

October 6, 2009

Hello everyone,

Daddy would have celebrated his 100th birthday this October. To commemorate this event I've enclosed some documents I've found describing some of his inventions. You may know of more and wish to share those with us.

The earliest was for a fishing lure he designed. I think it was in the later 1930's or early 1940's.

Next is his patent for a Locating fixture. The patent was filed December 2, 1942 but it was approved until 1945.

His patent for the cutting tool, called a biscuit cutter, was approved March 25, 1975.

The last item was designed by daddy, but is a posting on the website for Falls City Machine Technology. You might enjoy what they have written about his business practices.

Hope you find these items interesting.

Love,

A handwritten signature in cursive script that reads "Nate".

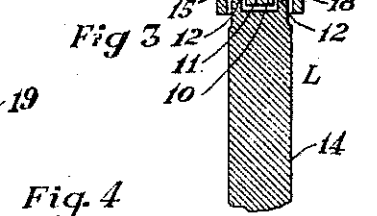
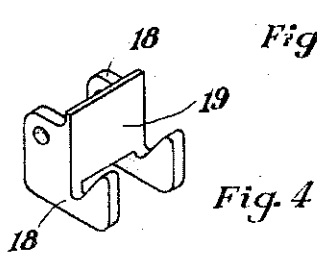
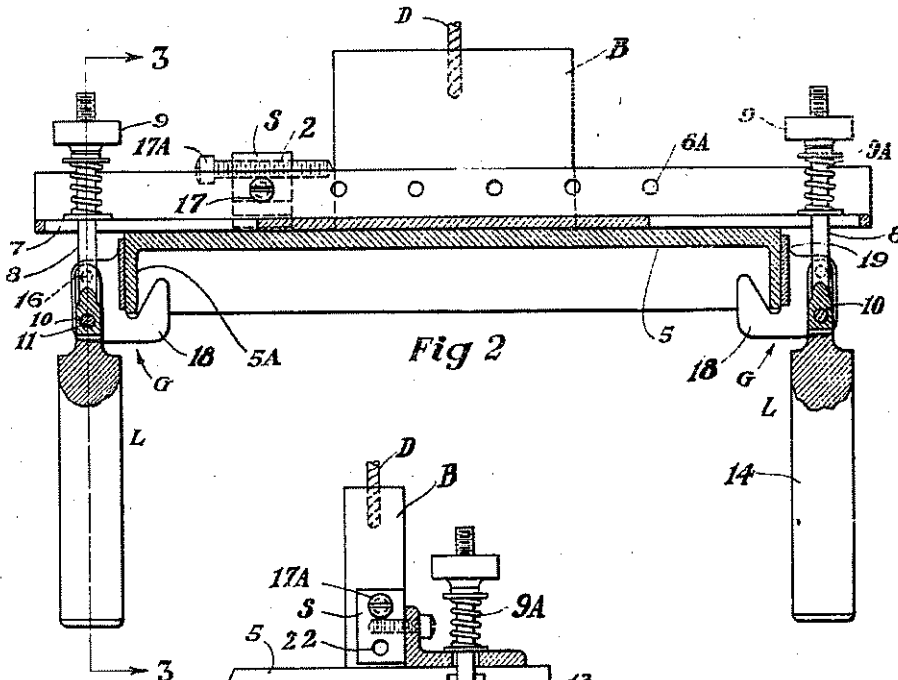
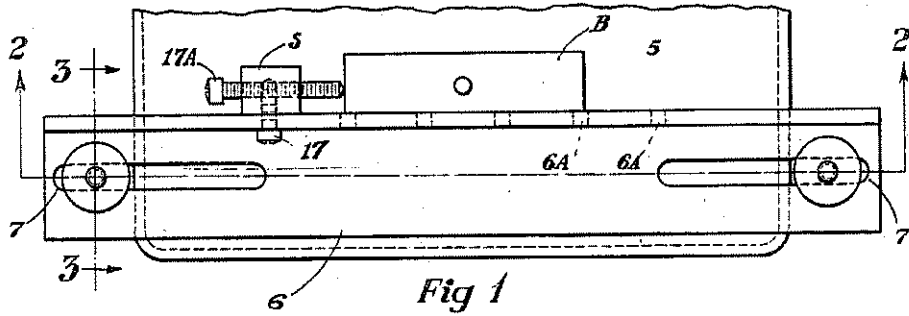
April 24, 1945.

C. D. HARGADON

2,374,286

LOCATING FIXTURE

Filed Dec. 2, 1942



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CHARLES D. HARGADON
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UNITED STATES PATENT OFFICE

2,374,286

LOCATING FIXTURE

Charles D. Hargadon, St. Matthews, near
Louisville, Ky.

Application December 2, 1942, Serial No. 467,671

5 Claims. (Cl. 77-63)

This invention relates to a special machine tool device which I designed as a locating fixture for locating and/or retaining objects of manufacture in position upon the work face or table of a machine while being operated upon by the cutting tool thereof.

One of the objects of the invention is to provide a locating fixture, complete as a unit, having all of the elements and instrumentalities for attachment to a machine tool without requiring the use of auxiliary, external or cooperating tools or objects beyond the use of human hands.

Another object of the invention is to provide attaching means that will permit the instantaneous attachment or detachment of my locating fixture.

A further object is to provide a locating fixture having a bar equipped with securing means of the simplest design for utility and economical manufacture.

These and further objects will be apparent from the following description when considered in connection with the accompanying drawing in which a preferred embodiment of the invention is illustrated.

Referring to the drawing,

Figure 1 is a plan view of a fragment of the table of a drill press equipped with my locating fixture embodying the invention disclosed herein.

