The TOOL SHED

No. 37 June 1985

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CAPT. HIRAM COOK AND HIS PATENTED POTATO DIGGER

by Albert S. Housman

This article is based on an incomplete file of papers from the estate of Capt. Hiram Cook and therefore is not represented as a complete story, even if space in The Tool Shed permitted. Cook lived in Verona, N.J., on an estate named Idle Wood, overlooking Verona Lake.

The first paper indicating Cook's interest in developing a digging implement is a letter "caveated" April 21, 1874. Patent laws provided that one could (and should) upon formulating a patentable idea, product, or invention write down a full description and/or specification of it and sign it in the presence of one or two witnesses. Such a document would have bearing in the event of two persons having patent applications on a like item at the same time. The next step would have been to have a patent attorney decided whether or not it was feasible to proceed with the patent process. This intitial letter reads in part:

"The following is a description of my newly invented self loading Cartopotatoe [sic] digger, which is as full, clear and exact as I am able at this time to give.... The object of this invention is to facilitate the excavating, loading and removal of dirt and also the digging and loading of potatoes."

Cook further describes the general form of the implement and for the specific working parts he writes:

"As the machine is drawn forward the scoop enters the earth somewhat like a plow and the dirt is forced backward and is received on an endless chain of buckets, which is caused to revolve upon cylinders by means of suitable gear attached to the hubs of the wheels and to the upper roll and from thence is delivered into the body until said body is loaded when the end of the scoop is raised by means of the lever and desired dirt may be dumped or ejected through trap in the bottom of the body. When used for digging potatoes the bottom of the scoop and the endless chain may be sufficiently opened like a screen to allow the dirt and small potatoes to escape."

There is no evidence in the file that a working model of the above was made or that a patent was sought. One could have doubts from the description that the combination of features provided for a practical implement, considering the factors of stone or vines

[Continued on page 5]

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JUNE 9 MEETING AT CLINTON MUSEUM VILLAGE: CHARLES H. PETERSON TO SPEAK

CRAFTS of New Jersey will hold its final meeting of the 1984-85 year on June 9 at the Historical Museum Village in Clinton.

Tailgate sales will begin in the parking lot at 1:00 p.m., and the formal program will start at 2:00 in the Education Center of the Museum.

The program for the afternoon will feature Charles H. Peterson , whose talk is entitled "Wood: Identification, Properties, Use." Peterson, a Professor of Technology at Kean College, is a widely recognized authority on wood varieties and uses, and he is also a superb craftsman. It promises to be a most interesting program.

The meeting will conclude with refreshments and the "Whatsit?" session.

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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 seven dollars for the membership year of July 1 to June 30. Membership fees may be sent to the Treasurer: John M. Whelan, 38 Colony Court, Murray Hill, NJ 07974.

The Tool Shed

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

A QUESTION ABOUT ALUMINUM

Harry L. Stevens of Clifton writes with a question that he hopes some reader of The Tool Shed can answer. He owns a small Goodell Pratt hand drill, with an 1895 patent date. The wooden handle holds drill bits, and at the end of the handle is an aluminum knob that unscrews.

Harry's question is: At what date did manufacturers begin to use aluminum in tools where they had previously used iron or steel? One of our authorities out there must know. Let us hear from you.

* * * * * * *

DUES ARE DUE

The membership year for CRAFTS of New Jersey runs from July 1 to June 30, so it is time to remind members about dues for the coming year. Send your check for $7.00 (or $14.00 for two years) to:

Mr. John M. Whelan, Trea.
CRAFTS of New Jersey
38 Colony Court
Murray Hill, NJ 07974

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ISRAEL WHITE EXHIBIT AT CARPENTERS' HALL

CRAFTSman Carl E. Bopp of Audubon, who has made a study of planemaker Israel White (d. 1839), will mount an exhibition of materials pertaining to White at historic Carpenters' Hall in Philadelphis. It will run for three months, from July through September, 1985.

It will be a small but informative exhibit and will feature, in addition to planes, documents relating to White and his work. All members of CRAFTS are invited to stop by and see the results of Carl's fine work.

