

(No Model.)

S. CORIASCO.

SPIRAL GUIDE FOR MACHINES FOR MAKING WIRE COILS.

No. 527,945.

Patented Oct. 23, 1894.

FIG 1

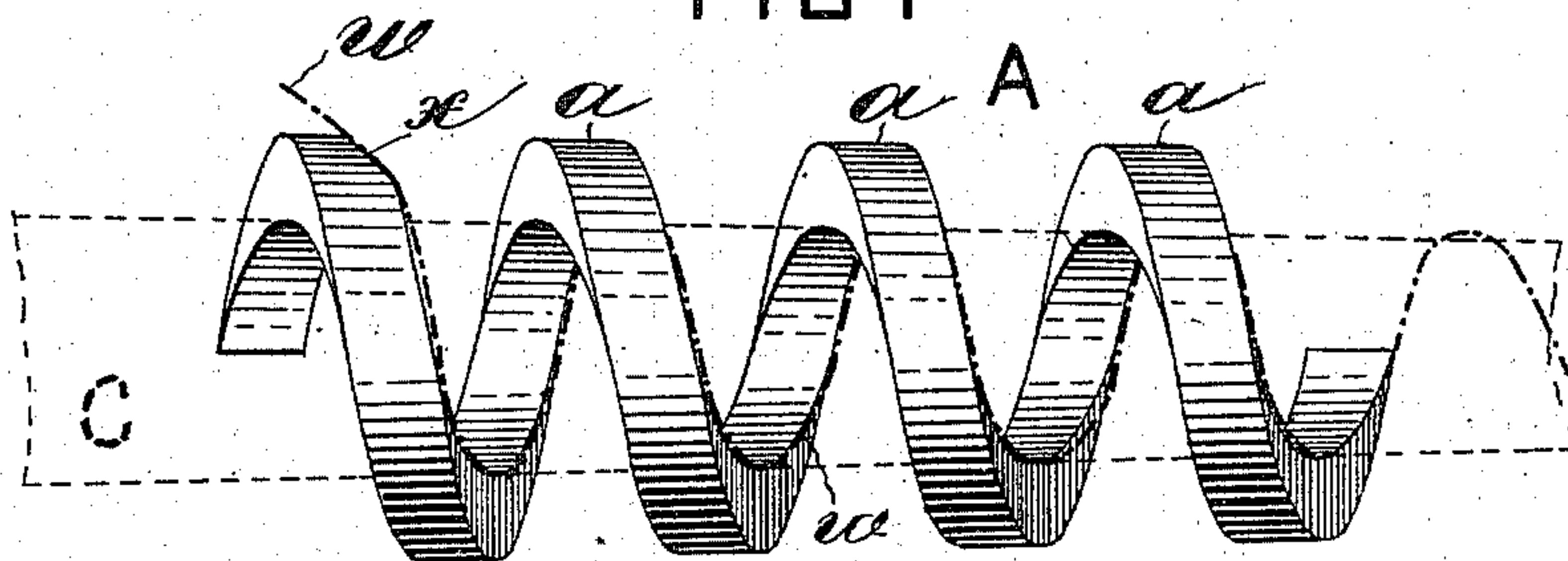


