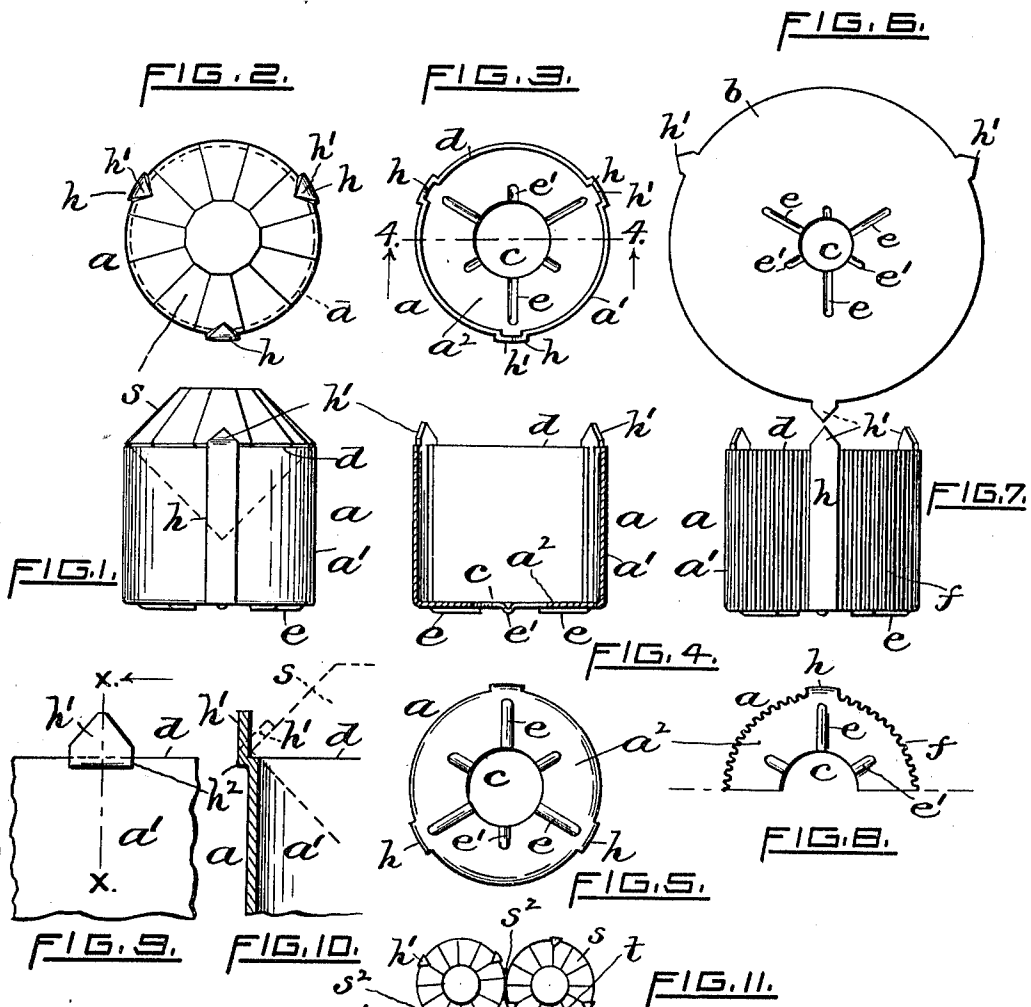


F. A. FAIRBROTHER.  
 GEM SETTING.  
 APPLICATION FILED JAN. 4, 1909.

1,001,583.

Patented Aug. 22, 1911.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

FREDERIC A. FAIRBROTHER, OF PROVIDENCE, RHODE ISLAND.

GEM-SETTING.

1,001,583.

Specification of Letters Patent. Patented Aug. 22, 1911.

Application filed January 4, 1909. Serial No. 470,639.

To all whom it may concern:

Be it known that I, FREDERIC A. FAIRBROTHER, a citizen of the United States of America, and a resident of Providence, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Gem-Settings, of which the following is a specification.

In U. S. Patent No. 775,030, issued to me November 15, 1904, is shown and described an improved integral setting for gems.

My present invention also relates to certain novel improvements in gem-settings.