Carpenters' Hall is open (free of charge) 10:00 a.m. to 4:00 p.m. every day except Monday.

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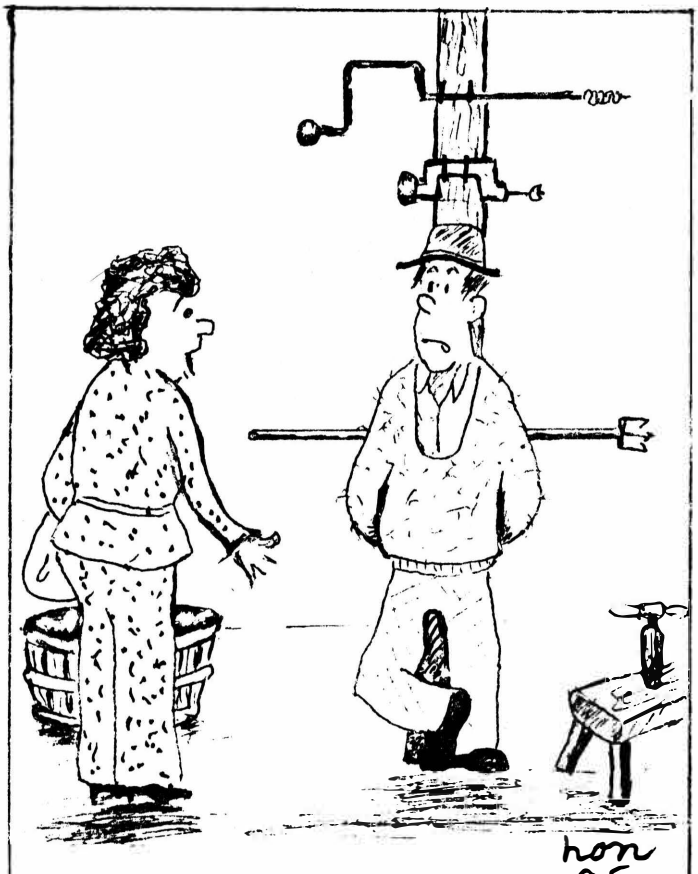

"GOOD LORD! DON'T YOU FEEL ANYTHING?"

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MATERIALS SOUGHT BY PUBLICATIONS COMMITTEE

CRAFTS Publications Committee is seeking catalogs, broadsides, or other material dealing with New Jersey tools or toolmakers that could be reprinted for distribution to members or for sale.

If you own such material and would be willing to let the Society reprint it, please get in touch with Publications Chairman Alexander Farnham at the next meeting or drop him a line at:

Box 365, RD#2
Stockton, NJ 08559

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THE APRIL AUCTION A WHALE OF A SALE

The CRAFTS spring auction, held at the Taylor Hose Co. in High Bridge, on April 13, was, once more, a big success, even though the sales total fell far short of last year's record, partially due to the absence of "big ticket" items.

A large number of eager buyers (the hall was crowded again this year!) plunked down $21,011.50 before the day was over.

Was there really a record number of lots, or did it just seem that way

[Continued on page 8]

