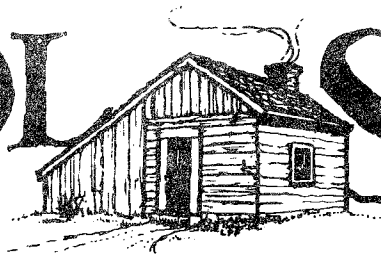


# The TOOL SHED

NUMBER 19



NOVEMBER, 1981

A Journal of Tool Collecting published by CRAFTS of New Jersey

## MOULDER'S TOOLS

by Harry O'Neill

Most tool collectors recognize foundry moulder's tools, those curious looking pieces of bent metal used by moulders, core makers, and other craftsmen of the metal-casting industry. And most know that when polished to a nice steel finish or a beautiful brass luster they make an attractive addition to a collection. But how many know their exact use—or even their names?

Actually, moulders use a wide variety of specialized tools, and the easiest way to identify and name them is to give a condensed, simplified description of the sand moulding process.

The first tool a moulder would use is a flask. This is a two-part wooden or metal box without top or bottom—simply a pair of matched frames. The upper half is known as the cope, and the

lower half is known as the drag. A metal pin on either end holds them in a match, and allows the two halves to slide apart and return to the same position.

The wooden pattern of the piece to be cast would usually be made in halves, called a split pattern. One half would have two protruding wooden pins, and corresponding holes in the other half would match the pattern as a single unit.

The bottom half of the flask, or drag, is placed face down on a bottom  
(continued on page 4)

NEXT MEETING ON  
NOVEMBER 22nd

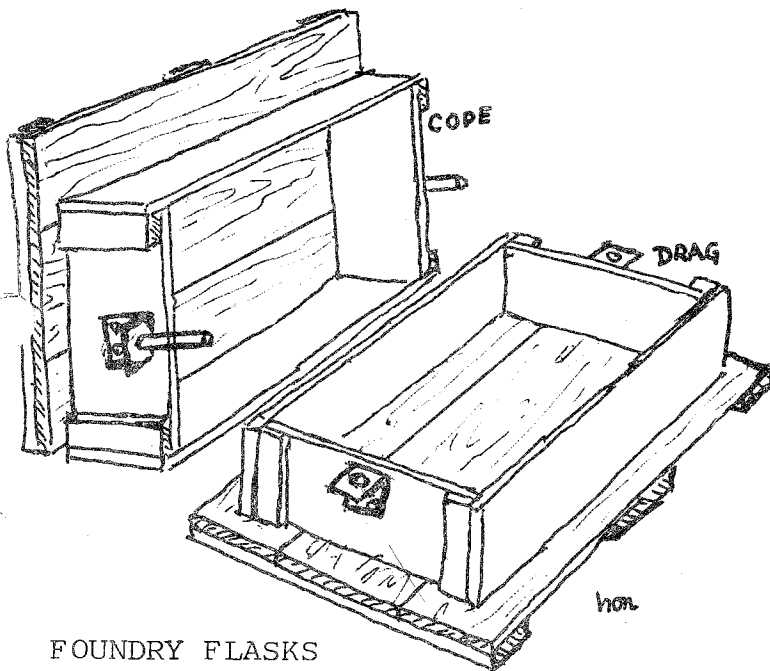
CRAFTS of New Jersey will hold its next meeting on Sunday, November 22, from 2:00 to 5:00 p. m., at the Indian Queen Tavern, East Jersey Olde Towne, in Piscataway.

The program for the afternoon will feature Dominic Micalizzi, whose talk has the intriguing title "How I Made a Pilkington Hand Drill." Look forward to an informative and entertaining session.

The latter part of the program will be devoted to "Whatsit?" identification, and the meeting will conclude with the Swap & Sell.

