(No Model.) 2 Sheets—Sheet 1.

J. A. EADES.

METHOD OF MAKING ORNAMENTED ARTICLES OF SOFT SHEET METAL.

No. 309,531. Patented Dec. 23, 1884.

Fig. 1.

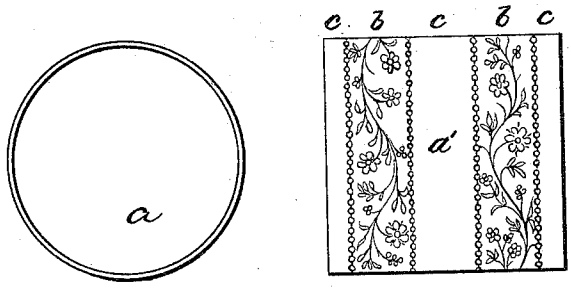
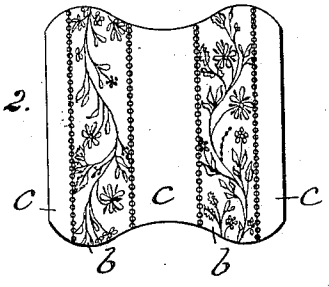


Fig. 2.



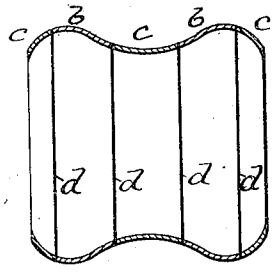


Fig. 3.

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(No Model.) 2 Sheets—Sheet 2.

J. A. EADES.

METHOD OF MAKING ORNAMENTED ARTICLES OF SOFT SHEET METAL.

No. 309,531. Patented Dec. 23, 1884.

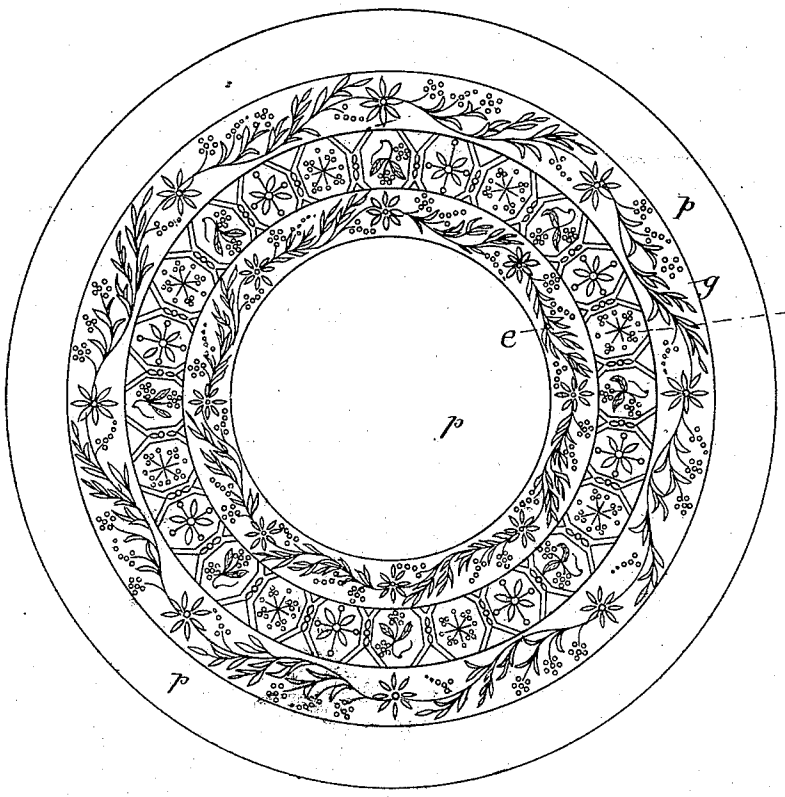


Fig. 4.

