United States Patent [19]

Bachtel, Jr.

[11] **3,924,844**

[45] **Dec. 9, 1975**

[54] **TOGGLE CLAMP LOCK**

[75] Inventor: **Hubert C. Bachtel, Jr.,** Granada Hills, Calif.

[73] Assignee: **Barry Wright Corporation,** Watertown, Mass.

[22] Filed: **July 29, 1974**

[21] Appl. No.: **488,560**

[52] **U.S. Cl.** **269/94;** 269/228

[51] **Int. Cl.²** **B23Q 3/06**

[58] **Field of Search** 269/91, 94, 201, 228

[56] **References Cited**

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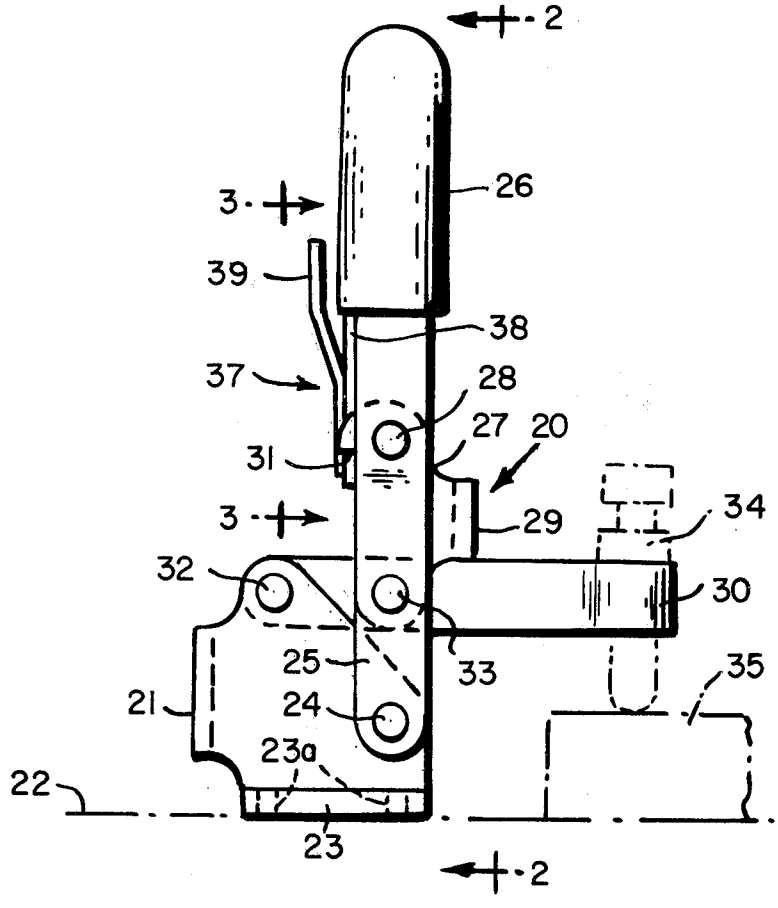
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Primary Examiner—Roy Lake
Assistant Examiner—Mark S. Bicks
Attorney, Agent, or Firm—Milton E. Gilbert

[57] **ABSTRACT**

A toggle clamp which includes a base, handle means pivotally coupled to the base, link means pivotally coupled to the handle, bar means also pivotally coupled to the base and the link means, releasable locking means including stop means, and means to release the locking means, said locking means prohibiting relative motion between the handle and the link means thus preventing inadvertent or accidental opening of the toggle clamp when the toggle clamp is in the closed position.

