United States Patent

[11] 3,597,813

[72] Inventors Kiyoshi Takahashi;
Akira Takahashi, both of 140 Sakai 1-chome, Edogawa-ku, Tokyo, Japan

[21] Appl. No. 854,066
[22] Filed Aug. 29, 1969
[45] Patented Aug. 10, 1971

[54] CLAMPING DEVICE
6 Claims, 19 Drawing Figs.

[52] U.S. Cl. 24/67.5, 24/252, 100/234, 249/187, 264/219
[51] Int. Cl. A44b 21/00, B29c 1/02, B30b 7/00
[50] Field of Search ..... 24/252 CP: 252 HC, 252 QC, 252 GC, 252 B, 248 SB, 248 HC, 248 GC, 248 PC, 137.5, 252 DP, 67.5, 252; 100/235, 234; 264/219; 249/187

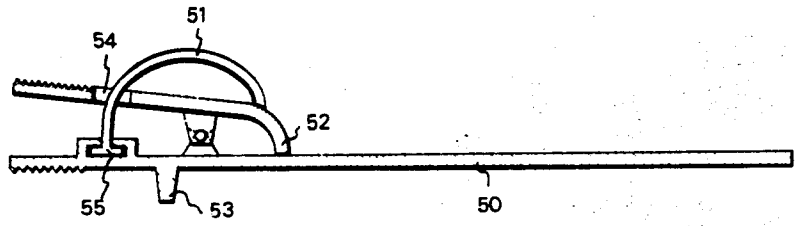
[56] References Cited

UNITED STATES PATENTS

171,154	12/1875	Miller	100/235 X
582,164	5/1897	Bacon	24/67.5 X
2,464,739	3/1949	Solomon et al.	24/252 HC X
2,665,466	1/1954	Morgan	24/137.5
3,030,681	4/1962	Phillips	24/252 PC X
3,338,291	8/1967	Kintner	24/252.1 X

Primary Examiner—Donald A. Griffin
Attorney—Polachek & Saulsbury

ABSTRACT: A clamping device comprising a pair of clamping members pivotably fixed to each other, one of said clamping members having an elongated opening through which extends a clamping spring and an arcuately curved leading end portion while the other clamping member has the arcuate compression spring for clamping which extends through said opening and presses against said curved portion the center of the radius of curvature of which is slightly deviated from the pivotal point of said pair of clamping members.



Patented Aug. 10, 1971 3,597,813

4 Sheets-Sheet 1

Fig. 1.

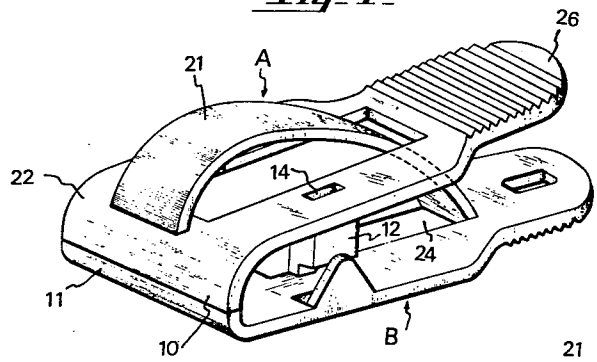
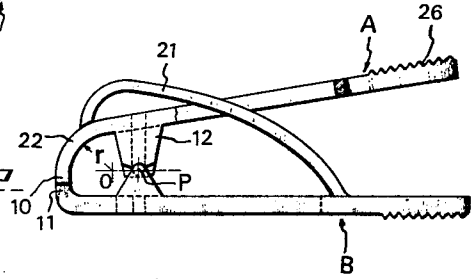


Fig. 2.



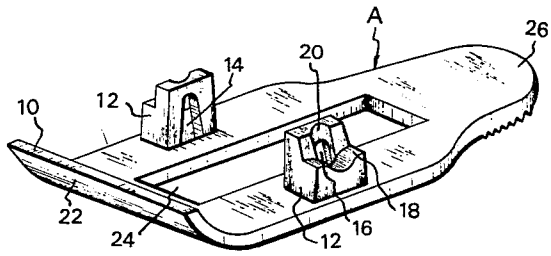


Fig. 3.

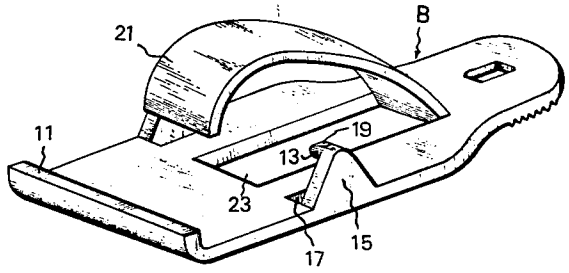


Fig. 4.

