United States Patent [19]

Longarzo

[11] **3,810,550**

[45] **May 14, 1974**

[54] **BALL, SOCKET AND CLIP DEVICE**

[75] Inventor: **Roland P. Longarzo,** Valley Stream, N.Y.

[73] Assignee: **Ibex Precision Products, Inc.,** New York, N.Y.

[22] Filed: **Sept. 15, 1972**

[21] Appl. No.: **289,554**

[52] **U.S. Cl.** **211/69.6**

[51] **Int. Cl.** **A47f 7/00**

[58] **Field of Search** 211/69.1, 69.5, 69.6, 69.7, 211/69.8, 69.9; 248/309, 181; 287/87; 312/234

[56] **References Cited**

UNITED STATES PATENTS

1,280,013	9/1918	Goddard	248/181
1,783,772	12/1930	Benson	211/69.6
1,956,084	4/1934	Tefft	211/69.6
1,991,363	2/1935	Hodny et al.	248/181 X
1,992,828	2/1935	Hodny et al.	248/181 X
2,160,661	5/1939	Huott	211/69.6 X
2,847,977	8/1958	Parker	211/69.6
3,251,343	5/1966	Wesenberg	211/69.6
3,306,566	2/1967	Paulson et al.	248/181 X
3,655,062	4/1972	Curry	211/69.6

Primary Examiner—Paul R. Gilliam

Attorney, Agent, or Firm—Leonard H. King

[57] **ABSTRACT**

A novel pen holder and integral pad support is provided comprising a socket mounted in a base member to which a spring clip is loosely attached for receiving a small pad of paper. A ball having a tubular stem integral therewith for receiving a pen or the like is snapped into the socket. A novel mold is disclosed for forming the ball and the tubular extension thereof.

The aforementioned abstract is neither intended to define the invention of the application, which, of course, is measured by the claims, nor is it intended to be limiting as to the scope of the invention in any way.