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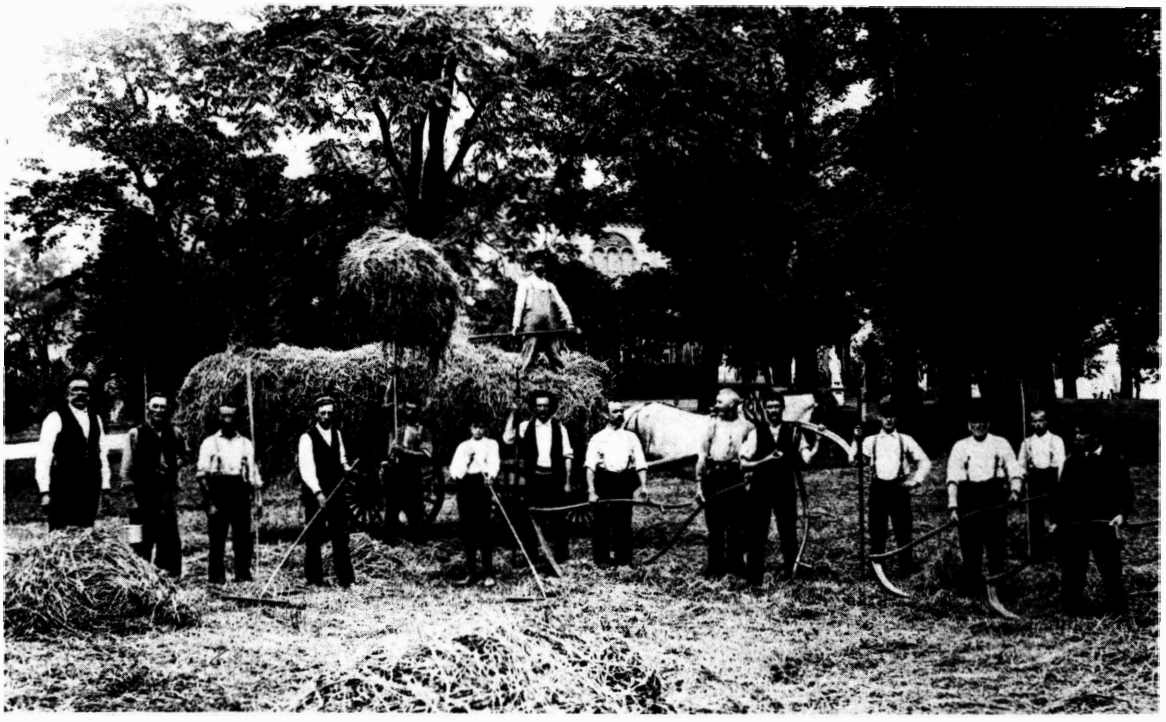
FARMING NEAR HOBOKEN



—from the Roger K. Smith Collection

Hoboken, N.J., lies directly across the Hudson River from New York City. Those who have been in that area recently can see how much it has changed since this picture was taken "near Hoboken" about 100 years ago. Our thanks to Roger K. Smith for providing the photo.

