April 14, 1953 G. J. FRANCAR 2,634,774

METHOD OF RECONSTRUCTING UNUSABLE BOWLING PINS

Original Filed Aug. 21, 1947 2 SHEETS—SHEET 1

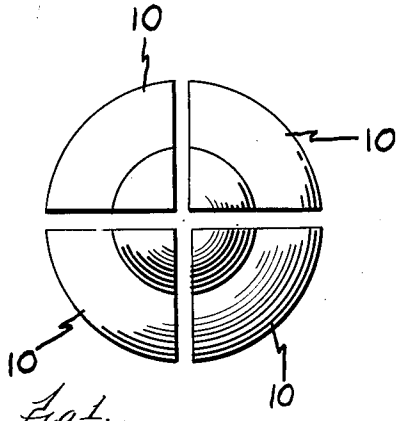


Fig. 1.

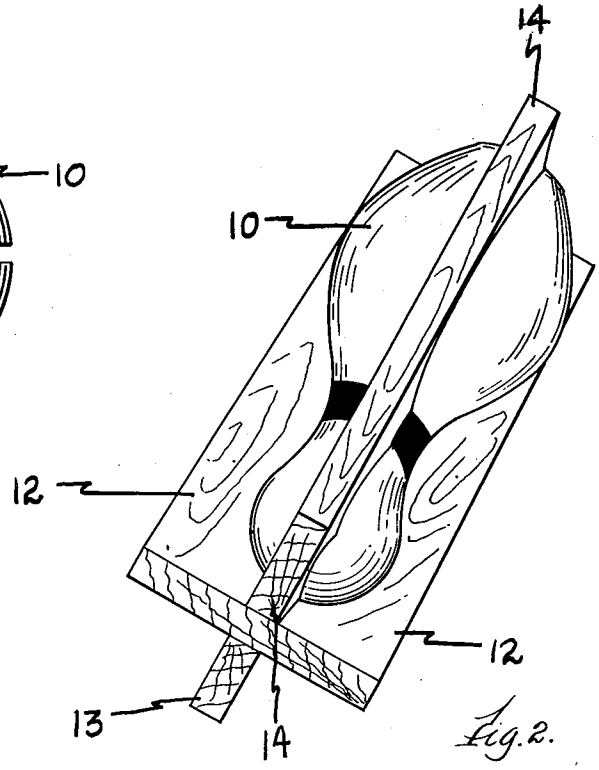


Fig. 2.

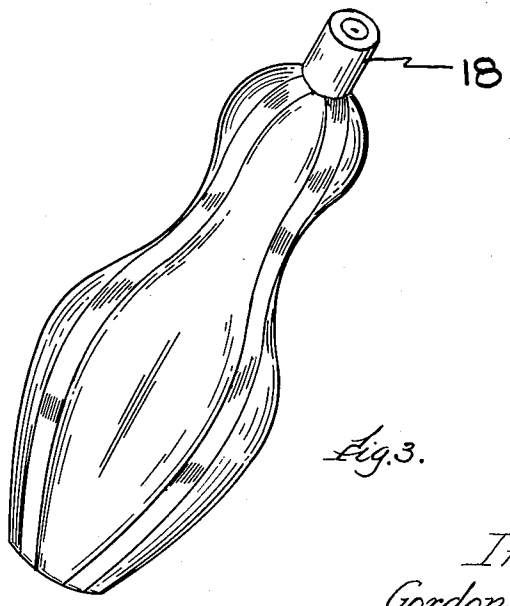


Fig. 3.

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METHOD OF RECONSTRUCTING UNUSABLE BOWLING PINS

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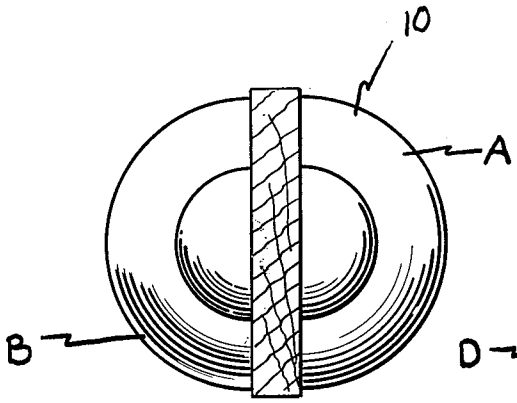


Fig 4.

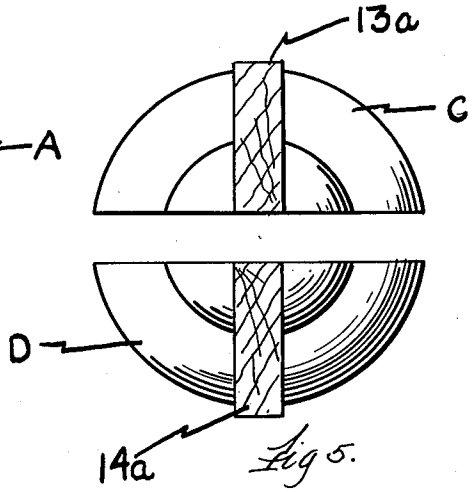


Fig 5.

