Aug. 27, 1963 A. A. LEVY 3,101,502

FEATHEREDGE

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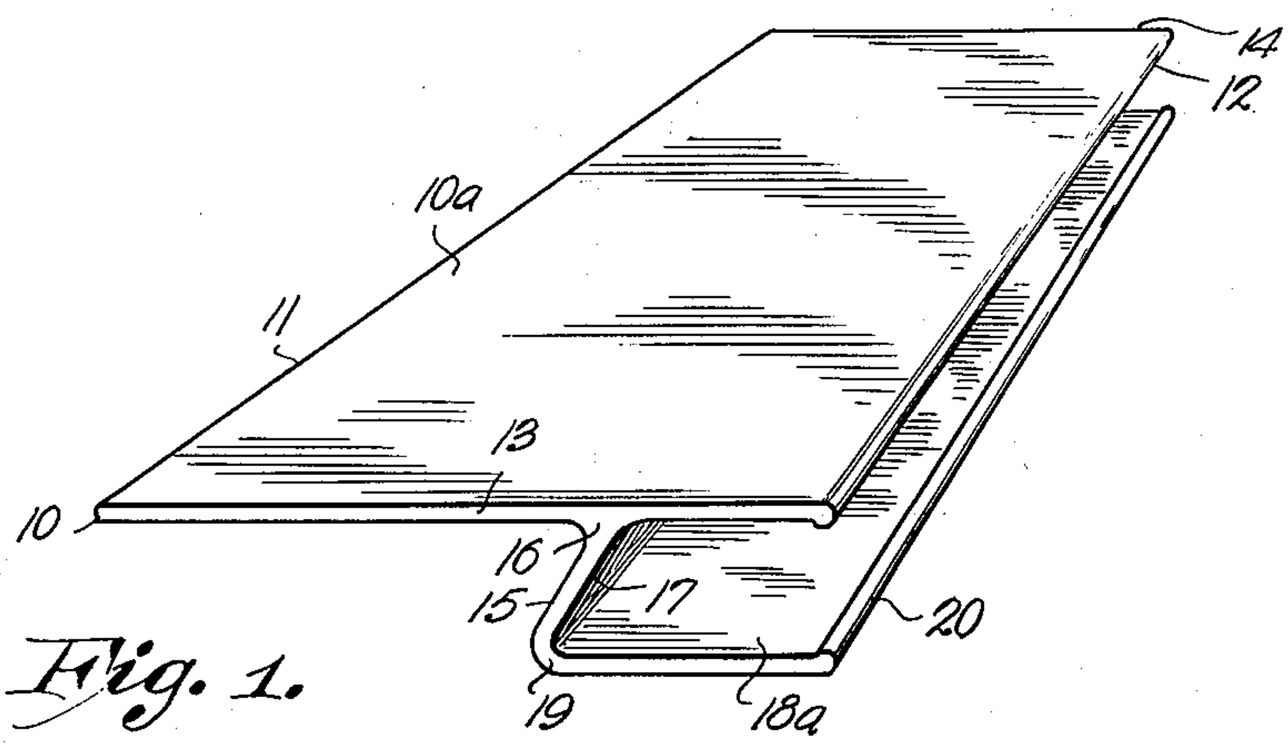

Fig. 1.