7 Claims, 12 Drawing Figures

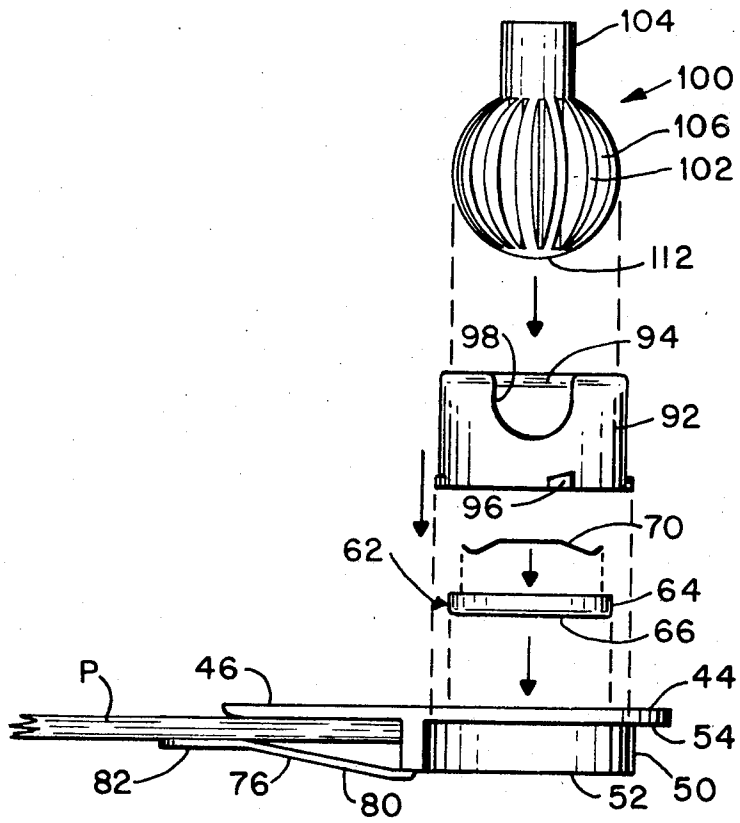


FIG. 1

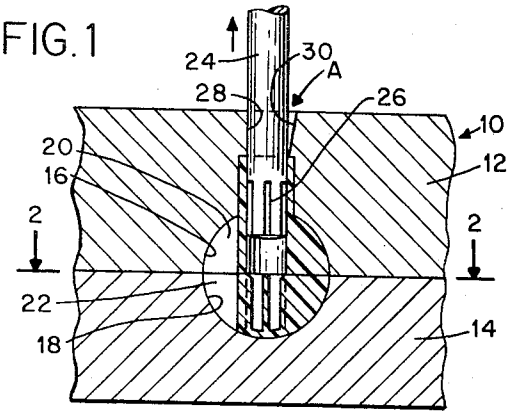


FIG. 2

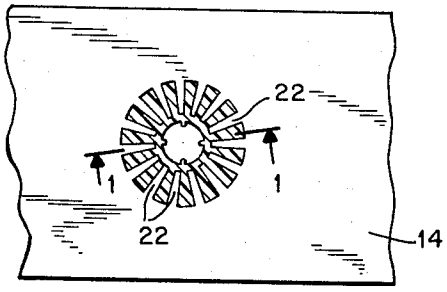


FIG. 6

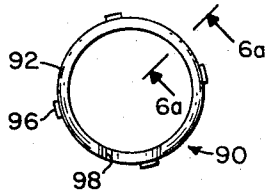


FIG. 3

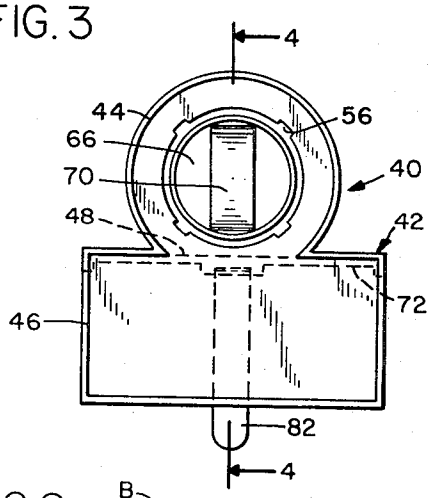


FIG. 4

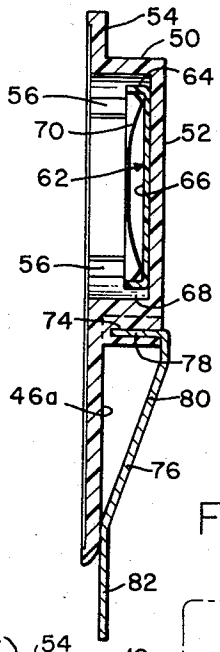


FIG. 7

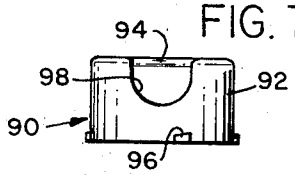


FIG. 6a

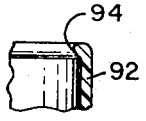


FIG. 8

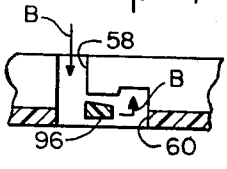


FIG. 11

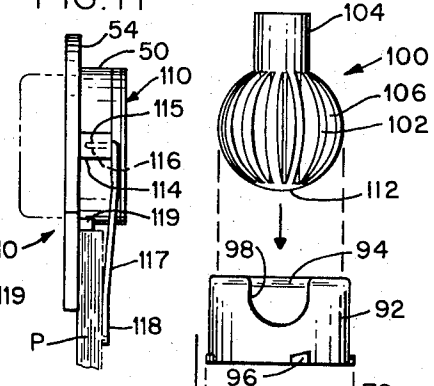
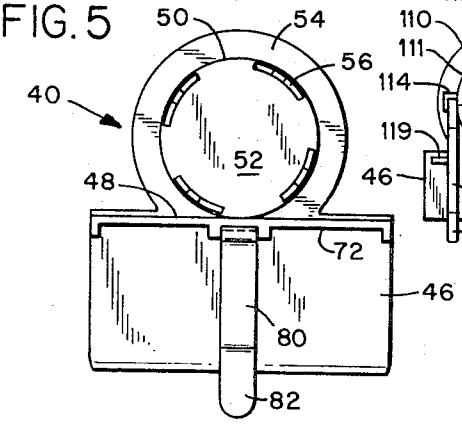