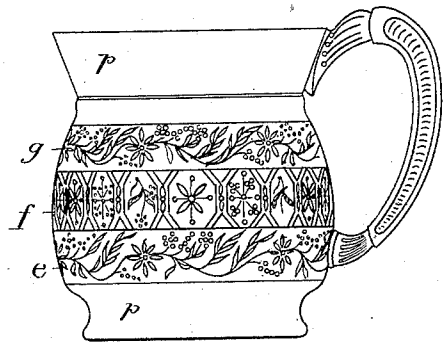


Fig. 5

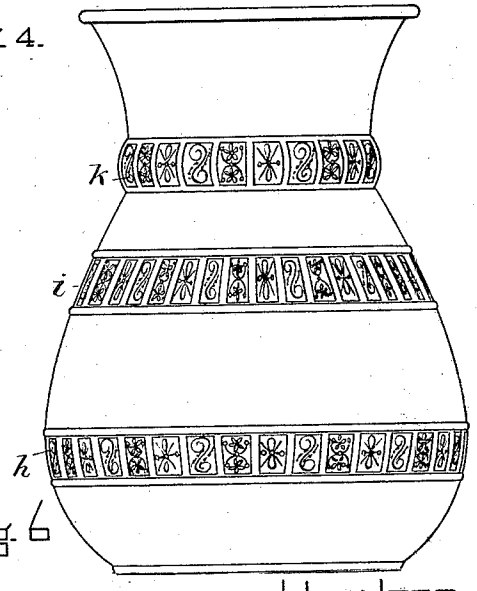


Fig. 6

WITNESSES.

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UNITED STATES PATENT OFFICE.

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METHOD OF MAKING ORNAMENTED ARTICLES OF SOFT SHEET METAL.

SPECIFICATION forming part of Letters Patent No. 309,531, dated December 23, 1884.

Application filed March 8, 1883. (No model.)

To all whom it may concern:

Be it known that I, J. ALVIN EADES, of Middletown, in the county of Middlesex and State of Connecticut, have invented certain new and useful Improvements in Making Ornamented Articles of Soft Sheet Metal; and I do hereby declare that the following is a full, clear, and exact description thereof, whereby a person skilled in the art can make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

Like letters in the figures indicate the same parts.

My improvement relates to articles made of soft sheet metal having complicated or irregular forms—such as napkin-rings, table-casters, pitchers, tea-pots, and the like, which, among other designs are very commonly provided with ornamental bands around them alternating with plain metal surfaces—and to new methods of manufacturing the same, of which the following is a description, reference being had to the accompanying drawings, in which I have represented a napkin-ring and a small cup as being the simplest articles with which to illustrate my invention.

Figure 1 shows an end and side view of a cylinder of metal, which may be called a "napkin-ring blank," the side view, *a'*, showing the ornamentation applied to the blank before spinning. Fig. 2 is a side view of the napkin-ring spun into shape after the ornamentation has been applied to the cylinder or blank, having the exterior ornamental bands in alternation with plain surfaces. Fig. 3 is a view of a ring of similar form shown in longitudinal section as made up by the old method in separate sections, the soldered joints being shown in heavy transverse lines. Fig. 4 represents a flat disk of metal ornamented upon one side before being spun. Fig. 5 represents a cup spun into shape from such an ornamented disk. Fig. 6 represents the body of a tea or coffee pot spun from a straight tube or cylinder after three ornamental bands have been imprinted upon it, the three bands being made by the use of the same ornamenting-roll.

Articles of this class have been heretofore made of separate rings or parts, some of such parts being rolled with an ornamental pattern, and some plain, all of which have been separately formed to their required shape and then soldered together to form the complete article; and also in some instances the bands, after being ornamented, have been soldered upon the outside of the plain surfaces of articles. The rolling of an ornamental band elongates or stretches the metal, and for this reason such parts have been made separate, so that when bent round and the ends united by soldering it should unite with and be of the same size as the adjacent plain portions; also the proper form has been given to these ornamental bands by driving them onto a block or former of the desired sectional shape, in order not to injure the figures of the design, while the plain portions of the article have been spun into shape. This method of making such articles by uniting the bands of plain and ornamental work after their shape has been given to them is a very laborious process, and requires skilled workmen, and even then the united joints are not always true and perfect.

The object of my invention is to make a much more perfect article by spinning the bodies into shape from one piece of metal after the ornamentation has been applied thereto.

I have discovered that the ornamentation can be rolled or otherwise imprinted upon a sheet or disk of plain metal so as to cover only a portion of its surface, or that such ornamentation can be rolled or otherwise made upon a portion only of a tubular or cylindrical surface, and the whole then spun into any shape desired in substantially the same manner as plain metal.