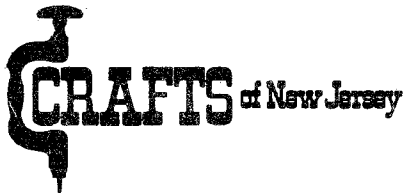
We will also have three more great programs coming up this year. On February 7, Daniel Comerford III will speak on "The Hammer—King of Tools."

Then on April 18, Ray Townsend  
(continued on page 4)



FOUNDRY FLASKS

and Foundry Boards



Collectors of Rare and Familiar Tools Society  
of New Jersey

PRESIDENT \_\_\_\_\_ Stephen Zluky, Whitehouse  
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Membership in CRAFTS is open to anyone interested in early trades and industries, and the identification, study, and preservation of tools and implements used and made in New Jersey. Annual dues are five dollars for the membership year of July 1 to June 30. Membership fees may be sent to the Treasurer: C. Carroll Palmer, 725 Pemberton Ave., Plainfield, N.J. 07060.  
The Tool Shed

Published five times per year for members of CRAFTS of New Jersey. Editor Robert Fridlington, 8 Keith Jeffries Ave., Cranford, N.J. 07016. Contributions, especially about New Jersey tools and trades, are welcomed.

## WOMEN'S CORNER

Our thanks to all of the ladies who prepared the delicious food served at the September meeting.

Somehow, many of the women present found the food more interesting than the tools, and there was a great deal of recipe exchanging. One of the dishes that attracted much attention was Marge DeSantis's marinated broccoli.

For the benefit of several women who were without pencil and paper, we were asked to print the recipe in this issue, and Marge kindly sent it to us. So, ladies, here it is.

- 2 bunches broccoli
- 1 1/2 C oil
- 3/4 C cider vinegar
- 1 T dill
- 1 t salt; pepper to taste
- 1 t garlic salt
- 1 T sugar
- 1 T Accent

Cut up broccoli, using only top half of bunches. Mix marinade. Pour over broccoli and refrigerate 24 hours. Stir several times while marinating.

Enjoy!

## CRAFTS WELCOMES NEW MEMBERS

CRAFTS of New Jersey bids a warm welcome to the following new members who joined after the directory was printed.

Mr. George Guempel, 20 Cherokee Road, Cranford, NJ 07016.

Mr. and Mrs. Bruce E. Herzog, 2212 Aileswick Drive, St. Louis, MO 63129.

Mr. John N. Kukis, 620 Drake Place, Westfield, NJ 07090.

Mr. and Mrs. Robert E. Nelson, 2800 - 64th Avenue, Cheverly, MD 20785.

Mr. and Mrs. David M. Truesdale, 101 East Main Street, Middleton, DE 19709.

And we are happy to welcome back as members Mr. and Mrs. Richard G. Haight, Fell Road, RD #4, Doylestown, PA 18901



"Note the densely distributed yet perfectly balanced relationship between the expressive line and organic whole. How unity of surface is achieved by overtly lyrical variations of scale texture, and color, giving three dimensional form a spontaneous plastically graphic definition."

## A MOCK ON MONCKY

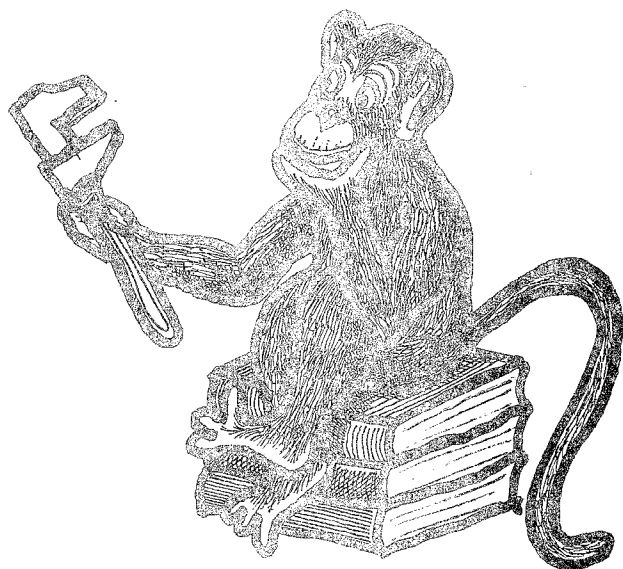
by Carl E. Bopp

In "What's in a Tool's Name?" (The Tool Shed, November, 1980) Frederick A. Shippey gave a list of tools named after living creatures.

