

Oct. 8, 1968

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3,404,435

PAPER CLIP

Filed Nov. 4, 1966

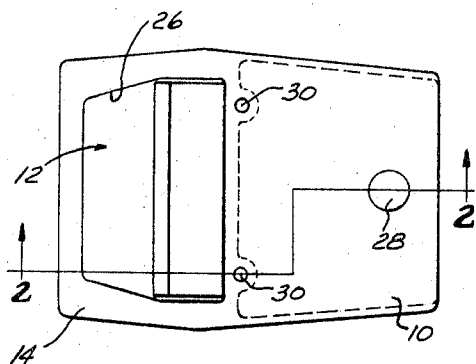


Fig. 1

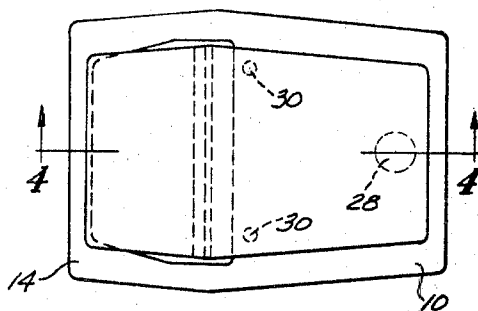


Fig. 3

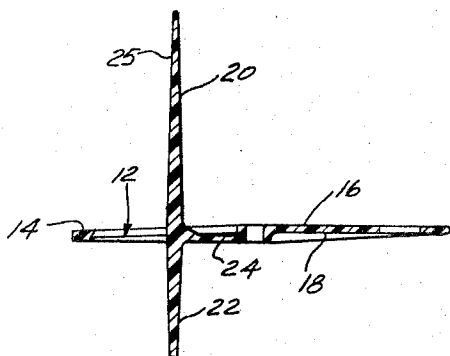


Fig. 2

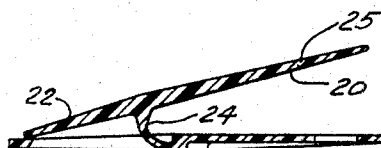


Fig. 4

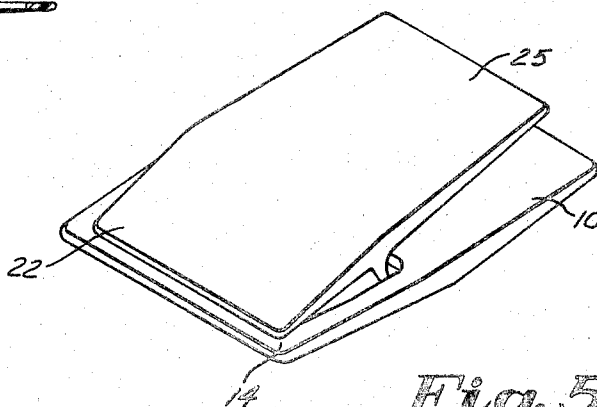


Fig. 5

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PAPER CLIP

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Filed Nov. 4, 1966, Ser. No. 592,030

2 Claims. (Cl. 24-66)

This invention relates to spring actuated clamp devices in general, and more specifically to a unique one-piece molded synthetic resin paper clip.

Clips and clamps for holding groups of sheets, or to clip paper to a board, are usually made of stamped metal with a coil spring associated with the clamp pivot. A great variety of clip devices have been made which take advantage of the inherent resiliency of metal and plastic materials.

An object of this invention is to provide a single piece molded synthetic resin clip in order to reduce the need for assembly.

Another object of the invention is to provide a clamp device having a base with a clamp member moving relative to the base under the urge of an integrally formed hinge section joining clamp member to base, wherein the hinge section is elastic over a wide range and is stressed out of its normal mode for the purpose of creating a clamping force.

In accordance with these and other objects which will become apparent hereinafter, the best mode contemplated for the present invention is disclosed in the accompanying drawing wherein:

FIGURE 1 is a top plan view of a clip made according to the principles of this invention in its condition as originally molded;

FIGURE 2 is a side elevation of the construction shown in FIGURE 1;

FIGURE 3 is a top plan view of the clip device with the clamp portion forced into its operative position;

FIGURE 4 is a side elevation of the clip as shown in FIGURE 3; and

FIGURE 5 is a perspective view of the finished clip.

