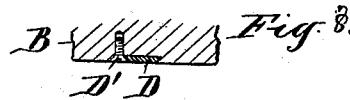
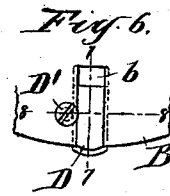
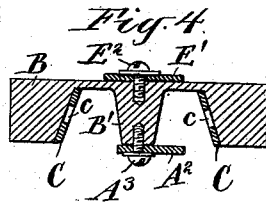
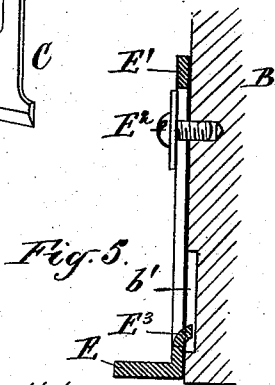
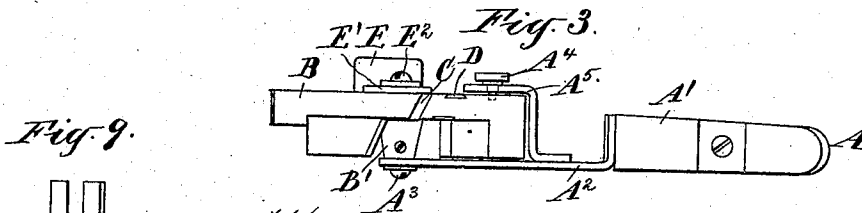
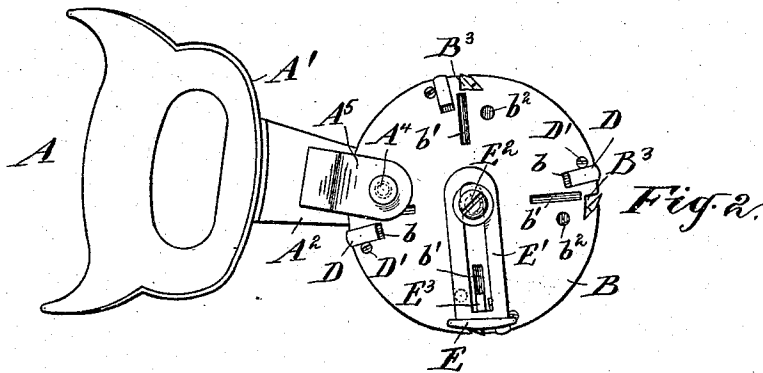
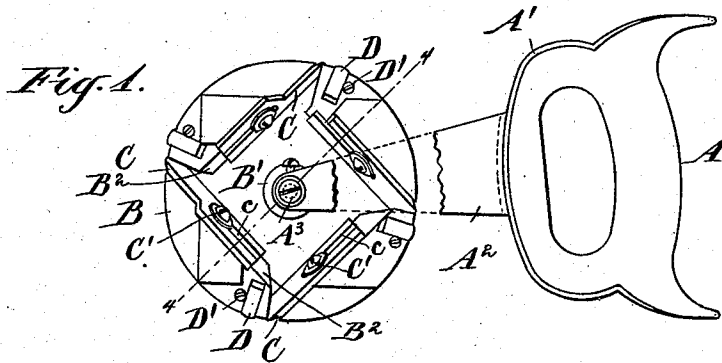


M. M. BEAHM.  
CARPENTER'S PLANE.  
APPLICATION FILED APR. 10, 1908.

932,672.

Patented Aug. 31, 1909.  
2 SHEETS—SHEET 1.