Figure 2 is a front elevation of Figure 1.

Figure 3 is an end elevation of a fragment of Figure 1 and a vertical section along line 3, 3 of Figure 2.

Figure 4 is a detail in perspective on an enlarged scale of the hooked jaw or gripper for attachment to the vertical depending flange of the table top shown in Figures 2 and 3.

For the purpose of illustration, my improved locating fixture is shown in simple form and mounted in operating relation on and attached to the end area of the top of a rectangular drill press table designated by the numeral 5.

A locating bar 6 of true section such as extruded or machined right angular steel form constitutes the main member. Since each end thereof is equipped with duplicate "overthrow" apparatus, the description of one of same is understood to apply to both. Each end of bar 6 is formed with a longitudinal slot 7 for receiving a vertically disposed bolt 8 provided with threads at one end for receiving adjustable stop nut 9 and an eye 10 at the other end for engagement with the overthrow operating and locking means. The word "overthrow" is employed to designate a toggle or over center action for applying longitudinal

force to the bolts for securing the bar to the drill press table.

Eye 10 provides a bearing for cross bearing pin or shaft 11, which is anchored in holes 12 positioned adjacent the inner ends of arms 13 that project from handle 14 of a lever, designated generally as L. The upper end of this particular lever L has been bifurcated to form a yoke. Adjacent each outer end of arms 13 is a bearing 15 for pin 16, the latter being anchored in arms 18 of jaw member, shown in individually in Figure 4 and designated generally as G in Figure 2.

Jaw G is preferably integrally formed with arms 18 projecting from base 19 in the form of a yoke. This yoke is mounted on bearing pins 15 so that the overthrow lever L can be freely oscillated over or through the vertical center line 3, 3 of Figure 2.

To apply my locating fixture to a given table top, nuts 9 are employed to adjust bolts 8 to the proper length in order that the jaws can grip the depending flange 5A of top 5 when levers L are operated inwardly for clamping or securing bar 6 to top 5 in operating or locked relation thereto. When both levers are rotated outwardly through said center line, the bar will be released from the table. Thus, it will be perceived that the bar can be placed at any desired location and instantaneously secured for the uses designated herein. It should be noted that a spring 9A, or other elastic member such as rubber, may be employed between the nuts and top face of bar 6 to provide a cushioning effect and to yieldingly rather than positively secure the bar to the table. Obviously, elastic member 9A assists the off-center operation and also compensates for minor variations in the cooperating members.

To provide additional facilities for expeditiously locating objects on a table in succession when the same machining operation on each object is contemplated, an adjustable stop or head indicated generally by S, is provided to cooperate with bar 6.

In Figures 1, 2 and 3 rectangular blocks B has been employed to represent an object located by the incident instrumentalities.

A series of equidistant transverse holes 6A in bar 6 receive screw 17. This screw cooperates with a threaded hole in head S for securing the same at a selected location. Locating screw 17A extends through one of the threaded holes in head S, the one in which screw 17A is lodged, or hole 22, to provide a stop for objects to be located and operated upon. Thus, after the locating apparatus has been set as explained,

each block or other object to be operated upon can be located and drilled with drill D, with substantially the same speed and accuracy as though a special drilling "jig" or fixture had been provided. Obviously, the locating apparatus can be attached to a machine tool and adjusted for a given operation, reset for another operation or removed from the machine tool with a minimum expenditure of time; thus, accomplishing the objects of this invention adverted to at the outset of this specification.

It will be understood that I desire to comprehend within my invention such modification as may be clearly embraced within the scope of my claims and invention.

Having thus fully described my invention, what I claim as new and desire to secure by Letters Patent, is:

1. A locating fixture for attachment to a table top comprising a main bar having a vertical face against which an object can be located; a bolt depending from each end of said bar; a tensioning member disposed between said bolt and said bar; each of said bolts having an operating lever pivoted thereto; a clamping jaw pivoted to said lever and adapted for securing and releasing said bar from said table, said tensioning member so arranged as to exert tension upon the operating lever to hold it in an overthrown position and hold the jaw in securing position.

2. In a locating fixture adapted for attachment to a table top of a machine tool; said fixture comprising a main bar provided with a face for engagement with the top of said table and a vertical flat face against which an object can be located, and apparatus operatively associated with each end of said bar for securing and releasing the bar from the top surface of said table, each of said apparatuses comprising a jaw clamp for engagement with said top and an overthrow lever articulated to a member depending from one of said ends on a given axis and articulated to said clamp on another axis and adapted to operate said clamp to secure and release the bar from said table.

3. In a locating fixture adapted for attachment to a flanged table top of a machine tool; said fixture comprising a main bar provided with a face for engagement with the top face of said table and a vertical flat face against which an object contacting said top face can be located, and apparatus operatively associated with each end of said bar and said flange for securing and releasing the bar from the table top, said apparatus comprising a clamp for engagement with said flange and an overthrow lever adapted to operate said clamp for securing to and releasing the bar from said table.

4. A locating fixture for attachment to the top of a table for locating objects thereon comprising in combination a main bar having an adjustable stop cooperating with a vertical face thereof against which an object to be located can rest while resting on said top for receiving a machining operation; and a bolt depending from each end of said bar, each of said bolts having an overthrow lever pivoted to the lower end thereof and each of said levers having a jaw clamping means pivoted thereto for securing to and releasing said bar from said top.