One tool mentioned in that article was the monkey wrench. As Fred pointed out in his analysis, "some of the yoked tool names appear quaint and even unrelated to the tool's shape or function."

This statement certainly fits the monkey wrench, because as hard as I tried I could not relate the shape, action, or use of the monkey wrench to that funny little animal that we have all seen in zoos.

A credible answer to this puzzle can be found in Hawkins' Mechanical Dictionary (1909). After describing the monkey wrench, Hawkins goes on to say that it should be called a "Moncky wrench." He then credits one Charles Moncky with this invention, and he says that Moncky sold the patent for a very small sum.



Hawkins gives no date for Moncky's patent, nor does he give much information about the inventor, simply saying that he lived his later years in the Williamsburg section of Brooklyn, N. Y.

If Hawkins' statements are true, then the only link that a monkey wrench has to that animal is a mock on Moncky's name.

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## THE ACCIDENTAL DATING OF A NEW JERSEY PLANEMAKER

by Stephen Zlucky

Documenting and researching New Jersey planemakers can be an arduous and frustrating task when there is little or no real information available. But a discovery, even if by accident, makes it all worthwhile.

Recently, my wife MarKay and I spent many hours in the New Jersey Room of Rutgers University's Alexander Library. Our objective was to find information on the elusive S. C. Cook, planemaker of New Brunswick, N. J. All of our leads only pointed toward more research and developed no exact information.

However, by accident, error, good luck, or whatever, we did date another New Jersey planemaker--E. Dunberry

(Danberry).

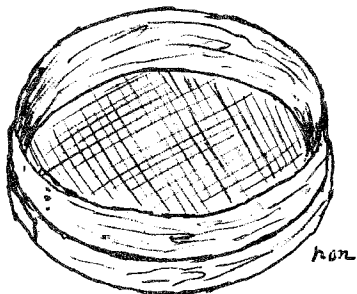
In Kirkbride's New Jersey Business Directory, published in 1850, we found E. Dunberry listed as a planemaker in New Brunswick, N. J.

Kirkbride's . . . Directory is an excellent source of information for the mid-nineteenth century, listing the names of many craftsmen by their county of residence.

In the meantime our fun and frustration continue as we attempt to establish dates for S. C. Cook. If any CRAFTSMen have an interesting S. C. Cook plane or any information about Cook himself, we would greatly appreciate hearing from you.

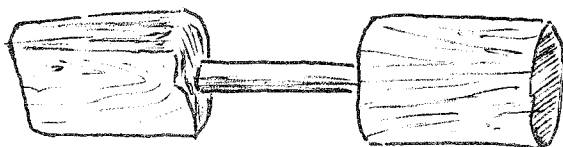
(Mldrs Tools, cont'd from page 1)  
board, a flat wooden board slight'y larger than the flask, with supporting battens on the back. The drag half of the pattern is placed face-side (i. e., split-side) down inside the flask on the bottom board.

The mould is now ready to be rammed up. A riddle, or sieve, is half filled with a mixture of fine sand and clay called green sand. This is shaken over the flask until the pattern and bottom board are covered with a quarter-inch layer of fine sand.



HAND RIDDLE

Rough, unsifted green sand is now added and pounded firm with a wooden bench rammer, usually made of dried hickory or hard maple. When the drag is filled, a straight bar of metal or wood, called a slick bar or strike-off bar, is used to scrape the sand level with the flask's edges.



BENCH RAMMER

A second foundry board is laid on top of the flask, and the combination of bottom board, flask, and top board is rolled over. A moulder might play safe, especially with large flasks, and use C-clamps in the turning process. Small flasks—6 x 6, 12 x 12, 12 x 18—can be handled by one man.