In the said patented device the points or prongs thereof were disposed around its periphery and extended beyond its upper edge, the prongs also being coincident or flush with the perpendicular sides of the setting and located at the angles formed by the intersection of the side walls. This construction is well adapted for prism-shaped settings having evenly spaced sides, the peripheral form being that such a number of the settings may be grouped or nested and soldered together sidewise to produce the effect of solid or cluster work, assuming each unit to carry a stone or gem whose maximum diameter or girdle is just equal to the minimum outside diameter of the unit. Such former construction precluded the successful employment of units having a non-polygonal or cylindrical form cross-sectionally.

The objects sought to be attained in my present invention are to produce an integral gem-setting, formed say from a sheet-metal blank, in which the stone or gem when mounted therein will rest upon the upper edge of the setting and at the same time completely conceal the metal, except the points or small prongs which hold the stone in place, assuming it to be viewed from the top. Moreover, the improved units or settings can be readily nested to produce the effect of solid work, or they can be as readily arranged to produce geometrical, scroll, foliate or other ornamental forms as desired; the contiguous sides of the assembled units, being vertical or substantially vertical, are subsequently joined together by solder throughout the length or depth of the units, thereby producing a strong and practically non-bendable article of jewelry.

Another advantage possessed by my improved integral gem-setting is that even when inverted it is adapted to accurately

designate the relation and location of the several prongs with respect to one another whereby the assembling and positioning of the units may be greatly facilitated.

To these ends the invention consists in the novel construction and arrangement of the members comprising the unit, all as more fully hereinafter set forth and claimed.

In the accompanying sheet of drawings illustrating my improved gem-setting, Figure 1 represents, in greatly enlarged scale, a side view of the device having a stone mounted therein. Fig. 2 is a corresponding top plan view. Fig. 3 is a plan view of the setting ready to receive a stone. Fig. 4 is a vertical sectional view, taken on line 4 4 of Fig. 3. Fig. 5 is an inverted or bottom view of the setting, corresponding with Fig. 4. Fig. 6 represents the form of a sheet-metal blank adapted to be converted into my improved gem-setting. Fig. 7 represents a side elevation of the setting having its side walls slightly corrugated or fluted. Fig. 8 is an inverted partial plan view of the same. Fig. 9 represents, still further enlarged, a partial side view of the setting showing a modified form of the prong member. Fig. 10 is a corresponding sectional view, taken on line *x x* of Fig. 9, and Fig. 11 represents a top view of a brooch or breastpin consisting of a suitably arranged number of the gem-carrying units joined together by solder and provided with the usual swinging pin-tongue and catch.

Again referring to the drawings, designates my improved integral cup or box-shaped gem-setting or unit, the same capable of being produced from thin sheet-metal stock by suitable tools and dies in a well-known manner. Fig. 6 represents a blank adapted to be converted into the gem-setting *a*. As drawn the blank *b* is provided with a central hole *c* and a plurality of peripherally spaced members *h*<sup>1</sup>, the latter extending radially from the blank's outer edge. The members *h*<sup>1</sup> are adapted to be utilized as prongs on the finished unit for holding a stone in position therein. The center portion of the blank is further provided with radial grooves or lines *e* disposed so as to align with or indicate the center of the members *h*<sup>1</sup>; shorter grooves, as *e*<sup>1</sup>, alternating with the grooves *e* may be provided for ornamental purposes if desired.

While the form of the complete or finished unit, cross-sectionally, may be polygo-

nal I prefer to make it cylindrical and having its side walls extend perpendicularly from the base  $a^2$ .

In drawing-up or cupping the blank or stock to produce the unit  $a$  the metal is forced outwardly to form in its side walls a plurality of shallow exterior ribs  $h$ ; these extend parallel with its longitudinal axis and terminate each at the top in one of the said members  $h^1$ , adapted to be employed as a bendable point or prong for holding the stone in position. It will be seen, referring to Fig. 5, that the outer ends of the said radial grooves  $e$  formed in the bottom portion  $a^2$  of the setting extend to or nearly to the lower end of the respective ribs  $h$ . I would add that in practice I prefer to offset the ribs laterally so that their inner surfaces (which are also in alinement with the inner faces of the prongs) will be substantially coincident with the outer circumference of the side walls  $a^1$  of the setting. In other words, the wall is offset at each rib an amount equal to the normal thickness of the stock.