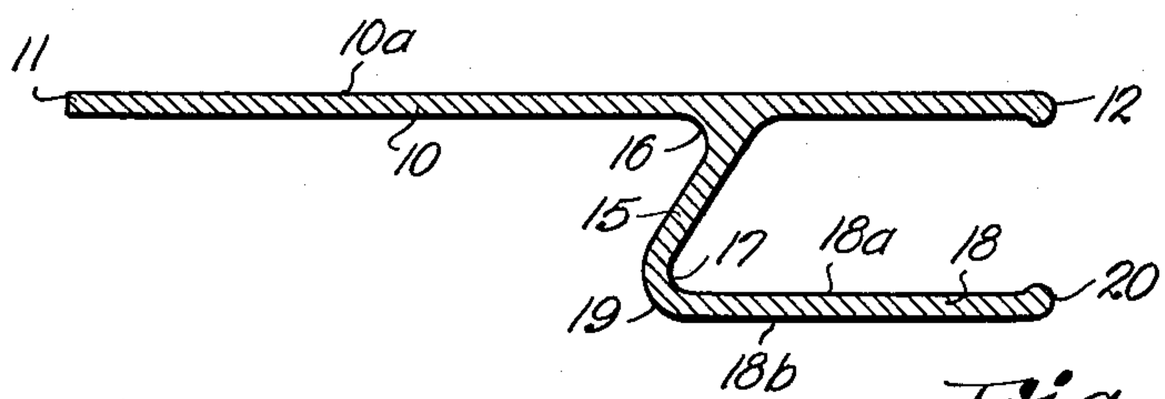

Fig. 2.

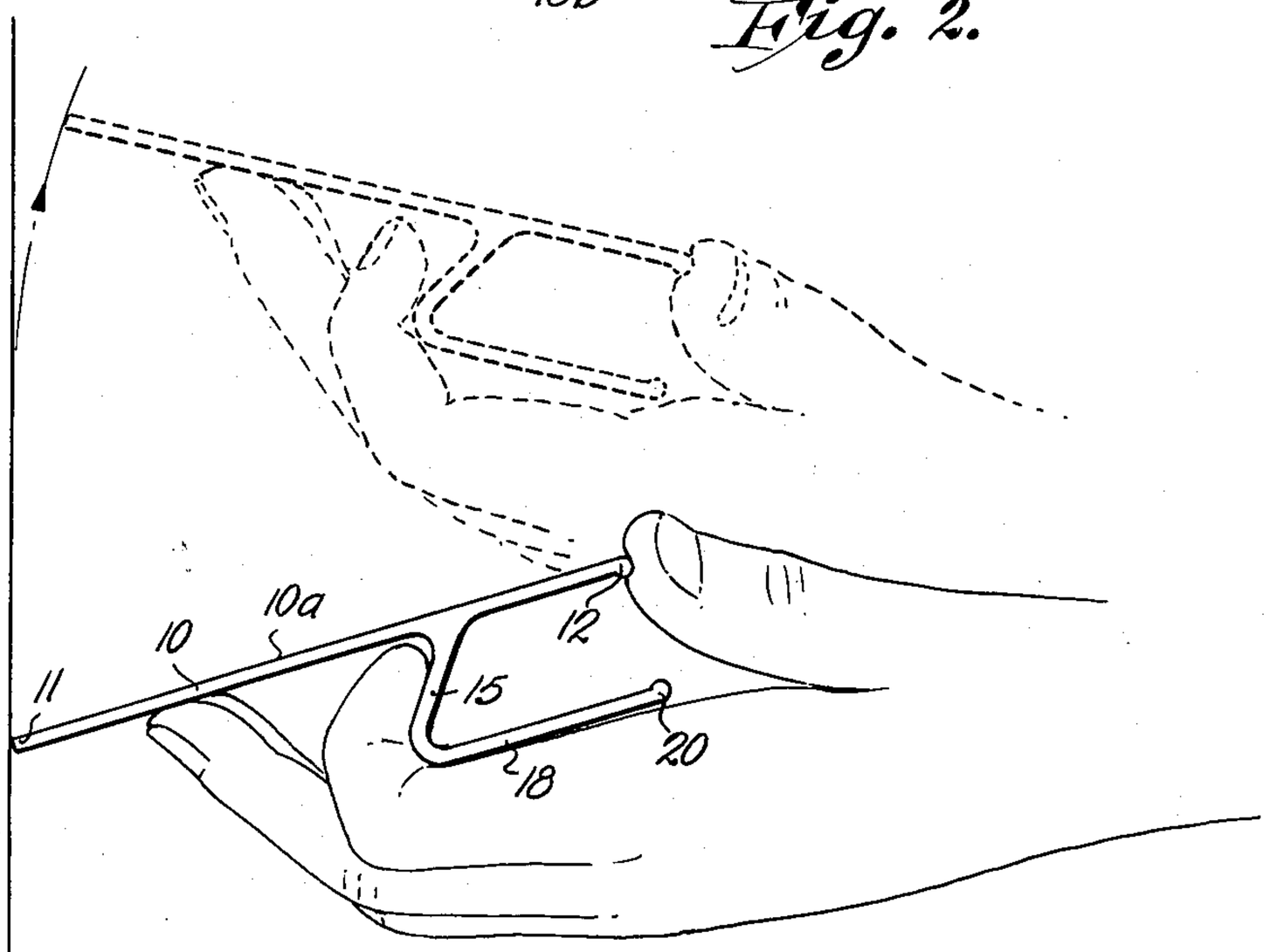

Fig. 3.