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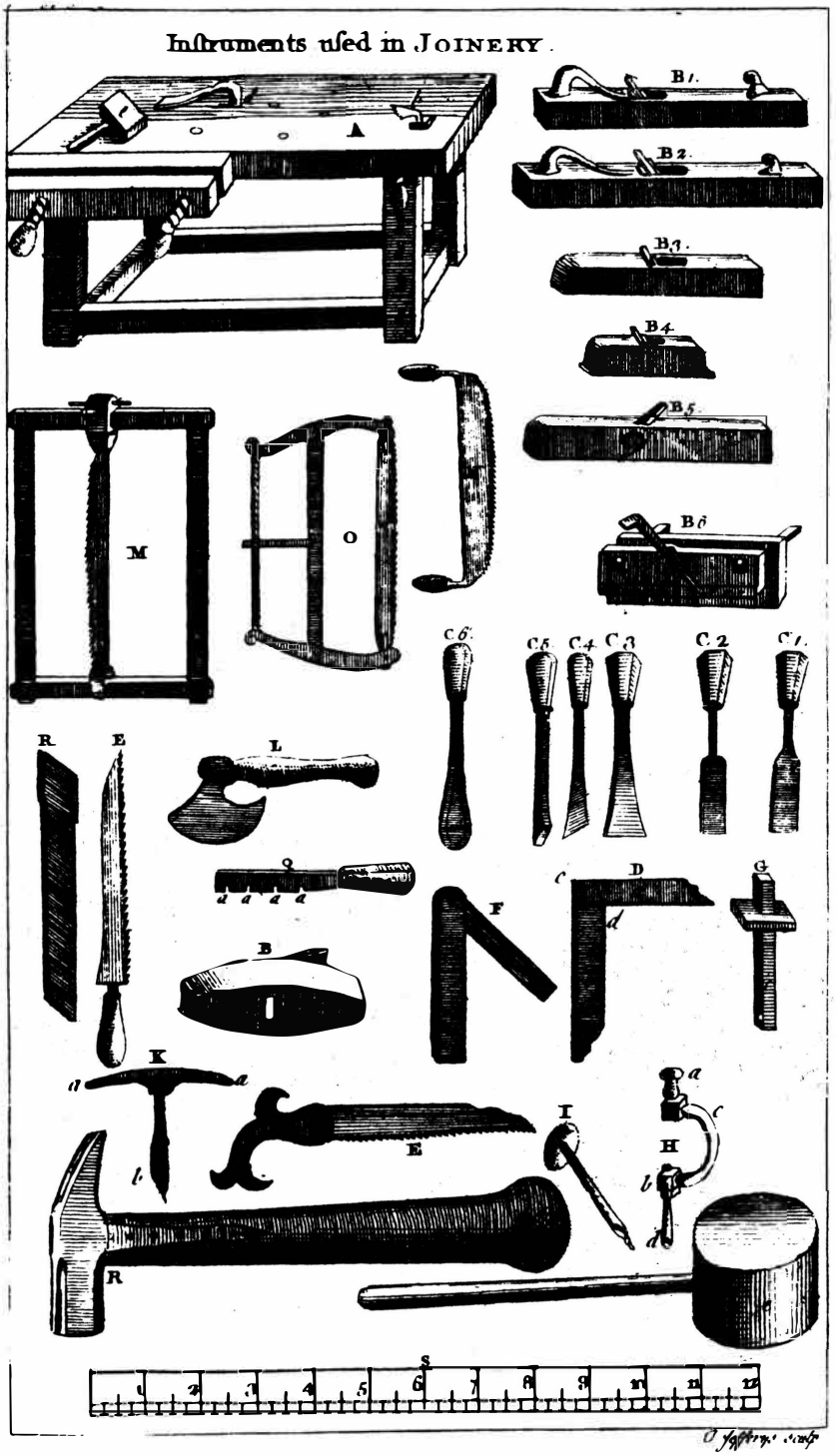
FROM "A NEW AND COMPLETE DICTIONARY OF ARTS AND SCIENCES" (LONDON, 1763)



Thanks to Bob Gargulli

CARPENTRY. In the annexed plate...are represented the tools employed in this art; where A is a wcrk-bench; b, the hook; c, the screw; d, the hold-fast; a, a, a, holes in the legs of the bench; c, c, mallets; B, B, B, &c. planes of several sorts; where B 1 is called a fore-plane; B 2, a jointer; B 3, a strike-block; B 4, a smoothing-plane; B 5, a rabbet-plane; B 6, the plough: C,C, C, chissels of several sorts; C 1 and C 3 being called formers; C 2, a paring-chissel; C 4, a skew-former; C 5, a mortess-chissel; C 6, a gouge: D is a square, a being called the handle; b, the tongue; c, the outer square; and d, the inner square: E, E, hand-saws; F, the bevel, with its tongue moveable upon a center; G, a gage; H, a piercer; a being its head; b, the pad; c, the stock; and d, the bit: I, a gimblet; K, an augre; a a being its handle; and b, its bit; L, a hatchet; M, a frame or bow-saw; N, a whip-saw; O, a tenant saw; Q, a compass-saw; R, a hammer; and S, a foot-rule, to measure their work with.

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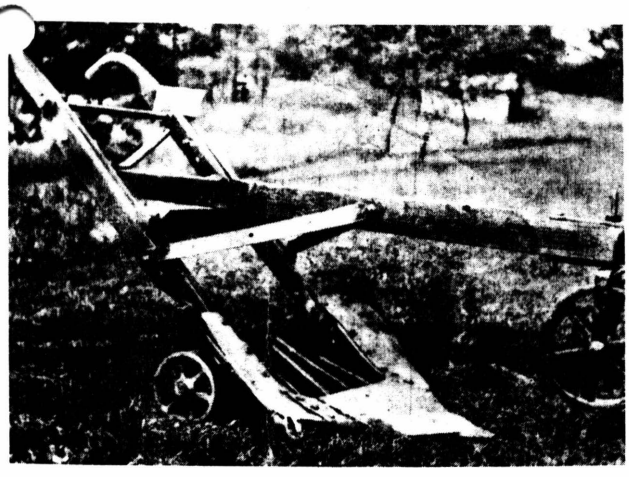
[Continued from page 1]
and weeds clogging the works; or one capable of being economically made.