FIG 2

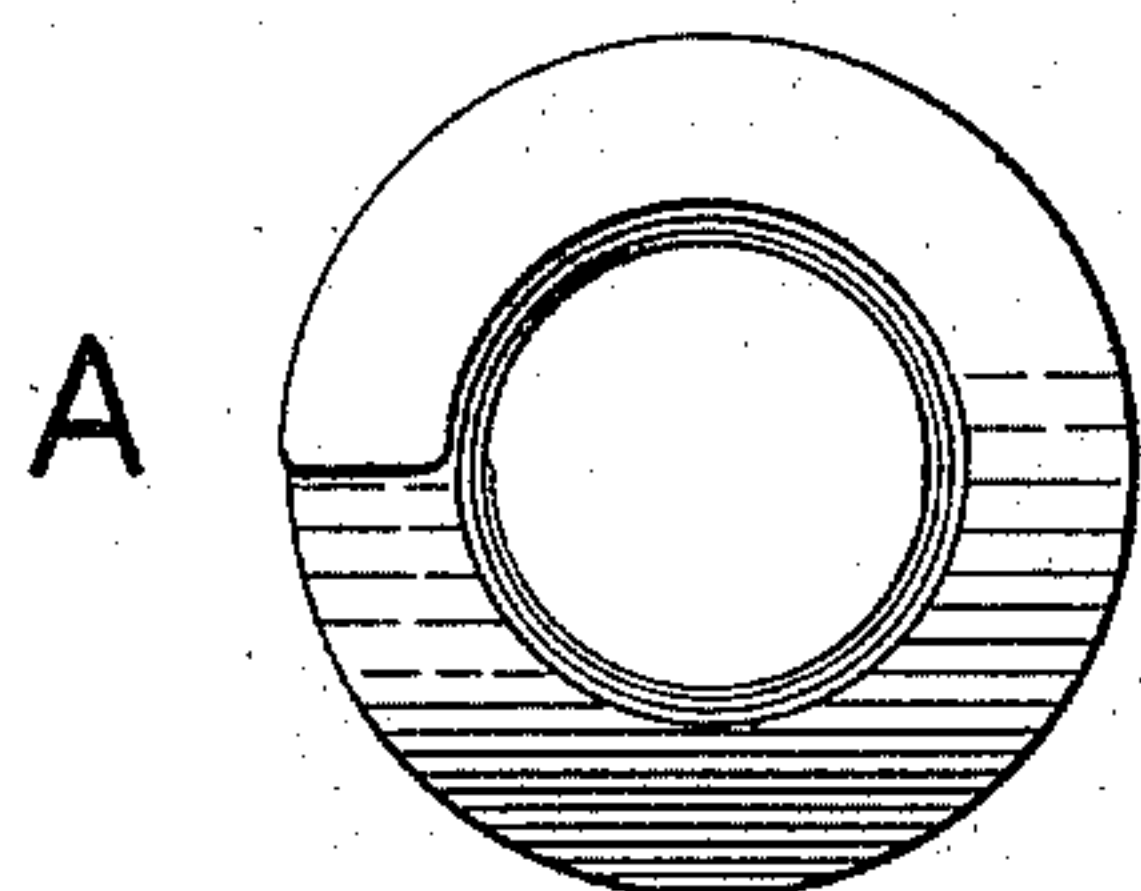


FIG 3

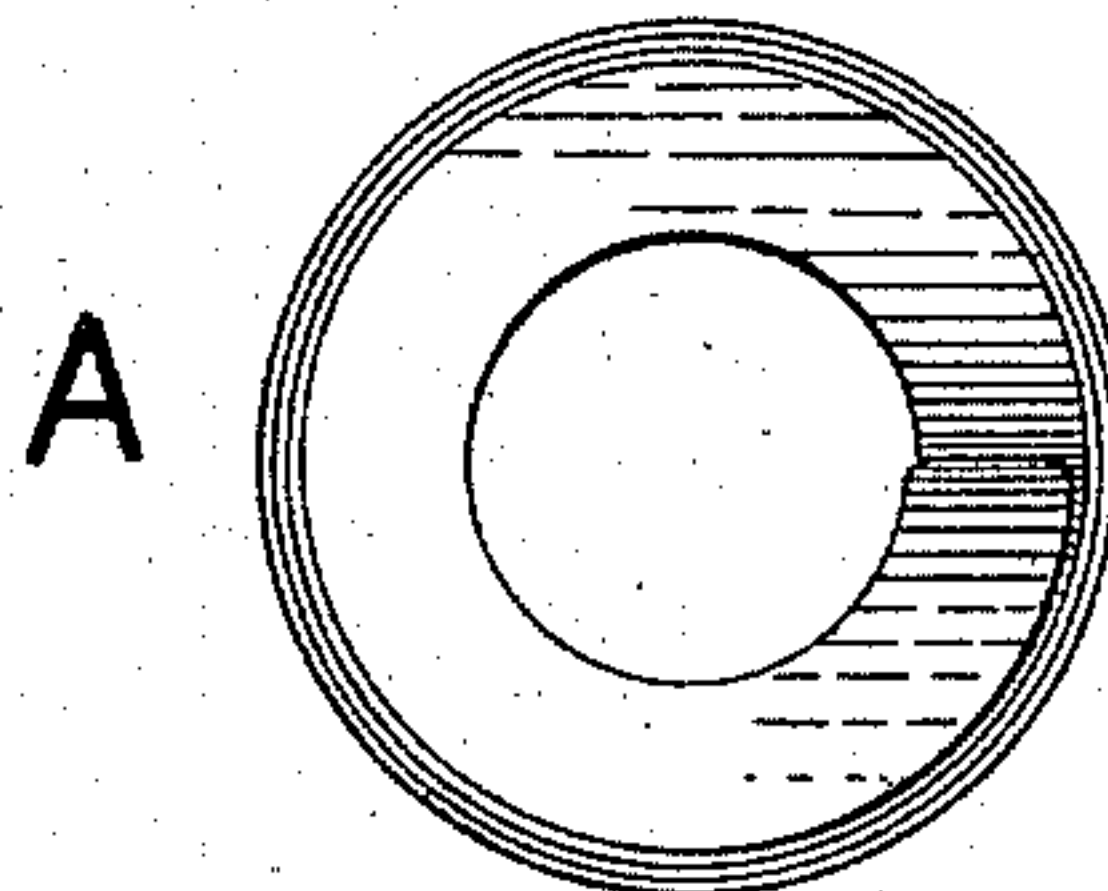


FIG 4

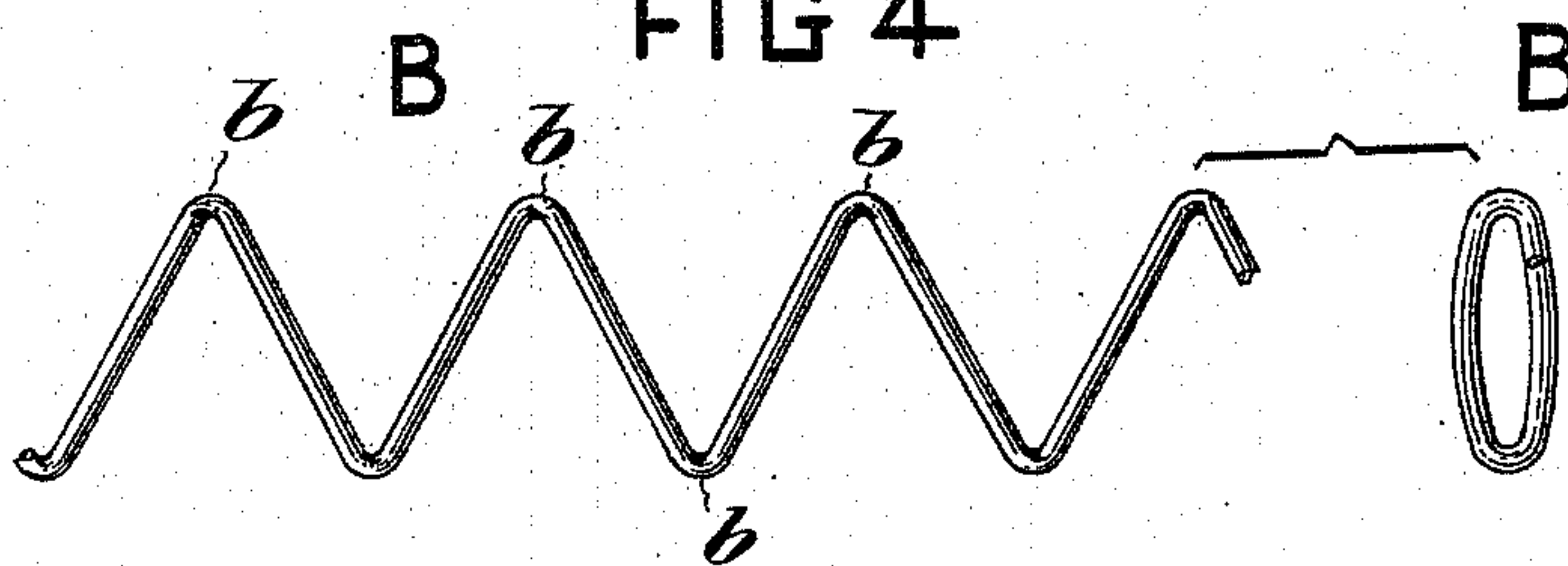