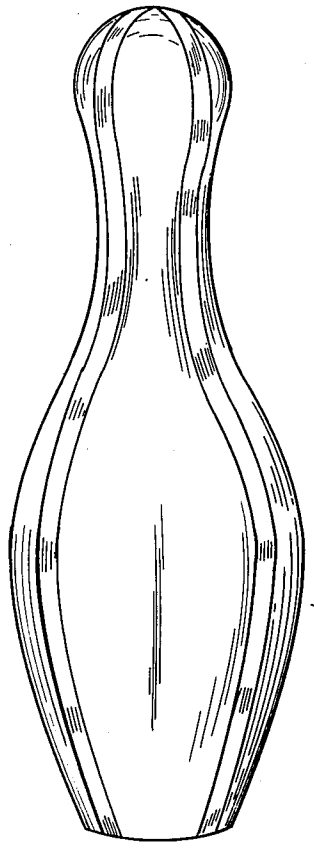


Fig. 7.

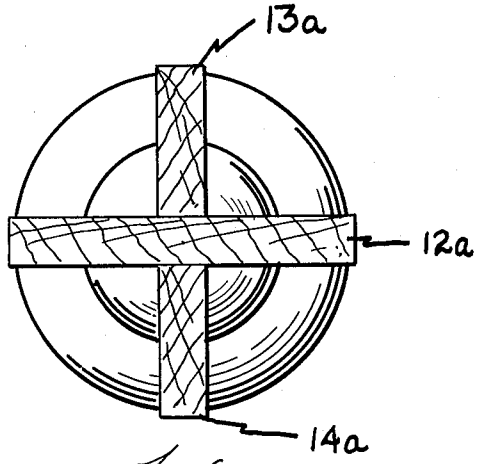


Fig. 6.

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METHOD OF RECONSTRUCTING UNUSABLE BOWLING PINS

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Original application August 21, 1947, Serial No. 769,907. Divided and this application June 16, 1949, Serial No. 99,452

3 Claims. (Cl. 144—309)

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My invention relates to a new and novel method of repairing, renewing and reconstructing damaged bowling pins.

This application is a division of a co-pending application and is filed as a result of a requirement for division in my co-pending application, Serial No. 769,907, now abandoned.

It is an important object of my invention to provide a much needed means for cheaply and inexpensively repairing and renewing bowling pins which have become damaged along the surface of the main body portions and along the necks due to splitting, chipping or pitting, brought about by repeated impacts with bowling balls or with bowling alleys. In numerous instances, such chips and cracks are not of great depth, though they become so numerous that the pins become inaccurate and bowlers refuse to use same. As such pins are usually made of hard maple, it is understandable that they are relatively expensive, and the cost of replacement of damaged pins is a material factor in bowling alley operation. Another factor is that replacements are difficult to procure in many instances, and delivery of pins is frequently long delayed with resultant and obvious undesirable effects.

It is an object of my invention to provide a means and method for renewing, repairing and reconstructing damaged bowling pins which utilizes the old and discarded pins, as the major source of material; and it will be seen that by employing my novel method acceptable pins are produced cheaply and quickly.

Other and further objects of my invention will become apparent from the following description and appended claims, reference being made to the accompanying drawings and numerals of reference thereon, it being understood that only limited of the possible variations of the concept herein embraced are described.

On the drawings:

Fig. 1 is an end view of a damaged pin which has been sawed into four longitudinal segments of substantially equal and uniform size.

Fig. 2 is a perspective view of two quarters of a damaged and quartered pin glued into the corners formed by three slabs of wood in perpendicular relation to each other.

Fig. 3 is an elevational view of a repaired bowling pin after the surplus outside parts of the wood slabs have been cut away and trimmed down in a lathe to the standard size of the conventional form of pin, tho before removal of the end stud which provides a convenient means for mounting one end of the pin in a lathe spindle.

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Fig. 4 is an end view illustrating two half portions of a damaged pin secured on opposite faces of a wood slab.

Fig. 5 is an end view of the combined unit of Fig. 4 after same has been bi-sected longitudinally so that four quarters of the pin are formed.

Fig. 6 is an end view illustrating the two half elements illustrated in Fig. 5 glued to opposite faces of a second slab respectively.

Fig. 7 is an elevation of the reconstructed pin after the exterior and surplus outside parts of the wood slab and damaged pin have been cut away and trimmed down on a lathe.

Referring to the drawings, numeral 10 represents a main body portion of a bowling pin whose surface has been dented, cracked, chipped or damaged.

In one of the modifications of my method the pin is first calibrated and marked so that it may then be cut, on a suitable power saw by making perpendicular, length-wise cuts, each of which bi-sects the pin and passes through the longitudinal axis of the pin so as to form at least four substantially equal quarters or segments each of which is the full length of the pin. The two faces of each segment, being preferably perpendicular to each other, are made smooth in any suitable manner by sandpapering or by the use of equivalent means.

