

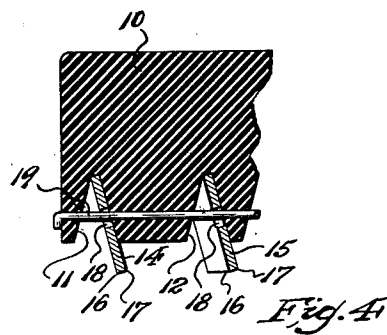
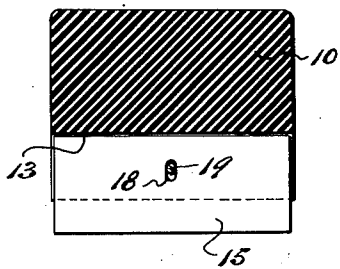
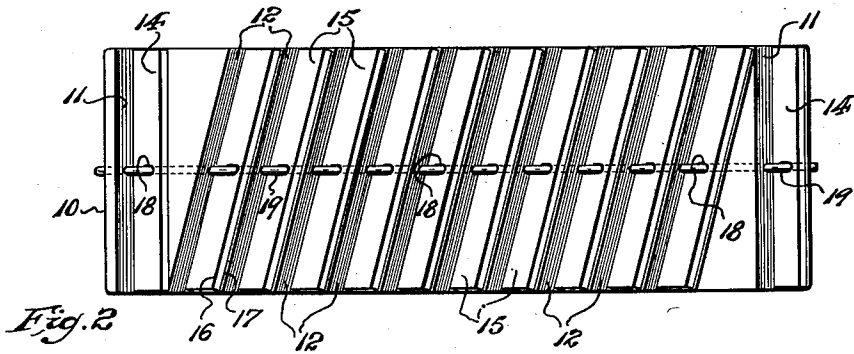
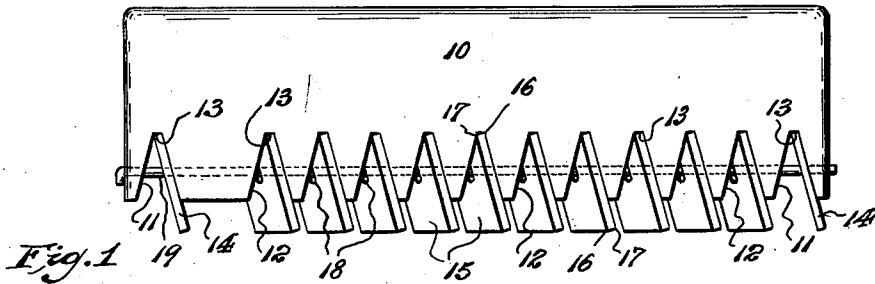
April 1, 1952

E. P. HELLER

2,590,966

SCRAPING TOOL

Filed Sept. 29, 1949



INVENTOR.  
Eugene P. Heller,  
BY *George Richards*  
Attorney

## UNITED STATES PATENT OFFICE

2,590,966

## SCRAPING TOOL

Eugene P. Heller, Madison, N. J., assignor to  
Heller Brothers Company, Newark, N. J., a cor-  
poration of New Jersey

Application September 29, 1949, Serial No. 118,679

1 Claim. (Cl. 30—172)

1

This invention relates to a scraping tool, and the invention has reference, more particularly, to an improved construction of oscillating blade type of tool of the general character disclosed in Wallace Patent No. 2,233,657.

The present invention has for an object to provide a scraping tool of the oscillating blade type wherein a plurality or group of spaced blades are supported in a holding body or block subject to oscillation or swing, whereby the opposite cutting edges of the blades are alternately brought into operation by the back and forth motion imparted to the tool in use.

