April 10, 1928. 1,665,270

J. A. LUBBERS

FLY SWATTER

Filed March 14, 1927

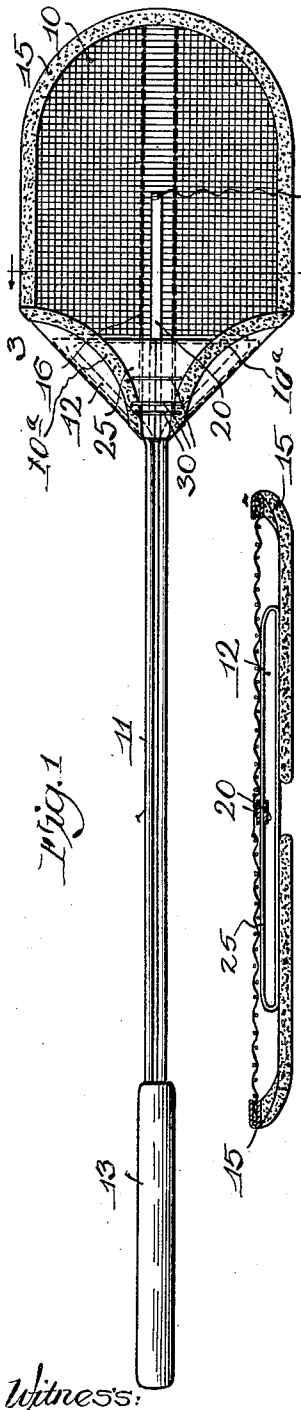


Fig. 1

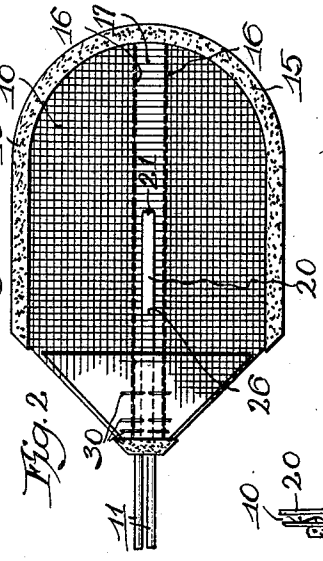


Fig. 2

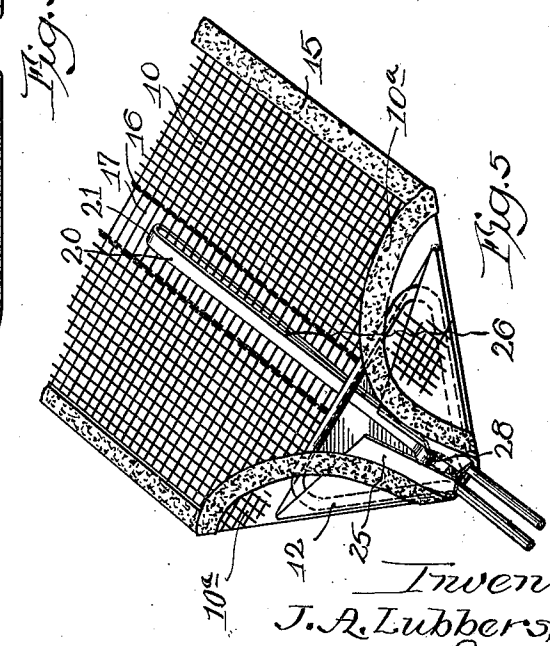


Fig. 3

Fig. 5

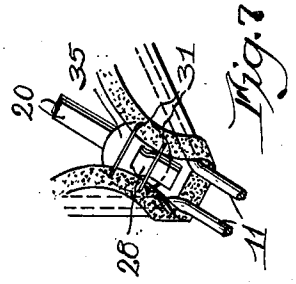


Fig. 7

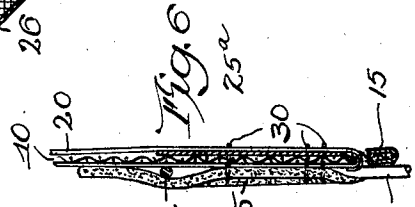


Fig. 6

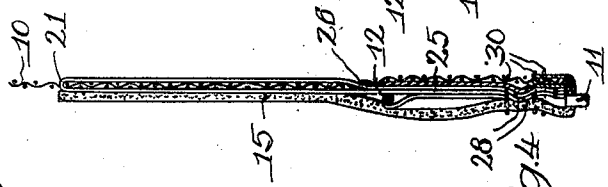


Fig. 4

Witness:
Chas. L. Kousch.

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UNITED STATES PATENT OFFICE.

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FLY SWATTER.

Application filed March 14, 1927. Serial No. 175,107.