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FEATHEREDGE

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1 Claim. (Cl. 15—235.4)

This invention relates to masoners' and construction tools and refers more particularly to featheredges, shingles, darbies, straightedges, etc. used in plastering.

Straightedges, darbies, shingles and featheredges, which are all names for the same thing in the plastering trade, are known to the art in many forms. The older and more conventional form, still often used, comprises a wooden board, with or without handles, sometimes with metal strip reinforcing or the like. Moore 400,590 (1889) and Moad 1,383,226 (1921) are typical examples of this older construction. More complicated constructions, still of wood, but having metal attachments and removable or adjustable features later appeared. Jacobson et al. 2,217,369 (1940) and Schumock 2,450,385 (1948) are examples of this trend. Still later, all metal featheredges as seen in Whalen 2,608,852 and Squire 2,773,377 (1956) appeared. This invention is particularly an improvement over the said Squire Patent 2,773,377, issued December 11, 1956, for "Featheredge."

Many objections have been raised to various of the above types of conventional straightedges and darbies. Thus, any device with a multiplicity of parts and adjustment features is necessarily more expensive to manufacture and sell than a simpler device. All of the wooden featheredges suffer from a marked tendency to warp and wear excessively. Even the metal featheredges have a tendency to warp under certain conditions. Complex structures, particularly metallic ones with hollow portions, are often difficult to clean and keep in operative shape. The variety of handles and grip attachments and means employed by the art readily show that handling and manipulation of the large size and often heavy featheredge devices is a severe problem. In addition to rigidity of construction, strength and resistance to wear in long continuous use, lightness and lack of weight are prime desirable factors due to the problem of user fatigue, and also problems of preuse handling of the large tool over long work periods in the plastering operation. Another advantage of a featheredge would be full and ready accessibility of all parts for cleaning after use. An attractive appearance over a long period of time of use would also be desirable.

An object of the invention, therefore is to provide a featheredge which is extremely simple in construction yet offers functional and operational features not provided by known featheredge constructions.

Another object of the invention is to provide a featheredge which may be formulated from a single aluminum or magnesium extrusion or the like whereby to minimize manufacturing and fabrication costs.

Another object of the invention is to provide a featheredge with all portions thereof readily accessible for repair and cleaning.

Another object of the invention is to provide a featheredge construction which is extremely light, yet of the required size, which has structural features which permit the handling thereof so as to permit the most precise control of the plastering operation.

Another object of the invention is to provide a featheredge or darby construction which is extremely simple in construction, light in weight, yet very rigid, strong and shape retaining over the longest periods of continuous and rugged use.

Still another object of the invention is to provide a featheredge construction which is attractive in appearance, functionally designed, cheap to manufacture, sell and purchase, easy to use and which has a long life under heavy usage.

Yet another object of the invention is to provide a featheredge construction which may be handled and manipulated by the user in such a way as to provide the most precise control in relatively small movements thereof, which feature has not previously been available in the art.

Yet another object of the invention is to provide a featheredge construction which enables the user to grasp it in an unusually convenient manner, which grasp is both secure and also permits manipulation of the featheredge in a manner not heretofore possible.

Another object of the invention is to provide a featheredge construction which permits variable thumb control and which provides a wrist action similar to a plastering trowel.

Another object of the invention is to provide a featheredge construction which permits the use of the featheredge both as a finishing tool in the manner of a plastering trowel and as a straightening tool in the manner of most conventional featheredges.

