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Gibbons et al.

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[54] **HOLLOW STAMP HANDLE**

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[52] **U.S. Cl.** ..... **101/405,** 16/110 R, 15/143 R, 264/274 X, 29/463, 145/61 J, 145/61 C

[51] **Int. Cl.** **B41k 1/56**

[58] **Field of Search** ..... 101/405, 406; 29/463; 16/110 R, 110 A, 114 R, 114 A, 121; 264/274; 145/61 C, 61 R, 64, 61 J; 46/76 R

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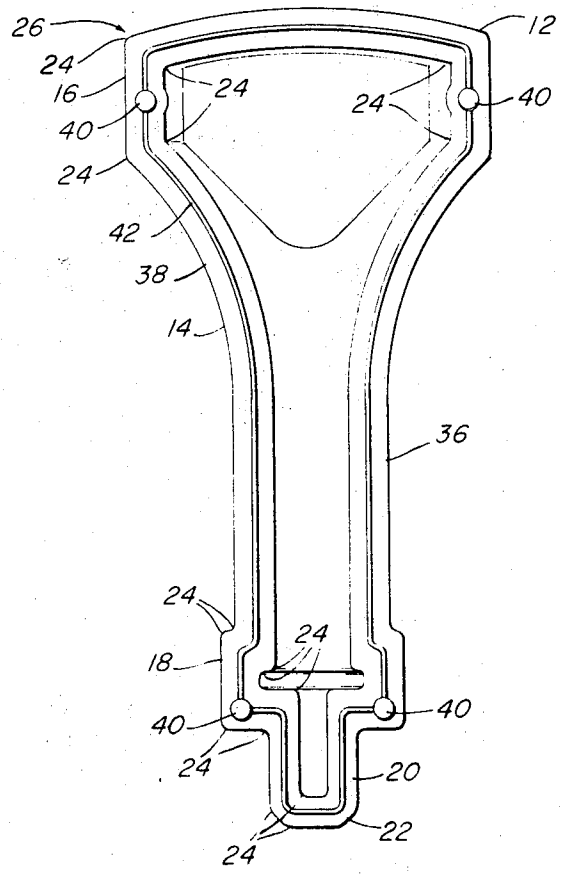
[57] **ABSTRACT**

A hollow, two-part elongated plastic handle including first and second matching parts parted along a longitudinal plane, each of the parts including a cap portion of uniform wall thickness, a gently tapered neck portion having a uniform wall thickness, an intermediate section interconnecting the cap portion and the larger end of the neck portion, an enlarged shoulder portion at the narrow end of the neck portion and a tendon portion suspended from the shoulder portion and having uniform wall thickness and gently tapering to a smaller cross-section at its outer end, remote from the shoulder portion.

