

R. J. GEMMILL

APPARATUS FOR ATTACHING RINGS TO UMBRELLA CASES.

No. 182,913.

Patented Oct. 3, 1876.

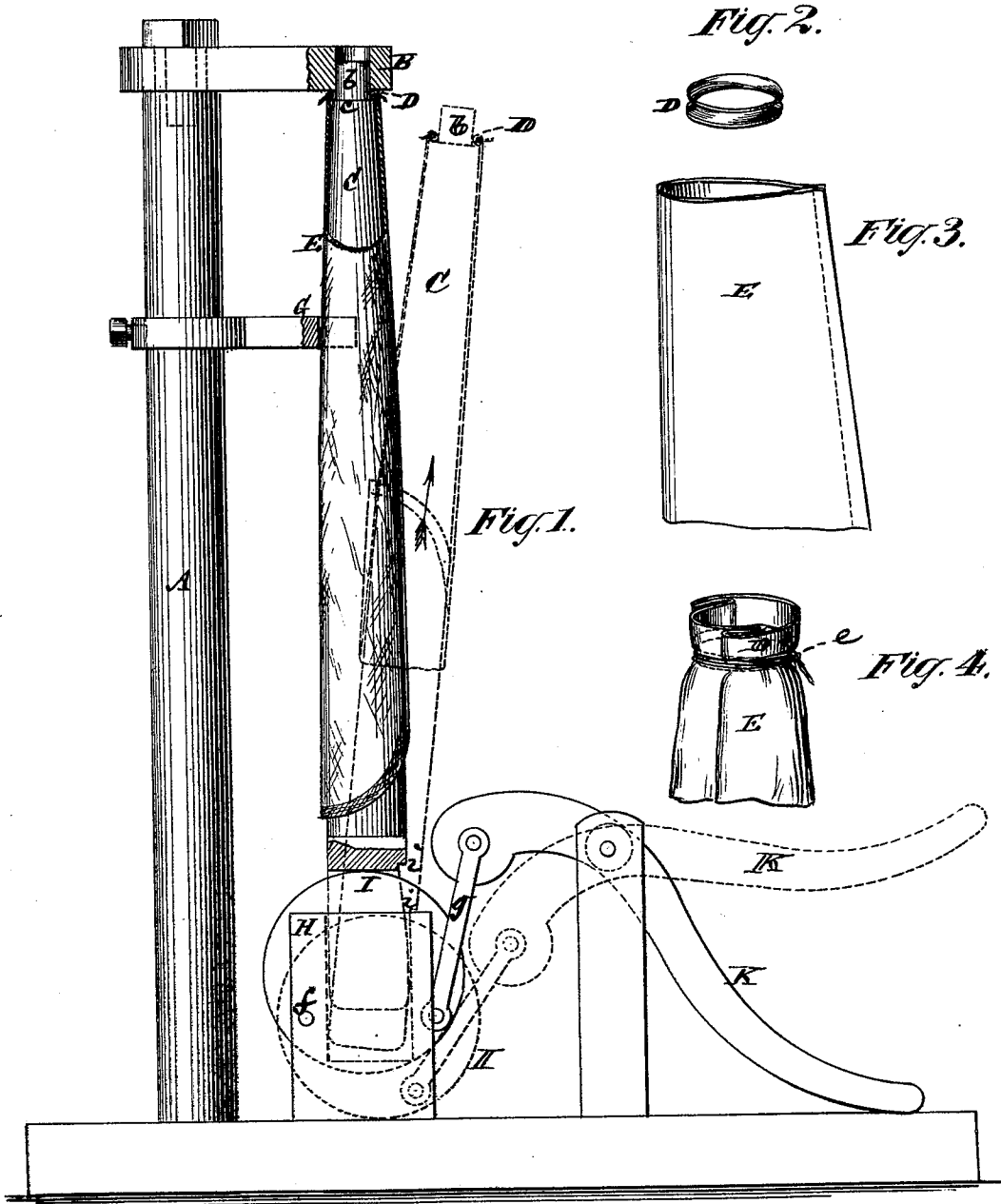


Fig. 2.



Fig. 3.

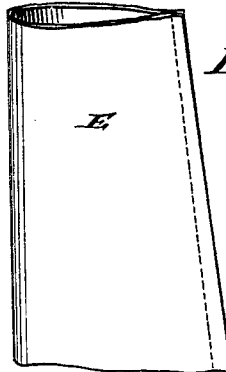
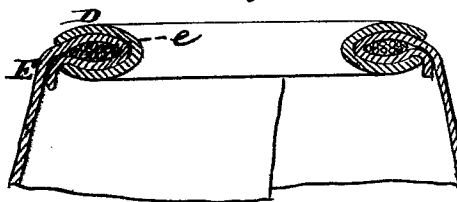


Fig. 4.



Fig. 5.



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IMPROVEMENT IN APPARATUS FOR ATTACHING RINGS TO UMBRELLA-CASES.

Specification forming part of Letters Patent No. **182,912**, dated October 3, 1876; application filed April 29, 1876.

To all whom it may concern :

Be it known that I, ROBERT J. GEMMILL, of the city, county, and State of New York, have invented certain new and useful Improvements in Machines for Attaching Metallic Binding-Rings to the Ends of Umbrella-Cases and the gores of umbrella-covers; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, which forms part of this specification.

The object of this invention is to provide a simple and efficient machine for expeditiously attaching grooved metallic binding-rings to the ends of umbrella-cases and the gores of umbrella-covers, and to allow of the umbrella-case, clamped at its ends by the binding-ring, being turned right-side out, and removed from its holding-post without tearing or cracking the material of which said case is composed.