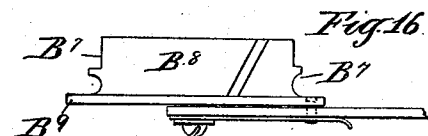
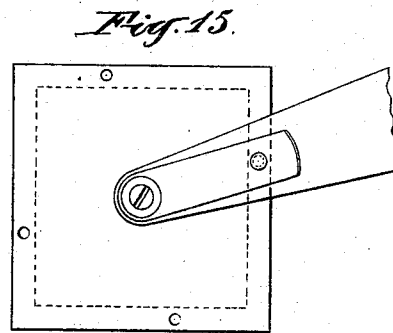
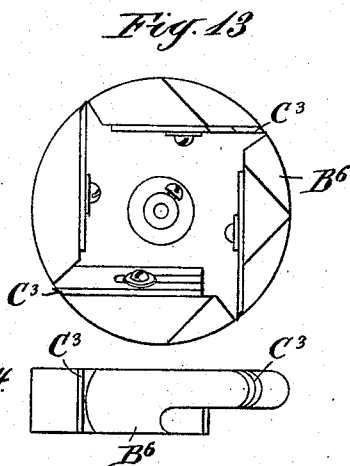
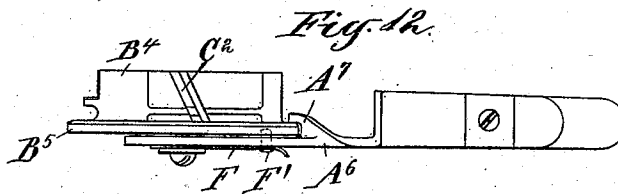
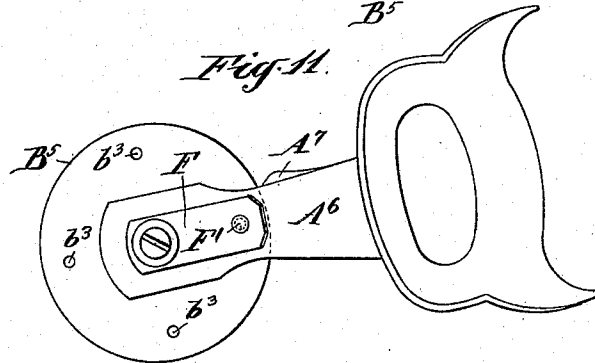
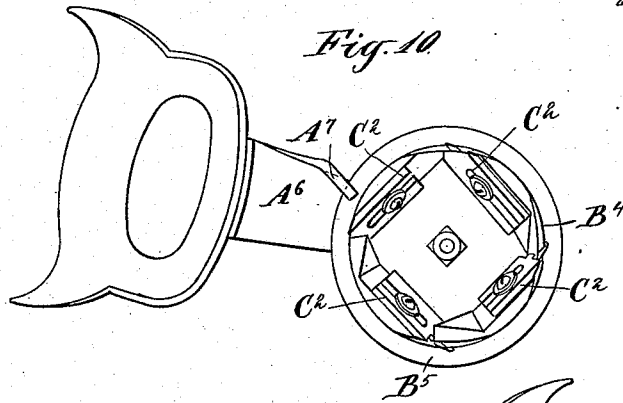
Witnesses:  
E. M. Levin.  
W. Osgood.

Inventor:  
Michael M. Beahm,  
by his attorney,  
Charles R. Seale.

M. M. BEAHM.  
CARPENTER'S PLANE.  
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2 SHEETS—SHEET 2.



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Charles R. Seate

# UNITED STATES PATENT OFFICE.

MICHAEL M. BEAHM, OF NORWOOD, OHIO.

## CARPENTER'S PLANE.

932,672.

Specification of Letters Patent. Patented Aug. 31, 1909.

Application filed April 10, 1908. Serial No. 426,303.

*To all whom it may concern:*

Be it known that I, MICHAEL M. BEAHM, a citizen of the United States, residing in Norwood, in the county of Bergen and State of New Jersey, have invented a certain new and useful Improvement in Carpenters' Planes, of which the following is a specification.

The invention relates to woodworking tools, and particularly to planes for forming rabbets, beads, tongues and grooves, dados, and the like.

The object of the invention is to provide a small hand-tool carrying a plurality of plane-irons, either of which may be conveniently presented for service, and which shall be inexpensive, easily carried and operated, and adapted to perform the required work easily and efficiently.

The invention consists in certain novel features of construction and arrangement by which the above objects are attained, to be hereinafter described.

The accompanying drawings form a part of this specification and show several forms of the invention.