FIG. 5



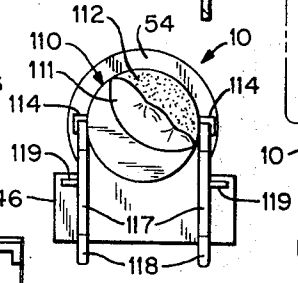
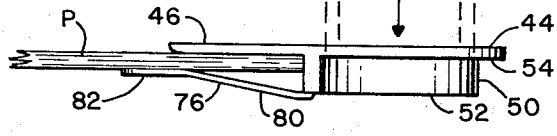


FIG. 10

FIG. 9



BALL, SOCKET AND CLIP DEVICE

BACKGROUND OF THE INVENTION

This invention relates generally to a novel pen holder and more particular to an improved ball and socket pen holder having integral paper retaining means as well as mold means for manufacturing one of the components thereof.

SUMMARY OF THE INVENTION

In its broadest aspect the present invention provides a novel, low cost ball and socket pen holder having integral clip means for releasably retaining a pad of paper. Several of the components comprising the present invention may be individually molded and either adhesively secured to each other or snapped together as the case may be. The socket member includes a circumferential lip that rotatably retains a ball member slightly above the centerline thereof.

It is conventional to mold plastic ball members by forming a pair of mating shells. This construction has been employed as a solid ball is difficult to mold as the non-uniform cooling of a large mass produces sink holes. The ball of this invention consists of a cylindrical tube with thin radially extending chord-like fins. The fins cool uniformly and do not shrink.

A novel mold member for fabricating the ball comprises a two part female mold having, in both halves thereof, a plurality of radially extending ribs defining radially extending recesses therebetween. A removable plug having a tubular bottom end and a plurality of radially oriented, axially extending slots at the bottom end is placed in the assembled mold halves such that the radially extending ribs of the mold halves are spaced from a peripheral surface of the plug. A thermoplastic material is then inserted into the mold and, after proper curing that depends upon the characteristics of the thermoplastic material, fills the spaces between the radially extending ribs and the radially oriented slots in the plug member. After the thermoplastic material is secured, the plug member, which may be coated before insertion with a mold release agent, is removed and the mold halves are separated. The resulting article is a ball shaped member having tubular extension and a plurality of ribs extending radially therefrom.

Accordingly it is an object of the present invention to provide an improved, low cost molded article having a member rotatably contained therein.

Another object of the present invention is to provide an improved molded article, as described above, that is adapted to received a pen or the like.

Still another object of the present invention is to provide an improved molded article that may readily be assembled with a minimum of skill and special tools.

A further object of the present invention is to provide an improved, molded article as described above, having integral means for retaining a pad of papers.

A further object of the present invention is to provide an improved mold for fabricating one of the components of the article described hereinabove.

These and other objects, features and advantages of the invention will, in part, be pointed out with particularity, and will, in part, become obvious from the following more detailed description of the invention, taken in conjunction with the accompanying drawings, which forms an integral part thereof.

BRIEF DESCRIPTION OF THE DRAWING

In the various figures of the drawing, like reference characters designate like parts. In the drawing:

FIG. **1** is a sectional elevational view illustrating means for molding one of the components comprising the present invention;

FIG. **2** is a plan view of one half of the mold comprising this invention shown in FIG. **1** and taken along line **2—2** of FIG. **1**;

FIG. **3** is a plan view of the finished article comprising the present invention;

FIG. **4** is a longitudinal sectional view taken along line **4—4** of FIG. **3**;

FIG. **5** is a bottom plan view of the molded article shown in FIG. **3**;

FIG. **6** is a plan view of the socket member comprising the present invention and which is shown in FIG. **3**;

FIG. **6A** is a fragmentary sectional view, on an enlarged scale, taken along line ***6a—6a*** of FIG. **6**;

FIG. **7** is an elevational view of the socket member shown in FIG. **6**;