A suitably shaped flat maple board or slab 12 which may be of a width greater than the greatest diameter of a new pin and preferably having squared off ends and preferably of not less than approximately one-half inch in thickness has joined to its opposite flat faces by glue or cement two slabs or strips of hard wood 13 and 14 which are also preferably of hard maple. Slabs 13 and 14 are joined perpendicular to slab 12 substantially half way from the side edges of said slab, and said slabs are of such width that when so joined to slab 12, the resulting unit will be of cross shape with wings perpendicular to each other. The length of slabs 12, 13 and 14 is preferably such that they will be longer by at least one-half inch than the standard bowling pin. It will be seen that four elongated right angles are formed as a result of the above.

I then apply a suitable glue or cement to the cut faces of each of the segments of pin 10 and press each of the cut segments into the four corners of the above formed cross member in corresponding positions, and in the mounted positions, as illustrated in Fig. 2, I clamp the segments to retain same until the glue has completely and fully dried.

It will be understood that numerous variations of this method may be employed by inserting longitudinal wood slabs so that the all over circumference of the pin is proportionately enlarged so that when the same is trimmed down to the proper size of pin the damaged surface of the pin will be trimmed away.

One alternative method is illustrated in Figs. 4 and 5, and it will be seen that the pin 10 is initially bi-sected length-wise into equal halves A and B as illustrated in Fig. 4 and then after appropriately smoothing the cut faces, the respective halves A and B of the cut pin are mounted on opposite sides of a hard wood slab, such as hard maple, by gluing or cementing and in this position they are clamped until the glue has fully dried. Thereupon I bi-sect the combined unit illustrated in Fig. 4 length-wise so that two halves C and D are formed and so that the hard wood maple slab illustrated in Fig. 4 is in a like manner transversely divided into two slabs 13*a* and 14*a*, as illustrated in Fig. 5. After appropriately smoothing the cut faces of segments C and D, I apply glue or cement and mount and join the segments C and D to the opposite faces of the wood slab 12*a*. Sections C and D are then clamped to maple slab 12*a* and permitted to dry.

It will be understood that by following the steps of either of the two modified forms of the method herein before described, the resulting unit will be the same and will appear as illustrated in Figs. 2 and 6. After this stage in the reconstruction of the pins is reached, the portions protruding beyond the circumference of the quarters of the segmented pin of slabs 13*a*, 14*a* and 12*a* or of slabs 12, 13 and 14 (as the case may be), are thereupon preferably removed with a power band saw, the end portions of said slabs beyond the neck section being allowed to remain. The resulting wood body which is substantially larger than a standard bowling pin, tho substantially the same shape, is mounted in a lathe with the spindle point in the center of the extended part or plug 18 and the opposite spindle point in the center of the substantially flat bottom face. Such body or unit is trimmed down gradually with the use of suitable lathe cutting tools to a size and shape corresponding to the size and shape of a standard bowling pin. The resulting pin with the end spindle plug 18 is illustrated in Fig. 3. The plug 18 on the neck is then removed by cutting and grinding so that the neck is the same as that of the original pin. It will be appreciated that plug 18 may be formed from the extension of one or more of the wood slabs which are allowed to remain subsequent to the preliminary removal of excessive wood slab extensions hereinbefore described.

As many changes could be made in the above construction, and as many apparently widely different embodiments of my invention within the scope of the claims could be constructed without departing from the spirit and scope thereof,

it is intended that all matter contained in the accompanying specification shall be interpreted as illustrative and not in a limiting sense.

I claim:

1. A method of renewing damaged bowling pins comprising bi-secting the damaged pin longitudinally; gluing the two half sections formed by said bi-section upon opposite faces of a wood slab; bi-secting longitudinally the unit consisting of said slab and said half sections; thence securing by gluing or the like said last mentioned half sections upon opposite sides of a second wood slab; thence removing the projecting parts of said slabs and cutting away the exterior parts of said pin sections and of said slabs to provide a resulting pin of size and shape corresponding to a new bowling pin.

2. In a method of reconstructing bowling pins or the like, in combination, the steps of dividing a pin longitudinally into substantially symmetrical sections; cementing said sections on opposite faces of an elongated wood slab having a length at least as great as the height of a standard bowling pin; dividing the unit including said slab and sections longitudinally into substantially symmetrical sections; cementing said last mentioned sections on opposite faces of a second elongated wood slab having a length at least as great as the height of a standard bowling pin; and cutting and trimming away the outer portions of the slabs and of said sections to a shape and size substantially corresponding to the shape and size of a standard bowling pin.

3. A method of constructing bowling pins from damaged bowling pins, the combination of steps comprising separating an old pin into longitudinal and symmetrical sections; interposing between and affixing to said sections a slab member having substantially the same density as that of the damaged pin; separating the composite unit comprising said slab member and sections into longitudinal and symmetrical sections; interposing between and affixing to said last mentioned sections a second slab member having substantially the same density as that of the damaged pin to provide a structure having a height and diameter not less than a standard bowling pin; and removing excess outer portions of the structure to provide a bowling pin of a size and shape substantially equal to a standard bowling pin.

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