After the clamps are released, removal of the top board exposes a smooth sand surface with half of a pattern embedded in it.

Next, the cope half of the wooden pattern is matched with the drag half by

means of the pins. Then the cope half of the flask is placed on top of the completed half mould with the aid of the metal guide pins.

A parting agent, which is a flour-like powder, is dusted over the entire surface of the sand and pattern. This is necessary to keep the next body of sand from sticking to the bottom half. Again a layer of fine sand is riddled over the surface of the sand and pattern, followed with coarse sand, rammed hard and leveled off with a slick bar.

A venting tool, which resembles an ice pick, is inserted through the end of cope half to the pattern. This will leave small holes or vents, enabling the gasses to escape as the molten metal enters the mould. The mould is now considered rammed up.



VENTING TOOL

The cope is carefully lifted off the drag, guided by the metal flask pins. A second man will sometimes pound the moulding bench with two rammers, setting up a vibration which aids in separating the two bodies of sand. The drag half is set aside.

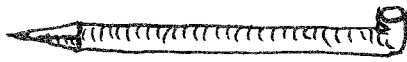
A small bulb sponge with a brush stem is used to apply water to the perimeter of the embedded pattern to insure proper hardness and prevent weak edges, thus lessening the chance of sand breakage as the pattern is lifted out.



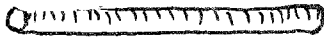
BULB SPONGE

The pattern is loosened by rapping. One form of rapping bar is a quarter inch rod with a pointed end. A light tap drives it into the center of the pattern, and a second bar, a striker, is used to rap the sides of the rapping bar. After rapping, a lifting screw is screwed into the pattern, and it is carefully drawn from the sand. The entire process is then repeated with the other half of the

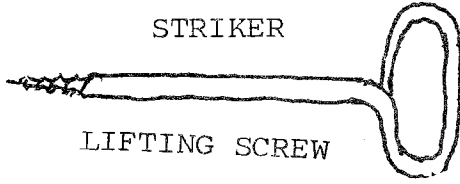
flask.



RAPPING BAR

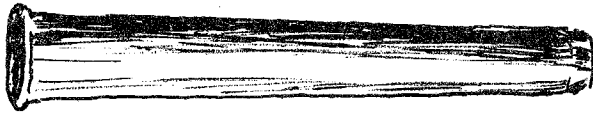


STRIKER



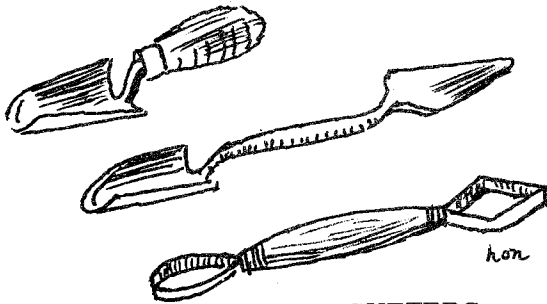
LIFTING SCREW

A sprue cutter is used to punch a hole in the cope half of the flask, a few inches away from the pattern cavity. The sprue cutter can be a thin brass tube, with or without a handle.



SPRUE CUTTER

A gate cutter is used to cut the in-gate or trough from the sprue to the pattern cavity. This combination of sprue hole and gate will eventually guide the molten metal into the pattern cavity.



GATE CUTTERS

Extremely large castings can be made by the flask method, using flasks more than 25 feet long. Overhead cranes are used to handle these. Another tool, called a flask dog, which resembles a logging dog, is used to hold these large flasks together during the actual casting.

A bench bellows is used to blow most of the loose sand from the open mould. The moulder now, in a sense, becomes a sculptor, and this is the point where those nice little iron and brass spoon-like tools come into use.

These tools come in an almost

unlimited number of combinations of types, shapes, and sizes. There are trowels, lifters, slicks, squares, spoons, etc.—all used to patch, rebuild, and put the finishing touches on the sand mould.

