May 14, 1940. E. AUGENSTEIN 2,200,828

ORNAMENTAL CHAIN AND METHOD OF MAKING

Filed Aug. 4, 1938

FIG. 1.

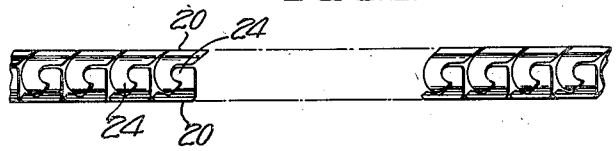


FIG. 2.

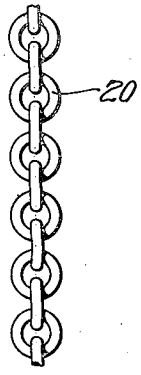


FIG. 3.

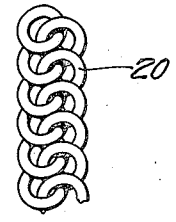


FIG. 4.

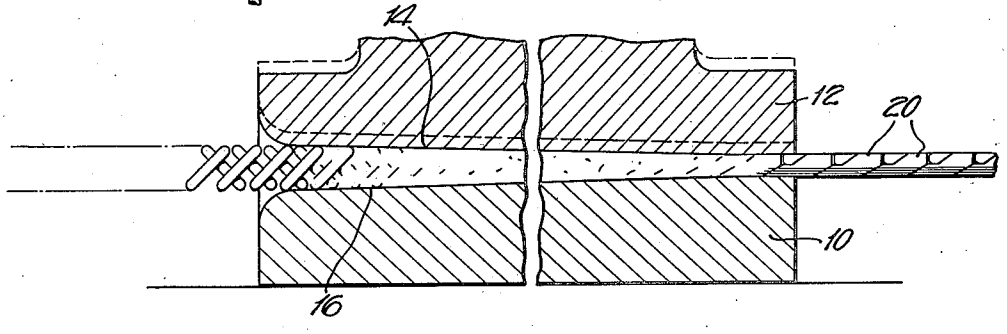
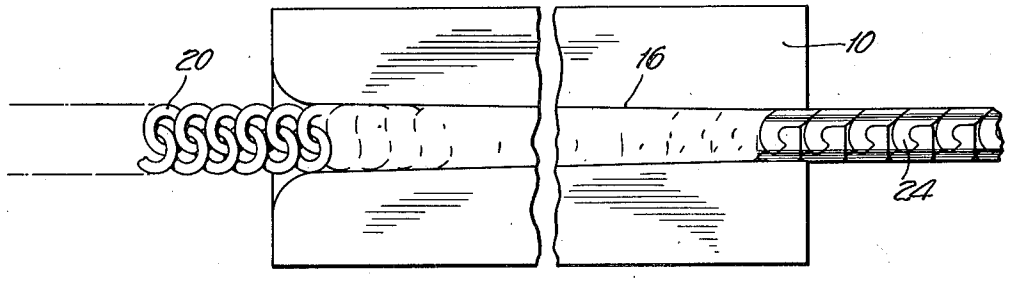


FIG. 5.



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WITNESS:

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ORNAMENTAL CHAIN AND METHOD OF MAKING

Eugen Augenstein, Pforzheim, Germany, assignor to Universal Chain Co., Inc., Maplewood, N. J., a corporation of New Jersey

Application August 4, 1938, Serial No. 223,033

5 Claims. (Cl. 59—35)

This invention relates to new and useful improvements in chains and methods of making chains and more particularly it pertains to chains of the ornamental type such as employed for personal wear.

It is an object of this invention to provide a new and novel method of forming ornamental chains whereby such chains may be constructed in various cross-sectional shapes and forms in designs, which to my knowledge have not heretofore been obtained.

Other features of the invention will become apparent as the nature of the invention is better understood and reference will now be had to the following specification and claims and the accompanying drawing in which,

Figure 1 is a view in elevation illustrating a section of my new and improved chain,

Figure 2 is a view in elevation illustrating a length of ordinary so-called cable chain which constitutes the stock from which my new chain is formed,

Figure 3 is a view in elevation illustrating the first step in the method of manufacture of my improved chain,

Figure 4 is a longitudinal sectional view through a hammering die, the view being of a diagrammatic character and illustrating the chain in edge elevation, and;

Figure 5 is a plan view of the lower section of the hammering die, illustrating the chain in plan view therein.

In forming my new chain by my improved method hereinafter described, I start with an ordinary cable chain such as illustrated in Figure 2, of the drawing. This chain is twisted to a position where its links overlie one another in staggered relation as illustrated in Figure 3. In this twisted condition the chain takes on the general appearance of a curb chain. However, in the twisting of the cable chain to position its links as illustrated in Figure 3, it is to be understood that, although the chain is tightly twisted, it is not twisted to the extent where any of its links are disorted or changed in shape as is true of a finished curb chain.