The clip of this invention is molded from synthetic resin material which has the inherent capability of flexibility under severe bending stress. It is molded in one piece in order to reduce manufacturing costs, and to assure a strong operative structure.

In the drawings, the preferred embodiment of the invention takes the form of a pair of large plate-like portions which operate together by a connecting flexible hinge. A base plate 10 forms the foundation structure. Plate 10 has a window opening 12 adjacent one end outlined by a remainder frame 14. The frame 14 in the preferred embodiment is a complete annular frame. The base plate has a top face surface 16 and a bottom face surface 18 spaced apart by a wafer thickness and the window opens from one face to the other.

The clamp, indicated by reference character 20, is also a plate structure having a pressure bar portion 22 forward of an umbilical hinge web 24, and a finger lever portion 25 to the opposite side of the hinge 24.

The hinge 24 begins at the edge of the window opening, and extends in a direction which would cause bridging of the opening if continued. That is, it extends substantially in the plane of the base plate 10. The clamp 20 and the hinge 24 are formed in an unstressed condition as shown in FIGURE 2 with the pressure bar portion 22 extending down through the window opening at an angle to the direction of the plate 10.

Preferably, the clamp 20 is substantially as wide as the window opening in order to provide a maximum clamping surface contact with the frame 14. The pres-

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sure bar portion 22 is designed to be sufficiently long that after the clamp 20 is forced up through the window 12 and released, the clamp will swing in a natural path such that the forward end of the pressure bar 22 will contact the frame 14.

In order to provide a greater amount of area as an anvil against which the pressure bar 22 may abut, the window 12 is convergent to form a restricted opening in the area of reference character 26. The forward pressure bar 22 may, nevertheless, be forced up through the window 12 and when released will fall into the position shown in FIGURE 4 and produce a good clamping action. FIGURE 4 also illustrates the curved nature of the hinge 24, which produces the constant urge of the clamp 20 to rotate in a counterclockwise direction in the FIGURE 4, thus producing the clamping force.

The lever portion 25 of clamp 20 is provided in order to make convenient the opening of the clip for the insertion of sheet material.

A large hole 28 and two lateral smaller holes 30 are provided to enable hanging of the clip or otherwise securing the clip on a support surface.

Whereas the present invention has been shown and described herein in what is conceived to be the best mode contemplated, it is recognized that departures may be made therefrom within the scope of the invention which is, therefore, not to be limited to the details disclosed herein, but is to be afforded the full scope of the invention as hereinafter claimed.

What is claimed is:

1. A clip device comprising:

a one piece molded elastic synthetic resin body having a base portion and a clamp portion;

said base portion having opposed top and bottom face surfaces and an opening from face to face outlined by a frame of remainder material at least partially surrounding said opening;

said clamp portion having a pressure bar section, said bar section having a stiffness of about the same degree as said base portion;

a hinge web interconnecting said clamp portion to said base portion, said hinge web having a degree of stiffening much less than said bar and base section to provide flexibility and spring resiliency, said hinge dimensioned to be swingable through said opening; and

said pressure bar section and hinge dimensioned and proportioned in relationship to the characteristics of the compound from which it is composed such that placing of said pressure bar section against the frame surrounding said through opening will extend said hinge section through said opening and flex said hinge section out of its natural condition, whereby said flexing will cause the hinge to urge the clamp portion to rotate in the direction of said frame in a clamping action.

2. A clip device comprising:

a base plate member having a window opening;

a clamp member;

an umbilical hinge web carrying said clamp member attached to said base plate at said window opening; said clip device composed of a unitary molded resilient synthetic resin material, with said clamp member having a normal unstressed position extending through said window at an angle to said plate member, and said hinge web extending generally in a direction to bridge said window;

said clamp and hinge proportioned to permit said clamp to be forced up through said window against the urge of said hinge; and

said clamp and hinge having a normal return path causing said clamp to abut the plate member struc-

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ture surrounding said window to thereby produce a clamping action.

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⁵ DONALD A. GRIFFIN, *Primary Examiner*.