5 Claims, 5 Drawing Figures



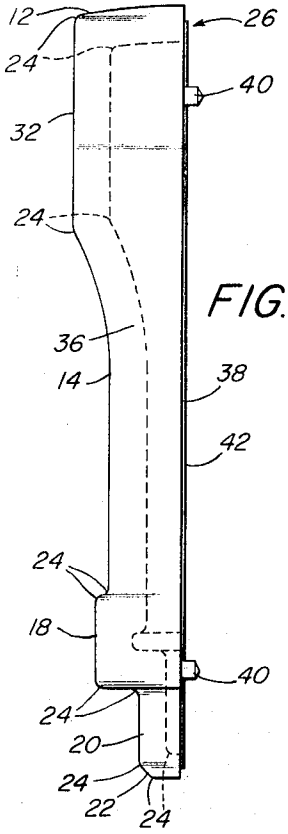


FIG. 2

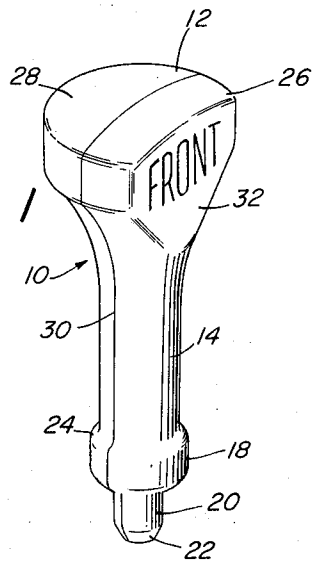


FIG. 1

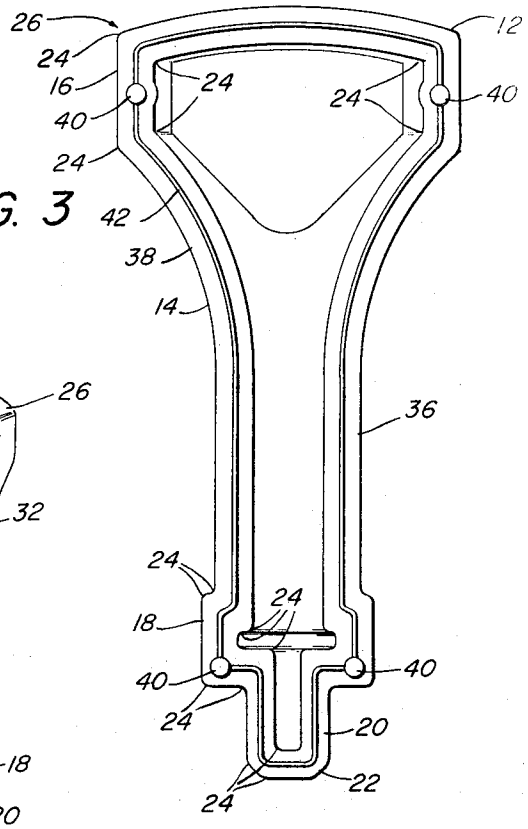


FIG. 3

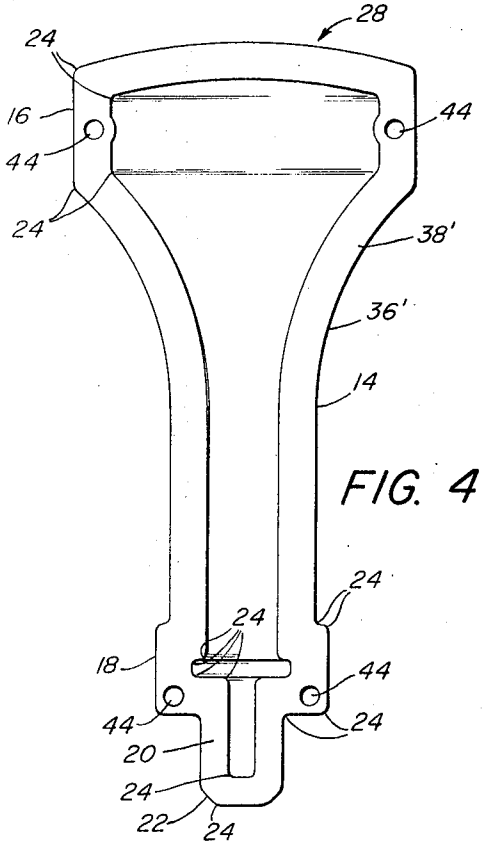


FIG. 4

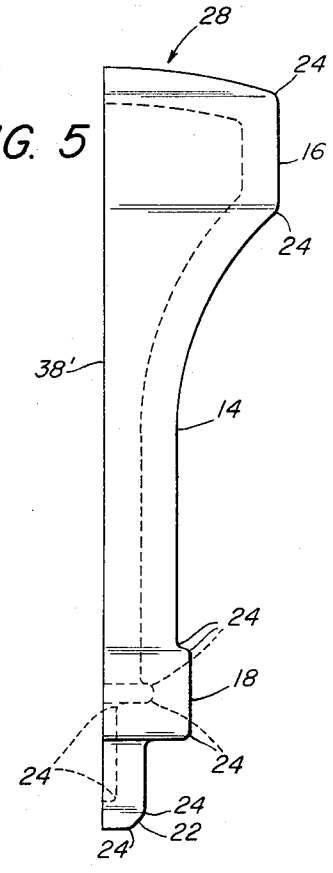


FIG. 5

HOLLOW STAMP HANDLE

FIELD OF INVENTION

This invention relates to an improved plastic handle, and more particularly to such a handle for rubber stamps.