5. In a locating fixture adapted for attachment to a table top of a machine tool; said fixture comprising a main bar provided with a face for engagement with the top face of said table and stop members against which an object contacting said top face can be located, and apparatus operatively associated with each end of said bar for securing and releasing the bar from the table top, said apparatus comprising an operating lever pivoted to a member depending from said bar and a jaw clamp pivoted to said lever for engagement with said top, said operating lever adapted to operate said jaw clamp for securing the bar to said table top, and tensioning means so arranged as to exert tension upon said operating lever so as to hold the jaw clamp and bar in clamped position.

CHARLES D. HARGADON.

- [54] **IMPROVED BISCUIT CUTTER AND METHOD OF MAKING SAME**
- [76] Inventor: **Charles D. Hargadon**, 13803 Shelbyville Rd., U.S. 60, Louisville, Ky. 40223
- [22] Filed: **Nov. 2, 1973**
- [21] Appl. No.: **412,306**
- [52] U.S. Cl. **83/691, 425/298**
- [51] Int. Cl. **B26f 1/14**
- [58] Field of Search **83/620, 687, 691; 425/298, 425/300**

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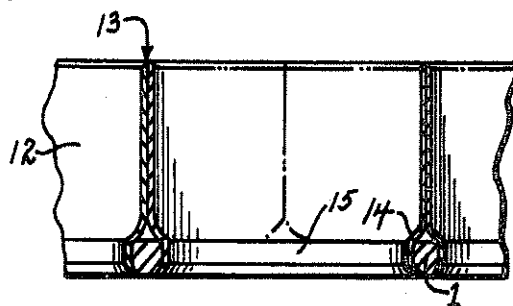
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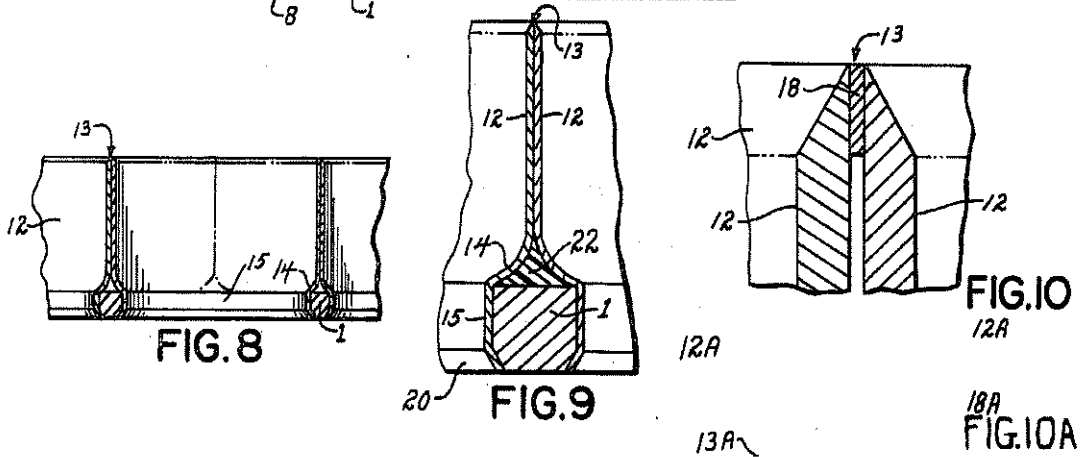
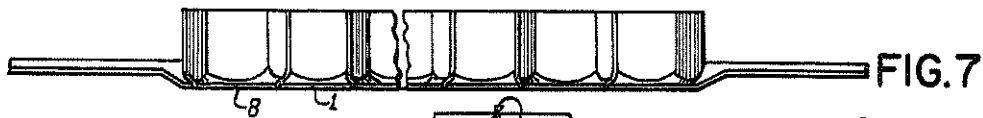
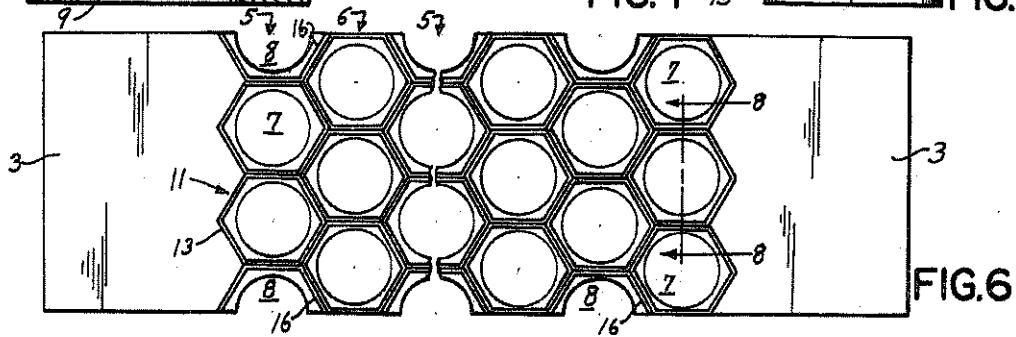
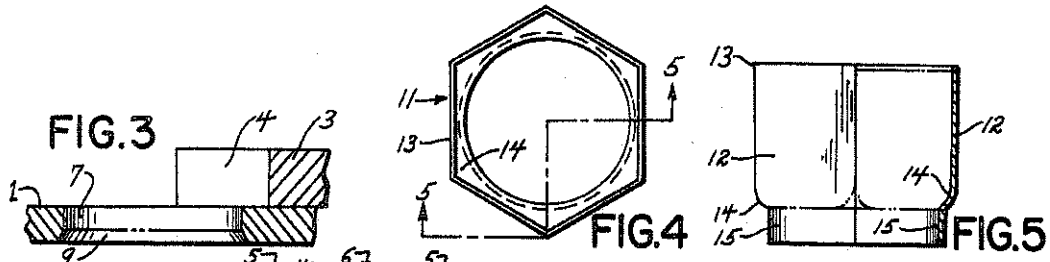
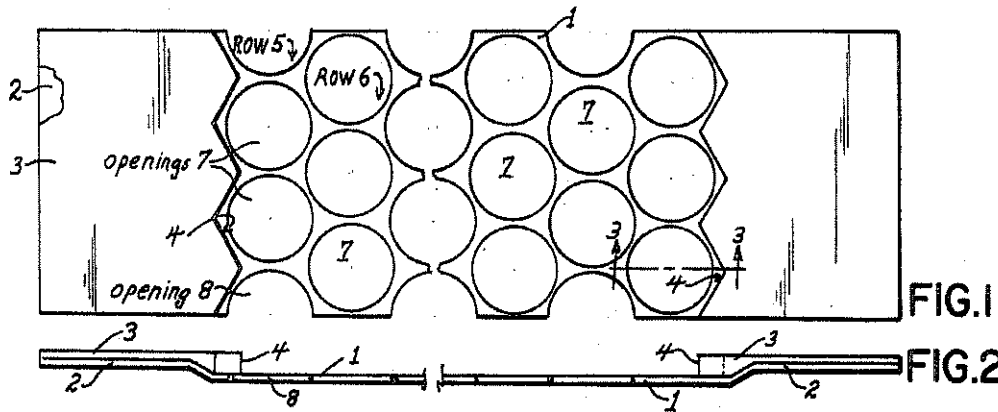
Primary Examiner—Andrew R. Juhasz
 Assistant Examiner—William R. Briggs
 Attorney, Agent, or Firm—Edward M. Steutermann