This invention relates to fly swatters and more particularly to fly swatters of the wire handled, wire-mesh type, and has for its principal object to produce an improved simple and durable construction of devices of the class above described, capable of being produced at a minimum cost.

More particularly, the present invention is directed to the practical application of a flat wire reinforcing strip such as shown in Jackson Patents Nos. 1,018,244 and 1,124,138, to a wire-handled device. Flat wire reinforcing strips of the character therein shown have been used in connection with wooden handled swatters of the Jackson type, but such wooden handled swatters have been largely superseded by wire handled devices on account of the fact that the latter may be generally made and sold at less price, and furthermore, have the advantage of being thinner at the throat so as to form a substantially flat striking surface where the handle joins the wire mesh. With such thinner, relatively flat wire handle structures, however, it has heretofore been difficult to provide a simple, commercially practical construction for supporting and anchoring the reinforcing strip. In the present invention I provide an extremely simple and economical construction whereby the reinforcing strip is securely and durably interlocked with the wire handle and wire mesh without an appreciable increase in cost over preexisting wire-handled types, excepting the added cost of the reinforcing strip itself.

The invention may best be understood by reference to the accompanying drawing illustrating certain preferred forms in which it may be carried out.

Figure 1 is a view of one form of fly swatter constructed in accordance with my invention.

Figure 2 is a fragmentary view showing the reverse side of the swatter shown in Figure 1, with the handle portion omitted.

Figure 3 is an enlarged section taken on line 3—3 of Figure 1.

Figure 4 is an enlarged longitudinal section showing details of construction of the reinforcing strip and its supporting means.

Figure 5 is an enlarged perspective view showing the swatter in partially assembled condition before the securing clips are applied and with the folded portion of the web and supporting fibre in partially unfolded position so as to show the method of assembling the parts of the swatter shown in Figure 1.

Figure 6 is a detail showing a modified anchoring construction for the reinforcing strip.

Figure 7 is a perspective view illustrating another modified form of anchoring construction.

Referring now to details of the swatter shown in Figures 1 to 5, inclusive, 10 indicates generally a piece of wire netting or web forming the striking end of the swatter. 11 indicates a heavy wire shank, herein formed of a single wire bent at one end in the form of an open triangular base or support 12 and having the two lower extremities thereof secured in a handle 13 which may be of wood or similar material. The wire netting 10 is somewhat elongated in shape with rounded inner and outer end portions, and is bound about its periphery by means of a suitable felt or cloth binding 15. In the preferred form shown herein, the center portion of the netting is woven with some of the longitudinal wires spaced apart between lines 16—16 so as to form an area 17 of sufficient width to accommodate the reinforcing strip or spring 20, which forms one of the principal features of my invention as will now be described.

The reinforcing strip 20 consists of a piece of strip steel bent flatwise upon itself at 21 and interwoven in the central area 17 of the netting so as to be disposed longitudinally thereof with its closed end 21 located some distance from the lower or inner end of the netting and with its two open ends extending downwardly to a point adjacent the lower margin of the netting 10. Said netting is secured to the triangular base portion 12 of the wire handle 11 by folding the lower margins 10^a, 10^a, of said netting inwardly and upwardly so as to fit along side edges of said triangular portion, as clearly shown in Figures 1 and 5. When so folded, it will be seen that the lower ends of the reinforcing strip 20 are disposed in the lower corner of the triangular base portion 12. In the preferred form shown in these figures, I have also utilized a triangular supporting piece 25, comprising a piece of heavy paper, fibre or the like, which is folded directly about the triangular wire

support 12 and within the netting 10, as clearly shown in Figure 5. When this supporting member is used, I find it preferable to insert or thread the lower portion of the spring 20 through the netting at a point above the outer margin of said supporting member, as for instance, at 26 in Figures 2, 4 and 5, so as to bring the two lower ends of the spring 20 in contact with each other within the folds of said support, as best shown in Figures 2 and 4.

In order to secure all the parts together, I form the free or lower ends of the reinforcing strip 20 with an offset gripping portion, in the form shown in Figures 1 and 5 this gripping portion consisting of corrugated or hump portions 28—28, as best shown in Figures 4 and 5. These securing portions are disposed at the extreme lower end of the reinforcing strip so as to be in position to be engaged by the securing means utilized in the final assembly of the parts.

A preferred form of securing means comprises a plurality of clips 30—30 which are disposed transversely of the swatter and pass from the inner margins of the folded-over portions of the netting through to the opposite side of the netting so as to secure the netting and fibre supporting member 25 in flattened position over the triangular wire base 12. It will be noted that the lower clips 30—30 are therefore disposed just above and within the lower corner of said triangular wire base so as to retain the base in the pocket thus formed by the folded portions of the wire netting and fibre member, and at the same time, these clips register with opposite sides of the corrugated portions 28—28 so as to restrain the reinforcing strip 20 from longitudinal movement relative to the handle 11 and thus maintain it securely against endwise displacement when in use.