Lifters are used to lift out particles of broken sand and tamp holes in the mould. Slicks and corner tools smooth out rough spots. It must be remembered that no casting can be better than the mould itself.

The shapes of some of these tools are outlined below.



SLICK



TAPER



HEART



LEAF



SQUARE









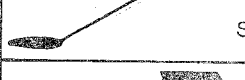











OVAL SPOON



SQUARE SPOON

MOULDERS TOOLS iron or brass

	Square Trowel		Taper & Sq. Spoon
	Finishing Trowel		Taper & Square
	Slick & Oval Spoon		Heart & Spoon
	Slick & Taper		Heart & Taper
	Slick & Square Spoon		Heart & Taper
	Slick & Square		Heart & Sq. Spoon
	Spoon & Gate Cutter		Heart & Square
	Taper & Spoon		Bench Lifter
	Taper & Leaf		Square & Square Spoon

Tools range from 6 to 18 inches long.

After all of the defects and imperfections have been repaired, and after the moulder has satisfied himself that the two halves of the mould are ready, he carefully lowers the cope flask onto the drag flask, guided by the metal pins.

Weights are placed on the mould to make sure that the two parts hold together. The mould is then set on the pouring floor, ready for the pouring of the molten metal. The process is now completed.

This brief summary of the sand moulding process has described the basic tools of the sand moulder and their uses. But perhaps one last point should be mentioned. Although most of these tools are manufactured pieces, one still finds a significant number of them that are craftsman-made. Moulders, like many other craftsmen, often prefer to make some of their tools themselves.

PRESIDENT'S COLUMN

by Stephen Zluky

On behalf of everyone who attended CRAFTS September meeting, I want to extend a very special thanks to Alex and Barbara Farnham for being such wonderful hosts.

Approximately 135 CRAFTSMen and family members attended this picnic meeting and found it every bit as enjoyable as our outing there last year. The weather was superb, the food and drink delicious, and the tool displays were outstanding.

It was a wonderful day from beginning to end. So again, my thanks to Alex and Barbara.

The recent EAIA meeting at the Mercer Museum in Doylestown, Pa., held a special importance because representatives from 16 different tool groups across the country met to discuss

(continued on page 7)

## LOST AND FOUND

After the September meeting at Alex Farnham's, someone turned in a plane that was found on the lawn. The price sticker was still attached.

If the owner can identify it, he can pick it up at the November meeting of CRAFTS. See Bob Fridlington or Carl Bopp.

## PATENT NUMBERS

Were you ever curious about the date of a patent?

The following table of lowest patent numbers for the years from 1836 to 1974 is taken from the Gristmill (No. 25, September, 1981) of the Mid-West Tool Collectors Association.

It is reprinted here with the kind permission of M-WTCA.

(President, cont'd from page 6)

ways to cooperate and coordinate their activities.

Among the ideas discussed were a speakers registry, joint activities, and a master calendar so that scheduled meetings and special events would not conflict with the activities of other groups. The leader in this effort is Dr. Fred Malott of Converse, Indiana.

Part of the meeting was also devoted to an explanation, by Tom Tully of the Smithsonian Institute, of the EAIA Tool Directory Project. I am sure that most of us have seen the forms for this project. But it seems that, for one reason or another, not many of us have completed them.