INVENTORS
KIYOSHI TAKAHASHI
AKIRA TAKAHASHI

BY Placek & Saulsbury
ATTORNEYS

Fig. 5

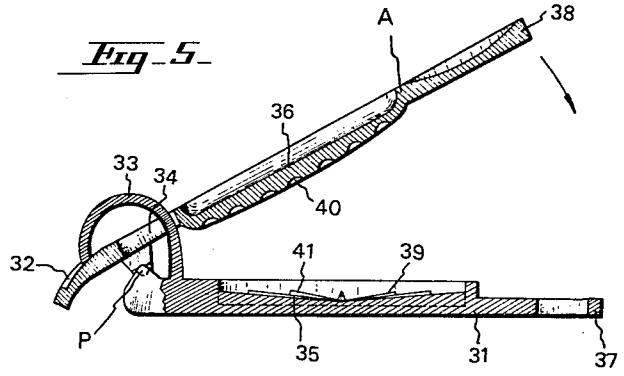


Fig. 6

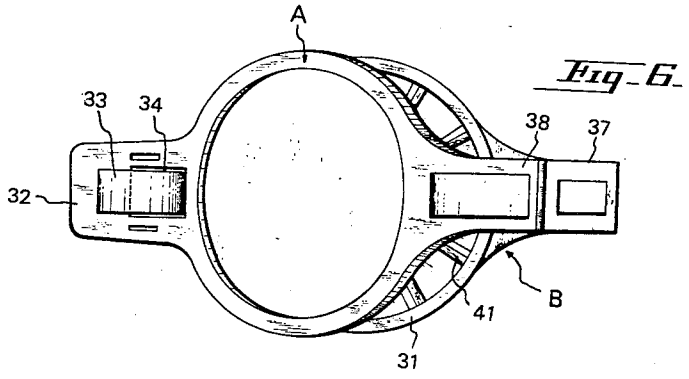
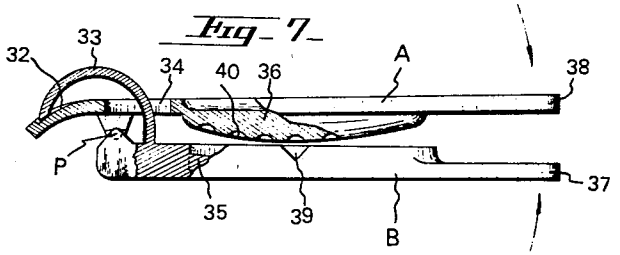