In the modified form shown in Figure 6, the lower ends of the reinforcing strip 20 extend on opposite sides of the netting 10 to a point below the securing means or clips 30, and at that point the extreme free ends are folded inwardly toward each other in overlapping position so as to pass through the wire netting and under the lower margin of the fibre supporting member 25ª, thus effectively securing the reinforcing strip against withdrawal in a longitudinal direction.

In a second modified form shown in Figure 7, the lower end portions of the reinforcing strip are formed with corrugations 28—28 as in the case of the form shown in Figure 4, but in this instance the ends are passed through an auxiliary anchor piece 35 and the strip and anchor piece are secured together by clips 31—31 passing therethrough, as shown.

A fly swatter constructed as above described is much more durable than the ordinary wire handle type heretofore in use. The reinforcing strip is effectively secured and anchored in place, in the triangular portion 12, and cooperating with the wire netting forming the striking surface so as to retain it in relatively flat condition, thereby greatly increasing the efficiency and lengthening the life of service of such devices.

Although I have shown and described certain embodiments of my invention, it will be understood that I do not wish to be limited to the exact construction illustrated and described, but that various changes and modifications may be made without departing from the spirit and scope of the invention.

I claim as my invention:

1. In a fly swatter, a relatively heavy-wire handle base having diverging sides, a wire netting having its lower edges folded laterally over said sides, a flat metal reinforcing strip interwoven with said netting to support opposite surfaces thereof beyond said base, said strip having an offset portion disposed adjacent said base, and wire clips extending through said netting and interlocking with said offset portion of said reinforcing strip to anchor the same to said base.

2. In a fly swatter, a relatively heavy wire handle base having diverging sides, a wire netting having its lower edges folded laterally over said sides, a flat metal reinforcing strip interwoven with said netting to support opposite surfaces thereof beyond said base, said strip having an offset portion disposed adjacent said base, and wire clips extending through said netting and said lateral folds thereof between the diverging sides of said wire base and interlocking with said offset portion of said reinforcing strip to anchor the same to said base.

3. In a fly swatter, a relatively heavy-wire handle base having diverging sides, a wire netting having its lower edges folded laterally over said sides, a flat metal reinforcing strip folded back on itself with its folded end passing through said netting to support opposite surfaces thereof beyond said base, the lower ends of said strip having offset portions disposed adjacent said base, and wire clips passing through said netting between the diverging sides of said base and interlocking with said offset portions of said strip to anchor the same to said base.

4. In a fly swatter, a relatively heavy-wire handle base having diverging sides, a wire netting having its lower edges folded laterally over said sides, a flat metal reinforcing strip folded back on itself with its folded end passing through said netting to support opposite surfaces thereof beyond said base,

the lower ends of said strip having offset portions disposed adjacent said base, and wire clips passing through and securing said netting and said lateral folds between the diverging sides of said wire base, and clamping opposite sides of said offset portions of said strip in interlocking engagement to anchor the same to said base.

5. In a fly swatter, a relatively heavy-wire handle base having diverging sides, a wire netting having its lower edges folded laterally over said sides, a flat metal reinforcing strip folded back on itself with its folded end passing through said netting to support opposite surfaces thereof beyond said base, the lower ends of said strip having corrugated offset portions registering with each other and disposed adjacent said base, means securing said netting and lateral folds thereof flatwise over said wire base and interlocking with said offset portions of said strip to anchor the same to said base.

6 In a fly swatter, a relatively heavy-wire handle base having diverging sides, a fibre supporting piece folded laterally over said sides, a wire netting having its lower edges folded laterally over said supporting piece and said sides, a flat metal reinforcing strip folded back on itself and interwoven with said netting to support opposite surfaces thereof beyond said base, the lower ends of said strip having offset portions disposed adjacent said base and within the folds of said supporting piece, and wire clips passing through said netting and fibre supporting piece and interlocking with said reinforcing strip to anchor the same to said base.

7. In a fly swatter, a relatively heavy-wire handle base having diverging sides, a fibre supporting piece folded laterally over said sides, a wire netting having its lower edges folded laterally over said supporting piece and said sides, a flat metal reinforcing strip folded back on itself and interwoven with said netting to support opposite surfaces thereof beyond said base, the lower ends of said strip having offset corrugated portions disposed adjacent said base and within the folds of said supporting piece, and securing means passing through said netting and supporting member to hold the same flatwise over said base, and interlocking with said reinforcing strip to anchor the same to said base.

Signed at Chicago, Ill., this 11th day of March, 1927.

JOHN A. LUBBERS.