[57] **ABSTRACT**
 A biscuit cutter having a sheet metal base with long

side edges, relatively short transverse end edges and a multiplicity of uniformly spaced cup-receiving circular holes arranged in parallel transverse rows; and a multiplicity of individual hexagonal cups, one for each hole. The lower end portion of each cup tapers into a bottom circular neck dimensioned to extend snugly through a base hole when the cups are assembled on the base. The hexagonal body of each cup is dimensioned so that, when assembled, the cups nest together with their sides fitting snugly flush against the adjacent sides of adjacent cups in adjacent holes. The hexagonal mouth-forming portions of the sides of the cups are tapered obliquely outward to a cutting edge. The bottom circular end portion of each base opening is chamfered while the bottom circular end portion of each neck is expanded outwardly against the chamfer to secure the neck mechanically to the base. The snugly fitting sides are secured and sealed by silver solder bands along the hexagonal mouths of the cups. The top base surface between the holes and the adjacent surface portions of the cup tapers cooperate to form a system of interconnected passageways which terminate in openings along the peripheral edge of the honeycomb. The mouths of each peripheral opening is closed and sealed with a suitable material, such as a resinous plastic.

10 Claims, 11 Drawing Figures





IMPROVED BISCUIT CUTTER AND METHOD OF MAKING SAME

BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention relates to the biscuit cutting art wherein a uniformly thick sheet of dough is pressed against a honeycomb of cups so that each cup severs a biscuit from the dough and holds that biscuit for subsequent removal and packaging.

2. Description of the Prior Art

One presently used prior art biscuit cutter of the honeycomb type comprises: a cast metal honeycomb characterized by a longitudinal succession of 24 transversely extending rows of hexagonal cups; and a pair of flat and lugs, one at each end of the succession. These rows alternately comprise: one transverse row of three full cups; and another transverse row of two full cups between a pair of half cups, one at each end of such row.

In manufacturing the foregoing honeycomb biscuit cutter, the end lugs and a multiplicity of longitudinally-short metal honey-comb sections are made of cast metal and then secured together. The multiplicity of honeycomb sections comprise: a succession of five identical intermediate sections; and a pair of non-identical end sections. Each intermediate section includes five transversely extending rows, viz: a center row, embracing three full cups; a pair of flanking rows, one on each side of the center row, each flanking row beginning and ending with one-half cup and having two full cups in between; and a pair of vertically-split opposite-end rows, each beginning and ending with one-quarter cup, and having two half cups in between. One end section contains two transversely extending rows including: a three full cup row adjacent the lug section; and a vertically-split row of quarter cups separated by two half cups. The other end section embraces three transversely extending rows comprising: a three full cup center row; a flanking row of two half cups separated by two full cups on the lug side of the center row; and a vertically-split row on the other side of the center row. Each vertically-split row in each of the seven sections presents three transversely spaced vertically arranged end edges projecting longitudinally outward, each being the edge of one half of one side of one hexagonal cup.

These cast sections are assembled into a biscuit cutter by silver soldering the projecting edges of each (end and intermediate) section to the corresponding projecting edges of the section adjacent to it and by bonding the extreme end surfaces of the end sections to the corresponding end lug. Thereafter, the hex bore of each cup is milled at its cutting end by milling one flat wall of one cup and the adjacent flat wall of the adjacent cup at one time. The opposite end portion of the hex bore walls of each cup are unmilled and rough. After milling, the cutting edges of each cup are hand-filed to a sharp edge.

The prior art practice has a number of disadvantages. It requires the manufacture of a casting which takes time and money. It is difficult to perform the silver soldering and milling operations with a high degree of accuracy. The silver solder joints between sections are relatively weak and correspondingly subject to breakage. The rough end portions of the hex bore walls are

difficult to clean. The cutting edges of the cup are readily damaged and their repair is laborious, expensive and often results in the loss of accuracy.

