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United States Patent [19]

Brown et al.

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[54] **STENT CRIMPING TOOL AND METHOD OF USE**

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[73] Assignee: **Advanced Cardiovascular Systems, Inc.**, Santa Clara, Calif.

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[51] **Int. Cl.**[7] **B21D 39/04**; B23P 11/00

[52] **U.S. Cl.** **29/516**; 29/282; 72/90; 606/1

[58] **Field of Search** 72/88, 90, 94; 29/516, 517, 270, 282, 283.5; 606/1

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[57] **ABSTRACT**

A hand held tool for crimping a stent onto a balloon of a catheter is disclosed. The stent crimping tool is operated in one hand by squeezing two plates together while simultaneously displacing the plates linearly to crimp and roll the stent held between the plates. Specifically, the crimping tool includes a base plate with two bosses through which respective pins pass linking the base plate to a compression plate. The compression plate has elongated diameter openings at opposite sides thereof to receive the pins. With the elongated diameter openings, the compression plate can pivot at the pins and translate linearly relative to those pins thus enabling the rolling action during the crimping process. A compression profile pad and a tapered profile pad are attached to the crimping areas of the plates to grip and together apply pressure to the uncrimped stent held therebetween. The pads may include specific contours in order to impart a desired profile to the crimped stent.
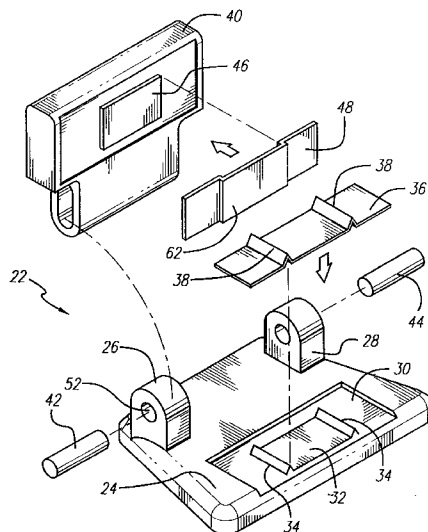
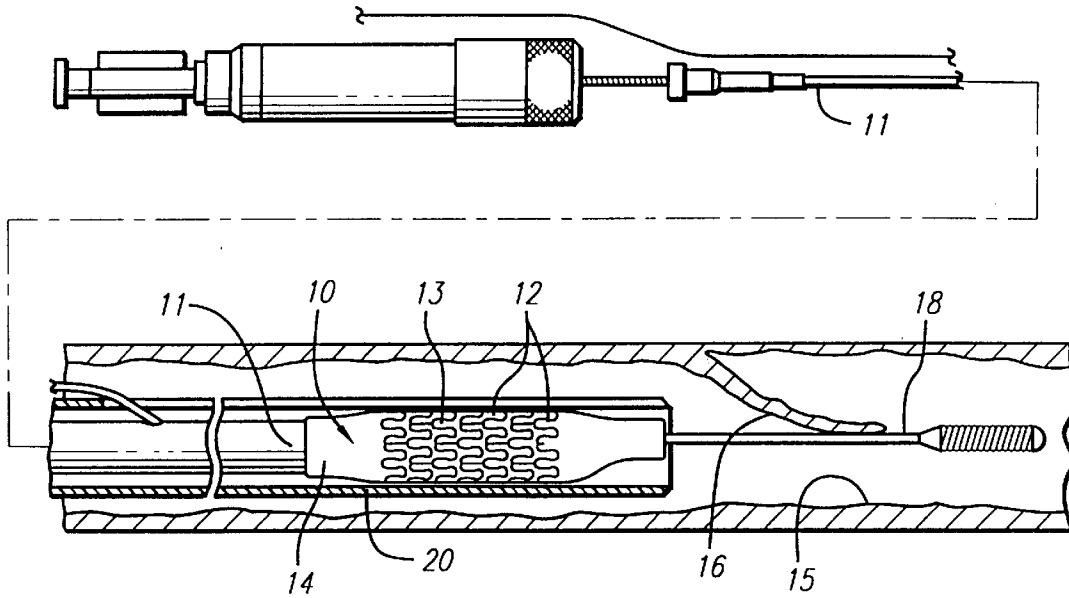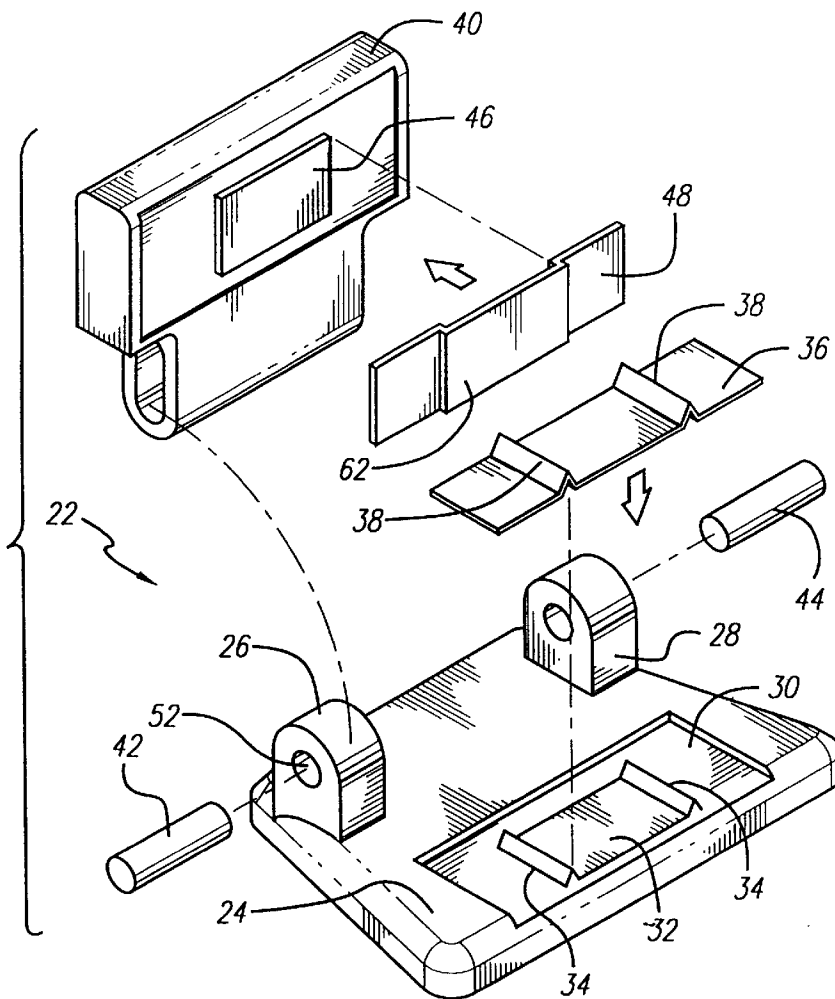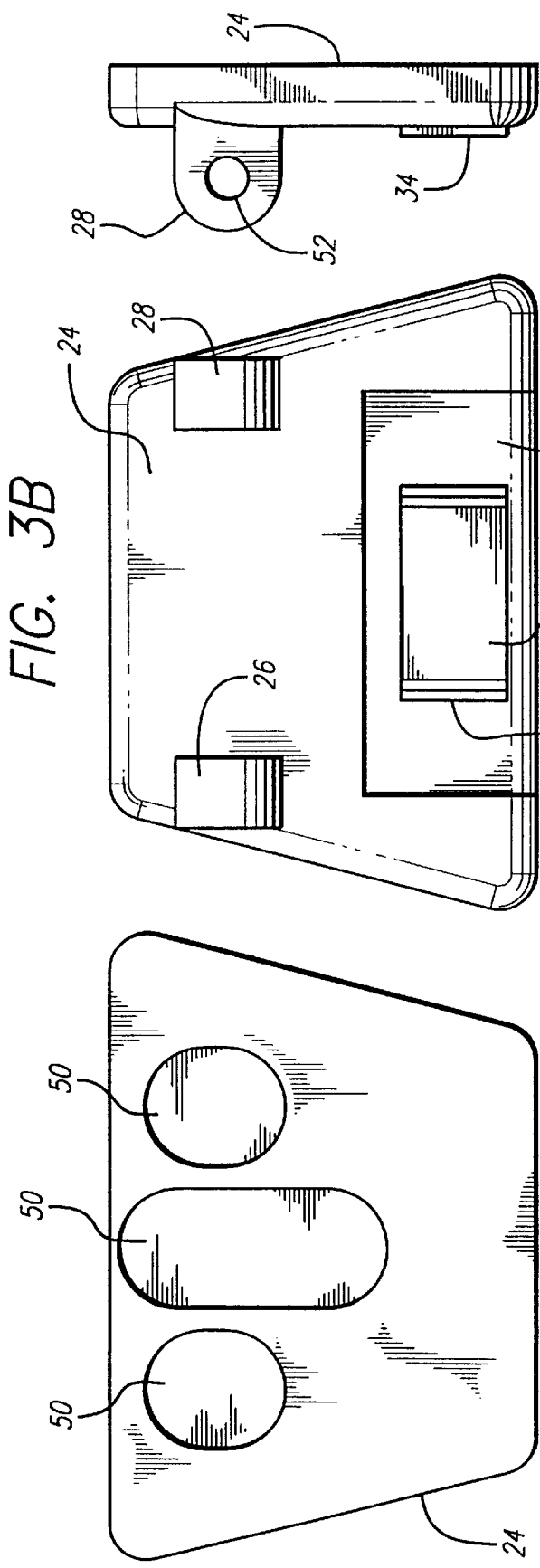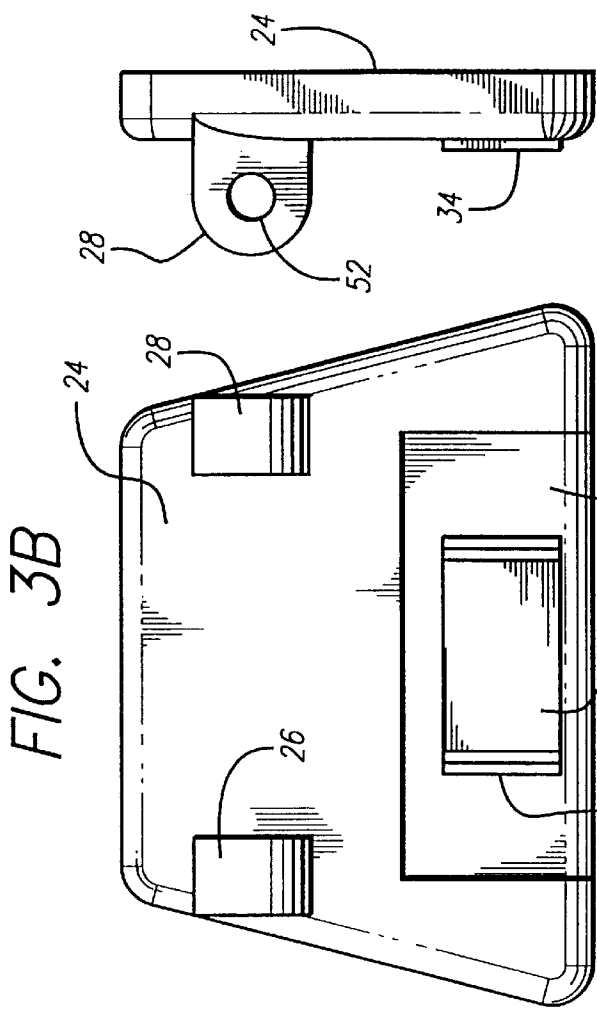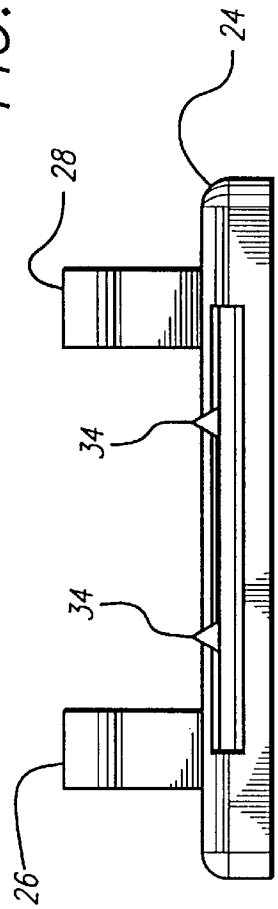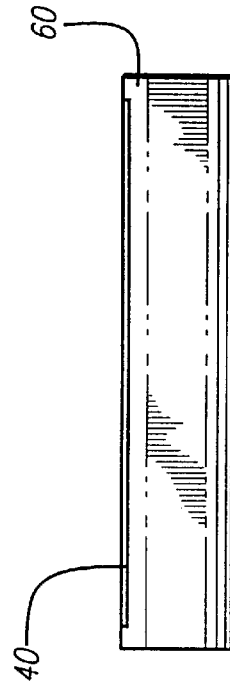**23 Claims, 4 Drawing Sheets**