Still another object of the invention is to provide a featheredge construction which gives a good grip or grip purchase when the instrument is slick and wet and wherein the operator's thumb is not necessarily forced into plaster picked up by the tool.

Other and further objects of the invention will appear in the course of the following description thereof.

In the drawings, which form a part of the instant specification and are to be read in conjunction therewith, an embodiment of the invention is shown and, in the various views, like numerals are employed to indicate like parts.

FIG. 1 is a perspective view from one end and above of a featheredge incorporating the invention.

FIG. 2 is a cross-sectional view through the subject featheredge.

FIG. 3 is a side view of a plasterer employing the subject featheredge, the view in full lines showing one position of the user's hands in the plastering operation, the dotted lines showing a second position of the user's hands.

Referring to the drawings, at **10***a* is shown the flat free side of a first elongate, flat plate member generally designated **10** and having substantially parallel longitudinal edges **11** and **12** with substantially parallel end edges **13** and **14**. Edge **11** is that portion of the tool which is adapted to work the plaster in application to a wall surface.

A second elongate flat member generally designated **15** has substantially parallel longitudinal edges **16** and **17** and substantially parallel end edges, non-numbered in the views. The length of the member **15** is preferably the same length as that of the first elongate member. Member **15** is connected to one side of the first member intermediate its longitudinal edges along a line substantially parallel thereto and closer to the nonworking longitudinal edge **12** thereof than the other. Member **15** is also necessarily angled from a plane normal to the said first elongate member in such fashion that an obtuse angle is formed between the first elongate member and member **15** between the latter and edge **12** and an acute angle is formed between member **15** and the first elongate member toward working edge **11**. The edge **16** is preferably faired or filleted into the surface of the first elongate member at their joinder. This may be seen most clearly in FIG. 2. Second member **15** is also preferably formed with edge **17** rounded for gripping purposes.

A third elongate flat member generally designated **18** has upper and lower faces **18***a* and **18***b*, the former opposing the face of the first elongate member. Substantially parallel longitudinal edges **19** and **20** are connected to or faired into second member **15** and oppose edge **12**,

respectively. The width of the third elongate member preferably is such that a plane normal to the first elongate member edge 12 intersects free edge 20 of the third member. Third member 18 preferably runs substantially parallel to the first elongate member.

Optimum angles between the second elongate member or flanges 15 and the first elongate member 10 are 57° (the acute angle) and 123° (the obtuse angle). The purpose of the inclination of the second member outwardly away from the nonworking edge 12 is to provide a secure grip for the fingers (not thumb) of user as seen in FIG. 3. If the inclination of the second member were to be reversed, it would not be possible for the operator to support the featheredge entirely by his fingers without the additional use of the thumb. In the illustrated construction, however, the operator may insert one or more fingers behind the inclined portion or member 15 and support the tool thereby without retaining a thumb grasp in order to rest and relax the hand without laying the tool down. A firm operating grasp is possible with the tool held between the fingers and the thumb of the operator with the thumb either inserted between the first and third members or extending substantially parallel to the tool contacting the free edges of the first and third members opposite the working edge. Shifts between these two positions provide a maximum angle of arc of manipulation without moving the arm and tool itself. A maximum of "fingertip" control of the tool is achieved by virtue of the configuration shown. While the angularity of the second member to the first member is not critical at the inclination above-mentioned, an angularity of 90° of the second member to the first member gives no finger purchase whatsoever, while a much greater angularity than that shown, in the direction illustrated would prevent the full insertion of the user's fingertips into the acute angled recess and thus would pinch or cramp the freedom of rotation of the tool relative to the fingers. I have discovered that an angling of the second elongate member 15 outwardly away from the nonworking edge 12 whereby to provide an acute angle varying from 75 to 35° between the second member and the first member 10 toward the working edge 11 covers the entire operative angle range. As previously noted above, a more acute angle prevents any insertion of the operator's fingers therebetween, while a less acute angle gives no finger purchase. This range of angularity is critical to the invention and covers the working operative range.