SUMMARY OF THE INVENTION

Objects Of The Invention

The principal object of the invention is to overcome most if not all of the disadvantages of the prior art practice. More particularly, the more important objects are: to provide a method of making honeycombs which is not only easier, cheaper and better to perform but which also renders the bore wall of each cup smooth and easy to clean; to secure the cup together by an easily performed silver soldering operation which insures both strength and accuracy; and to eliminate the hand-filing of the cutting edges and the time and expense required to hand-file.

Other objects are to render the performance of repairs easier, less expensive and accurate and to facilitate honeycomb cleaning.

Statement of the Invention

Substantially all of the objects of this invention are achieved in a honeycomb structure comprising: a flat sheet metal base having a multiplicity of cup-receiving holes, one for each cup, each hole being chamfered at one end; and a multiplicity of individual "honeycomb nestable" sheet metal cups, one for each hole, the preferred form of each cup having a top mouth-end portion, the wall thickness of which tapers "annularly" outward to a knife-like edge, and a bottom end portion tapering into a bottom neck, which is shaped and dimensioned to extend snugly through its base hole when the cups are assembled on the base, the identically shaped bodies of the cups being dimensioned so that, when assembled, the cups nest together with their sides fitting snugly flush against the adjacent sides of adjacent cups in adjacent holes, the bottom end portion of each neck being slightly flared to extend obliquely outward snugly against the chamfer of its base opening so as to clamp the base between flare and taper of the cup and thus secure the cup mechanically and tightly to the base; and a band of silver solder extending along the outer periphery of the mouth end portion of the cups to bond the cups together.

The base of the foregoing structure can be easily, quickly and accurately die cut with relatively little expense once the die is made. Each nestable full cup can be easily and quickly drawn in a series of dies which reduce its "diameter" and increase its depth progressively and accurately until it can be easily and quickly drawn to final size in one final operation which contemporaneously forms its cutting edge portion with a tapered knife-like edge. Each half cup can be easily, quickly and accurately formed by sawing a full cup in half.

Obviously, it is easy to assemble the cups on the base to form the initial honeycomb, to expand the bottom end portion of each cup obliquely outward against the chamfers of the base opening (with or without sealing material interposed between the bottom flare of the cup and the bottom chamfer of its base opening) and thereby quickly and securely anchor the cup to the base, and to provide a sanitary seal along the chamfer. Furthermore, it is easy to heat the cutting end portion of the cups sufficiently to provide a strong and effective silver solder bond between cups without damaging the

knife-like edges of the cups. Finally, if the base end portions, which project outwardly beyond the honeycomb, are not strong and rigid enough to function satisfactorily as lugs, it is easy to build up the strength and rigidity of each lug by bonding one or more layers of sheet metal thereto.

While the invention is broadly applicable to honeycomb nestable cups, i.e. square cups, hexagonal cups, or cups of other nestable shapes, the description hereafter made of the invention will be limited to hexagonal cups simply for the sake of clarity.

BRIEF DESCRIPTION OF THE DRAWINGS

The invention is illustrated in the accompanying drawings wherein:

FIG. 1 is a broken top plan view of a base made in accordance with the present invention;

FIG. 2 is a side edge elevation of FIG. 1;

FIG. 3 is an enlarged section taken along lines 3-3 of FIG. 1;

FIG. 4 is a top plan view of an individual hexagonal cup;

FIG. 5 is a view corresponding to one taken along lines 5-5 of FIG. 4;

FIG. 6 is a broken plan view of a honeycomb with the cups of FIGS. 4-5 assembled on the base of FIGS. 1-3;

FIG. 7 is a side elevational view of the honeycomb of FIG. 6;

FIG. 8 is a section corresponding to one taken along lines 8-8 of FIG. 6;

FIG. 9 is an enlarged fragmentary view showing the manner in which the bottom end of a cup is secured to the base and the openings between the base and adjacent cup tapers are plugged;

FIG. 10 is a somewhat exaggerated enlarged fragmentary view of the cutting end shown in FIG. 9, this view showing the silver solder connection between the mouth end portions of the adjacent side walls of adjacent cups; and

FIG. 10A is a somewhat exaggerated enlarged fragmentary view of the opposite end of a modified form of honeycomb forming cup.

DESCRIPTION OF THE PREFERRED EMBODIMENT

The biscuit cutter illustrated in FIGS. 1-10 comprises a base; and a multiplicity of honeycomb nestable cups of hexagonal shape mounted on the base.

As seen in FIG. 1, the sheet metal base 1 has its opposite flat and portions 2 offset upwardly from the major horizontal plane of the base to provide the base with end lugs. As seen in FIG. 2, each end lug may be strengthened by bonding, to its upper face, an upper metal layer 3 of requisite thickness and shape. Preferably, the inner end edge of the upper layer 3 is serrated as indicated at 4 in FIGS. 1 and 3.

Between end lugs, the base 1 is provided with a multiplicity of uniformly-spaced cup-receiving die-cut holes arranged in parallel transversely extending rows. Proceeding from left to right in FIG. 1, these rows include odd numbered and evenly numbered rows 5 and 6 respectively. While each of these rows could include full circle openings only, the odd numbered row 5 preferably include two full circle openings 7 between two semicircular openings 8 while the evenly numbered rows 6 include three full circle openings 7. The rows 5 could include three or more full circle openings in

which event the rows 6 would include four or more full circle openings. The bottom end portion of each full circular opening 7 and each semi-circular opening 8 is flared outwardly to provide corresponding circular and semi-circular chamfers 9.