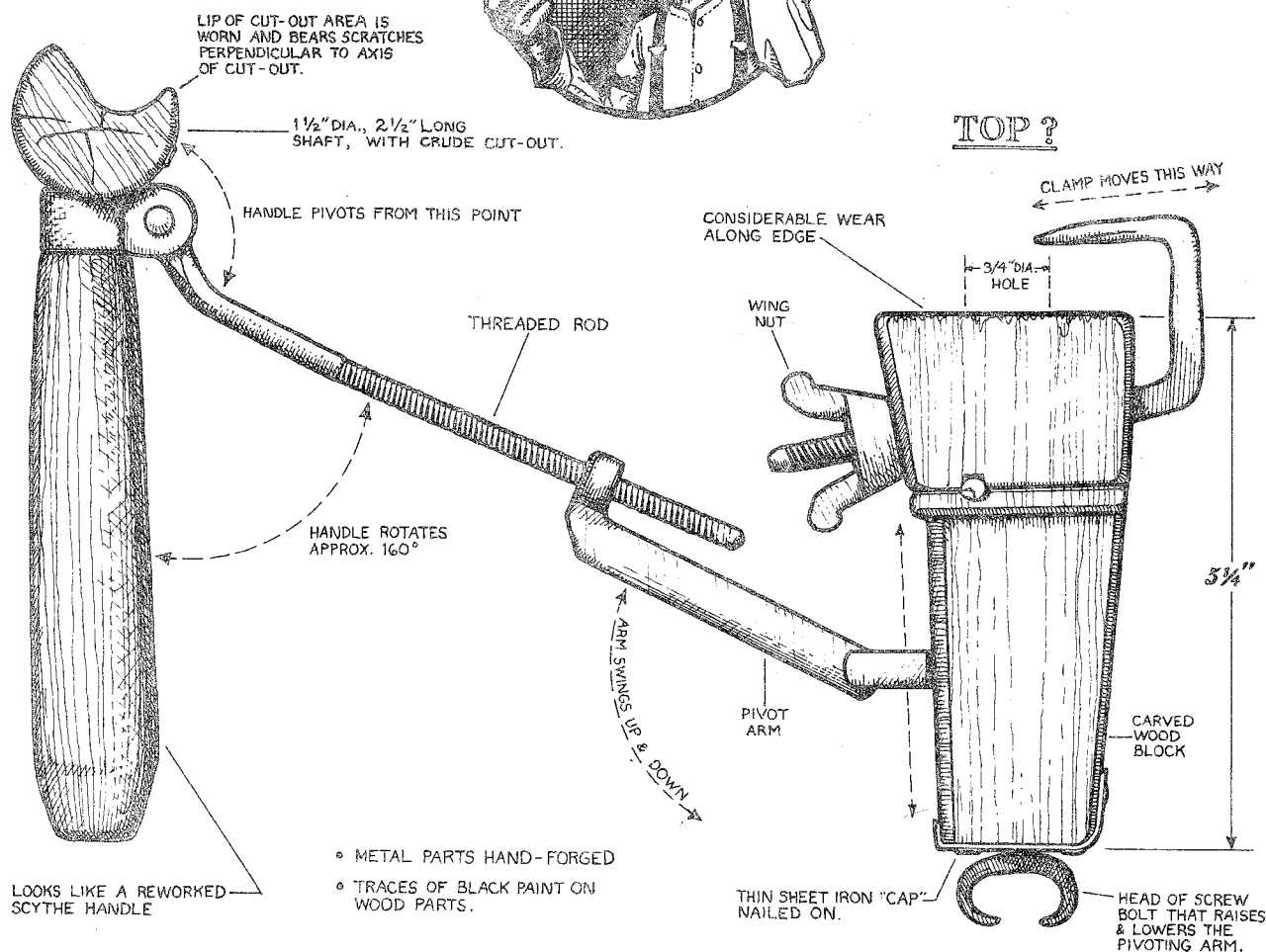
If you have a tool with a maker's name and that dates prior to 1860, fill out the forms and send them in. Don't worry about duplication.

