

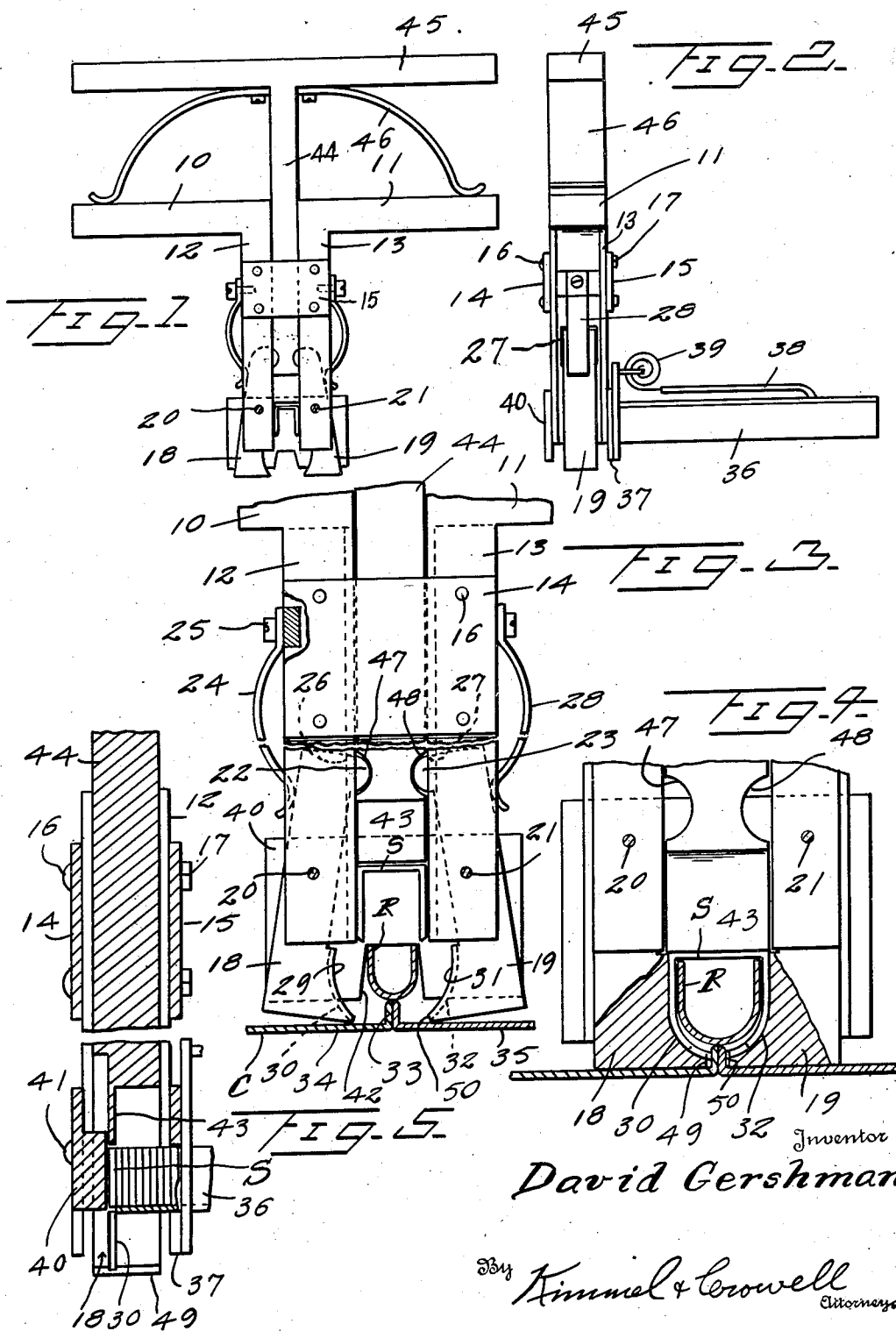
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MEANS FOR ATTACHING RIBS TO UMBRELLA COVERS

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MEANS FOR ATTACHING RIBS TO
UMBRELLA COVERS

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4 Claims. (Cl. 1—49)

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This invention relates to an improved means for securing umbrella ribs to the covers.

