent coil, are given merely by way of illustration. Specific examples of this interlocking of the outer links of adjacent coils with all four sides of the coil 52 have been pointed out. However, this or similar interlocking takes place between the adjacent edges of all adjacent coils. It is further noted that not only do the eyes of one coil enter into the spaces between the side bars of links of a second coil, it is equally true that eyes of the second coil enter into the spaces between the side bars 16 and 17 of links of the first mentioned coil.

For example, it is noted that while the eyes 62 of links of the coil 56 enter the spaces between the side bars of the links 63 of the coil 52, it is likewise true that the eyes 70 of links of the coil 52 enter the spaces between the side bars of the links 71 of the coil 56. Thus, it will be understood that not only are the coils in side-by-side relation with their edges abutting but all these abutting adjacent edge portions of the coils interlock. Thus, a layer of these coils wherein the individual coils are laterally stiff, is itself stiff since the coils are interlocked at their edges. Each layer therefore represents a rather rigid structure.

Above it was pointed out how the irregular or rough upper and lower flat sides of the coils would overlap or interengage with one another so there is no likelihood of edgewise slipping of a coil of one layer on the coil of another layer. Also, it was suggested that the coils immediately on the bottom wall 37 or on or supporting any of the separators 40, 41, 42 and 43, would become slightly embedded in such corrugated or compressible elements. This is suggested in Fig. 9, which is a section through the coil 53. There it will be clearly seen that the lower edges of the side bars 17 of the various links have sunk or become embedded or dug into the corrupated or otherwise compressible separator 43. Thus, the separator assists in holding the chain lengths in their coiled formation and against uncoiling and establishes a relationship between the adjacent lengths and also insures that the coils actually on the separators will not shift edgewise.

When a package is received at its destination, a whole carload of packages may be stored in a relatively small space since they may be piled one on the other and, in addition, through the use of the truck as described, a carload of the packages may be rapidly unloaded. It is not necessary that a man or men carry out of the car individual coils. The packages are all identified through stencil markings or the like (not shown) and thus where the receiver needs certain identified chain lengths of certain size links, he merely opens the package bearing that designation. This will be accomplished by cutting the binders 48 and lifting off the top member 44. Then the workman lifts off the coils of the top layer as they are needed, then those of the second layer, etc. When a separator is reached, it may be lifted off and thrown away or placed in a temporary location, as generally it will later be destroyed by burning or the like. Also, the top member 44, as well as the bottom member 36 and the pallet 30, are preferably all of paper and so may be destroyed by burning.

It is the present purpose that all these parts, while being of considerable strength, shall be of inexpensive construction whereby there is no occasion for the receiver of the package burdening himself with storing these parts with the idea of later returning them to the chain manufacturer. It is desired that they be destroyed and that they be yet so inexpensive that it would not be commercially advisable to return them.

While the invention is shown and described with particular reference to the shipping of lengths of detachable steel sprocket chain in coil formation, it will be understood that the package is adapted for the shipping of other goods or articles and especially goods or articles having either upper or lower or both upper and lower surfaces rough or irregular so that such surfaces will interlock after the articles are stacked upon themselves or will sink or bite into compressible separators if each layer of the articles has a separator above and below it. Thus, it will be appreciated with reference to Fig. 2, that each of the layers shown may be separated from each of the other layers by a separator or that separators may be employed only between every other layer or every three layers or the like. This latter purpose seems to particularly lend itself to the packaging of the coils of the detachable steel sprocket chain shown.

Having thus set forth the nature of my invention, what I claim is:

1. In a shipping package for sprocket chains, a pallet, a shallow box-like device including a bottom wall on and substantially co-extensive with the upper side of said pallet and short upstanding side walls, a layer of coils on said bottom, said coils each formed of a length of sprocket chain wound upon itself into a flat coil with the outer convolutions of each coil against the next innermost convolutions thereof, said coils of the layer arranged with their outer edges in engagement whereby each coil braces another laterally, said chains each comprised of links each consisting of a pair of side bars, an end bar and an eye of which the latter extends laterally of the link at one end thereof and is of a length to be located between the side bars thereof and of which each eye of one link hingedly receives the end bar of the next adjacent link, said coils in said lateral engagement having at least one eye of one link of each coil partly entering between the side arms of a link of another coil whereby the coils are interlocked against relative lateral movement, a separator of compressible material over said layer of coils, a second layer of coils of chain on said separator, a second device over said last layer of coils and including a top wall across said layer of coils and short depending side walls, binders extending under the top wall of said pallet and then about said devices and binding said parts together and to the pallet with the coils of chain in place between said devices, and the bottom wall of said first device and said separator of compressible material whereby the edges of at least some links of each coil dig into such bottom wall and said separator and the coils are held against edgewise

relative movement in the package and against uncoiling.

2. In a shipping package, a bottom device, layers of goods to be shipped, the lowermost of said layers on said bottom device, said goods comprising flat coils each consisting of a length of sprocket chain, said coils arranged in side-by-side relation in the layers with the adjacent edges of the coils of a layer abutting and thereby holding one another against edgewise movement, separators between certain of said layers, a top device on the uppermost of said layers, binders about said devices and securing them in position with the layers squeezed between them whereby the coils of an upper layer are held against movement upwardly with respect to the coils of a lower layer, said coils having irregular upper and lower sides whereby when the layers of coils are disposed immediately on one another the upper sides of the coils of the lower layers and the lower sides of the coils of the upper layers interengage securing the coils of the layers against relative edgewise sliding movement one on the other, and said bottom device and said separators of compressible material whereby said coils immediately on them dig into said bottom device and said separators and are thereby additionally held against independent edgewise movements.