The next dated papers in the file, 21 years later, April 2, 1895, are the Patent Office printed specifications and drawing of a potato digger and a certificate, all indicating that patent no. 536,850 was granted to Hiram Cook. From the drawing that follows (page 7), you will see that the resulting implement is far less complicated than would be indicated by the earlier concept covered above.

A notation on the sketch states, "No Model." Patent law provided that a model was not necessary if the invention would be well enough described and sketched, which in this case questionably qualifies. A reading of the specs will enable you to agree or not.

The only photograph we have of one of Cook's diggers is obviously not the one for which he obtained the patent. It could represent one of his experimental models or the practical outcome of all his efforts.



A Cook "Digger"

The next item in the file by date, June 18, 1895, covers Capt. Cook's providing for production of his invention. It is an agreement between him and two men from Newark, N.J., William G. Morris and Arthur E. Barlow. It provides that for one-half interest in the patent the two men will deliver the castings necessary for the construction of 25 implements to a shop in Verona and will also pay $200 toward expenses of completing same. It was agreed that the minimum sale price was to be $20 per unit. Profits were to be divided, one-half to Capt. Cook and one-half to Messrs. Morris and Barlow.

Among the remaining papers in the file is a letter of April 5, 1909, from Chandlee and Chandlee, patent attorneys, who advise that a patent will be allowed for a potato digger. They also furnished a "Gilt Edged" Certificate attesting to this. The letter advises of provision for improvements, foreign patent protection and various costs involved.

Pending further knowledge we can only wonder at the success of the potato digger and of Capt. Cook's commercial venture.

[See pages 6 and 7 for specifications and drawings of Cook's potato digger]

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ANSWERS TO CRAFTS TRIVIA QUIZ (FROM LAST ISSUE)

1. The name of Henry C. Mercer's dog was ROLLO.
2. JOHN CARTWRIGHT invented the famous Ultimatum Brace.
3. The three A's (AAA) in E.C. Atkins & Co.'s trademark stands for ATKINS ALWAYS AHEAD.
4. The Irwin Auger Bit Co. did not use the name BORBOR. It did use the others.
5. BUCK BROS. used the motto "Excelsior—onward and upward; He who stands still, runs behind, outstripped by his fellows.
6. An ulu is a type of primitive KNIFE used by Eskimo women.
7. NONE. The Stanley Rule & Level Co. had no planes in its 1867 catalog. Its 1870 catalog was the first to list planes.

Scoring

7	correct	= A
5 or 6	correct	= B
3 or 4	correct	= C
2 or less	correct	= F

If you didn't do well on this quiz, take heart. You can always sell your tools and take up beer-can collecting.

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UNITED STATES PATENT OFFICE.

HIRAM COOK, OF VERONA, NEW JERSEY.

POTATO-DIGGER.

SPECIFICATION forming part of Letters Patent No. 536,850, dated April 2, 1895.

Application filed April 19, 1894. Serial No. 508,088. (No model.)

To all whom it may concern:

Be it known that I, HIRAM COOK, a citizen of the United States, residing at Verona, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Potato-Diggers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

The objects of this invention are to reduce the cost of construction, to increase the efficiency of the machine, to avoid the use of gears such as would be apt to catch weeds when in service and be clogged thereby and to secure other advantages and results some of which will be referred to hereinafter in connection with the description of the working parts.

The invention consists in the improved potato digger and in the arrangements and combinations of parts, all substantially as will be hereinafter set forth and finally embraced in the clauses of the claim.

