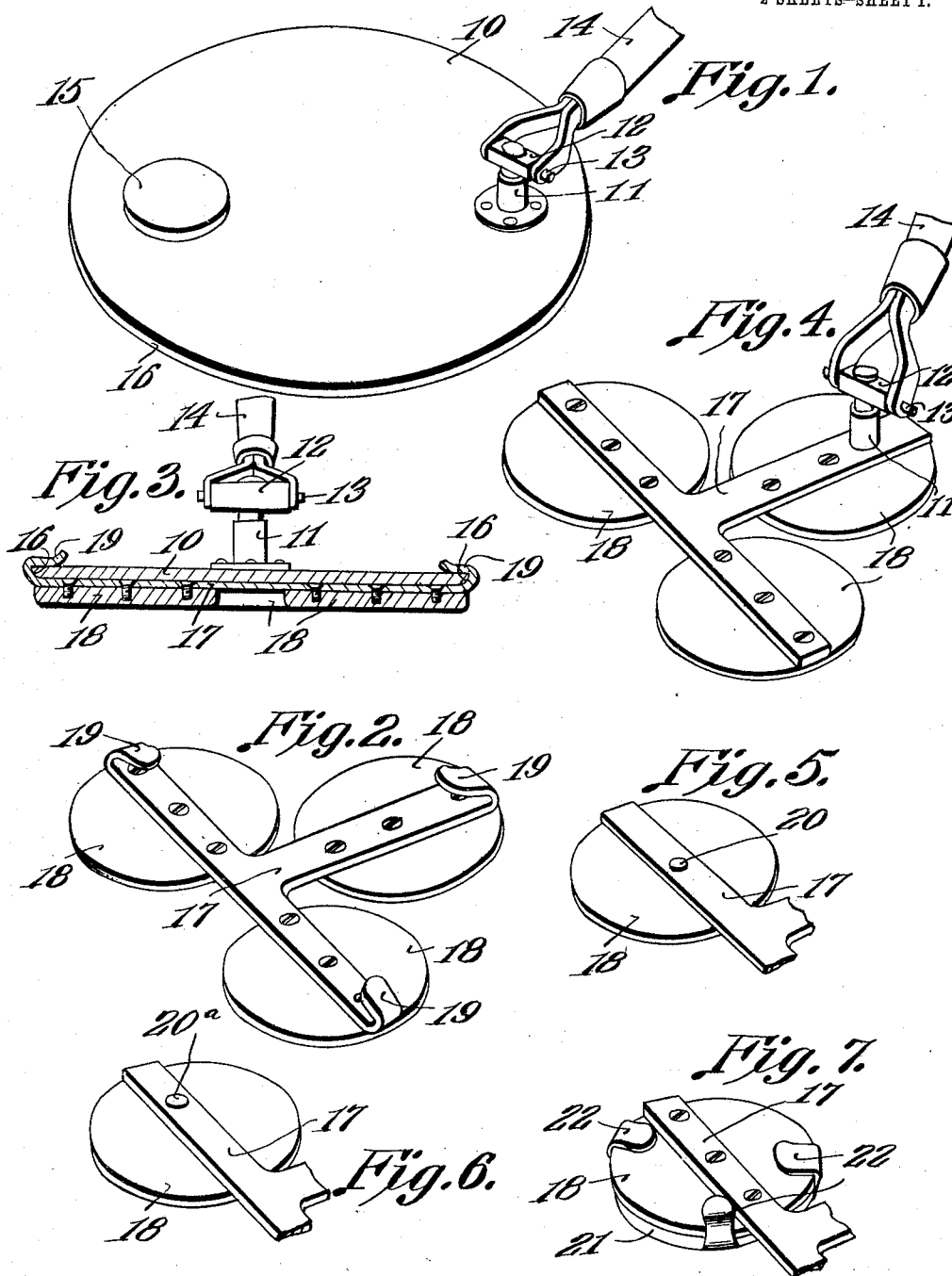


J. N. HELTZEL.
 TOOL FOR WORKING AND FINISHING PLASTIC MASSES.
 APPLICATION FILED OCT. 22, 1910.

1,005,208.