Fig. 7



INVENTORS
KIYOSHI TAKAHASHI
AKIRA TAKAHASHI

BY Polachek & Saulsbury
ATTORNEYS

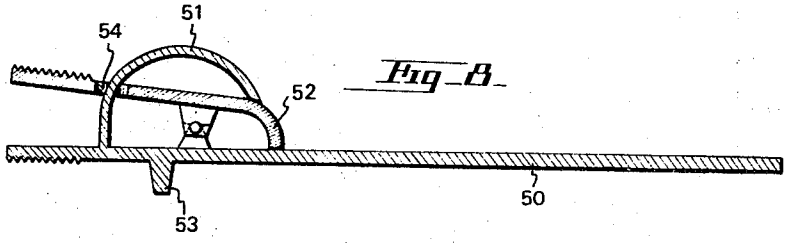


Fig. 8

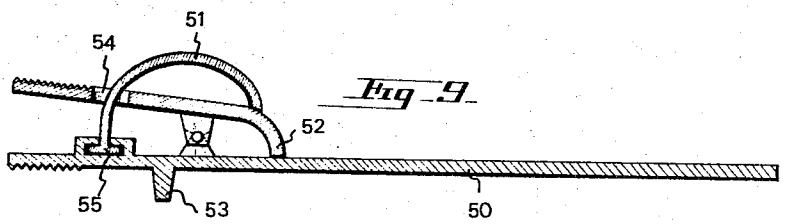


Fig. 9

Fig. 10

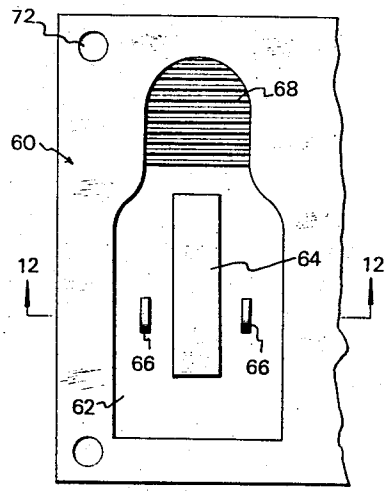


Fig. 11

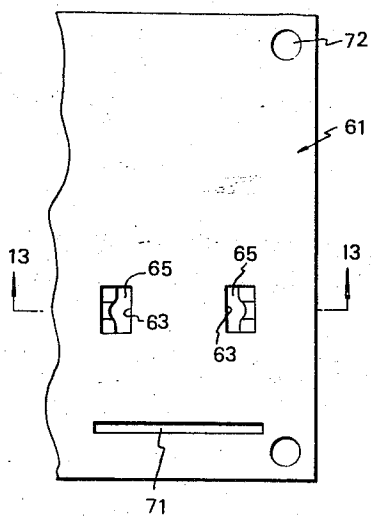


Fig. 12

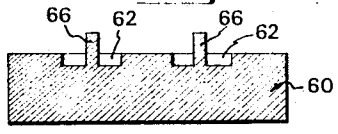
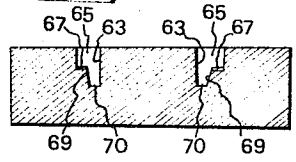


Fig. 13



INVENTORS
KIYOSHI TAKAHASHI
AKIRA TAKAHASHI

BY Glaeckel & Saulsbury
ATTORNEYS

Fig. 14

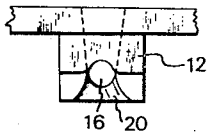


Fig. 19

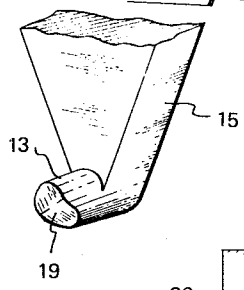


Fig. 15

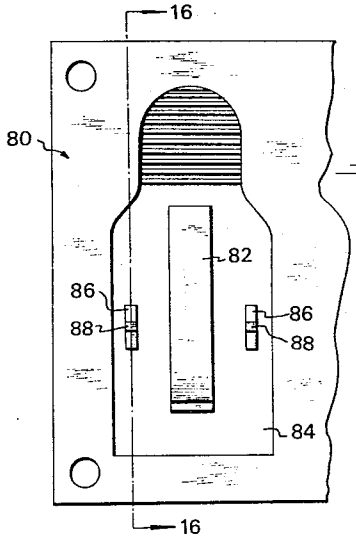


Fig. 16

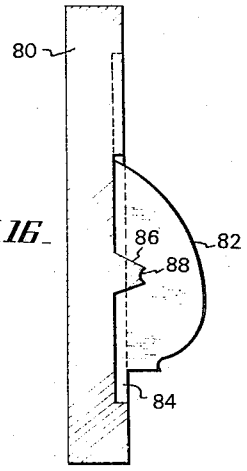


Fig. 17

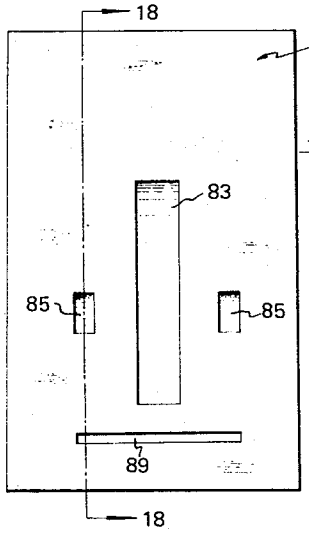
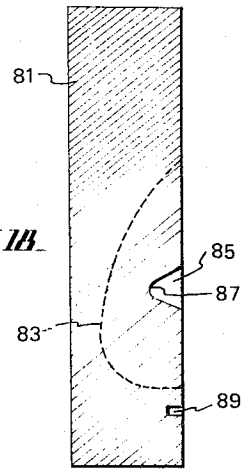


Fig. 18



INVENTORS
KIYOSHI TAKAHASHI
AKIRA TAKAHASHI

BY Golacheck & Saulsbury
ATTORNEYS

CLAMPING DEVICE

BACKGROUND OF THE INVENTION

The present invention relates to a clamping device and more particularly a clamp made of a synthetic resin and comprised of a pair of clamping members pivotably fixed to each other with an arcuately curved spring member pressing against one end portion of one of the pair of clamping members.

Various clamps proposed so far use metallic coiled springs or U-shaped plate springs in order to press a pair of clamping members against each other even though the clamps themselves are made of synthetic resins. Thus, in fabrication of these clamps there are required a step of fabricating metallic springs and a step for molding the pairs of clamping members so that the fabrication steps are complicated, thus resulting in expensive costs of the final products.

The fabrication steps will be much simplified when both of the spring members and the pairs of clamping members are molded from synthetic resins without fabricating the spring members from the materials other than synthetic resins. The use of the spring members made of synthetic resins instead of the metallic spring members in the clamps has not been proposed so far and not presumed by those skilled in the art because they consider that the spring members made of synthetic resins have no adaptability for variation in temperature and tend to be easily broken when the force is continuously applied to the spring members.