23 Claims, 18 Drawing Figures



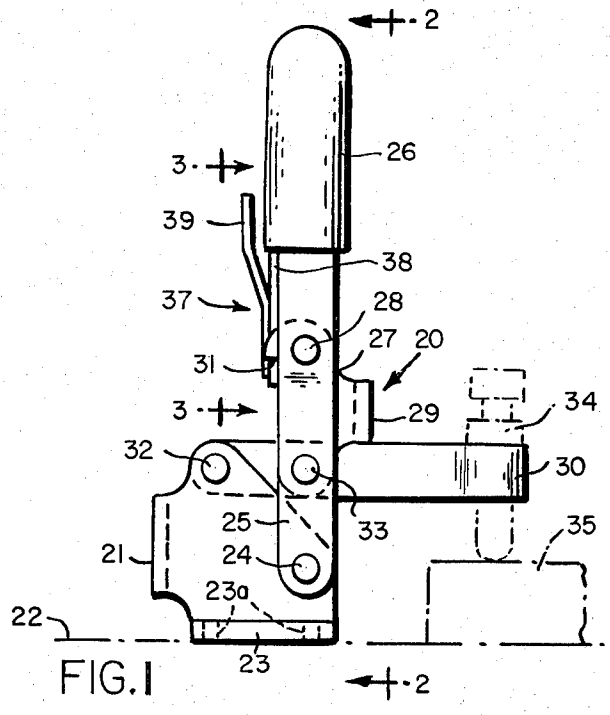


FIG.1

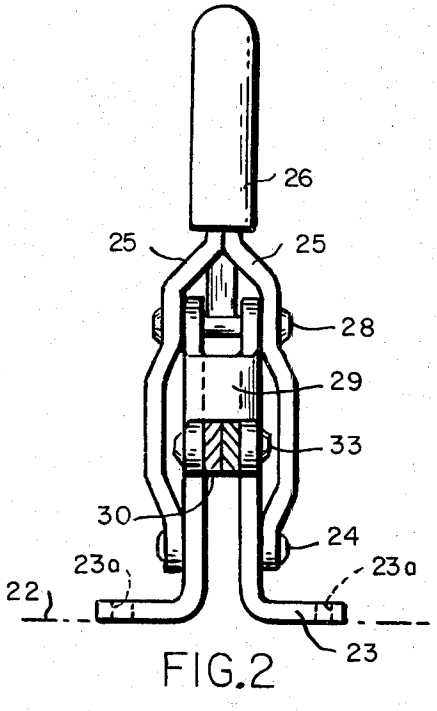


FIG.2

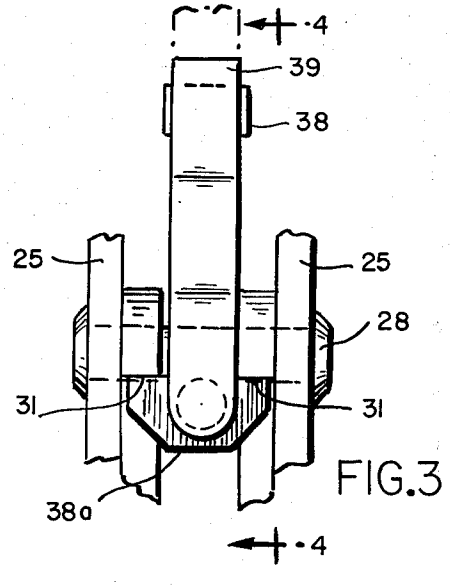


FIG.3

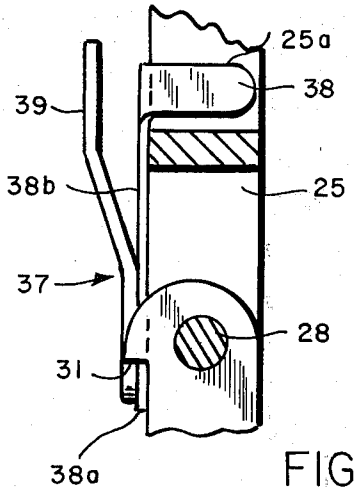


FIG.4

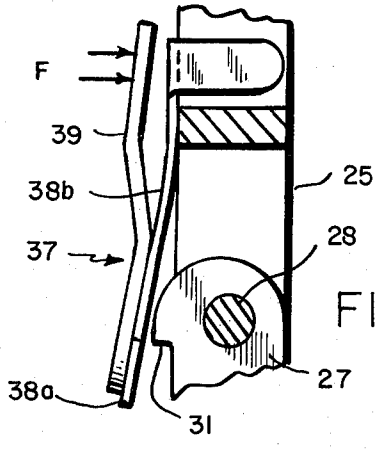


FIG.5

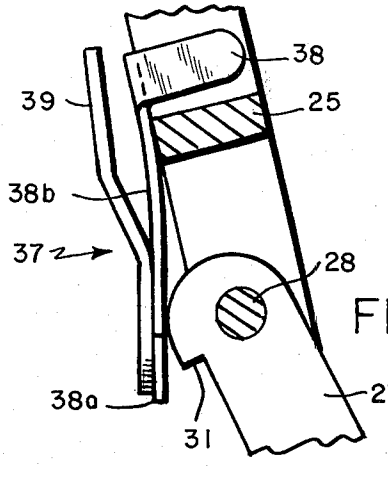


FIG.6

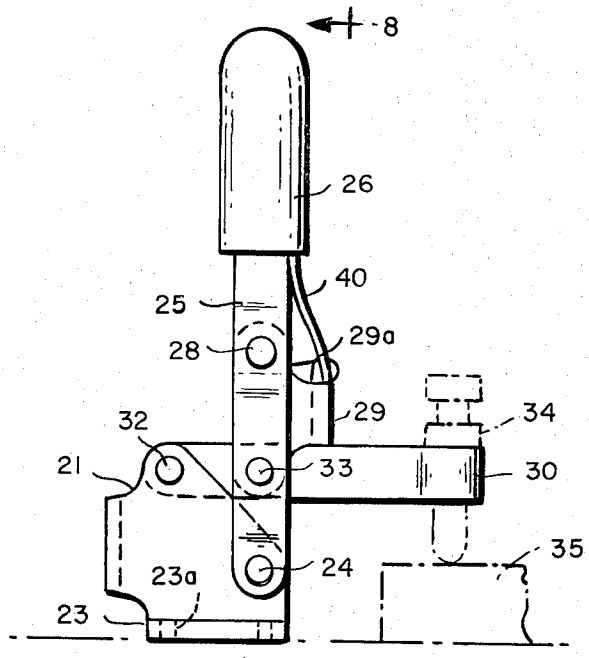