The twisted chain as illustrated in Figure 3 is passed intermittently through a suitable hammering die which subjects the chain intermittently and successively to a plurality of separate operations, which will be hereinafter described.

In Figure 4 I have shown, somewhat diagrammatically, a die by which the desired operations upon the twisted chain of Figure 3 may be carried out to produce a so-called flat chain. The die comprises a stationary member 10 and a movable member 12, the extent of movement of said member being designated in dotted lines in said Figure 4. The die has an operating face 14 which engages one side of the chain in its passage through the die, the said face 14 cooperating with the face 16 of the stationary member 10 of the die.

The die has its two faces 14 and 16 divided into a plurality of sections for forming successive operations upon a chain in its passage through the die and a suitable feeding mechanism, not shown, is employed which feeds the chain through the die intermittently in steps so that each section of the chain will be moved to the next succeeding section of the die faces after an operation upon the chain has been performed, in order that the several sections of the die faces may perform their operations upon the chain. Thus it will become apparent that as the chain is passed intermittently through the die, it will be successively operated upon by the several sections of the faces of the die in such a manner that the several operations will have been performed to complete the chain when it has been passed through the die.

A cable chain such as illustrated in Figure 2, comprises a plurality of interconnected links 20 of circular form.

In carrying out my method, I take such a chain as illustrated in Figure 2 and twist the same about its longitudinal axis until the links assume an overlying relation such as illustrated in Figure 3. The cable chain is tightly twisted but is not sufficiently twisted to distort any of its links and if the chain of Figure 3 were allowed to untwist, it would be found that the links thereof are of true circular form as illustrated in Figure 2.

The chain in its tightly twisted condition is then passed into the die and in the first section thereof, the chain is flattened, distorting the links and producing a rigid structure comprised of a plurality of interconnected overlying links. As the flattened chain is passed through the die, it is further shaped, depending upon the contour of the sections of the die faces. In the present instance, the chain illustrated is of flat form although I have in actual practice constructed the chain in other cross-sectional shapes or forms.

After the chain has passed completely through the die, it emerges therefrom in the form of a rigid structure, after which it is annealed in the usual manner of treating chains of this character, after which the chain is broken down or, as

is commonly described in the art, "limbered," in the ordinary manner to form a flexible structure thereof.

The chain in its finished condition is shown in Figure 1, and by examination of said figure, it will be apparent that the links **20** are formed with a plurality of hooked extensions **24**. Figure 1 illustrates one side of the chain and the opposite side thereof is of the same construction, thus providing two hooked extensions **24** in each link.

As illustrated in Figure 1, the links **20** in the finished chain are arranged in overlying or superimposed, interconnected relation and the adjacent or corresponding hooked extensions **24** of the superimposed links having interlocking engagement with each other.

From the foregoing, it will be apparent that the present invention not only provides a new and improved method of manufacturing ornamental chains, but likewise produces a new and novel type of ornamental chain never to my knowledge before produced.

While I have herein illustrated a so-called flat chain, I have in actual practice constructed chains in other cross-sectional forms. However, I find that in all such forms in which I have constructed the chain, the interlocking hooked extensions **24** are present at diametrically opposite points of the finished product.

Having thus described the invention, what is claimed as new is:

1. The method of making ornamental chains which consists in tightly twisting a cable chain to position its links in overlying relation, subjecting the cable chain in its twisted form, to a plurality of successive hammering operations to form a rigid structure of the twisted cable chain of the desired cross-sectional form, and subsequently limbering the chain to form a flexible structure thereof.

2. The method of making ornamental chains which consists in tightly twisting a cable chain to position its links in overlying relation but without distortion of the links, subjecting said twisted chain to a series of hammering operations to distort the links thereof and bind them together into a rigid structure, and subsequently limbering the rigid structure to form a flexible structure thereof.

3. The method of making ornamental chains which consists in tightly twisting a cable chain to position its links in overlying relation but without distortion of said links, hammering the chain in its tightly twisted condition to flatten the same by distortion of the links thereby to form a rigid structure, further hammering the rigid structure to produce the desired cross-sectional shape thereof, and subsequently limbering the chain to form a flexible structure thereof.

4. The method of making ornamental chains which consists in tightly twisting a cable chain to position its links in overlying relation but without distortion of said links, and passing said twisted cable chain in intermittent steps through a hammering die to flatten said twisted chain and form the same into a rigid structure of predetermined cross-sectional form, and subsequently limbering the rigid structure to form a flexible chain therefrom.

5. The method of making ornamental chains which consists in tightly twisting a cable chain to position its links in overlying relation but without distortion of said links and passing said twisted cable chain in successive steps through a single hammering die to first flatten the twisted cable chain and form the same into a rigid structure and finally through a plurality of successive operations in the same die, bringing said rigid structure to a predetermined cross-sectional form without destroying its rigidity and subsequently limbering said rigid structure to form a flexible ornamental chain therefrom.

EUGEN AUGENSTEIN.