FIG. 1

FIG. 2

FIG. 3D

FIG. 3B

FIG. 3C

FIG. 3A
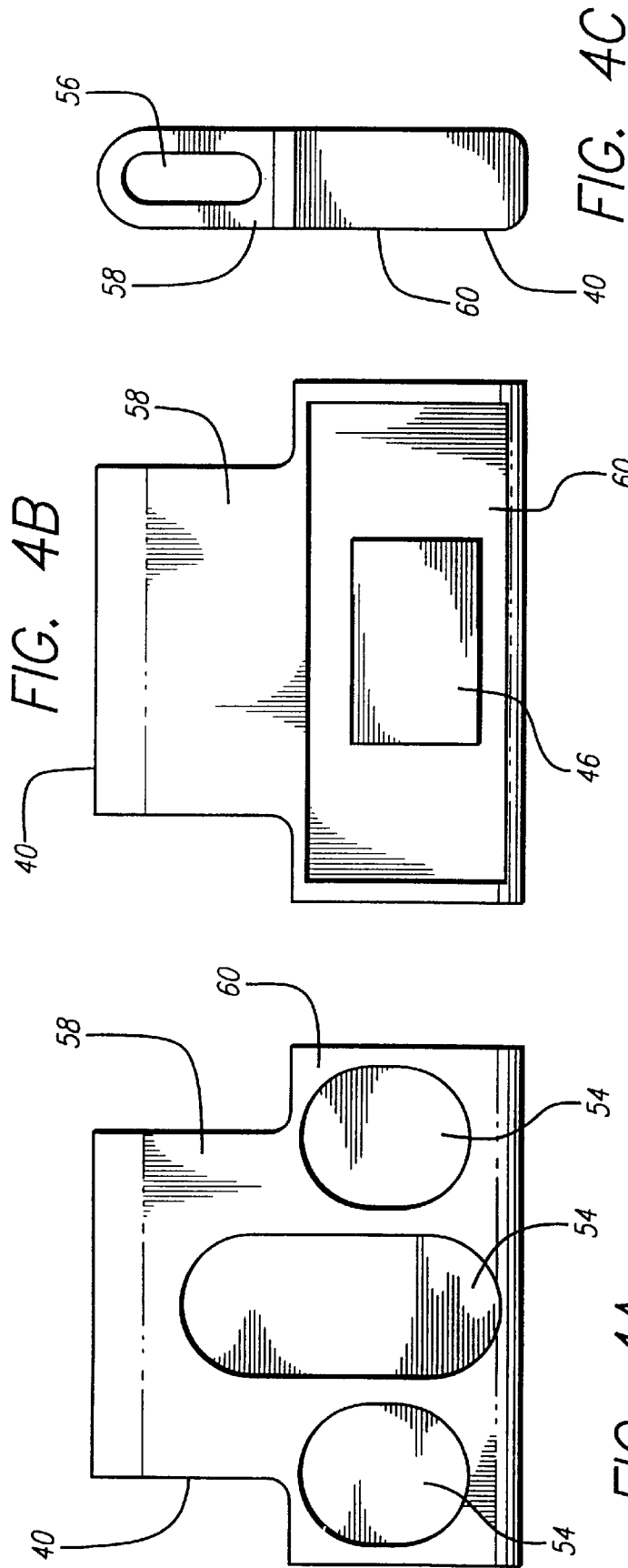
FIG. 4A
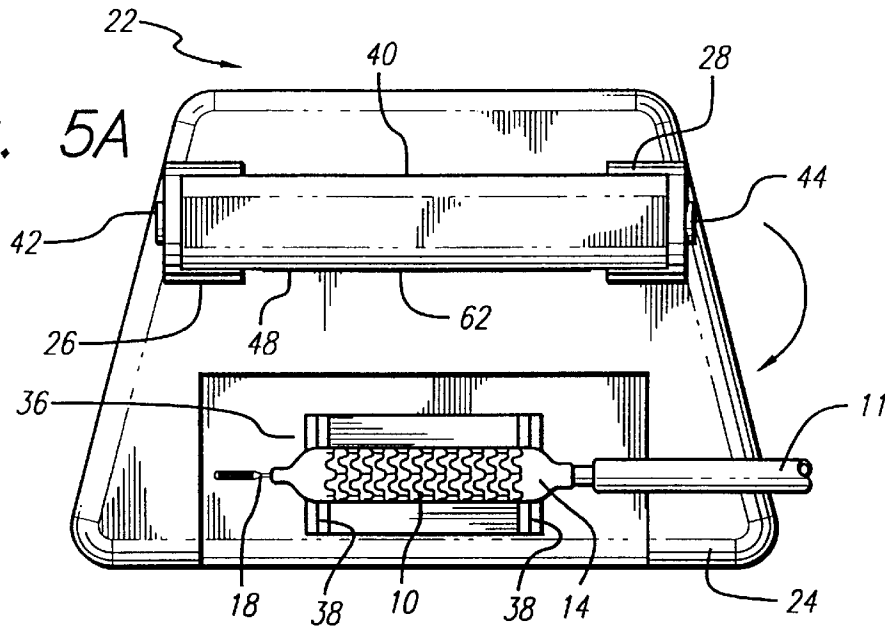
FIG. 4B