FIG.7

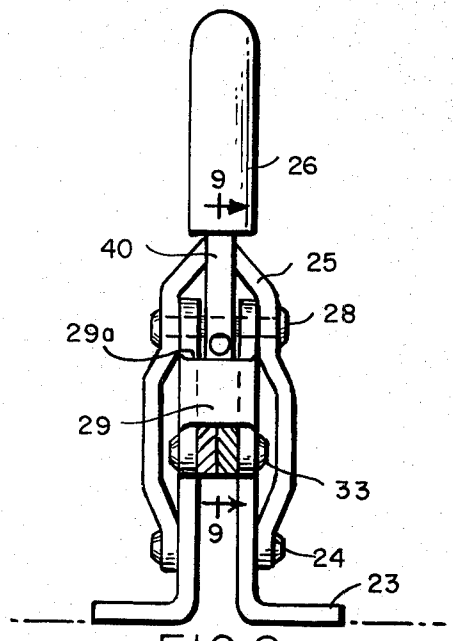


FIG.8

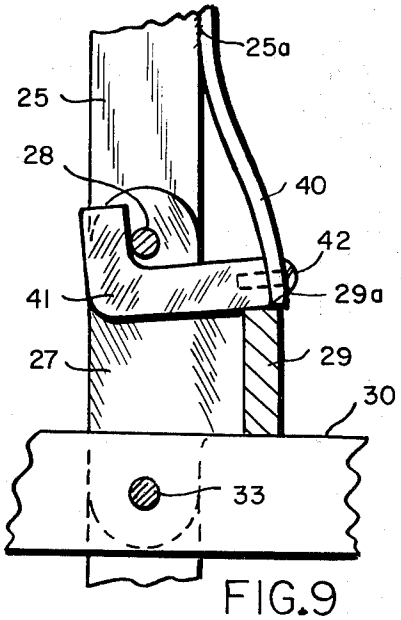


FIG.9

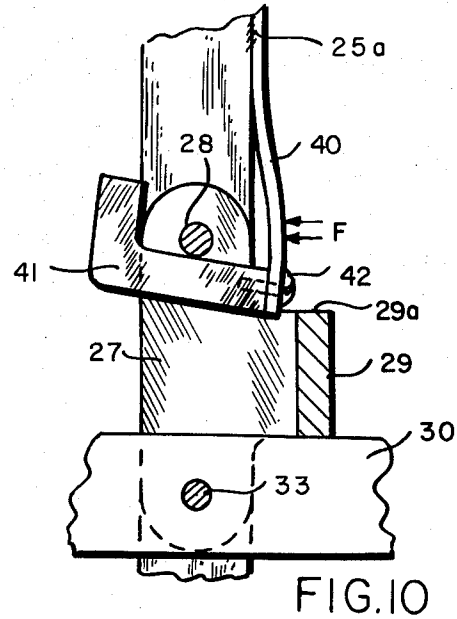


FIG.10

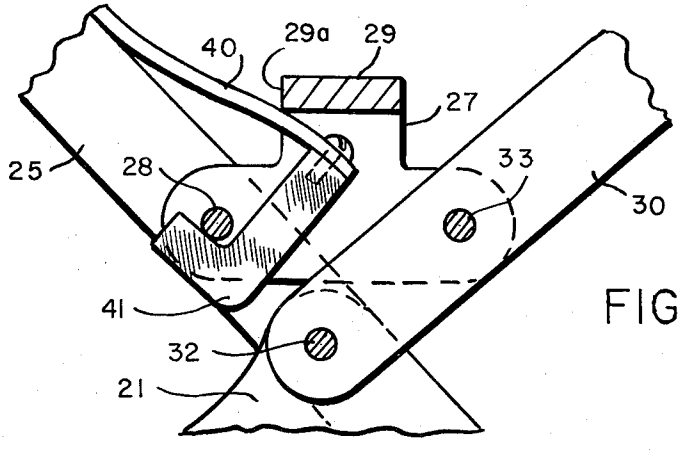


FIG.11

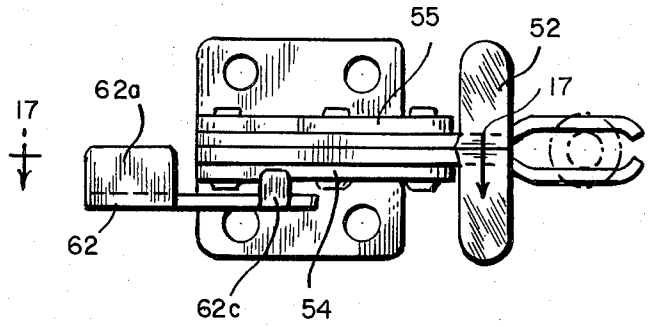


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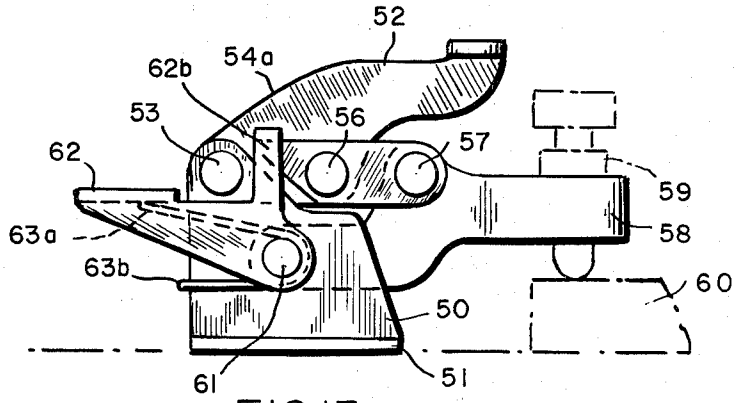