To these and other ends the invention consists in a solid and removable externally-heated post, over which the umbrella-case, having been turned inside out, is drawn or passed, and which, after the grooved metallic binding-ring has been inserted within the end of the case, and secured by tying, is made to operate as a male die, that, as it enters a female die, clamps or closes the ring on the folded-in end of the umbrella case or cover. This solid post retains its heat better than a hollow one, and, being removable, may be readily heated by plunging it in a hot-water bath, and in this way the external surface of the post be uniformly heated throughout its length, which is important as regards the effect on the umbrella-case, and by having a number of said posts, certain of which are being heated while one is in use, the delay consequent on employing such a case-holding post is insignificant. Said post, which also operates as a male die in clamping the ring on the end of the umbrella-case, is supported by, and has combined with it, certain operating means, whereby it is automatically lifted to facilitate the removal of each ring end bound case from off it, and to provide for the placing of a fresh case and loose ring on it,

and subsequently of adjusting the post under the female die, to effect the clamping of the ring.

Figure 1 represents a side view of the machine with the working parts in different positions, as shown by full and dotted lines, and with the umbrella case or cover as having its end clamped by the binding-ring, and as being stripped from its holding-post with its binding-ring attached. Fig. 2 is a perspective view, upon a larger scale, of the grooved metallic binding-ring detached; Fig. 3, a longitudinal view of the upper portion of the umbrella case or cover, having its right side innermost, and before it is folded round and made to inclose at its end the binding-ring; Fig. 4, a perspective view of the same after its end has been made to inclose the binding-ring, and secured by thread tied round the case within the groove of the ring, with the latter ready for clamping. Fig. 5 is a longitudinal sectional view, upon a still larger scale again, of the upper end of the case, with its binding-ring attached and clamped, and after the case has been turned right side outermost.

The frame of the machine may be of any suitable construction. On it, or forming part of it, is a column, A, carrying at its upper end a laterally or forwardly projecting female die, B, within and from under which the umbrella-case - holding post C works, to clamp the binding-ring D on the end of the case E. G is an adjustable guide and back support on the column A, for retaining the holding-post C in position when under the female die, and acting in concert with the latter.

The case-holding post C is reduced at its upper end *b*, whereby it is converted into a male die to clamp the ring on the end of the case, by the shoulder *c* of the post and under face of the female die, within which the portion *b* of the post enters when closing the ring on the case.

The grooved metallic ring D may be of the usual construction, and is sufficiently large to fit freely over the male die portion *b* of the post, but so that the closing of it, when clamping the end of the case E, causes said ring, by the contraction of it under such operation, to

snugly hug the post and hold the case E tightly on the upper part of it while turning the case right-side out by stripping it off the post, as shown by dotted lines in Fig. 1.

In the operation, the ring D is first slipped over the end *b* of the heated post, when the latter is inclined forward and from under the female die B, and the case E, with its right side innermost, drawn down over the post, or the case first adjusted to its place on the post, and the ring afterward inserted within the upper end of the case and on the portion *b* of the post, after which the latter, carrying the case and ring, may be raised into a perpendicular position under the female die B, and a string or thread, *e*, be drawn or tied round the end of the case E to force and hold it in the groove of the binding-ring D. After this, the post C is raised till its end *b* enters the female die B, and the ring is compressed or closed down on the end of the case E, drawn and secured within it, as represented by full lines in Fig. 1. The post C is then dropped and tilted again forward from under the female die B, and the case E, held by the close hug of the ring D on the post, is stripped from off the latter by turning it right side outermost, when the upper end of the case clamped by the binding-ring will appear as represented in Fig. 5. The uniform heated condition of the solid post on its exterior throughout its length protects the fabric of which the case is composed from cracking, and facilitates the handling of the same when putting it on and off the post much more effectually than is practicable with a hollow post heated from below and hotter at the base than above. The post C is tilted forward and backward automatically, to bring it from under and to return it again beneath the female die B, by the operation of raising and lowering it in the clamping of the binding-ring. Thus the post C is arranged to fit loosely down within vertically-slotted standards H of the main frame, and so that it rests upon an eccentric or cam, I, the fulcrum or turning center *f* of which is in the standards H, back of the center line of the post when in its perpendicular position. This

cam is operated by a lever, K, and link or rod *g*, so that when it is being turned to the position represented by dotted lines in Fig. 1, to lower the post, the latter is tilted forward, by the rubbing action of the cam, and the disturbance of the center of gravity, to the position occupied by it in dotted lines, Fig. 1, the weight of the post facilitating such action. A shoulder, *i*, on the post prevents it from dropping unnecessarily far forward. When it is necessary to raise the post C again into an upright position within the guide and support G, and under the female die B—as when required to clamp a binding-ring on an umbrella-case—then the working of the cam I, as it rubs on the under side of the post C, while said cam is being moved from the position shown for it by dotted lines to that shown for it by full lines, tilts the post C back again to its perpendicular position, after which the post is raised by said action of the cam. The free or loose fit of the post C in the standards H, and on top of the cam I, also provides for the ready removal of the post to facilitate the heating of it by plunging it in a bath or tub of hot water, and of returning it to its normal position in the machine.

I claim—

1. In a machine for attaching metallic binding-rings to the ends of umbrella-cases, the solid and removable externally heated case-holding post C, substantially as and for the purpose herein set forth.

2. The solid post C, having a tilting motion and reduced at its upper end to form a solid male die, *b*, in combination with the stationary female die B, substantially as and for the purpose herein described.

3. The raising and lowering cam I, in combination with the free or loose and tilting case-holding post C, and the female die B, whereby said post is tilted in and out of line with the female die by the operation of raising and lowering the post, substantially as described.

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