BACKGROUND OF INVENTION

Handles, particularly those used in rubber stamps, are typically made of wood. Such handles generally are formed with a knob at the top to fit the hand of the user, a neck, and a tendon of reduced cross-section extending from the neck and designed to be inserted in a hole in the rubber stamp body. Those wooden handles are relatively expensive due to the high material, manufacturing, and finishing costs involved. It is generally difficult to maintain precise tolerances on wooden handles, because of the nature of the material. This is especially important in regards to the tendon portion which is sized to be inserted into the hole provided in the rubber stamp body. In addition, because of the nature of the wood the body may crack or split when the handle is hammered into the body or afterwards. Attempts to make the handles out of plastic material have met with indifferent success. For example, on one approach the entire handle is molded in one piece except for a small opening at the top of the handle. That opening is closed by means of a snap fit cap. The handle is hollow and tends to warp and crack. The cap often pops off when the handle is struck with a hammer to fit the tendon into the hole provided in the body. In addition, the handle often breaks off at the tendon within a few days after assembly. The flat portion on the front of the handle which usually carries printed information of some sort, usually including the word FRONT, often is not strong enough to withstand the printing action, even though that portion is made extra thick. The basis of this invention is the discovery that the reason for the breaking of the tendon is that the hole in which it is inserted in the wooden body spreads to receive the tendon when it is inserted. Then after insertion the hole shrinks and squeezes the tendon. The pressure on the tendon causes stresses that result in the breaking of the tendon. It was also discovered that cracking and breaking of the prior art plastic handles was due, at least in part, to inherent weakness in the handle resulting from non-uniformity of the wall thickness and to stresses occurring at certain points in the handle.

SUMMARY OF INVENTION

It is therefore an object of this invention to provide an improved inexpensive, plastic handle of uniformly rugged two-part construction.

It is a further object of this invention to provide such a handle which is of uniform quality, easy to insert, able to withstand the shocks of assembly and use, and capable of having printing done on its flat front face without damage to the structure.

The invention features a hollow two-part elongate plastic handle formed of first and second matching parts parted along a longitudinal plane. Each of the parts includes a cap portion of uniform wall thickness and a tapered neck portion having uniform wall thickness. An intermediate section interconnects the cap portion with the larger end of the neck portion and there is an enlarged shoulder portion at the narrow end of the neck portion. A tendon portion is suspended from the shoulder portion and has a uniform wall thickness. The tendon tapers to a smaller cross-section at its outer end, remote from the shoulder portion.

DISCLOSURE OF PREFERRED EMBODIMENT

Other objects, features and advantages will occur from the following description of a preferred embodiment and the accompanying drawings, in which:

FIG. 1 is an axonometric view of an assembled hollow, two-part elongated plastic handle according to this invention;

FIG. 2 is a side elevational view of one part of the handle;

FIG. 3 is a front elevational view of the part shown in FIG. 1;

FIG. 4 is a front elevational view of the other part of the handle shown in FIG. 1; and

FIG. 5 is a side elevational view of the part shown in FIG. 4.

The invention may be accomplished with a hollow two-part elongated plastic handle including first and second parts separated along a longitudinal plane passing through the longitudinal central axis of the handle. Each of the parts includes a cap portion of uniform wall thickness, a gently tapered neck portion having uniform wall thickness, and an intermediate section interconnecting the cap portion and the larger end of the neck portion. At the lower end of the neck portion, there is an enlarged shoulder portion extending from which is a tendon portion having uniform wall thickness and tapered to a smaller cross-section at its outer end, remote from the shoulder portion. One of the parts may include one or more alignment pins on its mating surface and the other part a like number of alignment holes for receiving the pins. A raised bead may be provided on the mating surface of one of the parts for enabling the two parts to be welded together. In one of the two parts the intermediate section may include an expansive planar area which is provided to carry some printed legend, such as for example, the word FRONT and the manufacturer's brand name, or similar information. That planar area generally is contained wholly on one or the other of the parts. In addition to being tapered, the tendon may also include a beveled edge at its lower end to facilitate its placement in the mating hole in the body. For increased strength, all of the junctions between surfaces may be formed with radii to reduce stress. The enlarged reinforced shoulder portion provides increased mass and strength at the interface between the handle and the body of the rubber stamp, so that a greater portion of the burden on the tendon may be assumed by the shoulder.