In the improved tool according to the present invention, the group of scraping blades comprises terminal blades disposed to extend transversely of the holding body or block, respectively at the opposite ends thereof, and at right angles or perpendicular to the longitudinal axis of said body or block, and a plurality of intermediate blades set transversely diagonal or oblique to the longitudinal axis of the body or block. In the improved tool thus characterized, the terminal blades serve as tracker blades which operate in use to prevent divergence of the tool from a substantially straight forward and back movement, so that the oblique blades, in traversing the straight forward and back path of movement of the tool, will so present their cutting edges, relative to the surface to be scraped thereby, as to effect a diagonal cut, thus producing a highly efficient scraping action with attendant reduction of resistance to tool movement, so that less exertion or force is required for operation of the tool, and less fatigue is experienced by the operator.

An illustrative embodiment of this invention is shown in the accompanying drawings, in which:

Fig. 1 is a side elevational view of the scraping tool; Fig. 2 is a bottom plan view thereof; Fig. 3 is a transverse vertical sectional view of the same; and Fig. 4 is a fragmentary longitudinal sectional view thereof.

Similar characters of reference are employed in the above described views, to indicate corresponding parts.

Referring to the drawings, the tool comprises a generally rectangular body or block 10 of suitable length, width and thickness. The body or block 10 is preferably made of resilient material, such as soft rubber or like somewhat elastically compressible material. Adjacent to each end thereof, the body or block 10 is provided with a transverse terminal groove or socket 11, the longitudinal axis of which extends perpendicularly or

2

right angularly to the longitudinal axis of the body or block, and which indents the bottom of said body or block. Formed in the body or block, intermediate said terminal grooves or sockets 11, so as to be spaced from the latter and parallelly spaced one from another, is a group of transverse intermediate grooves or sockets 12, the longitudinal axes of which extend diagonally or oblique to the longitudinal axis of the body or block, and which also indent the bottom of said body or block. Both said terminal grooves or sockets 11 and said intermediate grooves or sockets 12 are of inverted V-shape or triangular in cross-section, thus widening at their mouths, which lie in the plane of the bottom face of the body or block 10, with their sides converging upon blade fulcruming seats 13 within the interior of the body or block.

Within the respective terminal grooves or sockets 11 are mounted scraper blades 14 which, for the purpose of distinguishing the same from other blades of the tool, are hereinafter sometimes referred to as "tracker" blades. Within the respective oblique intermediate grooves or sockets 12 are mounted like scraper blades 15 which, for the purpose of distinguishing the same from said tracker blades, are hereinafter sometimes referred to as "oblique cut" blades. Both the tracker and the oblique cut blades 14 and 15 are of rectangular shape, and of width substantially in excess of the depths of the grooves or sockets 11 and 12, so that operative longitudinal portions thereof freely project well beyond the bottom face plane of the body or block 10. The blades 14 and 15 are preferably of lengths corresponding substantially to the lengths of the grooves or sockets in which they are mounted. The upper longitudinal edges of the blades 14 and 15 engage the seats 13 of the grooves or sockets in which they are mounted, so that said blades are fulcrumed on said seats for back and forth oscillation or swing between the sides of said grooves or sockets. The lower longitudinal edges of the blades 14 and 15 are suitably sharpened to provide oppositely presented cutting edges 16 and 17.

Each of the blades 14 and 15 is provided, in that part thereof which is housed in a groove or socket, and midway between the blade ends, with a perforation or slot 18. Extending longitudinally through the body or block 10, in a plane which intersects the grooves or sockets 11 and 12 thereof, is a keeper rod 19 which passes through the perforations or slots 18 of each blade, thereby securing said blades against dis-

placement from operative assembled relation to the body or block 10, but in such manner as to allow freedom of movement of the blades for desired oscillation or back and forth swing within the grooves or sockets by which they are housed.

The fulcruming edge portions of the blades 14 and 15 may also be sharpened to provide oppositely presented cutting edges 16 and 17, so that the blades may be reversed in the body or block 10, thus permitting use of either long edge of a blade for the scraping operation. The blades 14 and 15 may be easily removed from the body or block 10, for resharpening, reversal or replacement, by withdrawing the keeper rod 19 from the body or block.