Referring to the accompanying drawings, in which like letters of reference indicate corresponding parts in each of the figures, Figure 1 is a side elevation. Fig. 2 is a plan of the improved digger. Fig. 3 is a side elevation of one of the wheels of the same.

In said drawings, *a*, indicates the shovel which, at its forward edge, *a'*, is oppositely inclined from a central projecting tooth, *a''*, adapted to enter the ground with ease, the oppositely inclined edges being adapted to throw stones, should any engage the same, laterally away from the shovel. The shovel is flat at the bottom *a'''*, with the exception of one, or more, very low projecting ribs, *b*, which tends to break the clod before it passes upon the separator *c*, the flat bottom serving to take up the dirt in shallow clods and feed it evenly upon the said separator.

At the sides of the flat bottom are arranged vertical plates, *e*, which are formed integral with said bottom, and at their forward edges are provided with sharpened edges, adapted to cut the clod as it passes through the same [illegible] at the upper parts said plates are upwardly and backwardly curved as shown more clearly in Fig. 1, and provide for the handles. Said handles *f*, *f*, are approximately parallel one with the other, and are curved at their upper extremities so as to provide convenient means to receive the hands for guiding the device as it is drawn by the horse or horses. To the said handles is secured at a proper distance above the ground, a draft bar *g*, which is held to said handles by suitable braces, *h* and *i*. To hold the shovel in proper relation to the ground and to relieve the hand from the strain of shoveling, I have provided wheels, *j*, *j*, arranged on an axle, *k*, which is carried by journal irons, *l*, adjustably secured to the handles, *f*, *f*. These are slotted as indicated in outline, and are carried by bolts passing through the slots and into the handles. Their lower ends may be braced by rods, *m*. Back of the bottom of the shovel is arranged a series of longitudinal rods or bars, *n*, forming the separator *c*. These are connected at their forward ends, by a cross bar, *o*, and are arranged substantially in line with the flat bottom of the shovel so as to receive the dirt therefrom. They are preferably given a slight inclination and curve, as shown in side elevation in Fig. 1.

The forward connecting bar *o*, of the longitudinal bars is pivotally connected with the side plates, *e*, *e*, so as to allow a limited vertical movement of said longitudinal bars, and the said longitudinal bars have preferably a pivotal relation to said connecting bar, as indicated at *p*, so that the said longitudinal bars will be allowed both a vertical and horizontal vibration. Near the rear ends of said longitudinal separator bars, *n*, is a transverse bar *o'*, which connects said bars and extends laterally into engagement with cams formed on the inner sides of the wheels, *j*. Said cams are of annular form, and provided with a slot adapted to hold the ends of said transverse rod, and are provided with a series of oppositely inclined teeth or cam projections, which serve to give the transverse bar and the separating rods or bars connected therewith a rapid vibration horizontally.

Above the separator, the axle of the digger is provided with teeth, *r*, for drawing the weeds through, and preventing the same from clogging the forward part of the machine.

the axle, turning with the wheels, serves to give a proper rotary movement to the teeth.

By the constructions described, the dirt, after having been lifted by the shovels, is caused to travel over an unobstructed course, and thus there is no resistance tending to impede the progress of the digger, and furthermore, all cog-gearing, by means of which power is transmitted from one working part to another, is dispensed with.

While I have shown but one modification of the invention, I am aware that others may be employed, and I do not wish to be understood as limiting myself, excepting as the state of the art may require.

Having thus described my invention, what I claim as new is—

1. The improved potato digger herein described, in which is combined with the shovel having upwardly extending side plates to which handles are secured and in which a connecting bar, *o*, is arranged, wheels attached to said handles and having cam wheels, a rear connecting bar, *o'*, extending into engagement with said cam wheels, and separating bars pivotally connected to said bars, *o*, and *o'*, substantially as and for the purposes set forth.

2. The combination with the wheels and handled shovel having upturned sides, a connecting bar arranged in said sides at the back edge of the shovel bottom, longitudinal bars pivoted on said connecting bar, a rear connecting bar extending laterally into engagement with cams, held by said cams from falling and given thereby lateral reciprocations, and said cams having slots for holding said bar and a series of oppositely inclined teeth or cam projections, substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 12th day of April, 1894.