Figure 1 is a side elevation showing one face of a tool designed for plowing and grooving as in the production of dados. Fig. 2 is a corresponding view of the opposite face. Fig. 3 is a top or edge view of the same, and Fig. 4 is a section taken on the line 4—4 in Fig. 1. Fig. 5 is a section on a larger scale showing the gage for limiting the depth of the cut. Fig. 6 is a side view showing one of the pairs of cutters mounted in advance of each plane iron. Fig. 7 is a section of the same taken on the line 7—7 in Fig. 6, and Fig. 8 is a corresponding transverse section taken on the line 8—8 in Fig. 6. Fig. 9 is a face view of one of the plane-irons. Fig. 10 is a face view similar to Fig. 1 but showing a modified tool adapted to form beads and the like. Fig. 11 is an elevation of the opposite face, and Fig. 12 is a top or edge view of the same. Fig. 13 is a face view showing another form adapted for hollow and rabbet work. Fig. 14 is a corresponding edge view. Fig. 15 is a face view showing still another modification, and Fig. 16 is an edge view of the same.

Similar letters of reference indicate like parts in all the figures.

Referring to Figs. 1 to 9, A is a handle preferably of hard wood shaped to be easily grasped by the hand and shown as analo-

gous to the usual saw-handle, it is reinforced by a strip of metal A<sup>1</sup> at the front to which is secured a forwardly projecting metal arm A<sup>2</sup> at the outer end of which is mounted a carrier, which I term the "cutter-head" B, in which is adjustably fastened two or more plane-irons C. The cutter-head is preferably circular, coved out or hollowed on one face and cast with a central boss B' which receives a screw A<sup>3</sup> extending through the end of the arm A<sup>2</sup> and serving as an axis on which the cutter-head may be revolved. Four plane-irons are shown, disposed with their cutting edges extending slightly beyond the periphery of the cutter-head at four equidistant points thereon, and are held at the desired angle to the line of cut by screws C' extending through slots c therein into holes in the beveled faces B<sup>2</sup> on the interior of the head. The screws C' also serve to hold the cutting edges in the desired adjustment relatively to the periphery of the head. B<sup>3</sup> are openings or throats forward of the plane-irons, through which the chips or shavings are delivered. In advance of the cutting edges of the plane-irons and mounted one on each side of the head, are pairs of cutters D serving the usual function of initiating the cut or sides of the groove to be produced. They are of dovetail section received in correspondingly-shaped shallow radial channels b in the side faces of the head, see Figs. 6, 7 and 8, and are held in the desired protruding position by screws D'. On the plane face of the cutter-head is a gage E for limiting the depth of cut; it has a slotted arm E' by which it is secured in the desired position by the screw E<sup>2</sup> set axially of the cutter-head and extending through the slot. The single gage serves for either of the plane-irons by loosening the screw E<sup>2</sup> and swinging the gage to the new position and again securing it; its relation to the selected plane-iron is maintained by the engagement of a tongue E<sup>3</sup> on the gage with a radial groove b' on the cutter-head, one of which is provided in the proper position for each plane-iron. The cutter-head is held against revolving when in use by a screw A<sup>4</sup> extending through an overhanging bracket A<sup>5</sup> mounted on the arm A<sup>2</sup>, and received in one or other of the four recesses b<sup>2</sup> on the adjacent plane face of the cutter-head. The bracket also serves with the arm in resisting torsional strains or side strains on the cutter-head, by embrac-

ing both faces of the latter at the periphery. Although the head has been above described as circular and is practically so, the curve is preferably flattened slightly along those portions of the periphery through which the plane-irons project, for the purpose of providing a less curved bearing surface for the tool when in use. It will be noted that either of the plane-irons may be easily presented for service and the cutter-head then firmly held by the screw  $A^4$ , and that the gage may be quickly shifted to the new position and adjusted as required. By making the plane-irons of different widths and mounting them in correspondingly wide or narrow portions of the periphery of the cutter head, grooves or dados of either width may be produced, and the curved form permits the tool to be used successfully on either straight or concave surfaces, thus offering in a single tool of comparatively small size facilities for doing a considerable variety of work.

Figs. 10, 11 and 12, show a modified form. The cutter-head  $B^4$  with its plane-irons  $C^2$  is arranged to produce beads of various widths along the margin of the material to be treated, and is provided with a flange  $B^5$  adapted to travel along the edge of such material and insure parallelism of the bead therewith. Torsional strains are resisted in this form by a lip  $A^7$  extending from the handle-arm  $A^8$  and with the latter closely embracing the edge of the flange. The cutter-head is held against turning by a spring  $F$  carrying a dog  $F'$  extending through the arm into one of the holes  $b^3$  provided for the purpose. The head may be turned by lifting the free end of the spring to withdraw the dog which will automatically engage the next hole when the latter is presented thereto.