3. In a shipping package, a bottom device, layers of goods to be shipped, the lowermost of said layers on said bottom device, said goods comprising flat coils each consisting of a length of sprocket chain, said coils arranged in side-by-side relation in the layers with the adjacent edges of the coils of a layer abutting and thereby holding one another against edgewise movement, separators between said layers, a top device on the uppermost of said layers, binders about said devices and securing them in position with the layers squeezed between them whereby the coils of an upper layer are held against movement upwardly with respect to the coils of a lower layer, said layers having irregular lower sides, and said bottom device and said separators being of compressible material whereby said coils are dug into said bottom device and said separators and are thereby held against edgewise movements.

4. In a shipping package, a bottom device, layers of goods to be shipped, the lowermost of said layers on said bottom device, said goods comprising flat coils each consisting of a length of sprocket chain, said coils arranged in side-by-side relation in the layers with the adjacent edges of the coils of a layer abutting and thereby holding one another against edgewise movement, a top device on the uppermost of said layers, binders about said devices and securing them in position with the layers squeezed between them whereby the coils of an upper layer are held against movement upwardly with respect to the coils of a lower layer, said coils having irregular upper and lower sides whereby when the layers of coils are disposed immediately on one another the upper sides of the coils of the lower layer and the lower sides of the coils of an upper layer interengage securing the coils of the layers against relative edgewise sliding movement one on the other, and said bottom and top devices being of compressible material into which the edges of the links of the coils are dug whereby the coils of the layers engaging said devices are held against edgewise movement by said devices.

5. In a shipping package, a strong light weight pallet including an upper member, a bottom device on said pallet and including a bottom wall of compressible material substantially coextensive with said upper member, a layer of flat coils each comprising a length of sprocket chain on said bottom wall, said coils arranged in side-by-side relation in said layer with their adjacent edges abutting, a top device over said coils, and binders passing under the upper member of said pallet and up the sides of said package and over said top device and securing all said parts together with the coils squeezed between the devices.

6. A shipping package comprising two layers of coils of sprocket chain, a separator between said layers, said separator of compressible material, said coils having the edges of their links adjacent said separator digging into the same whereby the separator retains the coils against edgewise relative movement, and binding means squeezing the coils of the layers toward one another and against opposite sides of said separator.

7. A shipping package comprising two layers of coils of sprocket chain, a separator between said layers, said separator of compressible material, said coils having the edges of their links adjacent said separator digging into the same whereby the separator retains the coils against edgewise relative movement, said coils of the respective layers in side-by-side relation with at least one eye of a link of each coil entering between the side arms or bars of a link of an adjacent coil, and means binding said coils and separator together.

8. In a shipping package, a strong light weight pallet including an upper member, a bottom device on said pallet and including a bottom wall of compressible material substantially coextensive with said upper member, two flat layers of flat sided coils each comprising a length of sprocket chain, said layers arranged one directly on the other whereby the lower edges of the links of the coils of the upper layer interengage with the upper edges of the links of the coils of the lower layer, said lower layer of coils on said bottom wall, a top device over said coils, and binders passing under the upper member of said pallet and up the sides of said package and over said top device and squeezing said device against the outer sides of the respective layers and the latter against one another and thereby securing all said parts together.

9. In a shipping package, a strong light weight pallet including an upper member, a bottom device on said pallet and including a bottom wall of compressible material substantially coextensive with said upper member, two layers of coils of sprocket chain, a separator between said layers, said separator of compressible material, said coils having the edges of their links adjacent said separator digging into the same whereby the separator retains the coils against edgewise relative movement, said lower layer of coils on said bottom wall, a top device over said coils and including a top wall of compressible material, and binders passing under the upper member of said pallet and up the sides of said package and over said top device and squeezing said device against the upper and lower sides of the respective layers and the latter against the respective sides of said separator and thereby securing all said parts together.

10. In a shipping package, a strong light weight pallet including an upper member, a bottom device on said pallet and including a bottom wall of compressible material against and substantially coextensive with said upper member, a layer of flat coils each comprising a length of sprocket chain on said bottom wall, said coils arranged in

side-by-side relation in said layer, each coil of said layer having at least the laterally extending eye of one link entering between the side arms or bars of a link of an adjacent coil of said layer, a top device over said coils, and binders passing under the upper member of said pallet and up the sides of said package and over said top device and securing all of said parts together with the layer of coils squeezed between the devices.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,458,172	Dull	June 12, 1923
1,498,245	Le May	June 17, 1924
1,574,904	Kucera	Mar. 2, 1926
1,588,121	Markert	June 8, 1926
1,850,714	Gaylord	Mar. 22, 1932
1,917,886	Hogan	July 11, 1933
2,129,488	Bomberger	Sept. 6, 1938
2,444,326	Baker et al.	June 29, 1948