FIG. **8** is a fragmentary sectional elevational view schematically illustrating the method of assembling two of the components comprising the present invention;

FIG. **9** is an exploded view, illustrating the components comprising this invention;

FIG. **10** is a bottom plan view of the alternative embodiment of the molded article; and

FIG. **11** is a longitudinal view of the device shown in FIG. **10** with a paper pad clipped thereby.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring now to the drawing the novel mold means for producing the article comprising the present invention is shown in FIGS. **1** and **2**. The mold means comprises upper and lower mold halves **12** and **14**. Each mold half **12** and **14** is provided with opposed semicircular recesses **16** and **18**, respectively. A plurality of radially extending ribs **20** and **22** are formed in the upper and lower recesses **16** and **18**, respectively. It will be noted, for example in FIG. **2**, that the radially extending ribs **22** (as well as the ribs **20** in FIG. **1**) terminate short of the center of the circle defined by the radially outermost portion of the ribs **22**.

Before the molding process is begun, a plug member **24** that may be coated with a mold release agent having a plurality of radially oriented, longitudinal or axially slots **26** extending from the lower end thereof is inserted in a counterbored hole **28** formed in the upper mold half **12**. An opening **30** is provided in the upper mold half **12** for the insertion of the thermoplastic material in the direction of the arrow A shown in FIG. **1**. The product resulting from the molding process and molding apparatus discussed hereinabove will be described in detail subsequently.

Reference may now be had to FIGS. **3**, **4** and **5** for a description of the article that may be made utilizing the molding the process and apparatus described hereinabove.

For purposes of this description, the ball member that is used in the article shown in FIGS. **3**, **4** and **5** has been purposely omitted from these figures for purposes of clarity and will be described in connection with FIG. **9**. The article shown in FIGS. **3**, **4** and **5** is a ball and

socket pen holder that also includes means for retaining a pad of papers. The article **40** is comprised of a molded plastic base member **42** comprising a substantially circular portion **44** and a substantially rectangular portion **46** that are interconnected along a common edge **48.** The top surface of the rectangular portion **46** may be used for an advertising message while, at the bottom surface thereof may have a double coated adhesive member secured thereto so that the article **40** may be mounted on a flat surface. The partially circular portion **44** is cup-shaped and includes an arcuate sidewall **50** and an integral basewall **52.** A flange **54,** extending peripherally about the sidewall **50,** is contiguous with the rectangular portion **46.** A plurality of L-shaped slots **56** (4 in number) are formed in the peripheral sidewall **50** and the basewall **52** at the junction thereof. The slots **56,** as shown in FIG. **8** consist of a first leg **58** and a second leg **60.** A cup-shaped molded member **62** comprised of a peripheral sidewall **64** and a basewall **66** is integrally attached to the interior surface of the basewall **52** in order to define an annular channel **68.** It should be noted at this time that the cup-shaped member **62** may be formed integrally during the molding of the body member **40** while still retaining the annular channel **68.**

For purposes to be described hereinafter a bowed leaf spring **70** is loosely placed in the cup-shaped member **62** with the arcute portion of the spring member **70** extending outwardly. It is not necessary to secure the spring member to the cup-shaped member **63** since the side wall **64** thereof accurately locates the spring **70.** The rectangular portion **46** is further provided with a downwardly extending wall **72** and therein there is formed a slot **74** for receiving one end of a resilient spring **76.** As shown best in FIG. **4** the spring **76** is comprised of a first leg **78** that is loosely received in slot **74,** a second leg **80** that is positioned at an angle to the plane of the rectangular portion **46** and a third leg **82** that is contiguous with the leg **80.** The junction of the legs **80** and **82** and a portion of the leg **82** bear against the underside **46***a* of the flange **46.** A pad of paper P may be inserted and be removably retained between the spring leg **82** and the underside surface **46***a* of the rectangular portion **46** as shown in FIG. **9.**

A tabular socket member, generally designated by the reference character **90** is shown in FIGS. **6, 6***a* and **7.** The socket member **90** is comprised of a sidwall **92** having a radially inward circumferentially extending lip formed integrally therewith at one end. The outer surface of the socket **90,** at the end thereof opposite the lip **94,** is provided with four equally spaced projections or lugs **96** that are adapted to be received in the grooves **56** formed in the article **40.** When the socket member **90** is assembled the lugs **96** follow the path indicated by the arrows B in FIG. **8** in order to releasably assemble the two components **40** and **90.** A cut out **98** is formed in the wall **92** of the socket **90** in order to provide a measure of resiliency thereto for purposes to be described hereinafter.

