May 21, 1957 E. M. WICKLIFFE 2,792,612

CLAMP

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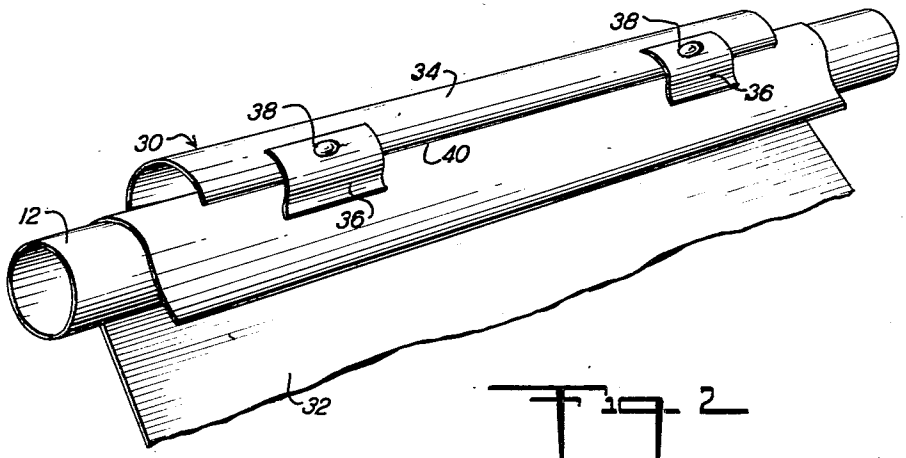


Fig. 2

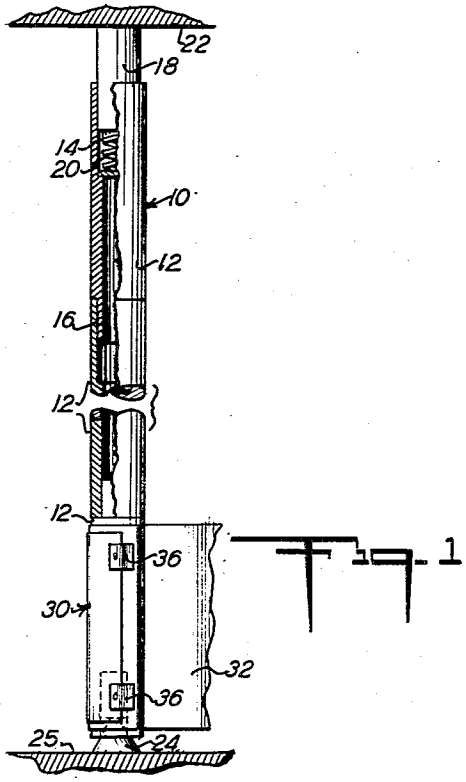


Fig. 1

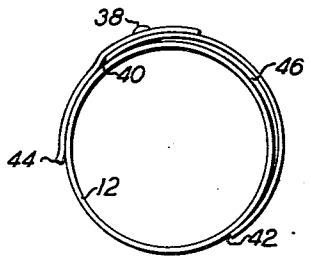


Fig. 3

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CLAMP

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1 Claim. (Cl. 24—259)

This invention relates broadly to fastening devices and more particularly to a clamp which is especially adaptable to securing articles to members of circular cross section.

According to my invention, a substantially rigid arcuate frame element of substantial length is employed to confine articles such as wide sheet material beneath the free edges thereof. It is important in carrying out my invention that the inside diameter of the substantially rigid arcuate frame element be somewhat less than the outside diameter of the circular member with which it is to be used so that only the free edges of the arcuate element contact the article to be clamped to the circular member. Resilient means, preferably in the form of leaf springs, are carried by at least one of the free edges and are adapted to extend for a substantial distance around the member to which it is desired that they be clampingly or resiliently engaged. It is to be noted that the above described structure makes it possible that a clamping action of great force be exerted by the free edges of the frame element, since the total resilient force of the resilient means is concentrated at the free edges.

My invention has particular application in connection with what are commercially known as "Deca Poles." A "Deca Pole" is a collapsable decorating device having a number of mating sections which, when they are joined form a pole which is adjustable in length according to the number of sections used. A spring biased plunger is provided at one end of the pole, and when the pole is placed between two opposed surfaces such as a floor and a ceiling, the plunger will bear resiliently against one of the surfaces to resiliently secure the pole therebetween. It is a primary function of these poles to act as a support for decorating paper backgrounds and the like. Heretofore, there has been considerable difficulty experienced by decorators in attaching articles such as decorating paper, wire, string, rope and the like. It will be observed, therefore, that a clamp such as described above can be very advantageously employed in this connection.

Accordingly it is an object of my invention to provide a simple clamp for quickly and securely fastening articles such as decorating paper and the like to cylindrical members such as "Decca Poles." Essentially, the clamp comprises an arcuate element having a pair of parallel edges and resilient means associated with at least one of the edges to engage the cylindrical member and to resiliently urge edges toward said cylindrical member so that articles may be securely clamped thereunder by virtue of the strong clamping action exerted at the edges of the arcuate element.