The multiplicity of individual hexagonal cups shown includes one full cup 11 (see FIGS. 4 and 5) for each full circular opening 5. Each full cup 11 comprises: a body portion; a tapered portion; and a neck portion. Each body portion 12 preferably is composed of six equal sides accurately forming a true hexagon having an upper end and a lower end. The wall thickness of the upper end of the body 12 provides the cutting end portion of the cup; hence, it tapers annularly outward to a knife-like edge 13 as seen in FIGS. 9 and 10. Its tapered portion 14 tapers inwardly from the lower end of the body portion 12 to a true circular cross-section at its lower end. Its neck portion 15, which is, of true circular shape, depends from the lower end of the tapered portion and is dimensioned to fit snugly within a full circular base opening 7, when the cup is assembled on the base. These hexagonal bodies 12 are dimensioned so that, when assembled on the base 1, they meet to form a honeycomb with their sides fitting snugly flush against the adjacent sides of adjacent cups in adjacent holes.

The multiplicity of individual hexagonal cups also includes a half cup 16 for each semi-circular opening 8. Each half cup preferably is formed by sawing a full cup 11 into one usable 3-sided half; hence, each usable half cup has corresponding body, tapered and neck portions 12, 14 and 15 with a knife-like edge 13 at the cutting end of the body portion 12.

Before the cups are inserted into the base holes, the chamfers 9 may be coated with an adhesive sealant while the peripheries of the bodies 12 may be coated (as seen in FIG. 10) with a silver solder band 18 of suitable width, say one-eighth to one-fourth of an inch more or less. Upon insertion of all cups, the lower end portion of each neck 15 is enlarged, preferably flared as indicated at 20 in FIGS. 8 and 9. Each flare 20 is tightly pressed against the adjacent chamfer 9 of its base opening and the base 1 is tightly clamped between the flare and tapered portion of the cup. Now it is a simple matter to heat the adjacent cutting ends of the adjacent cups sufficiently to cause the silver solder to bond those ends together.

When the cups are fully assembled, secured and bonded, the tapered portions 14 of adjacent cups and the adjacent top surface of the sheet metal base 1 cooperate to provide a network of interconnecting passageways, which terminate in triangular openings along the periphery of the cup assembly or honeycomb. For sanitary reasons, these openings should be plugged in a manner both preventing the existence of dirt-accumulating cracks and crevices and facilitating easy and thorough cleaning. This may be readily accomplished by plugging each opening with a suitable sealing material 22 such, for example, as a suitable synthetic resin or some other suitable plastic material which readily hardens into a firm, solid and closely-fitting plug.

From the foregoing, it will be appreciated that the ultimate honeycomb structure achieves substantially all of the objects stated in the Statement Of Invention. The base 1 can be easily and quickly made at low cost with a very high degree of accuracy. Each cup can be easily

and quickly drawn in a series of dies and ultimately drawn to final size in a highly accurate operation which contemporaneously forms the cutting edge. Obviously it is easy to coat the chamfers, to provide each cup with a silver solder band and to assemble the cups on the base to form the initial honeycomb. It is easy to expand the bottom end portion of each cup obliquely against its chamfer, with or without sealing material on the chamfer, and thereby quickly and securely anchor the cup to the base in a manner providing a sanitary seal along the chamfer. Again it is easy to bond the cups without damaging the knife-like edges. The triangular peripheral openings can be easily and quickly sealed to complete the operation. The resulting product is smooth-walled, hence, easy to clean and to keep clean. If one or more cups are damaged, it is an easy matter to remove and replace each cup accurately within its original position.

While a flat based honeycomb is preferred, the honeycomb may be made in arcuate or cylindrical form for use in a rotary biscuit cutter.

MODIFICATION

In operation of the biscuit cutter shown in FIGS. 1-10, the biscuit-forming dough enters the cutting end of each cup and is removed from the same end. In some biscuit cutters, the dough enters the cutting end and is removed from the opposite or noncutting end. To provide a biscuit cutter of this latter type, the biscuit cutter of FIGS. 1-10 may be modified as indicated in FIG. 10A by omitting the base and the tapered portion and neck of the cups, leaving only the body portion in the form of an open-ended cylinder of hexagonal or other honeycomb nestable cross-section and by securing the peripheries of these cups together in any suitable manner.

Reverting again to the biscuit cutter of FIGS. 1-10, it may be broadly described as comprising: a multiplicity of individual cups shaped to nest each other to form a honeycomb, each cup having a honeycomb nestable body portion terminating at one of its ends in a knife-like edge; and bonding means securing the body portion of adjacent cups to each other. This much of the embodiment shown in FIGS. 1-10 is common to the modification indicated in FIG. 10A which eliminates the base 1 and the tapered and circular neck portions 14 and 15 of each cup. This modification requires the body portion 12A of each cup to terminate at the other of its opposite ends in a non-cutting bottom edge portion 13A; and includes bonding means 18A securing the body portion of adjacent cups to each other. The cups may be secured together by spot welding. Preferably they are secured along the cutting and non-cutting end portions of their adjacent peripheries by bands of silver solder comprising band 18 shown in FIG. 10 and band 18A similar to the band 18. A succession of transverse rows of such cups, when secured together in a single unit, would be provided with end lugs (not shown) secured to the end rows.

The modified honeycomb may be flat, arcuate or cylindrical.