At present there are available various synthetic resins having sufficient characteristics so as to be molded into spring members. They are, for example, polyacetal, polycarbonate plastics, polyfleonin plastics, A.B.S. resins etc. The function and characteristics of the spring members molded from these synthetic resins will be similar to those of the metallic coiled or plate springs if the synthetic resin spring members are so molded that the change in stress exerted to them when the clamps are opened or closed may be reduced as much as possible. Thus, when the spring members for clamps are molded from synthetic resins as in the case of the clamping members, the fabrication of clamps will be much simplified, the whole of the clamps including the spring members may be colored, and the colorful clamps having high commercial value may be offered at lower costs.

In the conventional method for molding the plastic clamps, the lateral slide device has been used for forming lateral holes which receive the pivots so as to serve as the pivotal points of the clamps. In this method, the lateral slide device must be incorporated within the molds so that the construction of the molds become complicated and their costs become expensive. Furthermore, casting fins are produced and the device tends to be out of order. When the device fails to work during the molding operation, the molten molding compound within the cylinder of the injection molding machine may be decomposed and in the worst case the cylinder will be exploded. Especially in case of the above-described synthetic resins best suited for molding the spring members, their thermal-decompositions frequently tend to occur so that the molding operation becomes very dangerous. Therefore, it is preferable to make the molding patterns of the molds as simple as possible so as to reduce the costs of the molds, to prevent the abrasive wears of the molds and to readily and securely mold the pivot members.

SUMMARY OF THE INVENTION

The primary object of the present invention is to reduce as much as possible the change in force applied to a compression spring member when a pair of upper and lower clamping members are opened, thereby reducing the fatigue of the spring member and facilitating the actuation for opening the clamp.

Another object of the present invention is to exert the force of the spring member made integral with one of the pair of upper and lower clamping members made of synthetic resin upon the other clamping member at a portion thereof forwardly of the pivotal point, thereby facilitating the opening and closing of the clamp.

The present invention relates to a clamp characterized in that the leading end portion of an upper clamping member is formed into an arcuately curved surface are in cross section, the center of said arc being the point slightly deviated form the pivotal point of the clamp, and an arcuately curved compression spring generally made integral with a lower clamping member is pressed against said arcuately curved surface which is slightly deviated forwardly of the pivot line of the clamp.

The present invention provides a method and molds for molding from a synthetic resin clamping members together with lateral pivots and lateral holes both of which constitute the pivot members to each other, thus eliminating the complicated molding arrangement in which the lateral slide device provided with a spring is incorporated within the molds and reducing the costs of the molds.

Because of the simplified molds in accordance with the present invention, the causes for breakdowns will be eliminated and the safeguarded molding operation may be accomplished. Furthermore, the cores used for molding the lateral pivots may be smoothly pulled out when the male and female molds are parted from each other so that the simple, dependable and reliable molding operation may be ensured.

The holes formed by the cores serve to reduce the amount of the synthetic resin and the holes formed by the cores in the bearing members at the centers thereof serve to reinforce these members. Since the cores are made in intimate contact with the cavities so that the deviation of the leading ends of the cores due to the hydraulic pressure of the molding compound can be prevented, whereby the step for finishing the molded products can be eliminated.

The present invention relates to a method and molds for molding a plastic clamp or clip wherein a pair of cavities for molding a pair of bearing members are formed on both sides of a female mold of a pair of male and female molds for molding an upper clamping member of a clamp, a pair of cores are formed in said male mold in opposed relation with said cavities in such a manner that the inner surfaces of said cores may be made in intimate contact with the inner surfaces of said cavities, the leading end of each of said cores is arculately protruded and is spaced apart from the bottom of the cavity by a suitable distance when the molds are clamped to each other thereby providing a mold cavity for molding a lateral hole for receiving a pivot therein which serves as a pivotal point of the clamp while the bearing member main body is molded by a mold cavity defined outwardly of the outer surface of the core; a pair of cores each having an arcuated recess formed at the leading end thereof are formed on both sides of a male mold of a pair of male and female molds for molding a lower clamping member; a pair of cavities adapted to receive therein said cores respectively are formed in the female mold, the inner surfaces of said cores are made in intimate contact with the inner surfaces of the cavities; the bottom of each of said cavities has an arcuate surface in opposed relation with said arcuated recess formed at the leading end of said core so as to mold said lateral pivot in a mold cavity defined therebetween; the lateral pivot supporting member main bodies are molded in the mold cavities defined outwardly of the outer surfaces of said cores; and thus molded lateral pivots are resiliently fitted into said lateral holes of said upper clamping member, thereby assembling said upper and lower clamping member in unitary construction.