Without rounding or fairing of edge 1 into the first member, there would be provided a sharp crack in which plaster or other material might collect. The same is true of the rounding of the interior angle between the face 18*a* and the second member. The rounding of the external portion of the acute angle between the third member and the second member is much preferred because it prevents any undue pressure on or shutting off of blood supply in the user's fingers and deprivation of comfort in the use of the tool. At all times, the user's grip is extremely secure and the user may use the thumb of his hand between the third and first member or against the free edges 12 and 20 of the first and third members, alternatively, as desired. Thus, not only is a very positive and affirmative grip afforded, but a comfortable working grip which gives a new degree of freedom and manipulation in the tool not heretofore achieved in the art.

The entire tool may conveniently be formulated or fabricated by magnesium or aluminum extrusion. The entire area or zone enclosed within the first, second and third members, in the gripping portion of the tool should not be greater than the gripping area or size of an average worker's hand. The configuration shown also provides a very convenient grip for carrying the tool with the working edge extending downwardly with the weight carried by the fingertips which grasp the rearwardly inclined blade surface, with the thumb serving merely as a retainer. Rounding the edges 20 and 12 and beading same in op-

position to one another also markedly eases handling and shifting of the position of the tool in the worker's hands.

FIG. 3 shows the device in use wherein, in full lines, an intermediate wall engaging position is shown, while, in dotted lines, rotation of the hand by pushing the fingers away from the user and bringing the thumb down, the tool is elevated in a sweeping arc. A downward movement or a position from which a larger arc of upward sweep can be achieved may be assumed with the user's thumb, in the full line showing of FIG. 3, placed against the free edges 12 and 20, and the operator's fingers curled toward the operator. This sweeps the working edge further downwardly, counterclockwise in the view.

As in any extruded featheredge, the working edge may be restored by machining if it deteriorates. The space between the first and the third members may receive a wood flange or strip to give an alternate working edge or a browning rod surface. The beaded edges 12 and 20 also aid in retaining any wood insert for use as a browning rod, in addition to increasing safety from sharp edges.

From the foregoing, it will be seen that this invention is one well adapted to attain all of the ends and objects hereinabove set forth together with other advantages which are obvious and which are inherent to the structure.

It will be understood that certain features and subcombinations are of utility and may be employed without reference to other features and subcombinations. This is contemplated by and is within the scope of the claim.

As many possible embodiments may be made of the invention without departing from the scope thereof, it is to be understood that all matter herein set forth or shown in the accompanying drawings is to be interpreted as illustrative and not in a limiting sense.

Having thus described my invention, I claim:

A featheredge comprising an elongate substantially flat first plate member having a pair of substantially parallel and straight line opposed longitudinal edges, one of said first plate member edges comprising the working edge thereof, a second plate member having a pair of substantially parallel and straight line longitudinal edges connected by one of said edges to said first plate member intermediate the longitudinal edges of said first plate member and along a line extending substantially parallel thereto, the connection between the first and second members positioned closer to the nonworking edge of the former than the working edge thereof, the connection between the first and second members faired on the acute angle side thereof, said second plate member in transverse cross section inclined from the normal to said first plate member in a direction toward the working edge of said first plate member, the inclination of the second plate member relative to the first plate member forming an acute angle between 75° and 35° toward the working edge of said first plate member, an elongate, substantially flat third plate member having a pair of substantially parallel and straight line longitudinal edges connected at one longitudinal edge thereof to said second plate member in such manner as to extend substantially parallel to said first plate member, the connection between the second and third members faired both exteriorly and interiorly thereof, the direction of extension of said third plate member carrying it over the obtuse angle formed between the first and second plate members, the width of said third plate member less than half the width of the first plate member and the adjacent longitudinal edges of the first and third plate members substantially opposed to one another, the substantially opposed longitudinal edges of the first and third plate members rounded off with respect to one another, the entire zone enclosed within the first, second and third members, in the gripping portion of the tool, not greater than the gripping area of an average worker's hand, said zone enclosed within said members sufficiently small that it may fit within the grasp of the average worker's hand in such

manner that the worker's thumb may abut against the nonworking edge of the first member and his fingers simultaneously manipulate the working edge thereof by directly contacting the face of the said first member between the second member and the working edge of the first member at a position substantially equidistant between the second member and said working edge.

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