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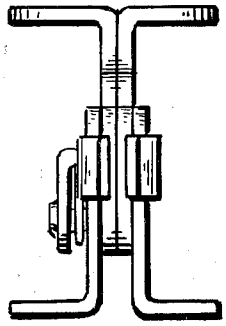


FIG.14

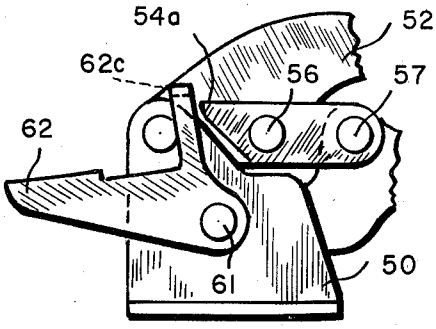


FIG.15

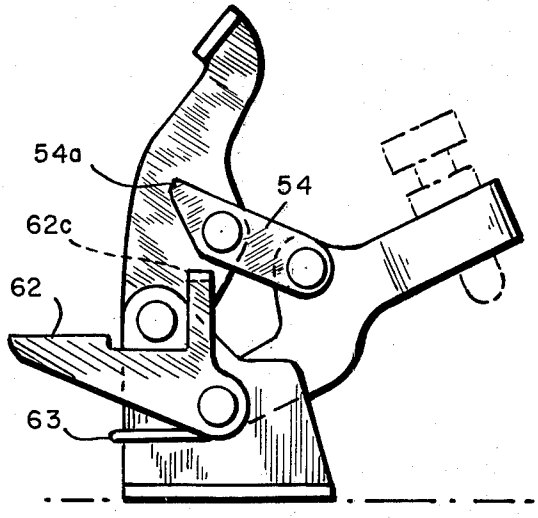


FIG.16

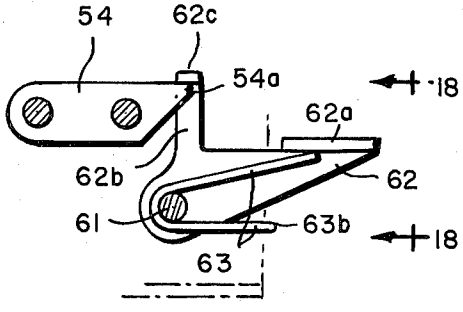


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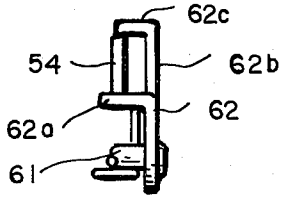