I claim:

1. A biscuit cutter comprising:

A. a base means having a pair of laterally spaced end portions with a sheet-like body portion extending longitudinally from one end portion to the other and secured to both, and a multiplicity of uniformly

spaced cooperative cup-receiving holes formed in said body portion;

B. a multiplicity of individual nestable cutter cup means: each cutter cup means having:

a. peripheral first wall member means including at least two straight sides, each wall member means terminating in an upper end, wherein said upper ends of said first wall member means define a first opening of selected configuration to said cutter cup,

b. tapered second wall means carried by selected first wall member means to taper inwardly from the lower ends of said first wall member means to define a neck at the end of said cup opposite said upper end which neck has a diameter less than the mean diameter of said first opening and is adapted to be received by a selected base hole when the cup is assembled upon said base;

C. means for releasably securing said neck to the base so a portion of at least one straight side of each cup is disposed generally parallel to and in contiguous relation with a portion of at least one straight side of an adjacent cup and so that the upper ends of straight sides of said cups disposed generally in contiguous relation are likewise in contiguous relation along the length thereof and said upper ends of said cups are in generally the same plane, so that a cutting edge is formed by the upper ends of the straight sides of adjacent cup members; and

D. means bonding a portion of adjacent cups together along a portion of the contiguous straight sides of the cups.

2. The biscuit cutter of claim 1 wherein:

A. said base holes are circular in shape.

3. The biscuit cutter of claim 2 wherein:

A. each hole formed in said body portion of said base is chamfered at the lower end portion of the hole.

4. The biscuit cutter of claim 2 wherein:

said neck is of circular shape dimensioned to fit snugly within a base hole.

5. The biscuit cutter of claim 1 wherein:

A. each cup is secured to the base by enlarging the lower end portion of the neck so as to clamp the base between the taper of the neck and the lower end enlargement thereof.

6. The biscuit cutter of claim 5 wherein:

A. The lower end portion of each hole in said base is chamfered; and

B. said enlargement is in the form of an outward flare tightly pressed against the chamfer of the hole.

7. The biscuit cutter of claim 1 wherein:

A. said base holes are circular in shape and arranged in parallel transversely extending rows alternately containing at least two full circular openings located between two semi-circular openings in one row and at least three full circular openings in the next row.

8. The biscuit cutter of claim 7 wherein:

A. each of said cups include:

1. First wall member means arranged to provide a cup body having a hexagonal cross-section so said opening to said cup means is in the shape of a regular hexagon.

2. said second wall means tapering inwardly from the lower end of the hexagonal body portion

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formed by said first wall means to a circular cross-section at its lower end; and

3. a circular neck depending from the circular lower end of said second wall means.

9. A biscuit cutter comprising: 5

A. a multiplicity of individual cups:

1. each cup including at least three substantially straight wall members of substantially equal length arranged to form a cup body of a regular geometric cross-section wherein each of said wall members terminates at its upper end in an outwardly tapering knife-like edge so that a substantially continuous knife like edge is provided around the upper end of each cup; and 10

B. means releasably bonding wall members of each cup to wall members of adjacent cups in an arrangement such that at least two wall members of 15

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each cup are in contiguous relation with a wall member of adjacent cups, and so upper ends of said cups are in generally the same plane and so said knife-like edges of adjacent cups are in contiguous relation to cooperatively form a cutting edge of generally V shaped cross-section so that individual cups within said biscuit cutter can be released, removed from said cutter and replaced by another cup.

10. The biscuit cutter of claim 9 wherein:

A. said cups are arranged to form a succession of two or more transverse rows and

B. said bonding means secures the cups of one row to the cups of the adjacent row along both the knife edge portion and opposite end portions of their respective adjacent peripheries. 20

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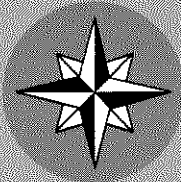
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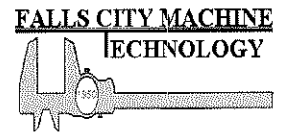
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FALLS CITY MACHINE TECHNOLOGY

QUALITY IS OUR STANDARD PRODUCT



Home

Capacities

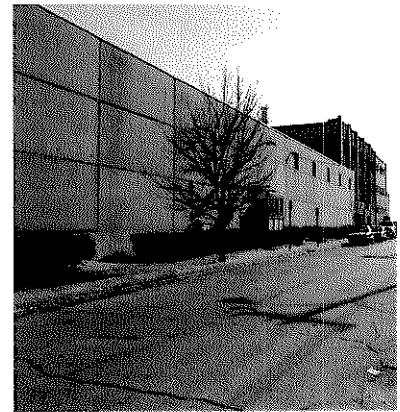
Photo Gallery

Contact Us

ABOUT US

Charles D. Hargadon started a machine shop business in June of 1950. He called it Charles D. Hargadon Manufacturing Co. He was a journeyman tool maker and experienced in running a plant from his previous positions as supervisor at two large manufacturing concerns. He was well equipped to embark on his new career.

The first shop was located in the 10,000 square foot basement of the "Snead Building" on Market Street in Louisville, Kentucky. As in any business the first years were a struggle. One thing that insured the survival of the company was the diversity of the type of work that was performed. Mr. Hargadon firmly believed that a shop with many areas of expertise would cope with hard times better than one that specialized in one field. Growing steadily by 1968 the company could no longer tolerate the over-crowding at the first plant.



The second location was the 20,000 square foot plant at Mellwood Avenue in Louisville. Over the years the company continued to grow and was recognized as a high quality machine shop in the Louisville area.

In 1976 after many years of service to the business community, Mr. Hargadon was looking forward to retirement. He wanted to sell the company, but he also wanted to insure the well-being of his employees. He accomplished both when he chose to sell to Packaging Service Corp. of Kentucky. In June of 1976 the "new" Charles D. Hargadon Manufacturing Company came into being as a subsidiary of PSC Corp.