The above and other objects, features and advantages of the present invention will become more apparent from the following description of some illustrative embodiments of the present invention with reference to the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWING

FIG. 1 is a perspective view of a clamp according to the present invention;

FIG. 2 is a side view thereof, in partial cross section;

FIG. 3 and FIG. 4 are perspective views illustrating a pair of clamping members of the clamp and the inner surfaces thereof are shown;

FIG. 5 is a longitudinal sectional view of another embodiment of the present invention applied to a lemon squeezer;

FIG. 6 is a plan view thereof;

FIG. 7 is a side view thereof in partial cross section illustrating a slice of lemon being squeezed;

FIG. 8 is a longitudinal sectional view of a further embodiment of the present invention applied to a clipboard;

FIG. 9 is a longitudinal sectional view illustrating one variation thereof;

FIG. 10 and 11 are plan views of a pair of molds for molding an upper clamping member;

FIGS.. 12 and 13 are sectional views taken along the lines 12–12 and 13–13 of FIGS. 10 and 11 respectively;

FIG. 14 is a front view, on enlarged scale, of a bearing member of the upper clamping member molded by the pair of molds shown in FIGS. 10 and 11;

FIGS. 15 and 17 are plan views of a pair of molds for molding a lower clamping member;

FIGS. 16 and 18 are sectional views taken along the lines 16–16 and 18–18 of FIGS. 15 and 17 respectively; and

FIG. 19 is a perspective view, on enlarged scale, of one lateral pivot-supporting member of the lower clamping member molded by the pair of molds shown in FIGS. 15 and 17.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring to FIG. 1, a clamp in accordance with the present invention is comprised of an upper clamping member made of synthetic plastic material and generally designated by A and a lower clamping member made of also synthetic resin material and generally designated by B. At the leading end of the upper clamping member A is formed a downwardly directed clamping portion 10 while at the leading end of the lower clamping member B in opposed relation with the leading edge of the upper clamping member is formed an upright clamping portion 11. A pair of bearing members 12 are disposed on both sides of the inner surface of the upper clamping member A intermediate the ends thereof. At the center of the bearing 12 is formed a recess 14 having a lateral bore for receiving therein a pivot formed at the leading end of the recess 14. Each bearing member 12 has a stepped portion 18 formed at the outer side thereof and a sloping guide surface 20 is formed so as to extend from the stepped portion 18 toward the top of the bearing member 12. An arcuate surface 22 whose radius is *r* and whose center is a point 0 slightly deviated from the center P of the pivotal point of the bearing member 12 is formed adjacent to the downwardly directed clamping portion 10 at the leading edge of the upper clamping member A, and the free end of a compression spring to be described hereinafter is abutted against this arcuate surface 22.

At the center portion of the upper clamping member A is formed a rectangular opening 24 and at the rear end portion of the member A is formed an actuating member 26.

In opposed relation with the bearing members 12 are formed a pair of lateral pivot-supporting members 15 each having a laterally extending pivot 13. Reference numeral 17 designates a hole formed because a core is disposed in molding. The arcuate surface 19 is formed at the upper surface of the free end of the pivot 13. A compression spring member 21 is cut off from the lower clamping member B at 23 so as to slant upwardly and then downwardly extend as best shown in FIG. 4.

The upper and lower clamping members A and B are so assembled into a unitary construction that the compression spring member 21 extends through the opening 24 of the upper clamping member A and the pair of bearing members 12 are disposed in side-by-side relation with the pair of pivot-supporting members 15 respectively so as to force fit the pivot 13 into the hole 16 along the sloping guide surface 20. That is, because of the elasticity of the bearing members 12 and the pivot-supporting members 15, the pivot-supporting members 15 which are disposed outwardly of the bearing members 12 are bent outwardly while the bearing members 12 are bent inwardly when the free ends of the pivots 13 are abutted against the sloping guide surfaces 20. When the free ends of the pivots 13 are disengaged from the sloping guide surfaces 20, the pivots may be fitted into the holes 16 respectively by the elasticity of the bearing and pivot-supporting members. In this case, the free end of the compression spring member 21 extending through the opening 22 of the upper clamping member A is abutted against the arcuate surface 22 of the upper clamping member A so that the member A is resiently pressed, thereby pressing against each other the clamping portions 10 and 11 formed at the free ends of the upper and lower clamping members A and B.