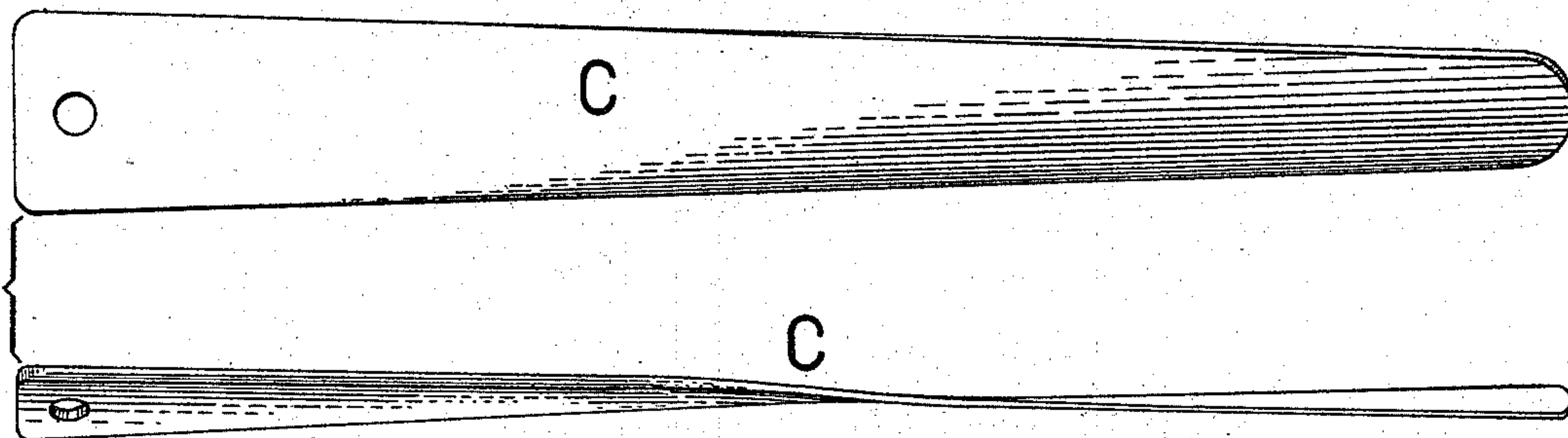


FIG 5



Witnesses:

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UNITED STATES PATENT OFFICE.