HIRAM COOK.

Witnesses:
CHARLES H. PELL,
LOUISA BROWNE.

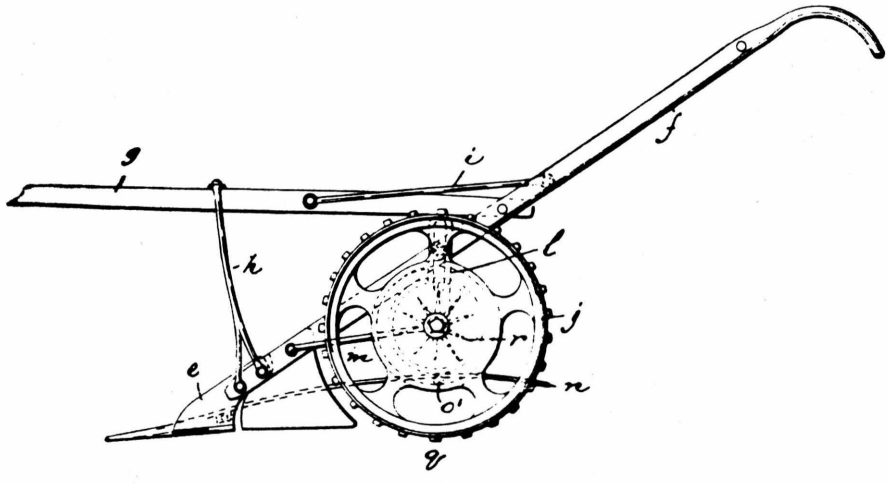

Fig. 1.

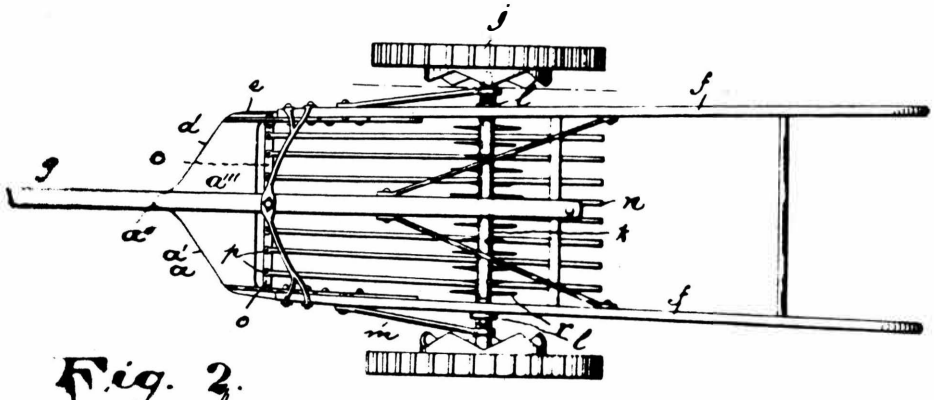

Fig. 2.

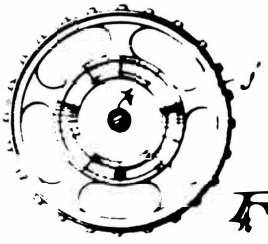

Fig. 3.