In operation of the scraping tool in use, the operator will apply the dependent free edges of the blades to the surface to be scraped, and will then reciprocate the tool in the direction of its longitudinal axis. On forward movement of the tool, the blades will swing back against the rear sides of the grooves or sockets in which they are housed, thus applying the forward cutting edges 16 of said blades to the surface to be scraped thereby (see Fig. 1). On reversed or rearward movement of the tool, the blades will swing forward against the forward sides of the grooves or sockets in which they are housed, thus applying the rearward cutting edges 17 of said blades to the surface under scraping treatment.

Owing to the disposition of the plurality of oblique cut blades 15 in diagonal extension across the longitudinal axis of the body or block 10, the highly desirable slicing or oblique cutting action of the operative cutting edges of the blades will tend to cause the tool to diverge from the desirably straight path of back and forth movement. Such divergence, unless substantially prevented, will counteract or neutralize the slicing or oblique cutting action of the tool which it is desirable to maintain. To prevent such divergence of the tool from the desired straight forward and back path of movement, the tool, according to the instant invention, is longitudinal tracking means preferably in the form of the tracker blades 14 respectively adjacent the opposite ends of the tool body or block 10. These tracker blades 14, being disposed across the tool body or block perpendicularly or right angularly to the longitudinal axis thereof, present their operative cutting edges squarely across the line of tool movement, so that no camming or laterally shifting force is transmitted by said tracker blades to the tool, but, on the contrary, the head on contact of these blades with the surface over which the tools is moved tends to oppose the tendency of the oblique cut blades to cause lateral shift of the tool during operation thereof. As a consequence of this, the tool is caused to firmly track in a straight path of movement without substantial divergence therefrom. As a result, the oblique cut blades 15 are so held to a straight path of movement, that the desired slicing cut effect thereof is not counteracted or neutralized. The slicing cut effect of the majority of the tool blades, as thus maintained, reduces the resistance

to blade movement over and in operative contact with the surface under treatment, with the result that less physical exertion is required to be exercised by the operator, and consequently less fatigue is experienced by said operator.

The body or block 10 of the tool, being of resilient material and thus of some flexibility, will allow sufficient flexure of the tool in use to cause the operative cutting edges of the blades to make effective contact with the surface undergoing scraping treatment, notwithstanding said surface may be somewhat uneven in plane. Also due to the elastic compressibility and flexibility of the tapered sections of the body or block 10 intermediate the grooves or sockets, and especially between the grooves or sockets 12, the blades, in their operative positions, are resiliently backed so as to be somewhat yieldably supported, thus better assuring uniform engagement of the sharp cutting edges thereof with the surface undergoing scraping treatment.

Having now described my invention, I claim:

A scraping tool of the oscillating blade type comprising an elongated body having intermediate its ends a plurality of longitudinally spaced grooves of inverted V-shape in cross-section extending across its bottom oblique to the longitudinal axis of the body, scraper blades respectively occupying respective oblique grooves with their upper longitudinal edges fulcrumed by the apices of said grooves for back and forth rocking movement therein, the lower longitudinal edges of said blades being sharpened to provide forwardly and rearwardly presented cutting edges, whereby said blades, due to their transversely oblique disposition, will cut with a slicing action when the body is reciprocated in a path parallel to its longitudinal axis, said body being further provided intermediate each end thereof and the adjacent end of the group of oblique scraper blades with a terminal groove of inverted cross-section extending across its bottom perpendicular to the longitudinal axis of the body, a tracker blade fulcrumed in the apex of each terminal groove for back and forth rocking movement therein, said tracker blades being operative to prevent substantial divergence of the tool in use from a path of longitudinal reciprocation parallel to the longitudinal axis of the tool body, whereby to assure desired slicing cut action of the oblique scraper blades, and means common to said oblique scraper blades and said tracker blades to retain the same within their grooves subject to back and forth rocking movement therein.

EUGENE P. HELLER.

#### REFERENCES CITED

The following references are of record in the file of this patent:

#### UNITED STATES PATENTS

Number	Name	Date
62,064	Peters et al. ....	Feb. 12, 1867
2,233,657	Wallace .....	Mar. 4, 1941
2,269,811	Elwood .....	Jan. 13, 1942