In the accompanying drawings, *a*, Fig. 1, is an end view of a cylinder or napkin-ring blank. *a'* is a side view of such blank, showing ornamental bands applied thereto.

b denotes the ornamental bands, and *c* the plain bands, in each of the figures.

d, Fig. 3, denotes the joints where the several bands are soldered together when the articles are made by the old method.

e f g, Figs. 4 and 5, respectively, denote the same ornamentation on the disk before spin-

ning, and on the cup spun therefrom, and *p* the unornamented portions.

h i k, Fig. 6, are ornamental bands on different portions of a tea-pot body illustrating the change produced by the spinning operation upon figures originally imprinted upon a straight cylinder by the same ornamenting-roller.

In my improved method of manufacture, when an ornamental band is rolled upon a plain surface, the metal being held from elongating by the plain metal upon each side, it bulges upward and becomes somewhat distorted; but this can be readily rolled or pressed down, so as to present a flat surface again. The whole can then be spun into the shape desired according to the usual method. For this purpose I use a wooden tool, and fill the ornamental designs with soap, so that the pattern shall not be injured or disfigured during the spinning operation.

By means of my improved method of ornamenting plane or cylindrical surfaces of soft sheet metal, and afterward spinning the metal into the form of the ring, cup, tea-pot, or other article desired, I am enabled to produce a great variety of different forms of figures upon the finished articles by the use of only a few different designs upon the ornamenting-rolls. For instance, by imprinting several ornamental bands with the same roller upon different portions of a plain cylinder or tube, and afterward spinning the cylinder into the form of a tea-pot having alternating swelled or bulged and contracted portions throughout its height, as shown in Fig. 6, the spinning operation will in some portions of the article lengthen out the ornamental figures and contract their width, as at *i*, Fig. 6, while in other portions of the article the figures will be expanded in width and contracted in length, as at *k*, Fig. 6, which gives the finished article the appearance of having been ornamented by a variety of rolls with a different figure cut upon each; and also by means of my improvement articles which have heretofore been made in several parts can be made of a single piece and present a much more finished appearance than is now possible, at the same time dispensing with the clumsy and heavy, as well as unsightly, soldered joints, and leaving the articles smooth and uniform in all their parts.

In the manufacture of deep hollow vessels—such as pitchers, coffee and tea pots, &c.—it will be found more advantageous to first spin the metal into the form of plain cylinders or frusta of cones with one end closed, then to apply the ornamentation, and afterward to spin these cylinders into the requisite shape; but when making shallow articles—such as cake-baskets, cups, caster-bands, &c.—the ornamentation may be applied to the flat disks of metal, which afterward are spun into the shape desired.

The ornamentation may be applied to the sheets or cylinders of metal by any of the well-known means; but I have found the most economical and successful means to be small rollers having the desired figure or pattern engraved upon their surfaces, and held in proper bearings, so that they may be secured firmly to the frame of a suitable lathe and forced against the surface of the metal to be ornamented with sufficient pressure to imprint thereon the counterpart of the design upon the periphery of the rolls.

The method of producing ornamental designs on sheet-metal articles suggested in the English provisional specification of Thomas White, No. 1,757, of the year 1879, I have found upon trial to be wholly impracticable, for the reason that composite sheets of metal produced by soldering cannot be fashioned into articles by spinning, because this operation tears apart the separate pieces of metal united by solder. On the other hand my method is practiced by the employment of homogeneous sheets of comparatively soft metal, and the operation of soldering is wholly dispensed with in the article so fashioned.

What I claim is—

1. The art or process of making ornamented hollow articles with the bodies formed from a single piece of sheet metal without soldering by, first, ornamenting the surface of a plain cylinder or other tubular form of metal, and, second, spinning such ornamented cylinder into the shape desired for the article to be produced, substantially as described.

2. The art or process of making ornamented hollow ware from one piece of sheet metal by, first, ornamenting the surface of a disk of metal, and, second, spinning such ornamented disk into the shape of the article desired, substantially in the manner described.

3. The art or process of making soft sheet-metal hollow ware with ornamented homogeneous bodies complete without soldering by ornamenting the metal before final shaping, and subsequently spinning it into the ultimate shape of the article desired, substantially as described.

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Witnesses:
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EDWIN F. DIMOCK.