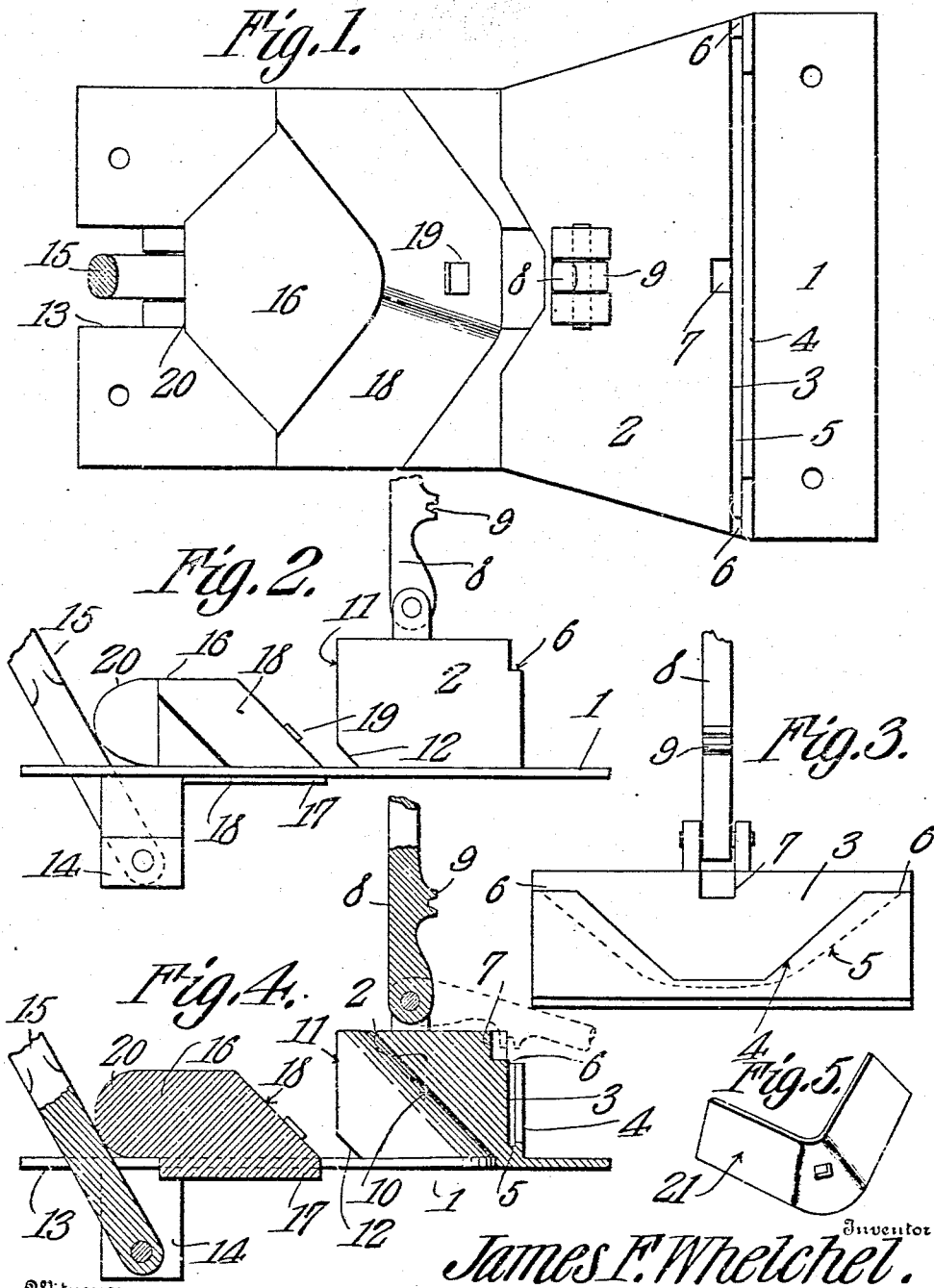


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SWEEP SHAPER.
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978,416.

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Witnesses

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UNITED STATES PATENT OFFICE.

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SWEEP-SHAPER.

978,416.

Specification of Letters Patent. Patented Dec. 13, 1910.

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To all whom it may concern:

Be it known that I, JAMES F. WHELCHER, a citizen of the United States, residing at Murrayville, in the county of Hall and State of Georgia, have invented a new and useful Sweep-Shaper, of which the following is a specification.

This invention has relation to sweep shapers and it consists in the novel construction and arrangement of its parts, as hereinafter shown and described.

The object of the invention is to provide a structure upon which a strip of sheet metal may be accurately formed and shaped into proper configuration for a sweep especially adapted to be used upon a plow standard. In forming such a part of a plow it is of prime importance that the side portions of the sweep be pitched at proper angles with relation to each other in order that they may properly operate in the soil, and it is also important that the angle of inclination or pitch of one side portion shall be equal throughout to the angle and pitch of the other side portion. Heretofore the shaping of such a part has been usually done upon an anvil, unattended with the use of a shaper, and consequently the operator, in a great measure, must rely upon his judgment and eye in determining the pitch and relation of the side portions of the scraper. Therefore, when bad judgment is used, or one unskilled attempts to form such a part, the result is usually that the side portions of the scraper are not properly disposed with relation to each other, the consequence being that when the scraper is applied to the standard of a plow, the implement has more or less side draft and will operate at different degrees upon the soil located at the opposite sides of the plow standard.

It is with a view of providing means whereby one practically unskilled in the art of forming sweeps may produce a sweep with accuracy and uniformity, that prompts the production of the subject matter of the present invention.