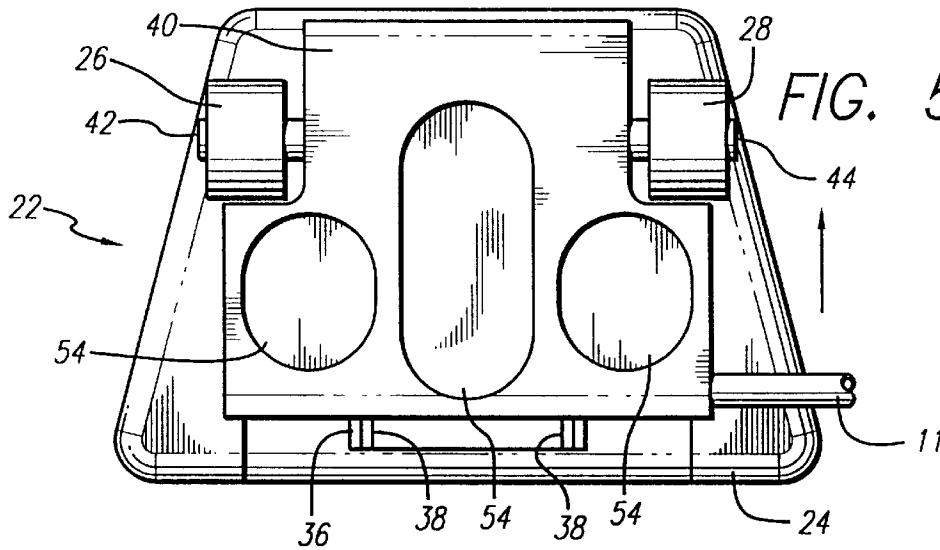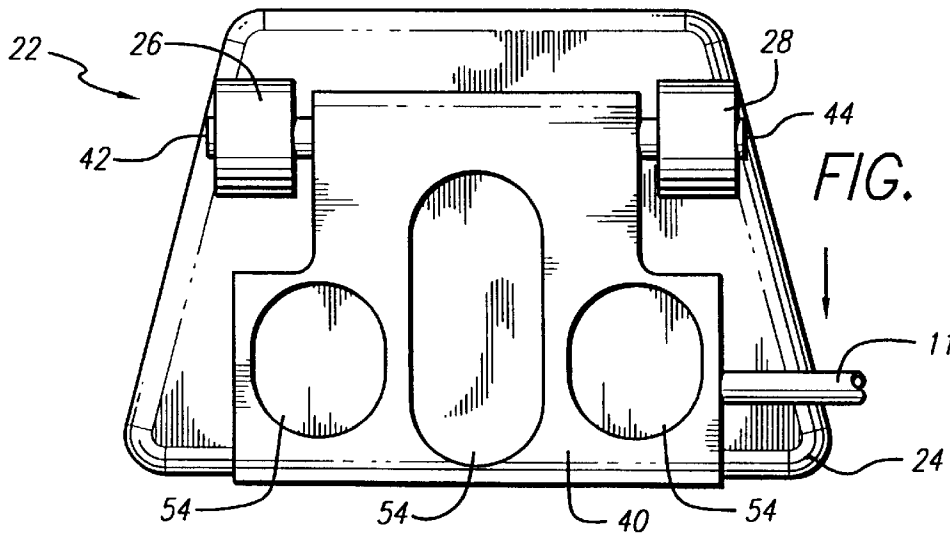
FIG. 4C

FIG. 4D

FIG. 5A

FIG. 5B

FIG. 5C

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