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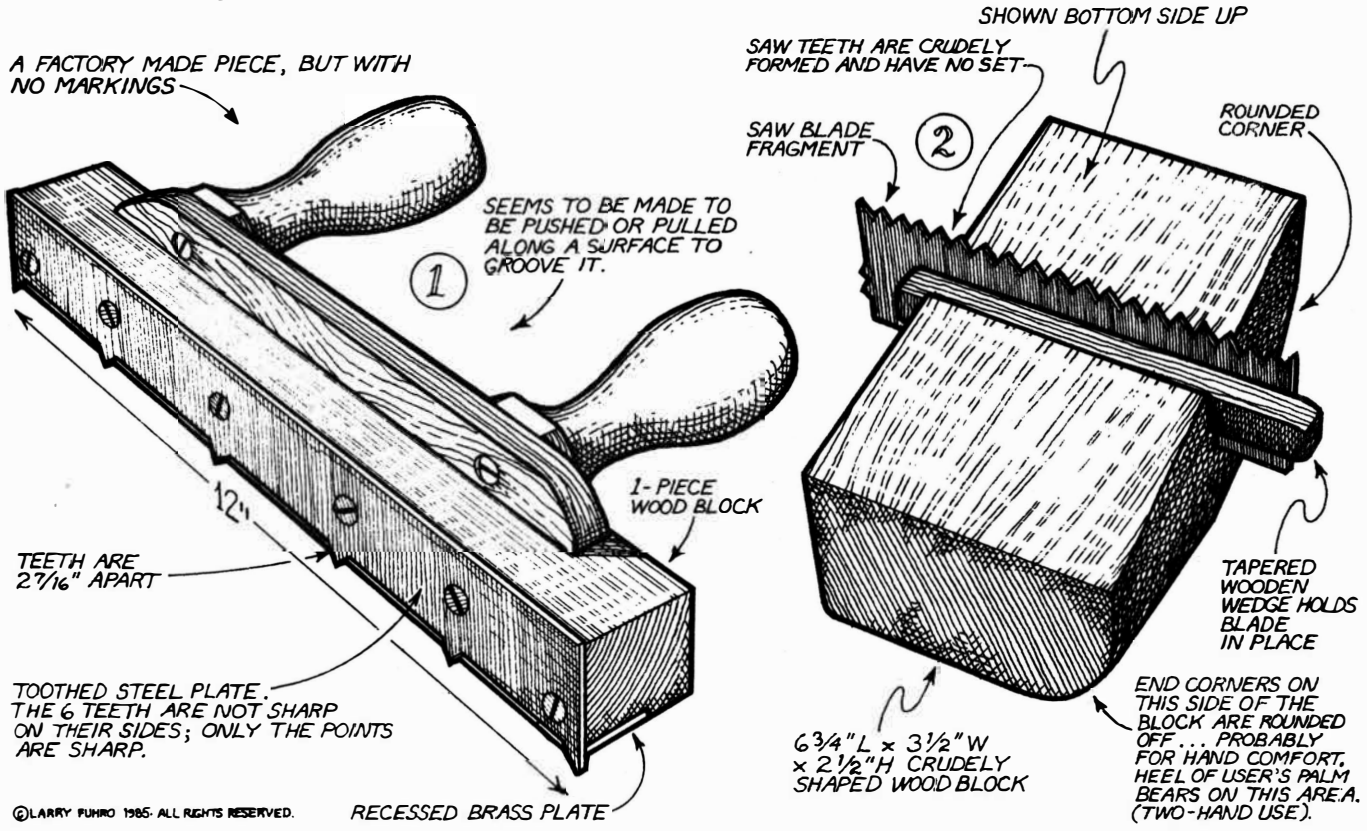
Pop Rivet's What's It? No.19

by LARRY FUHRO

HERE ARE TWO "TOOTHED" DEVICES FROM
Bob Nelson,
Cheverly, Md.



GADGETS · DOOHICKEYS · THINGAMAJIGS · AND WHATCHAMACALLITS

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[Auction, continued from page 3]
because of all the "specials" that were introduced throughout the day? Either way, it made little difference, as auctioneer Herb Kean was in unusually fine form and finished the sale in record time.

The bidding followed no discernible pattern. As always, some items brought surprisingly high bids. On the other hand, many buyers walked away with some excellent bargains. But regardless of the prices, everyone went home happy.

The success of the auction was the result of the efforts of many people. All of those who worked so hard and who gave so generously of their time deserve a vote of thanks. Special recognition must go to auction manager Joe Hauk, who made an extremely difficult job look easy; to Herb Kean, the best tool auctioneer in the country; and to Jack Whelan, Helen Whelan, Markay Zluky, and Fran Smith, who handled all of the financial and technical details with the skill and precision of seasoned professionals.

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