With the construction described above, the free end of the compression spring member 21 is normally positioned forwardly of the center P or the pivotal point of the upper and lower clamping members A and B and is pressed against the arcuate surface 22 of the upper clamping member A so that the clamping force is always acting upon the abutting surfaces of the clamping portions 10 and 11. When the rear ends of the upper and lower clamping members A and B are compressed by the fingers, the free end of the compression spring 21 slides downwardly relative to the arcuate surface 22 of the upper clamping member A and the abutting surfaces of the clamping portions 10 and 11 are spaced apart from each other. Since the center of the radius r of the arcuate surface 22 is the point 0 slightly eccentrically deviated from the pivotal center P, the free end of the compression spring 21 may lightly and readily slide upon the arcuate surface 22 so that the clamping portions 10 and 11 may be readily spaced apart from each other or opened.

Referring to FIGS. 5 to 7, another embodiment of the present invention will be described in detail. The embodiment illustrated in FIGS. 5 to 7 is the application of the present invention to a lemon squeezer or extractor and generally has the same construction with that described hereinabove with reference to FIGS. 1 to 4.

That is, upper and lower clamping plates A and B are engaged with each other so that they may pivot around a pair of pivotal points P. At the leading portion of the upper clamping plate A is formed an arcuate surface 32 whose center is the point slightly eccentrically deviated from the pivotal center P and an inverted U-shaped spring member 33 is extending from the lower clamping plate B through an opening 34 and is pressed against the arcuate surface 32 of the upper clamping plate B. A pair of circular lemon-squeezing members 35 and 36 are respectively attached to the upper and lower clamping plates A and B and have a plurality of grooves and ridges which extend radially and mate with each other. Reference numerals 37 and 38 designate a pair of actuating or squeezing members.

With the construction described above, a slice of lemon may be placed in the lemon-squeezing member 35 on the side of the lower clamping plate B and the actuating or squeezing members 37 and 38 are pressed in the direction indicated by the arrow in FIGS. 5 and 7 so that the free end of the arcuate spring member 33 slides along the curved surface 32, thereby producing the lemon-squeezing action between the members 35 and 36. Thus, the slice of lemon is squeezed between the ridges 41 and grooves 40 of the squeezing members 35 and 36 so that the squeezed juice is discharged from an outlet 39.

FIGS. 8 and 9 illustrate a clip board to which is applied the present invention.

A board 50 is molded from a thermoplastic resin and a clip member 52 having its leading end curved downwardly is pivotably fixed to the board 50. An arcuate compression

spring **51** made integral with the board **50** and extended through an opening **54** formed in the clip member **52** has its free end pressed against the curved portion of the clip member **52**. A projection **53** is protruded from the undersurface of the board **50** so that the board **50** may be suitably inclined when placed upon a desk or the like.

In the embodiments described above with reference to FIGS. **1** to **8**, the arcuate spring member has been described as being integral with one of the clamping or clipping members, but it will be understood that the present invention is not limited thereto. As shown in FIG. **9**, the spring member may be formed independently of the clamping or clipping member so that it may be replaced when it is broke. The spring member has a T-shaped root which in turn is fitted into a T-shaped groove formed at the surface of the board **50**.

Next with reference to FIGS. **10** to **19** a method and molds for molding a pair of pivot members for pivotably fixing pair of clamping or clipping members illustrated in FIG. **1** will be described hereinafter.

Referring to FIGS. **10** and **11** male and female molds **60** and **61** are for molding the upper clamping member A and a cavity for molding the upper clamping member A is formed in the male mold **60** with a protruded or raised surface **64** for forming a rectangular opening at the center portion thereof. A pair of cores **66** for forming the pair of bearing members are disposed on both sides of the raised surface **64** respectively. A cavity **68** is for molding the actuating member **26** of the clamping member A.

In the female mold **61** are formed a pair of cavities **65** in opposed relation with the cores **66** respectively for forming or molding the pair of bearing members. As best shown in FIG. **13**, one inner surface **63** of the cavity **65** is made planer while the opposing inner surface on the side of the outer edge of the mold has a stepped portion **67** and a sloping surface **69** extending from the stepped portion **67** toward the bottom **70**. The inner surface of the core **66** of the male die is made so as to intimately contact with the inner surface **63** of the female mold **61** and the height of the core **66** is made slightly shorter than that of the inner surface **63** so that a space may be defined between the bottom **70** of the cavity **65** and the free end of the core **66**. A cavity **71** is for molding the clamping portion **10** (see FIG. **1**) of the upper clamping member A and reference numerals **72** designate the guide pin holes. In molding operation, a pair of the above described molds are clamped to each other, thereby molding the upper clamping member A in the mold cavity defined therebetween. That is, when they are clamped to each other in molding operation, the cores **66** of the male mold fit into the bearing molding cavities **65** of the female mold with the inner surfaces of the cores **66** being intimately contacted with those of the cavities **65** respectively so that the mold cavity for molding the pair of bearing members may be defined around the cores **66** in cooperation of the cavities **65**. When the molten molding compound is ejected into the clamped moulds, it may be thoroughly filled in the molding cavity, thereby molding the desired upper clamping member A. When the male mold **60** is released from the female mold **61**, the cores **66** may be smoothly pulled out of the cavities along their surfaces and the lateral holes **16** (see FIG. **2**) as well as the sloping surfaces **20** are formed. Thus, the upper clamping member is molded together with the pair of bearing members **12** each having the lateral holes **16** at the leading edge portion thereof.