Patented Oct. 10, 1911.

2 SHEETS—SHEET 1.



Witnesses

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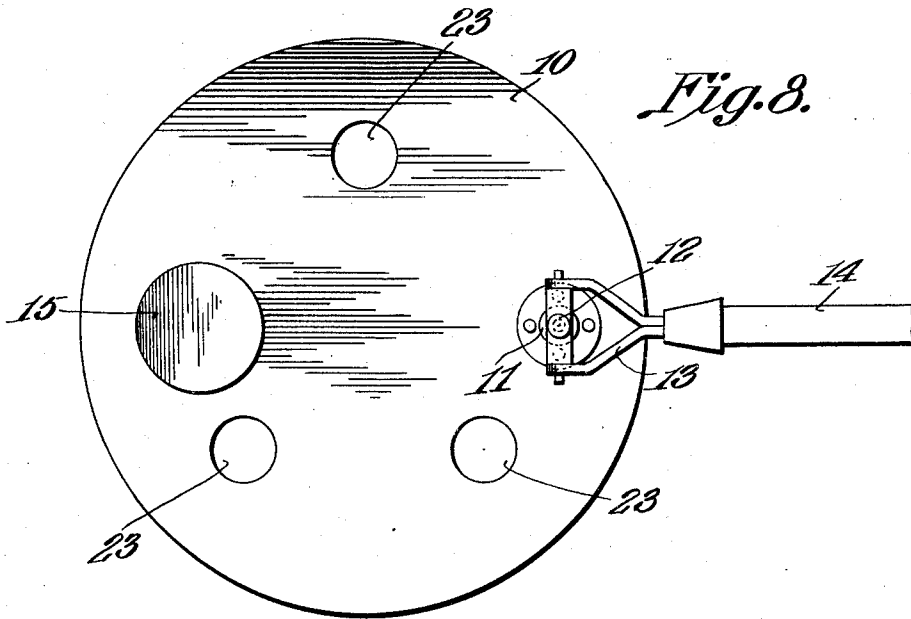


Fig. 8.

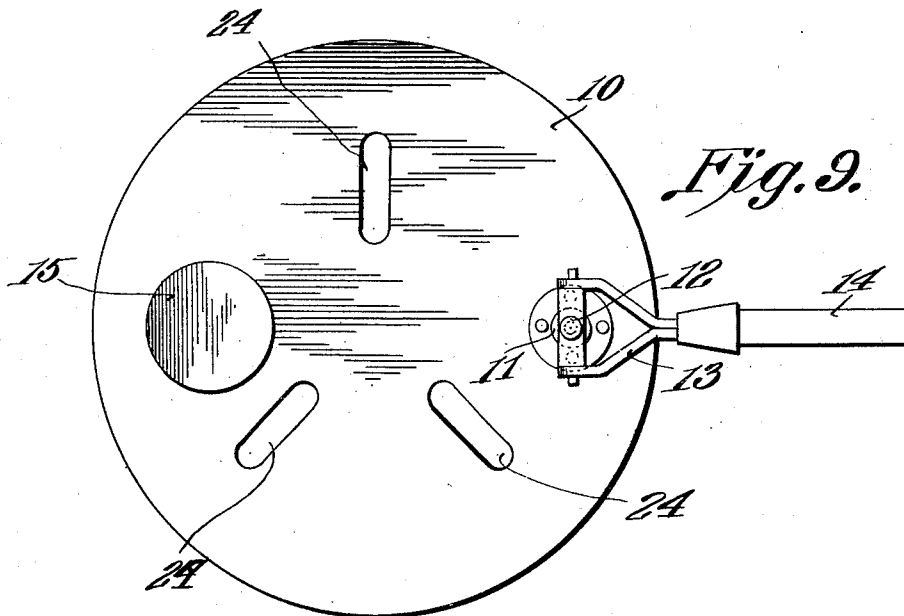


Fig. 9.