The invention may be embodied in a two-part plastic rubber stamp handle **10**, FIG. **1**, including a cap portion **12**, gently tapering neck portion **14**, and intermediate member **16** interconnecting cap **12** and neck **14**. At the lower end of neck portion **14** is an enlarged reinforced shoulder **18** from which extends a tendon **20**. Tendon **20** is tapered to a reduced cross-sectional area at its outer end most remote from shoulder **18** and contains at that outer end a bevel **22** to facilitate its being fitted into the mating hole in the rubber stamp body. Eahc junction between surfaces is formed with a radius **24** to increase the strength of handle **10** and reduce stress concentration.

Handle **10** includes two parts **26** and **28** which are separated along the longitudinal plane through the cen-

tral longitudinal axis of handle **10** as shown by the parting line **30.** Intermediate section **16** may include an expansive planar area **32,** preferably contained entirely on one or the other of parts **26** or **28.** Planar area **32** is provided for carrying some printed legend **34** such as the word FRONT, for example, indicating which side of the rubber stamp is the front side. Previously, planar area **32** would have to be constructed using thicker walls or some sort of reinforced material in order to bear the forces exerted on it by the printing operation without deforming or distorting the handle. However, with the construction shown in FIG. **1,** the part **26** may be placed with the inside of area **32** against a back-stop while area **32** is being printed so that the force of the printing action need not be borne by the handle structure alone.

Part **26** is formed with a wall **36,** FIGS. **2** and **3,** which is uniformly approximately 0.085 inches in thickness. Preferably, the thickness of the wall below the shoulder **18** has an increased thickness of 0.125 inches for added durability. All radii **24** are approximately 0.62 inches. The mating edge **38** of wall **36** includes a plurality of alignment pins **40** and a bead **42** having a triangular cross-section which provides the matter to form a weld between the two parts **26** and **28.** The lower end of neck **14** proximate shoulder **18** is typically approximately 0.5 inches in diameter, while the shoulder itself is an enlarged 0.6 inches in diameter. Tendon **20** is tapered such that at its outer end it is approximately 0.29 inches in diameter. Part **28,** FIGS. **4** and **5,** has a shape similar to that of part **26** and is formed of a wall **36'** similar to wall **36.** The mating edge **38'** of wall **3',** however, contains no bead **42.** In addition, edge **38'** contains four alignment holes **44** for receiving alignment pins **40** on part **26.** All of the dimensions on part **28,** including those of radii **24,** are the same as those given with reference to part **26,** FIGS. **4** and **5.** It is not necessary that there be four alignment pins **40** and four alignment holes **44** for even one alignment pin and one alignment hole will provide some assistance in properly fitting parts **26** and **28** together, and two or more pins and holes are definitive of the relative positions of parts **26** and **28.** The pins may be on part **28** instead of on part **26** and thus also the holes may be on part **26** instead of on part **28.** The weld bead **42** also may alternatively be disposed on mating edge **38'** of part **28** or may be eliminated entirely, especially if a method other than welding is going to be used to secure parts **26** and **28** together.

Other embodiments will occur to those skilled in the art and are within the following claims:

What is claimed is:

1. A hollow two-part, longitudinally elongated, plastic handle for rubber stamps and the like comprising

means forming first and second matching handle parts parted along a longitudinal plane,

each of said parts being made of plastic and including

a cap portion of uniform wall thickness,

a longitudinally tapered neck portion having a uniform wall thickness,

an intermediate section interconnecting said cap portion and the larger end of said neck portion,

an enlarged shoulder portion with a greater wall thickness than said neck wall thickness at the narrow end of said neck portion, and

a tendon portion suspended from said shoulder portion and having uniform wall thickness and having a smaller cross-section area than the shoulder portion at its outer end remote from said shoulder portion,

the intermediate section of one of said first and second parts comprising an expansive planar area therein,

means integrally formed on each handle part for securing the parts to each other, and

the assembled matching parts forming an enclosed empty volume.

2. The handle of claim **1** in which one of said parts includes a plurality of alignment pins and the other includes a plurality of alignment holes for receiving said pins.

3. The handle of claim **1** in which said tendon portion has a beveled edge at its outer end to facilitate its placement in a mated hole.

4. The handle of claim **1** in which each said part includes a radius at each surface junction to reduce stress.

5. Device in accordance with claim **1** wherein said means for securing are incorporated in the wall edges of said matching parts.

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