A pair of molds **80** and **81** illustrated in FIGS. **15** and **17** are for molding the lower clamping member. The mold **80** will be referred to as "male mold" while the mold **81**, as "female mold." In order to mold the compression spring member **21** (See FIG. **1**), a curved and raised surface **82** is formed in the male mold **80** and a mold cavity **84** is formed therearound. A pair of cores **86** for molding the pair of lateral pivots **13** (see FIG. **4**) are disposed on both sides of the raised surface **82** and have arcuate recessed surfaces **88** formed at the free ends thereof for forming the lateral pivots.

A mold cavity **83** mating with the raised surface **82** of the male mold **80** is formed at the center portion of the female mold **81** and on both sides of this mold cavity are formed in opposed relation with the cores **86** a pair of cavities **85** respectively. The inner surface of the cavity **85** is so formed as to make an intimate contact with the mating surface of the core **68**, and the width of the cavity **85** is made larger than the thickness of the core while the depth of the cavity **85** is made greater than the height of the core **86**. The bottom of the cavity **85** is rounded so as to oppose the arcuate recess formed at the end of the core **86**. Reference numeral **89** designates a molding cavity for forming the clamping portion **11** (see FIG. **4**) of the lower clamping member B.

When the pair ofmale and female molds **80** and **81** are clamped to each other for molding the lower clamping member B, the mold cavity for forming the compression spring member **21** (see FIG. **1**) is defined in the center cavity **83** of the female mold **81** in such a manner that the root of the spring member **21** may be integrally joined to the main body of the lower clamping member B. The cores **86** are fitted into their mating cavities **85** respectively with their inner surfaces being in intimate contact with each other while the mold cavity for forming the lateral pivot-supporting members **15** (see FIG. **19**) are defined.

Thus, it will be readily seen that the pair of pivot supporting members having the lateral pivots in opposed relation are molded at both sides of the lower clamping member when the molten molding compound is ejected into the clamped molds. The core **86** is advantageously pressed against the inner surface of the cavity **85** by the hydraulic pressure of the molding compound so that there is no need for providing the projections and recesses for receiving these projections in order to stationarily hold the core **86** in position during molding operation. Thus, it will be readily seen that the design of the molds may be much simplified and the lateral pivots may be molded sufficiently enough to be readily fitted into the lateral holes respectively.

Now it will be readily seen that a plurality of upper and lower clamping members may be molded simultaneously when a suitable number of the male and female molds for molding the upper and lower clamping members are mounted upon suitable mounting members respectively so that they may be suitably clamped to each other when the molten molding compound is injected therein.

The method for molding the pair of pivot members in accordance with the present invention has been described with particular reference to the clamping members illustrated in FIGS. **1** to **4** and it will be readily understood that the method and the molds described hereinabove may be also applied to the molding of the clamping or clipping members illustrated in FIGS. **5**, **8** and **9**.

The present invention so far has been described in particular reference to the preferred embodiments thereof, but it will be understood that variations and modifications can be effected without departing from the true spirit of the present invention as described hereinabove and as defined in the appended claims.

What we claim is:

1. A clamping device in which an upper clamping member having a rectangular opening and a curved surface is pivotably fixed to a lower clamping member having an arcuate spring member, said arcuate spring member being extended through said rectangular opening in such a manner that the free end of said spring member may be pressed against said curved surface of said upper clamping member, both of said upper and lower clamping members including said spring member being molded from a synthetic resin, wherein said curved surface of said upper clamping member against which is pressed said arcuate spring member has an arc in cross section having a radius of curvature whose center is slightly eccentrically deviated from the pivotal center of said upper and lower clamping members.

2. A clamping device in which an upper clamping member having a rectangular opening and a curved surface is pivotably fixed to a lower clamping member having an arcuate spring member, said arcuate spring member being extended through said rectangular opening in such a manner that the free end of said spring member may be pressed against said curved surface of said upper clamping member, both of said upper and lower clamping members including said spring member being molded from a synthetic resin, wherein said upper clamping member is provided with a spherically extended portion directed toward said lower clamping member, said spherically extended portion being provided with radially extended grooves; and said lower clamping member is provided with a spherical recess adapted to receive said spherically extended portion of said upper clamping member, said spherical recess being provided with radial ridges and an outlet.