An object of this invention is to provide an improved means in the form of a stapling device by means of which the ribs may be secured to the cover at the seams of the cover segments, so as to more firmly bind the cover to the ribs and eliminate the present tacking means for securing the cover to the ribs.

Another object of this invention is to provide an improved stapling device for stapling umbrella covers to the ribs, the device being so constructed and arranged as to firmly bind the cover between a pair of staple bending jaws and thereby firmly hold the cover in position while the staple is being bent or clinched about the rib.

A further object of this invention is to provide a stapling device of this kind which is simple in construction and which can be manually operated to secure the cover to the ribs of an umbrella.

To the foregoing objects and others which may hereinafter more fully appear, the invention consists of the novel construction, combination and arrangement of parts, as will be more specifically referred to and illustrated in the accompanying drawing, but it is to be understood that changes, variations, and modifications may be resorted to which fall within the scope of the invention as claimed.

In the drawing:

Figure 1 is a detail rear elevation partly in section of a stapling device constructed according to an embodiment of this invention.

Figure 2 is a detail side elevation of this device.

Figure 3 is a fragmentary view similar to Figure 1, but on an enlarged scale.

Figure 4 is a fragmentary view similar to Figure 3 partly broken away and in section, showing the clinching jaws in operative position.

Figure 5 is a fragmentary vertical section taken substantially through the center of the device.

Referring to the drawing, the numerals 10 and 11 designate a pair of oppositely extending aligned arms which are formed integrally with a pair of right angularly disposed parallel channel members 12 and 13. The channel members 12 and 13 are held in spaced apart relation by means of a pair of plates 14 and 15 secured to the channel members by fastening devices 16 and 17, respectively.

A pair of staple clinching jaws 18 and 19 are pivotally secured on pivot members 20 and 21, extending through the channel members 12 and 13, respectively, and the jaws 18 and 19 project below the lower ends of the channel members.

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The jaws 18 and 19 are provided at their upper inner ends with cam members 22 and 23, respectively, which are adapted to normally project in the space between the two channel members 12 and 13.

A spring 24 secured as at 25 to channel member 12 is adapted to normally urge jaw 18 to released position, engaging this jaw above the pivot 20 thereof, so as to constantly urge the cam 22 inwardly through an opening 26 formed in the inner wall of channel member 12. Cam member 23 is adapted to project through an opening 27 which is formed in the inner wall of channel member 13, and a spring 28 engages jaw 19 above the pivot 21 thereof so as to constantly urge cam member 23 inwardly through the opening 27.

The jaw 18 is formed with a concave inwardly extending clamping face 29, and is also formed with a recess or slot 30 in the face 29 for guiding the staple. The jaw 19 is also formed with an arcuate clamping face 31 and with a slot 32 complementary to slot 30 for guiding the staple about the umbrella rib R. The inner ends of the jaws 18 and 19 are adapted to tightly clamp the seam 33, which is formed between a pair of segments 34 and 35 of an umbrella cover C. The seam is firmly held against the bight or arcuate side of the rib R, so that when the staple is moved downwardly with the legs thereof sliding in slots 30 and 32, the legs of the staple will be bent in opposed relation and will also pierce the seam 33.

A staple guide 36 extends from the rear side of the channel members 12 and 13, being secured thereto by means of a plate 37, and the guide 36 which is of conventional construction includes a spring-pressed staple follower 38, which is constantly urged towards the channel members 12 and 13 by means of a spring 39.

A plate 40 is secured by fastening members 41 to the forward side of channel members 12 and 13 and is formed in its lower edge with an upwardly converging shaped opening 42 within which the rib R is adapted to loosely engage the upwardly convergent sides of the recess or opening 42, providing a centering means for centering the rib R with respect to the staple S, which is in a position to be ejected and clinched about the rib.

The foremost staple S is ejected from the guide 36 and forced downwardly by means of a staple driver 43 integral with staple plunger 44. The plunger 44 is slidable between the channel members 12 and 13 and is formed at its upper end with a T-shaped head or operator 45. A pair of bowed springs 46 are secured to the head 45 and bear against the upper sides of the arms 10 and 11,

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the springs 46 constantly urging the head 45 upwardly and the elongated ejector or plunger carrier 44 upwardly to an inoperative position.