Due to additional equipment and an increasing number of customers, the company was running out of space again. In 1981 a larger building was purchased for Hargadon Manufacturing, the old Falls City Beer bottling plant. In June of 1981 the company moved into its present 112,000 square foot facility at 667 S. 31st. Street. In 1987 it was determined that the company could no longer be named Charles D. Hargadon Manufacturing Company, since Mr. Hargadon had no legal affiliation with the company. A new name had to be found. Falls City Machine Technology was picked for several reasons:

- 1.) the long association with local businesses in Louisville, the "Falls City"
- 2.) the company was located in the Falls City Beer building, a local landmark

Due to Mr. Hargadon's philosophy of diversity, Falls City Machine Technology (FCMT) excels in several areas of machining services. We do maintenance machining, the repair of broken, or fabrication of obsolete machine parts so that our customers can keep their manufacturing machines in production. We also do production machining. FCMT is the only commercial business that does heat treating in the local area. We harden, temper and anneal metal parts for many local and regional customers. We are one of the few machine shops in the Louisville area to do design and fabrication of custom equipment. FCMT has built machines for Pillsbury, Inland Container, Gates Rubber, General Foam and of course PSC to name a few of our customers.

After more than 50 years in business, Falls City Machine Technology still holds to the principles of quality workmanship, fair pricing, customer service and satisfaction. Our experienced employees are dedicated to doing the job right. We aren't satisfied with just doing the job, we do it right!

BUILDING THE FUTURE WITH OLD FASHIONED QUALITY

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Bill Niekamp, Sales Engineer, billn@pscokfy.com

KY Lures.com

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Introduction to Fishing Tackle Made in Kentucky

Kentucky's contributions to baseball bats, horses, rifles, whiskey, and tobacco are well known, but Kentucky also produced some of the highest quality fishing lures, reels and tackle in the country and arguably the world at the time they were made. The artifacts and their makers are a fascinating story of the times, and intensely evocative of the rich history and culture of fishing in this Commonwealth.

Kentucky rivers, streams and lakes represent the soul of Kentucky, and the fishermen who frequented them. The water and terrain across the state varies almost as much as the characters that made the tackle used in the area. We attempt to capture the uniqueness of the individuals, the beauty, utility, and inherent value of the articles depicted, as well as the flavor of the period.

It is interesting to discover that some fishing tackle made in Kentucky is unique to that state, and can be sometimes be identified just by knowing the characteristics of the particular regional art. This is especially true of the folk art lures that were hand carved by individuals. Although no two lures in a given region may be alike, they all may share common design principles and a common heritage shared by all the makers. The fact is, you can't take the country out of the person, even if you wanted to. There is nothing more dangerous than a local fisherman, goes the saying. Regionalism tends to reflect tools at hand, the culture, and the customs.

In my experience as a collector, I have grown to understand that fishing articles are much more than just manufactured goods to the persons who make them, and also to the people that used them. I have seem grown men (and women also) tear up when reflecting upon the lure that their father cherished, or that their grandfather invented and made popular. To many, the artifacts depicted here are priceless for the memories, emotions, and moments in time that they represent. In many cases, the memories of dozens of fishing, camping and hunting trips are captured in the rod, reel, lures and tackle box of their father, mother, grandfather, uncles and friends. The best times of life are sometimes reflected in the objects closest to the ones we grew to love on those brief outings. For myself, I appreciate them for all that they represent, and I would like you to see them in that light also. Probably, you already do.

So far as we know, no one from Kentucky ever gained great riches from manufacturing fishing tackle, and no one established a continuing business dynasty from the early days. While there are definitely continuing businesses today that may well extend far into the future, the older reel and lure companies are long gone and remain only in our memories and through the articles and papers and boxes we can find now and then. It is somewhat a mystery that we can find such greatness in the design and realization of such wonderful and useful articles, and then they can disappear and cease to exist faster than we think possible. The truth is that the tackle exists through the sweat, genius, and passion of a few individuals that made them, and this passion is not easily passed to another generation. Just as true is the fact that some of the very things that we love about fishing tackle of the olden days makes it virtually impossible to manufacture and continue in modern economic times. How can lures exist today that took literally dozens of

manufacturing steps, had twenty or thirty different parts, and took seven coats of paint? The market for \$1000 reels and \$50 fishing lures today is fairly limited, and the fact is that few of us could afford or would choose to support the high cost of such high quality goods. We are recently encouraged however, at some manufacturers that have adopted some of the passion, quality, and techniques of the old line fishing tackle makers, and have started to make tackle that is evocative of the golden age. We wish them continued success.

We have attempted to be somewhat comprehensive in scope, cataloging or at least mentioning what we know about almost every important angling artifact made in the state or with close connections. However, as in any endeavor with a scope this wide, we are sure that we have missed some important persons and artifacts, and apologize in advance. Hopefully this can be corrected in future editions or through future authors. If you have information that is missing from this edition, please bring it to our attention. Write it down before it is gone, like so many of the ones we so memorialize in these pages. Perhaps you can bring your collection or individual piece to the attention of the public.

The Early Years

The Middle Years

The Modern Years

**Folk Art Lures of the
Herrington Lake Region**

**Other Fishing Tackle of
Kentucky**

**Fishing Tackle Patents of
Kentucky**

**Fishing Licenses of
Kentucky**

Fishing Reels of Kentucky



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*Fishing Reels &
Lure Collection*

*Fishing Tackle
Clubs & Links*

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Introduction to Fishing Tackle made in Kentucky

The Middle Years

- C.M. Brown - Brown's Baits and Flies - Hopkinsville
- Charles D. Hargadon - Louisville
- E.R. Barber - Raceland
- Hampton Fishing Lures - Louisville
- Hinkle Tackle Company - Louisville
- Mattox Baits - Lexington
- Mubago - Lexington
- Trenton Manufacturing Company - Covington
- Webb & Company - Louisville



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