In the accompanying drawing:—Figure 1 is a plan view of the shaper. Fig. 2 is a side elevation of the same. Fig. 3 is an end elevation of the same. Fig. 4 is a sectional view of the same. Fig. 5 is a perspective view of a sweep as formed by the shaper.

The shaper comprises a base 1, upon which is mounted an anvil portion 2. The said

portion is provided at one end with an approximately vertical surface 3, which lies in a plane, and in front of which is located a spaced flange 4. Between the face 3 and the flange 4 is located a web 5, having a synclined upper surface which extends at equal angles or curves at the opposite sides of a vertical line erected from the plane of the base 1 at a point midway between the sides of the anvil portion 2. The dotted line in Fig. 3 of the drawing best illustrates the disposition of the synclined surface of the said web 5. At its upper edge the web 5 terminates in shoulders 6, 6 which are located adjacent the vertical sides of the anvil portion 2.

The anvil portion 2 is provided at the upper edge of its end portion upon which the face 3 is located with a niche 7. A lever 8 is fulcrumed upon the upper side of the anvil portion 2 and is provided with spaced lugs 9, one of which is adapted to enter the niche 7 when the said lever is swung down in the manner as illustrated in dotted line in Fig. 4. The side of the anvil portion 2 opposite that side thereof at which the face 3 is provided is undercut, forming an inclined surface 10, which is pitched at an angle of 45 degrees to the plane of the base portion 1, and which is regularly curved at the opposite side of a line passing through the middle of the anvil portion 2 and at right angles to the plane of the face 3. The end portions of the surface 3 are at right angles to each other, and, while the major portion of the side 11 of the anvil portion 2 lies in a plane parallel with the face 3, the lower portion of the side 11 at the ends of the curved surface 10 are cut away, forming edges 12, which are inclined at an angle of 45 degrees to the plane of the base 1. Thus the edges 12 are parallel with the angle of inclination of the surface 10 provided in the anvil portion 2.

The base 1 is provided with a passage 13, which in turn is provided with parallel side edges, and the said base is also provided with standards or supports 14. A lever 15 is fulcrumed between the standards or supports 14 and is arranged to swing longitudinally along the passage 13. A block 16 rests upon the base 1 and lies over the passage 13 provided therein, and is provided upon its under side with a web 17, which projects down through the passage 13 and is provided at its sides with grooves 18 for the reception

of the side walls of the said channel 13. The said block 16 is thus arranged to move longitudinally along the said channel 13, and the block at one end is provided with an inclined curved surface 18, which approximately corresponds with the inclination and curvature of the surface 10 provided in the anvil portion 2. The said block 16 is further provided upon the inclined surface 18 with a non-circular lug or projection 19, which has its middle located in the vertical central plane of the said block. That end of the block 16 opposite the end thereof upon which the inclination 18 is provided is formed as a curved shoulder 20, against which the upper portion of the lever 15 may operate, as will hereinafter appear.

When a sweep is to be formed the following steps of the operation are usually traced:—From a sheet of metal is cut an oblong strip. This strip is heated and is then placed with its lower edge upon the shoulders 6 of the anvil portions 2, and the lever 8 is swung down so that the upper edge of the strip is caught between the lugs 9 of the said lever. The said lever 8 is then forced down, so that the strip of metal is distorted from an oblong shape into an approximate crescent shape, but still retains its opposite sides in parallel planes. During the bending of the strip as above described if it should show a tendency to buckle or warp, an operator may use a hammer upon the same, driving the strip into contact with the face 3 of the anvil portion, and thus the sides of the said strip may be maintained in parallel planes as stated. After the strip has been bent as indicated it is removed from between the flange 4 and the face 3 of the anvil portion 2 (previous to which however the strip has been forced down so that its lower edge assumes the curvature of the surface of the web 5). After the strip has been bent as indicated it is removed from the web 5 and a perforation is provided therein at a point midway between its ends for the reception of a heel-bolt, by means of which it is attached to a plow standard. The strip is then placed upon the inclined surface 18 of the block 16 and the bolt perforation provided in the strip as indicated is made to receive the lug 19. The said block 16 is then moved toward

the anvil portion 2, and the lower outer edge portions of the strip engage the inclined edges 12 of the anvil portion 2, and thus the said strip is held at an angle of 45 degrees to the plane of the base 1. The free end of the lever 15 is then operated so that the intermediate portion of the said lever is brought in contact with the curved shoulder 20 of the block 16 and the said block 16 is forced toward the anvil portion 2, so that the inclined surface 18 of the said block is carried under the inclined surface 10 of the anvil portion, and thus the scraper is distorted from the approximately crescent shape into the proper form of a sweep having its side portions at uniform and regular angles with relation to each other.

While it has been above stated that the plate is first heated, it is to be understood that it is also possible to work the plate or strip into the shape indicated in a cold condition, if sufficient power is at hand to accomplish the bending and shaping as indicated.

Having described my invention, what I claim as new, and desire to secure, by Letters Patent, is:—

A device for shaping a sweep formed from a blank curved edgewise, comprising a base having an anvil portion provided with an undercut curved surface inclined at an angle of approximately 45 degrees to the plane of the base, and having the lower portions of its ends terminating in edges inclined at an angle of approximately 45 degrees to the plane of the base, said inclined edges lying in planes at an angle of approximately 90° to the plane of the base, said base having a passage, a block slidably mounted in the passage and having an inclined face pitched at an angle corresponding to the angle of inclination of the inclined surface of the anvil portion, and having a lug, a lever fulcrumed with relation to the base and operating through the passage to engage the said block.

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

JAMES F. WHELCHEL.

Witnesses:

I. F. HURLEY.

J. G. HURLEY.