Referring to FIG. **9,** the construction of the ball member comprising the present invention as well as the assembly thereof will now be described. The ball member **100** is comprised of a spherical section **102** and a tubular section **104** extending from one end thereof. The spherical section **102** includes a plurality of ribs **106** extending radially outward of the tubular member **104,** (which is comprised of an annular wall **108** and a base wall **110** that is recessed within the spherical section.) With the cup-shaped member **62,** the spring **70** and the socket **92** assembled to the body member **40** as described hereinabove, all that is necessary to complete the assembly is to force the diametrical plane of the spherical section **102** past the lip **94** of the socket **92.** The diameter of the lip **94** is somewhat smaller than the maximum diameter of the spherical section **102** but has a measure of inherent resiliency so that once passed the lip **94,** the socket **100** will not be readily removable unless pulled outwardly with come force. Necessarily there must be some axial play provided for assembly of the ball member **100** and to take up this play, the spring **70** provides an axial force bearing against the bottom surface **112** of the ball member **100.**

In FIGS. **10** and **11** an alternative embodiment is disclosed. Extending from rim **54** integrally formed bosses **114** which are provided with slots **115.** Right angle legs **116** of spring molding means **120** are inserted in slots **115.** A pad of paper P inserted into holding means **120** is secured by leg portion **118** which is at an angle to intermediate portion **117** of means **120.** Integrally formed step means **119** permits the seating of the pad in a firm position.

The device may be readily attached to a supporting surface by means of adhesive means **110.** Adhesive means **110** includes a peel off protective membrane **111** which is removed to expose the actual adhesive layer **112.**

From the foregoing it will be appreciated that a low cost article that is made up almost entirely of molded plastic members except for the two springs has been provided. The components described hereinabove may be assembled with a minimum of skills and in the absence of complex tools. The pen holding ball is freely rotatable in its socket so that it may be positioned at any convenient angle.

What I claim as new and desire to secure by Letters Patent is:

1. A ball and socket holder for pens or the like, said holder comprising:

a. a cup-shaped member defined by a base wall on which said holder is adapted to rest, a side wall extending upwardly from said base wall and a flange extending about and radially outward from said side wall at the end thereof opposite said base wall and substantially parallel to said base wall;

b. a ring integral with said base wall and positioned inwardly of said side wall for defining an annular space therebetween;

c. an elongated, tubular socket mounted in said annular space, said socket having an inwardly directed lip at the end thereof remote from said annular space;

d. a spherical member rotatably journalled in said socket, said spherical member having a diameter slightly larger than the dimension across said lip so as to be retained thereby, said spherical member having a bore at least partially therethrough;

e. biasing means positioned in said ring for urging said spherical member into abutment with said lip; and

f. a spring coupled to said base and extending substantially parallel and into engagement with a portion of said flange for retaining a pad of paper therebetween.

2. The holder in accordance with claim 1 wherein there is further included bayonet means for removably mounting said socket in said annular space.

3. The holder in accordance with claim 2 wherein said bayonet means comprises at least one lug formed integrally with with said socket means and at least one L-shaped opening in said base for receiving said lug.

4. The holder in accordance with claim 1 wherein said spherical member is defined by a plurality of angularly spaced apart ribs radiating outwardly from said tubular extension at one end thereof, the outermost ends of said ribs defining a spherical envelope.

5. The holder in accordance with claim 1 wherein said biasing means is a bowed leaf spring.

6. The holder in accordance with claim 1 wherein said spherical member includes a tubular extension coaxial with the bore therein.

7. The holder in accordance with claim 1 wherein said spring is generally L-shaped with one leg thereof being retained at said base, at least a portion of said other leg of said spring bearing against the bottom surface of said flange for retaining a pad of paper therebetween.

* * * * *