STEFANO CORIASCO, OF NEW YORK, N. Y.

SPIRAL GUIDE FOR MACHINES FOR MAKING WIRE COILS.

SPECIFICATION forming part of Letters Patent No. 527,945, dated October 23, 1894.

Application filed August 22, 1894. Serial No. 520,961. (No model.)

To all whom it may concern:

Be it known that I, STEFANO CORIASCO, a citizen of the United States, residing in the city, county, and State of New York, have invented certain new and useful Improvements in Spiral Guides for Machines for Making Wire Coils, of which the following is a specification.

My invention relates to the class of machines employed for making coils of wire, flat or round, for use in making wire fabrics. In this class of machines, and especially in such machines as are employed for making fabrics of flattened coils, it is the practice to employ a stationary spiral guide in which rotates a mandrel. The wire is fed to the mandrel and the spiral guide determines the pitch of the spiral of the coil while the mandrel determines the diameter of the coil; or if it be a flattened coil, the greatest diameter thereof.

I find from experience in operating this class of machines that by reason of the resiliency of the wire, or in part at least from this cause, good results cannot be obtained where the spiral guide has a uniform pitch and a uniform internal diameter. Hence the object of my invention is the improvement of the spiral guide so that accuracy and uniformity may be attained in the coil of wire made therewith, and the invention consists, essentially, in making a spiral guide for this purpose with a gradually increasing pitch and with a gradually decreasing internal diameter, that is, the pitch of the spiral increases in the axial direction that the internal diameter decreases.

In the accompanying drawings I have shown an embodiment of my invention.

Figure 1 is a plan view of a spiral guide constructed according to my invention, and Figs. 2 and 3 are end elevations of the same. Fig. 2 represents the left hand end of the guide seen in Fig. 1, and Fig. 3 the other end of the same. Fig. 4 is a side and end view of a bit of flattened wire coil such as may be produced with the guide. Fig. 5 represents a flattened mandrel for use with the guide.

A represents the guide as a whole. I usually make this guide by bending a square bar

of iron or steel about a tapered form, taking care that the whirls, *a*, shall gradually increase in pitch toward the end of the guide where the internal diameter is least.

In making a flattened coil, as B in Fig. 4, the wire is led to the guide at *x*, where the angle of the metal is cut away or rounded off, by preference, to prevent chafing. Through the guide is passed a flattened and tapered mandrel, C, seen in Fig. 5, and in dotted lines in Fig. 1, and this mandrel rotates axially in the guide, the wire wrapping itself spirally about it, following the course indicated by the broken line *w* in Fig. 1. The gradually increasing pitch gives a stretch or set to the wire at the points where it bends sharply over the edge of the mandrel, seen at *b* in Fig. 4, and the taper of the mandrel and guide allows for the lateral shrinkage due to this. This form of guide may be used to advantage in making cylindrical or polygonal coils as well as flattened coils, but I deem it of especial value in producing flattened coils of uniform pitch and diameter; and where the coil is to be woven, as it is formed, into another similar coil, to form a fabric, this uniformity is essential to rapid and economical work as well as to a good fabric.

The mandrel C should fit quite snugly in the guide and will be tapered to correspond to the taper of the bore in the latter.

I find that four whirls in the spiral guide will suffice to produce good work, but it might be somewhat shorter or longer. I do not limit myself in this respect.

I find, also that if a flattened coil be wound upon a straight flat mandrel, the resiliency of the wire will impart to the flat coil as a whole a spiral form. To compensate for this and insure a straight coil, I give to the flat mandrel C a twist, as seen in Fig. 4 where the mandrel is represented in side and edge elevation.

Having thus described my invention, I claim—

1. A spiral guide for forming wire coils having a gradually increasing pitch from one end toward the other and a gradually decreasing internal diameter from one end toward

the other, the pitch and diameter decreasing in opposite directions axially of the guide, substantially as set forth.

2. The combination with a spiral guide A,
5 having a gradually varying pitch and internal diameter, of a flattened mandrel C, having a taper to fit the guide and a twisted or warped form, as set forth.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

STEFANO CORIASCO.

Witnesses:

PETER A. ROSS,
JAS. KING DUFFY.