FIG.18

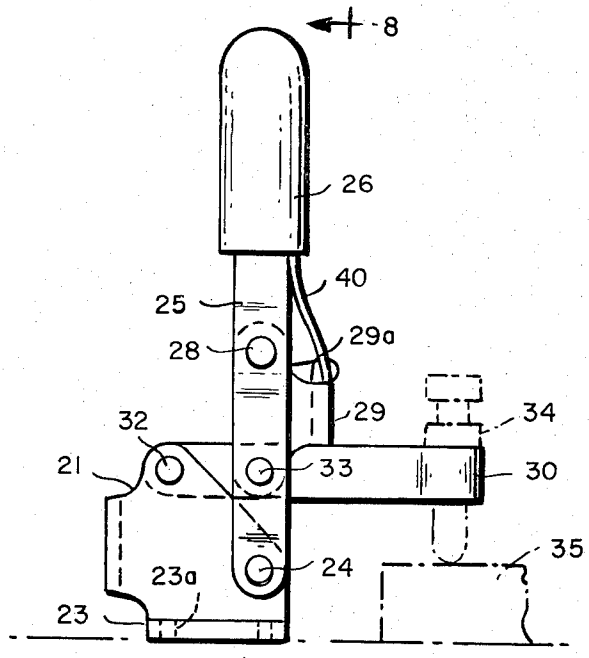


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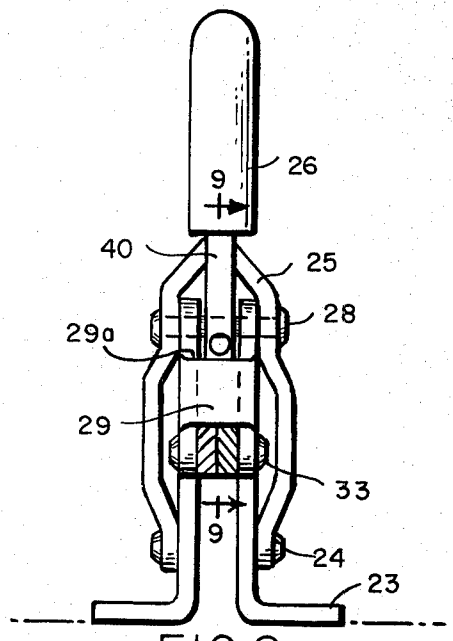


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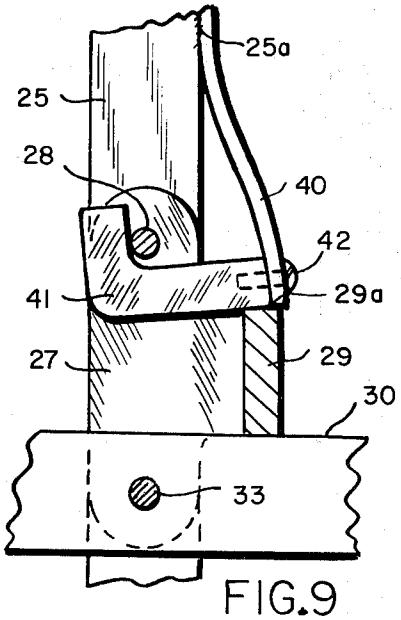


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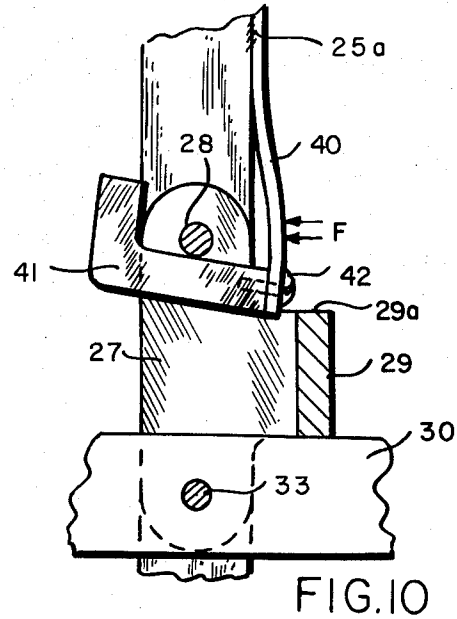