In lieu of the ribs  $h$  which terminate at their upper ends in the parallel prongs  $h^1$  extending above the edge or seat proper  $d$ , the stock may be offset abruptly at or near said edge substantially as shown at  $h^2$   $h^1$  in Figs. 9 and 10. In Figs. 7 and 8 the side walls of the setting are represented as provided with fine vertically extending flutings or corrugations  $f$ ; these latter may be produced simultaneously with the operation of transforming the blank into the cup or box-shaped setting  $a$ .

In my improved cylindrical or tubular setting unit the imperforate outer surface or wall is provided with a plurality of slightly offset or raised ribs  $h$  extending longitudinally of and parallel with its central axis, each rib terminating at its upper end in a short extension, as  $h^1$ , having its inner face in circular alinement with the outer surface of the main portion of the unit. In my said Patent, No. 775,030, the setting units have each a prismatic form, cross-sectionally. An objection to the latter is that when the stone is mounted therein a considerable part of the metal is visible, when viewed from the top, at the corners or angles.

By means of my improved setting the stones or gems  $s$ , such for example as are usually employed in this class of jewelry and being practically round at the belt or girdle, when mounted therein completely conceal the top of the setting with the exception of the prongs  $h^1$ , and these in practice are quite small and inconspicuous. Now, in order to produce a pin or brooch the units  $a$  are first inverted and arranged in the desired form or design, the units then touching one another, followed by joining them together by fusing solder at the several places or points of contact in a well-known man-

ner. By placing the bases  $a^2$  uppermost, as just stated, the distinguishing grooves or lines  $e$  formed therein accurately indicate to the solderer the relative location of the then concealed prongs at the opposite or lower ends, thereby enabling him to place the units in position with greater facility and at the same time to avoid juxtaposition of the prongs or offset portions. The sides of adjacent units at the points of contact touch each other throughout the entire length therefore the solder will readily flow downward from the then top and securely join them together, thus producing an extremely strong and stiff connection. In fact, the base-bars heretofore usually employed for holding gem-settings in position thereon by solder are or may be dispensed with. A pin-joint  $p^1$  having a tongue  $p$  mounted therein and a catch  $p^2$  may be soldered directly to the bases  $a^2$  of the units  $a$ . After the soldering operation has been completed the thus joined settings are reversed and the stones  $s$  mounted therein by bending downward the prongs  $h^1$  thus completing the brooch or pin  $A$ , represented in plan view in Fig. 11. In this figure  $t$  indicates the small triangular shaped spaces or openings formed between the adjacent sides of a plurality of the cylindrical-shaped units and  $s^2$  the points of solder contact.

I claim as my invention:—

1. As an improved article of manufacture the swaged integral gem-setting unit herein described for cluster work, the same consisting of a sheet-metal cylindrical cup-shaped member having its side walls terminating at the upper edge in an annular seat whose maximum diameter is the same as the normal outer diameter of the cylinder, a plurality of circumferentially spaced narrow interiorly recessed parallel exterior projections formed in and extending longitudinally of the axis of the cylinder, and having said projections terminating at the top in bendable prong-like members extending both laterally from and above the seat.

2. A swaged integral gem-setting unit adapted to be employed in cluster work, the same consisting of a sheet-metal cylindrical cup-shaped member having its upper end provided with an annular seat and a plurality of circumferentially spaced bendable prongs, and having the metal of the opposite or bottom end of the unit provided with permanent integral ribs or lines arranged or disposed so as to indicate the location of the respective prongs.

3. In an ornamental article of jewelry for personal wear, the combination of a plurality of cylindrical cup-shaped units grouped in a cluster form having their juxtaposed normal vertical or side walls in actual contact with one another and soldered

5 together, the upper edge of each unit termi-  
nating in an annular seat and being pro-  
vided with a plurality of integral circum-  
ferentially spaced narrow interiorly re-  
cessed parallel exterior projections formed  
10 in and extending longitudinally of the cyl-  
inder and terminating at the top in bend-  
able prongs, and having the normal radius  
of the inner face of the prongs and the ra-  
dius of the outer diameter of the cylinder

substantially alike, and stones or gems  
mounted on said seats and held in place by  
the prongs of the corresponding units.  
Signed at Providence, R. I., this 1st day  
of January, 1909.

FREDERIC A. FAIRBROTHER.

Witnesses:

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,  
Washington, D. C."