The plunger 44 is formed in the opposite sides thereof with recesses 47 and 48 within which the cam members 22 and 23, respectively, are adapted to engage. When the cam members 22 and 23 engage in the recesses 47 and 48, respectively, the clinching jaws 18 and 19 will be in their released position, which is the position shown in Figures 1 and 2. When the plunger 44 is moved downwardly, the cam members 22 and 23 will ride out of the recesses 47 and 48, engaging against the flat opposite sides of the plunger 44, and at this time the jaws 18 and 19 will be moved inwardly toward each other in a clamping position, which is the position shown in Figure 4.

The clamping noses 49 and 50 of the jaws 18 and 19, respectively, are adapted to engage on opposite sides of the seam 33 of the cover, so as to firmly grip the seam prior to the time that the staple S is in its completely clinched position.

In the use and operation of this stapling device the springs 46 will normally maintain the head 45 in its uppermost inoperative position. The lower end of the device is engaged over a rib of the umbrella, with the rib engaging in the slot or opening 42 of plate 40. The seam 33 is adapted to be disposed against the bight or outer side of the rib R and upon downward movement of the head 45 jaws 18 and 19, which are normally open, are moved inwardly toward each other. The seam clamping noses 49 and 50 initially grip the seam 33, so as to center the seam with respect to the outer side or bight of the rib.

Further downward movement of the head 45 and the staple driving member 44 will cause the driver 43 to force the staple S downwardly on opposite sides of the rib R. The lower or free ends of the staple S will engage in the confronting arcuate slots 30 and 32 of the jaws 18 and 19, so that when the staple S is moved downwardly the free ends of the staple will be bent inwardly toward each other and these free ends will pierce the seam 33 and will then be disposed in side by side relation. At this time the bight of the staple S engages over the inner free ends of the rib R, as shown in Figure 4.

This device will provide an improved means for attaching the cover of an umbrella to the ribs and will eliminate the present practice of tacking the cover to the ribs by means of thread, or the like.

I claim:

1. A stapling machine for attaching an umbrella cover to the intermediate portion of a rib, including in combination L-shaped members forming the head, a staple magazine to one side

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and near the lower end of such head for feeding one staple at a time into the head, a plunger mounted for sliding movement in said head, springs for holding the plunger upwardly, the lower end of the plunger being provided with a staple engaging portion to engage and force the staple in the head downwardly when the plunger is forced against the spring action thereof, a pair of spring-pressed claws mounted in the head adjacent the mouth of the magazine, the lower staple engaging ends of which are normally held away from the staple, and cooperative means carried by the claws and the plunger for causing the claws to engage the terminals of the staple as the plunger moves downwardly to bend such terminals around and below the rib and through a portion of the cover.

2. A stapling machine for attaching an umbrella cover to the intermediate portion of a rib including in combination, a head provided with a plunger guide, a spring pressed plunger mounted in said guide for straight-line movements, means for delivering one staple at a time below the plunger, a pair of spring-pressed plunger actuated staple setting members mounted in the head to press the terminals of the staple toward each other as the plunger is moved against its spring, said staple setting members being two claws pivotally mounted in the head, one upon each side of the plunger, and having the upper terminals thereof riding against the plunger, said plunger being provided with oppositely disposed recesses to receive such terminals when the claws are in open position.

3. A stapling machine as set forth in claim 1 wherein said cooperative means includes opposed cam members carried by said claws, said plunger having oppositely disposed recesses in which said cam members normally engage to maintain said claws in open position.

4. A stapling machine for attaching an umbrella cover to the intermediate portion of a rib including in combination, a head provided with a plunger guide, a spring pressed plunger mounted in said guide for straight line movements, means for delivering one staple at a time below the plunger, a pair of spring pressed plunger actuated staple setting members mounted in the head and movable to staple setting position to press the terminals of the staple toward each other as the plunger is moved against its spring, and correlated means carried partly by said staple setting members and said plunger which by downward movement of said plunger will effect movement of said staple setting members to staple setting position.

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