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TOOL FOR WORKING AND FINISHING PLASTIC MASSES.

1,005,208.

Specification of Letters Patent.

Patented Oct. 10, 1911.

Application filed October 22, 1910. Serial No. 533,502.

To all whom it may concern:

Be it known that I, JOHN N. HELTZEL, a citizen of the United States, residing at Streator, in the county of Lasalle and State of Illinois, have invented a new and useful Tool for Working and Finishing Plastic Masses, of which the following is a specification.

It is the object of the present invention to provide a novel tool for use in working and finishing plastic surfaces such for example as concrete side walks, concrete floors, and the like. In "floating" and finishing the surfaces of such side walks, floors, and the like, a flat rectangular trowel is employed and this implement is given a circular movement while in use.

The present invention aims, among other things, to provide a tool for floating and finishing concrete or other plastic surfaces as effectively as could be done by the employment of the ordinary trowel in the hands of a skilled workman and in which the rotary or circular movement of the working member or blade is produced automatically by the backward and forward movement of a handle which is pivoted thereto, the point of pivotal connection of the handle with the blade being eccentric with respect to the center of the blade whereby such rotary or circular movement of the blade will result from the reciprocatory movement imparted to the handle.

In the accompanying drawing, illustrating several embodiments of the invention, Figure 1 is a perspective view of one form of the invention. Fig. 2 is a perspective view of an attachment designed for use in connection with the structure shown in Fig. 1. Fig. 3 is a vertical transverse sectional view through the structure shown in Fig. 1, illustrating the attachment shown in Fig. 2 applied thereto. Fig. 4 is a perspective view illustrating a slight modification of the invention. Fig. 5 is a similar view illustrating a further modification thereof. Fig. 6 is a view similar to Fig. 5, illustrating a still further modification. Fig. 7 is a view similar to Fig. 5 illustrating an attachment designed to be used in connection with the structure shown in Fig. 4. Fig. 8 is a top plan view of a modified form of tool, and Fig. 9 is a similar view illustrating a further modification, of the tool.

In the drawings, and more particularly in Fig. 1 thereof, there is shown a working

member in the form of a flat, comparatively thin, circular disk indicated by the numeral 10, this disk being preferably of metal although it may be of hard wood. Secured upon the upper face of the disk 10 is an up-standing stud indicated by the numeral 11 and swiveled to this stud is a block 12 having at its end, pintle lugs 13 to which lugs a handle 14 is pivoted. The handle 14 may be of any desired length and is preferably sufficiently long to permit of convenient use of the tool without necessity of bending over the surface being finished as is necessary in employing the ordinary hand trowel heretofore referred to. Also fixed upon the upper face of the disk 10 at a point diametrically opposite stud 11 is a counterweight indicated by the numeral 15. The under side of the disk 10 is perfectly smooth and preferably, the peripheral edge of the disk is rounded or beveled as at 16.

In using the tool above described and illustrating one embodiment of the invention, the handle 14 is grasped and the disk 10 is disposed flat upon the surface to be finished. The handle is then given a reciprocatory movement whereupon the disk 10 will have imparted to it a rotary movement, due to the fact that the stud 11 is arranged eccentrically upon the disk. The counterweight 15, being located diametrically opposite the stud 11, assists in imparting a rotary movement to the disk, as will be readily understood. The fact will be appreciated that owing to the rotary movement had by the disk upon reciprocation of the handle 14, the same results are obtained as by the employment of the ordinary hand trowel and in fact inasmuch as the pressure upon the disk is practically constant, even better results may be secured through the employment of this tool of which it forms a part.