3. A clamping device in which an upper clamping member having a rectangular opening and a curved surface is pivotably fixed to a lower clamping member having an arcuate spring member, said arcuate spring member being extended through said rectangular opening in such a manner that the free end of said spring member may be pressed against said curved surface of said upper clamping member, both of said upper and lower clamping members including said spring member being molded from a synthetic resin, wherein said lower clamping member is enlarged sufficiently enough to serve as an underlying upon which a sheet of paper or the like may be placed, wherein said underlying has a projection formed so as to extend from the undersurface of said underlying, thereby inclining said underlying at a suitable angle when placed upon a horizontal plane, and wherein said arcuate spring member has a T-shaped root and a groove for receiving said T-shaped root of said arcuate spring member is formed in said lower clamping member whereby said arcuate spring member can be detachably fixed to said lower clamping member.

4. A clamping device in which an upper clamping member having a rectangular opening and a curved surface is pivotably fixed to a lower clamping member having an arcuate spring member, said arcuate spring member being extended through said rectangular opening in such a manner that the free end of said spring member may be pressed against said curved surface of said upper clamping member, both of said upper and lower clamping members including said spring member being molded from a synthetic resin, wherein at both sides of the inner surface at the intermediate portion of said upper clamping member are formed a pair of bearing members while a pair of pivot-supporting members are formed at said lower clamping member in opposed relation with said pair of bearing members, each of said pair of bearing members being provided with a hole formed upon drawing a core, there being a lateral hole for receiving a lateral pivot, stepped portions formed at both sides of said lateral hole and a sloping surface formed upwardly of said lateral hole for guiding said lateral pivot to said lateral hole; and each of said pair of lateral pivot-supporting members is provided with a hole formed upon drawing a core and an arcuate surface formed at the top end thereof.

5. Molds for molding a plastic clamp consisting of a pair of upper and lower clamping members pivotably fixed to each other characterized in that a pair of cavities for molding a pair of bearing members are formed in the female mold of a pair of molds for molding an upper clamping member; a pair of cores are formed in the male mold so as to fit in said cavities respectively with the inner surfaces of said cones being in intimate contact with the inner surfaces of said cavities; an arcuate surface is formed at the leading end of each of said cores so as to be spaced apart from the bottom of said cavity by a predetermined distance, whereby a lateral hole which is the pivotal point between said upper and lower clamping members is molded while a bearing member main body is molded in a mold cavity defined outwardly of the outer surface of said core in said cavity; a pair of molds each having an arcuate recessed surface formed at the leading end thereof are formed on both right and left sides of a male mold of a pair of male and female molds for molding a lower clamping member while a pair of cavities mating with said pair of cores are formed in said female mold in opposed relation with said cores in such a manner that when each of said cores is mated with its mating cavity the inner surface of said core is made in intimate contact with the inner surface of said cavity; the bottom of each of said cavities is arcuated in opposed relation with said arculately recessed surface of said core, thereby defining a mold cavity for molding a lateral pivot while a main body of a pivot supporting member is molded in a mold cavity defined outwardly of the outer surface of said core; and lateral pivots are adapted to be resiliently fitted into said lateral bearing holes of said upper clamping member, to thereby assemble both of said upper and lower clamping members into a unitary construction.

6. A method for molding a pair of pivot members for a clamp comprising forming a pair of cavities for molding a pair of bearing members for said pair of pivot members in a female mold of a pair of male and female molds for molding an upper clamping member; forming a pair of cores adapted to fit into said pair of cavities, respectively, in said male mold in such a manner that the inner surface of said pair of cores may be made in intimate contact with the inner surfaces of the pair of cavities, respectively; forming the free end of each of said pair of cores into an arcuate surface; forming a pair of cores each having an arcuate recess formed at the leading end thereof at both right and left sides of a male mold of a pair of male and right and left sides of a male mold of a pair of male and female molds for molding a lower clamping member; forming a pair of cavities for receiving said pair of cores respectively in the surface of said female mold clamped to said male mold in opposed relation with said pair of cores is such a manner that when said pair of cores are fitted into said pair of cavities, the inner surfaces of said cores are made in intimate contact with the inner surfaces of said pair of cavities, respectively; forming at the bottom of each of said pair of cavities an arcuate surface in opposed relation with said arcuate recess at the free end of each of said pair of cores; clamping said pair of male and female molds for molding said upper and lower clamping members, respectively; and injecting a molten molding plastic into the mold cavities defined between said pairs of male and female molds, respectively, thereby molding the pair of bearing members each having a lateral hole for receiving a lateral pivot upon said upper clamping member while molding a pair of lateral pivot-supporting members each having said lateral pivot upon said lower clamping member.