

(No Model.)

C. F. GRIMMETT & J. COOK.

DEVICE FOR MAKING COILS, RINGS, AND SIMILAR ARTICLES.

No. 304,639.

Patented Sept. 2, 1884.

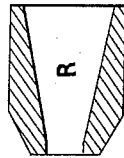
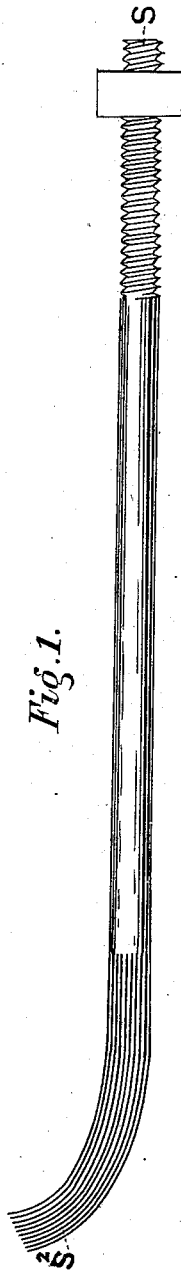


Fig. 3.

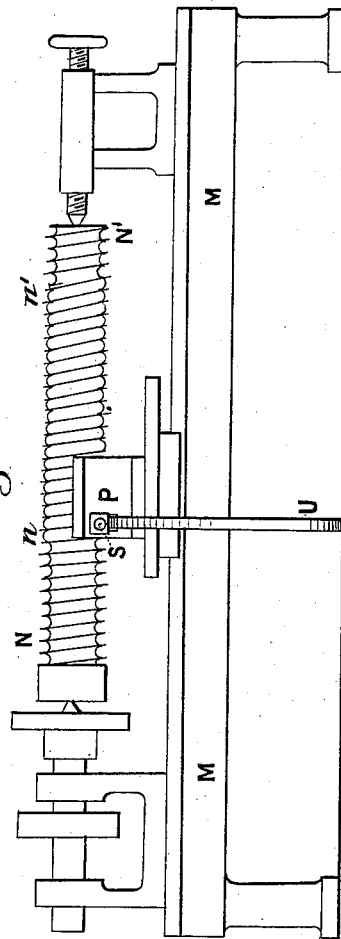
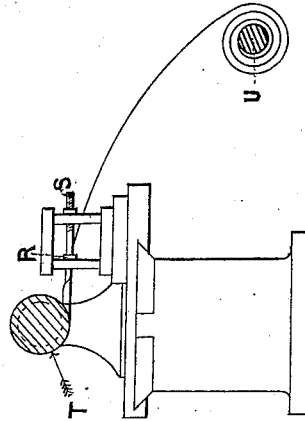


Fig. 4.



Witnesses.
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UNITED STATES PATENT OFFICE.

CHARLES FREDERICK GRIMMETT AND JOSEPH COOK, OF BIRMINGHAM,
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DEVICE FOR MAKING COILS, RINGS, AND SIMILAR ARTICLES.

SPECIFICATION forming part of Letters Patent No. 304,639, dated September 2, 1884.

Application filed June 23, 1884. (No model.) Patented in England April 8, 1882, No. 1,694; in France October 12, 1882, No. 151,352;
in Belgium October 13, 1882, No. 59,279, and in Germany February 15, 1883, No. 1,930.

To all whom it may concern:

Be it known that we, CHARLES FREDERICK GRIMMETT and JOSEPH COOK, both of Birmingham, in the county of Warwick, England, subjects of Great Britain, have invented new and useful Improvements in Devices for Manufacturing Cornice Coils, Rings, and other Similar Articles, of which the following is a specification.

So that our invention may be fully understood, we will refer to the accompanying sheet of drawings and letters of reference marked thereon.

Like letters refer to similar parts throughout the drawings.

Figure 1 is an elevation of the flexible mandrel; Fig. 2, a section of same through the flexible part thereof. Fig. 3 is a longitudinal elevation of a lathe or other similar machine, showing the shaft with spiral groove cut on its surface. Fig. 4 is an end elevation of same, showing position of the flexible mandrel when in use. Fig. 5 is a section of the bell-shaped die for guiding the metal strip and holding the flexible mandrel in position.

In manufacturing by our devices cornice coils, rings, or other hollow spiral coils or rings we employ, in connection with a suitable lathe, M, or other machine, a shaft, N, having a deep spiral groove, N', cut or otherwise formed upon its circumference. We then attach to the slide-rest P a bell-shaped die, R, and a flexible mandrel, S, Fig. 1, which passes through the die R until its curved end S² reaches near the position indicated by the point of the arrow T, Fig. 4. This point T may be varied without interfering with the nature of our invention according to the nature of the work required to be performed. The strip of brass or other metal U of which it is desired to construct the coils or rings is then drawn through the bell-shaped die R under the solid portion of the mandrel S. This operation causes the brass strip U to bend or wind around said mandrel, and thus it is drawn over the flexible portion S² thereof into one of the grooves N', formed on the shaft N, which is shown with a tube or coil in the

grooves extending from n' to n. This shaft N may be constructed round, oval, or of other desired shape, according to the form the coil or rings are required to be finished, and it may be either constructed with a spiral groove around its circumference or it may be formed plain, according to the strength and quality of the metal being used and other varying conditions.

The flexible mandrel S, Fig. 1, is a most important feature of our invention, because without ample flexibility the tube or other coil could not be wound evenly on the shaft. We make our flexible mandrel S partly from a number of thin strips of metal, as shown at S² and in section in Fig. 2, which may be oval, round, or any other desired shape, according to the internal section of the tube required. The thin layers or other pieces as they bend round a shorter or longer curve adapt themselves in length by sliding upon the surfaces of one another, according to the bend of the mandrel, which will be regulated partly by the diameter of the coil required and partly by the thickness and strength of the metal to be coiled.

We are aware that strong metal strips can be coiled without our flexible mandrel; but the great advantage in the use of our mandrel is that it enables us to coil metal very much thinner than can otherwise be accomplished, the fact being that the curved mandrel delivers the tube onto the shaft sufficiently far to prevent it collapsing, and thus we are enabled to produce cornice-rings much lighter and cheaper than has been hitherto possible. After making a coil of hollow tube we run a fine saw through the coils, which cuts them into split rings, which we fasten together in any suitable known manner; or they may be left quite plain to twist aside over the cornice-pole. These mandrels are suitable for forming many other sections besides round and oval. Their range of usefulness is, indeed, very wide for making various articles requiring similar treatment to that described above for making cornice coils and rings.

Having now described our invention of im-

provements in devices for manufacturing cornice coils, rings, and other similar articles, what we claim is—

5 1. The flexible mandrel S S², composed in part of a number of small sections of suitable material, as herein set forth.

2. A flexible mandrel, in combination with a lathe and grooved shaft, N, substantially as set forth.

In testimony that we claim the foregoing as our own we affix our signatures in the presence of two witnesses.

CHARLES FREDERICK GRIMMETT.
JOSEPH COOK.

Witnesses:

GEORGE PRICE,
Clerk to Mr. George Barker.
GEORGE BARKER.