Figs. 13 and 14 show an arrangement of cutter-head  $B^6$  and plane-irons  $C^3$  for producing grooves of various widths and cross-sectional forms. The handle and locking means are omitted in these figures but the cutter-head may be understood as arranged to serve with either of the handles shown in the preceding figures. A number of heads for various classes of work may be constructed to serve interchangeably with a single handle of any suitable form.

Figs. 15 and 16 show a modification in which the cutter-head is of rectangular outline instead of circular or approximately circular outline. It is shown as adapted on two faces  $B^7$   $B^7$  to produce beads, and on the uppermost face  $B^8$  to produce a rabbet. A guiding-flange  $B^9$  is provided and the device for holding the cutter-head against turning comprises a spring  $F^2$  and dog  $F^3$  similar to the corresponding parts in Figs. 11 and 12.

Other modifications may be made in the

sizes, forms, and proportions of the various parts in conditioning the tool for the various services to which it may be adapted.

Although I have shown the several cutter-heads as equipped each with four plane-irons, and deem that number usually preferable, it will be understood that two, three, four, or more may be mounted in one head if desired. Four equally spaced is considered a preferable number for the reason that such arrangement offers sufficient space between the irons to avoid interference and still permit the employment of a small cutter-head.

I claim:—

1. A handle, a circular head revolubly mounted thereon, means parallel with but eccentric to the axis of said head and engaging the latter to hold the same against rotation, means carried by the handle and carrying holding means, a plurality of plane-irons mounted in said head to act at the periphery thereof, and a gage independent of the head and irons and mounted on the axis of the former.

2. A handle, a circular head revolubly mounted thereon, means parallel with but eccentric to the axis of said head and engaging the latter to hold the same against rotation, means carried by the handle and carrying holding means, a plurality of plane-irons mounted in said head to act at the periphery thereof, a gage independent of the head and irons and mounted on the axis of the former, and interengaging means on said gage and head.

3. A handle, a cutter-head thereon, a plurality of plane-irons mounted in said cutter-head, either of said plane-irons being presentable for service relatively to said handle, and a gage independent of the head and irons and mounted on the axis of the former and arranged to serve with either of said plane-irons.

4. A handle having an arm, a revoluble cutter-head carried by said arm, a plurality of plane-irons mounted in said cutter-head either of which is presentable for service relatively to said handle by partially revolving said cutter-head, a bracket on said arm, and a locking-means independent of and parallel with the axis of rotation of said cutter head and carried by said bracket and arranged to engage said cutter-head near the periphery thereof and a gage independent of the head and irons and mounted at the axis of the former and lying parallel with the head.

5. A handle having an arm, a revoluble cutter-head carried by said arm, a plurality of plane-irons mounted in said cutter-head either of which is presentable for service relatively to said handle by partially revolving said cutter-head, means for holding said cutter-head in the desired position, and a

gage movable independent of the head and irons and mounted at the axis of said cutter-head and arranged to be turned thereon for service with either of said plane-irons.

5 6. A handle having an arm, a revoluble cutter-head carried by said arm, a plurality of plane-irons mounted in said cutter-head either of which is presentable for service relatively to said handle by partially revolving said cutter-head, means for holding said cutter-head in the desired position, a screw set axially of said cutter-head, a slotted gage held by said screw and extending radially therefrom, and a tongue on said gage arranged to engage either of a series of radial recesses in the adjacent face of said cutter-head.

10 7. A handle having an arm, a revoluble cutter-head carried by said arm, with one face closely adjacent to the latter, a plurality of plane-irons mounted in said cutter-head

either of which is presentable for service relatively to said handle by partially revolving said cutter-head, means independent of the means for holding the plane irons for holding said cutter-head in the desired position, and means independent of said head and carried by said arm for engaging the opposite face of said cutter-head and serving with said arm in resisting torsional strains on said cutter-head and a gage mounted on the axis of the cutter-head and having a tongue engaged in a radial groove in the said head.

In testimony that I claim the invention above set forth I affix my signature, in presence of two witnesses.

MICHAEL M. BEAHM.

Witnesses:

CHARLES R. SEARLE,  
W. OSGOOD.