## Lowest Patent Number of Year

1836 .....1	1871 .....110,617	1906 .....808,618	1941 ...2,227,418
1837 .....110	1872 .....122,304	1907 .....839,799	1942 ...2,268,540
1838 .....516	1873 .....134,504	1908 .....875,679	1943 ...2,307,007
1839 .....1,061	1874 .....146,120	1909 .....908,436	1944 ...2,338,081
1840 .....1,465	1875 .....158,350	1910 .....945,010	1945 ...2,366,154
1841 .....1,923	1876 .....171,641	1911 .....980,178	1946 ...2,391,856
1842 .....2,413	1877 .....185,813	1912 ...1,013,095	1947 ...2,413,675
1843 .....2,901	1878 .....198,733	1913 ...1,049,326	1948 ...2,433,824
1844 .....3,395	1879 .....211,078	1914 ...1,083,267	1949 ...2,457,797
1845 .....3,873	1880 .....223,211	1915 ...1,123,212	1950 ...2,492,994
1846 .....4,348	1881 .....236,137	1916 ...1,166,419	1951 ...2,536,016
1847 .....4,914	1882 .....251,685	1917 ...1,210,389	1952 ...2,580,379
1848 .....5,409	1883 .....269,820	1918 ...1,251,458	1953 ...2,624,016
1849 .....5,993	1884 .....291,016	1919 ...1,290,027	1954 ...2,664,562
1850 .....6,981	1885 .....310,163	1920 ...1,326,899	1955 ...2,698,431
1851 .....7,865	1886 .....333,494	1921 ...1,364,063	1956 ...2,728,913
1852 .....8,622	1887 .....355,291	1922 ...1,401,948	1957 ...2,775,762
1853 .....9,512	1888 .....375,720	1923 ...1,440,362	1958 ...2,813,567
1854 .....10,358	1889 .....395,305	1924 ...1,478,996	1959 ...2,866,973
1855 .....12,117	1890 .....418,665	1925 ...1,521,590	1960 ...2,919,443
1856 .....14,009	1891 .....443,987	1926 ...1,568,040	1961 ...2,966,681
1857 .....16,324	1892 .....466,315	1927 ...1,612,790	1962 ...3,015,103
1858 .....19,010	1893 .....488,976	1928 ...1,654,521	1963 ...3,070,801
1859 .....22,477	1894 .....511,744	1929 ...1,696,897	1964 ...3,116,487
1860 .....26,642	1895 .....531,619	1930 ...1,742,181	1965 ...3,163,865
1861 .....31,005	1896 .....552,502	1931 ...1,787,424	1966 ...3,226,729
1862 .....34,045	1897 .....574,369	1932 ...1,839,190	1967 ...3,295,143
1863 .....37,266	1898 .....596,467	1933 ...1,892,663	1968 ...3,360,800
1864 .....41,047	1899 .....616,871	1934 ...1,944,449	1969 ...3,419,907
1865 .....45,685	1900 .....640,167	1935 ...1,985,878	1970 ...3,487,470
1866 .....51,784	1901 .....664,827	1936 ...2,026,510	1971 ...3,551,909
1867 .....60,658	1902 .....690,385	1937 ...2,066,309	1972 ...3,631,539
1868 .....72,959	1903 .....717,521	1938 ...2,101,004	1973 ...3,707,729
1869 .....85,503	1904 .....748,567	1939 ...2,142,080	1974 ...3,781,914
1870 .....98,460	1905 .....778,834	1940 ...2,185,170	

# Pop Rivet's What's It? No. 1

by LARRY FUHRO



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GADGETS · DOOHICKEYS · THINGAMAJIGS · AND WHATCHAMACALLITS

## INTRODUCING "POP RIVET"

This issue of The Tool Shed introduces Pop Rivet (CRAFTSman Larry Fuhro), who in future issues will showcase more "doohickeys" and "thingamajigs" whose uses are unknown.

If you can identify one of these tools or even make an educated guess as to its use, let us know and we will publish your ideas.

Any member with a "what's it" he would like to see featured can see Larry Fuhro at a regular CRAFTS meeting. But a few criteria have to be

met.

First, it must be a complete tool and not part of some larger apparatus. Second, it cannot be a patented item. Third, the owner should not know its use.

The gadget pictured above was brought to the September meeting by Bill Gustafson, who swears that it is an auger-handle clamp invented by Rube Goldberg's grandfather. Frankly, we skeptical. Can you settle the argument?