Another object of my invention is to provide a clamp capable of exerting a concentrated pressure along two longitudnial lines which are spaced around the circumference of a circular member so that this pressure acts at two different angles to the force tending to dislodge an article confined thereunder. This double clamping action greatly enhances the effectiveness of the individual clamping actions. This is accomplished by providing an arcuate substantially rigid frame of substantial length

presenting a pair of gripping edge portions and resilient means carried by at least one of the free edges for resiliently engaging the circular member and for urging the edge portions toward the circular member.

While some of the objects have been stated above, other objects will become apparent to those skilled in the art of fastening when the specification is read in connection with the accompanying drawings in which:

Fig. 1 is a front elevation showing a "Deca Pole" and my improved clamp being employed therewith,

Fig. 2 is a perspective view showing the clamp about to be positioned to confine a piece of decorating paper of substantial width to a section of a "Deca Pole," and

Fig. 3 is an end view showing my improved clamp in engagement with a section of a "Deca Pole."

Referring most specifically to the drawings, the numeral **10** broadly designates a "Deca Pole" which is being held in resilient engagement between two surfaces such as the ceiling and the floor of a show window. The "Deca Pole" is composed of a number of identical hollow sections **12** having an enlarged inside diameter at the top as indicated at **14** and having a smaller outside diameter at the bottom as indicated at **16**. It is to be noted, therefore, that any number of sections may be employed in order to vary the length of the rod and that each section is adapted to mate with the next succeeding section. A plunger **18** is shown slidably carried in the cut out or enlarged portion **14** at the top of the "Deca Pole.". A spring **20** is confined beneath the plunger **18** and normally urges the same upwardly in Fig. 1 so as to resiliently bear against the ceiling **22**. A stopper like element **14**, which is preferably made of rubber, is provided at the bottom of the pole for the purpose of preventing the marring of the opposed surface such as the floor **25**.

Fig. 1 shows my clamp, broadly designated at **30**, confining a piece of decorating paper **32** therebeneath. The clamp **30** consists of an arcuate element of substantial rigidity, indicated at **34**. A pair of resilient members, preferably leaf springs, **36** are shown suitably secured as by rivets **38** adjacent one of the free edges **40** of the frame element **34**. It is to be understood that any suitable means of securing the resilient member **36**, such as by welding or brazing to the frame **34** would be equally satisfactory. If desired, the resilient member **36** could be integral with the arcuate member **34**. It is to be further understood that additional resilient elements could be provided adjacent the other free edge **42**, if desired, without impairing the efficiency of clamp. It will be noted particularly by reference to Figs. 2 and 3, that the leaf springs **36** project forwardly and slightly inwardly of the frame **34** so that the entire clamp must be forced over the section **12** in order to overcome the resiliency of the springs **36**.

Fig. 3 shows, in greater detail, that the resilient member **36** should be of sufficient length to extend for a substantial distance around the circular section **12**. It will also be noted that a slightly up turned edge **44** is provided at the free end of the resilient member **36** so as to facilitate its passage around the cylindrical member **12** during the application of the clamp.

It is important to note that a space **46** remains between the frame element **34** and the cylindrical member **12**. This space results due to the fact that the inside diameter is somewhat less than the outside diameter of the member on which the clamp is to be used. The entire resilient force exerted by the leaf spring member **36** is therefore concentrated at the free edges **40** and **42** of the arcuate frame element **34** and is transferred therefrom to the cylindrical member or to the article to be confined thereunder. This provides for a substantial amount of gripping action and when an article such as decorating paper

32 is secured under the clamp 30 both of the free edges 40 and 42 act with great force to confine the same thereunder. It is clear that such a gripping action, exerted along two spaced longitudinal lines of substantial length, make it virtually impossible to pull the paper loose.

It is seen, therefore, that I have provided a simple and novel clamp, consisting of a single unit, which may be adapted to a variety of uses in connection with the effective securing of articles to circular members, by virtue of its extraordinary clamping action.

While my invention has been described in detail using specific terms, they are used in a descriptive sense only and are not intended as limitations, and it is to be understood that various modifications may be made which fall within the spirit and scope of the appended claim.

I claim as my invention:

A clamp for attaching web-like articles to a cylindrical member comprising an arcuate substantially rigid frame of substantial length presenting a pair of elongated edge portions, said frame being substantially semi-circular in cross section, the inside diameter of said frame being slightly smaller than the outside diameter of the cylindrical member and said edge portions being in parallel relationship with each other, and at least one leaf spring

carried by at least one of the edges of the frame and projecting beyond said edge for a substantial distance around said cylindrical member so that the entire clamp extends substantially more than one-half way around the cylindrical member in such a manner that the clamp must be forced around the cylindrical member to overcome the resiliency of the leaf spring, whereby said edge portions will be urged toward said cylindrical member to confine said web-like articles between the edges of said clamp and the cylindrical member.

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