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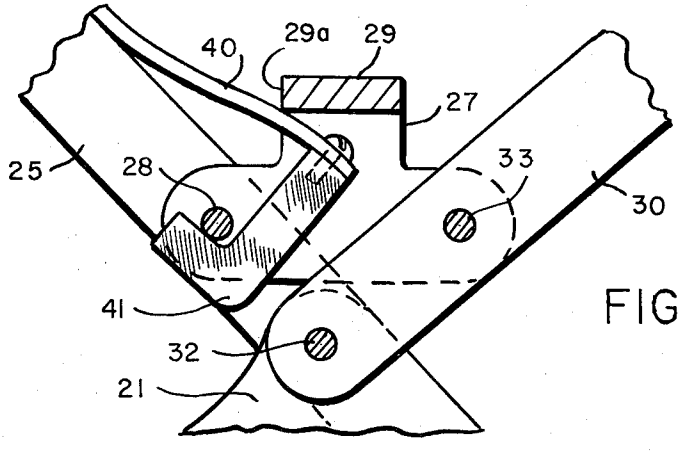


FIG.11

releasable means comprise a member pivotally coupled to the base having means for engaging the stop means to maintain said clamp in a locked condition.

11. In a toggle clamp according to claim **10** wherein said releasable means includes resilient biasing means urging said releasable means toward said link.

12. In a toggle clamp according to claim **11** wherein said releasable means includes a flange for engaging said stop means.

13. In a toggle clamp according to claim **12** wherein said resilient biasing means engages said base and said releasable means.

14. In a toggle clamp according to claim **13** wherein said resilient biasing means comprises a wire spring member positioned about the pivot for the releasable means.

15. In a toggle clamp having a base, a handle pivotally coupled to the base, a link pivotally coupled to the handle, workpiece hold-down means pivotally coupled to the base and the link, the improvement comprising said link having first and second spaced apart sections interconnected by an interconnecting section, said first and second link sections each having stop means formed therein, a flat spring supported by said handle at one end and fixedly supporting a crossbar at the other end thereof, said crossbar biased by said spring to engage said link while permitting said link to be rotated with said handle and workpiece holddown means with respect to said base when said clamp handle is rotatably moved towards a closed position, said crossbar positioned to engage each of said link section stop means when said clamp is in a closed position thereby preventing opening of said clamp without moving said crossbar away from each of said link section stop means.

16. In a toggle clamp according to claim **15** wherein trigger means is fixedly coupled to said flat spring to bend it to move said cross bar means away from said right angled face of said stop means.

17. In a toggle clamp according to claim **16** wherein said first and second link sections each include a camming surface to urge said crossbar and said flat spring away from each of said stop means when the link is moved relative to said handle.

18. A toggle clamp having a base, a handle pivotally coupled to said base, workpiece hold-down means pivotally coupled to said base, a link pivotally coupled to said handle and said hold-down means, releasable means pivotally coupled to said base, resilient biasing means coupled to said base and said releasable means, said link including projecting stop means, said releasable means biased by resilient biasing means in a position to engage said projecting link stop means when said clamp is in a closed position so as to prevent substantial rotation of said link in one direction with respect to said base.

19. A toggle clamp according to claim **18** in which said releasable means includes an arm having a first flange means for engaging both the top and bottom portion of said projecting link stop means.

20. A toggle clamp according to claim **19** in which said releasable means include a second flange means engaged by said resilient biasing means.

21. A toggle clamp according to claim **19** in which said projecting stop means includes a sloping bottom surface which will engage said first flange means as the link is moved during closure of the clamp.

22. A toggle clamp comprising a base, a workpiece hold-down means pivotally coupled to the base, a handle pivotally coupled to the base and a link comprising first and second sections each pivotally coupled to both said handle and said workpiece hold-down means, an interconnecting section fixedly coupled to said first and second link sections with a portion thereof acting as stop means, a flat spring coupled to said handle and supporting a bar member between said first and second link sections, said bar member positioned to engage said interconnecting member portions which acts as a stop means when said clamp is in a closed position.

23. The toggle clamp of claim **22** in which said first and second link sections are pivotally coupled to said handle by a rod and wherein said bar includes a portion for engaging said rod to limit movement of said spring.

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