In Fig. 2 of the drawing there is illustrated an attachment designed to be used in connection with the device shown in Fig. 1 and this attachment embodies a base frame as indicated by the numeral 17 and having secured rigidly to the under side of each of its arms a circular disk 18 corresponding in every way to the disk 10 heretofore described except that it is of less diameter. Each arm of the frame 17 is bent up as at 19 to afford a resilient clip and in applying the device shown in Fig. 2 to the disk 10, the frame is fitted upon the disk 10

with the clips 19 engaging the edge of the said disk 10. With the device shown in Fig. 2 applied as illustrated, the tool is manipulated in the same manner as without the attachment and the results attained are substantially the same, the attachment being however particularly well adapted for use in "floating" the plastic material prior to finishing the surface thereof.

If desired, the attachment itself may constitute a complete tool or implement in which event the clips 19 at the ends of the arms of the frame 17 are omitted, as illustrated in Fig. 4 of the drawings, and a handle identical with the handle 14 is then applied to one arm of the frame near the end thereof. A tool constructed as above described and illustrated in Fig. 4 of the drawings, is employed in the same manner as the tool shown in Fig. 1.

It has been found expedient, under some conditions to rotatably mount the disk 18 upon the frame 17 in the manner illustrated in Fig. 5 of the drawing, the stud about which the disk shown in this figure, rotates, being indicated by the numeral 20. Also, it has been found desirable at times to locate the stud 20 eccentrically with respect to the axis of the pin as indicated at 20^a in Fig. 6 of the drawing. In this modification of the invention, reciprocation of the handle 14 will result not only in a rotation of the frame and all three of the disks about the axis defined by the stud 11 associated with the handle 14, but also in a rotation of the disk 18 about the respective axis 20^a in the same manner as described in connection with the disk 10 and stud 11.

In Fig. 7 of the drawings there is shown an attachment designed for use in connection with the disk 18 and this attachment is in the nature of a disk 21 having spring clips 22 adapting it for application to one of the disks 18. The disks 21 are preferably of hard wood and this attachment is particularly desirable for "floating" the plastic material.

While several forms of the invention have been herein shown and described, it will be readily understood that the invention aims broadly to provide a tool embodying a handle, and a working member, the handle being so connected with the working member that reciprocatory movement thereof will impart to the working member a rotary

movement simulating the movement given to the ordinary hand trowel. Consequently, various other modifications may be made in the structure of the device so long as the principle involved remains the same.

In the form of the invention shown in Fig. 8 of the drawing, the tool is of the structure shown in Fig. 1 of the drawing, except that a plurality of openings 23 are formed in the plate 10. Likewise, the form of the invention shown in Fig. 9 is identical with that shown in Fig. 8 except that slots 24 are formed in the body 10 instead of the openings 23.

It has been found by practical experience in the use of the device illustrated in Fig. 1 of the drawing, in finishing certain classes of material, that a partial vacuum will be created beneath the plate causing the same to more or less firmly adhere to the surface of the material. To overcome this, the two forms of the invention illustrated in Figs. 8 and 9 are provided, the openings 23 or slots 24, as the case may be, preventing the creation of a vacuum beneath the plate and serving further, in an advantageous manner, to cut down any high spots in the surface. The arrangement and form, as well as the size of the openings and slots, are of course purely arbitrary.

What is claimed is:

1. In a tool of the class described, a working member, and a handle loosely pivoted eccentrically to the member.

2. In a tool of the class described, a flat surface-working disk, and a handle loosely pivoted eccentrically thereto.

3. In a tool of the class described, a working member, and operating means loosely connected pivotally eccentrically thereto.

4. In a tool of the class described, a flat perforated surface working disk, and a handle loosely pivoted eccentrically thereto.

5. In a tool of the class described, a flat surface-working disk, a handle loosely pivoted eccentrically thereto, and a weight upon the disk diametrically opposite the pivot for the handle.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

JOHN N. HELTZEL.

Witnesses:

P. J. LUCEY,
R. E. LARKIN.