(No Model.)

H. M. BRIGHAM.

DEVICE FOR BENDING METAL PIPE.

No. 411,756. Patented Sept. 24, 1889.

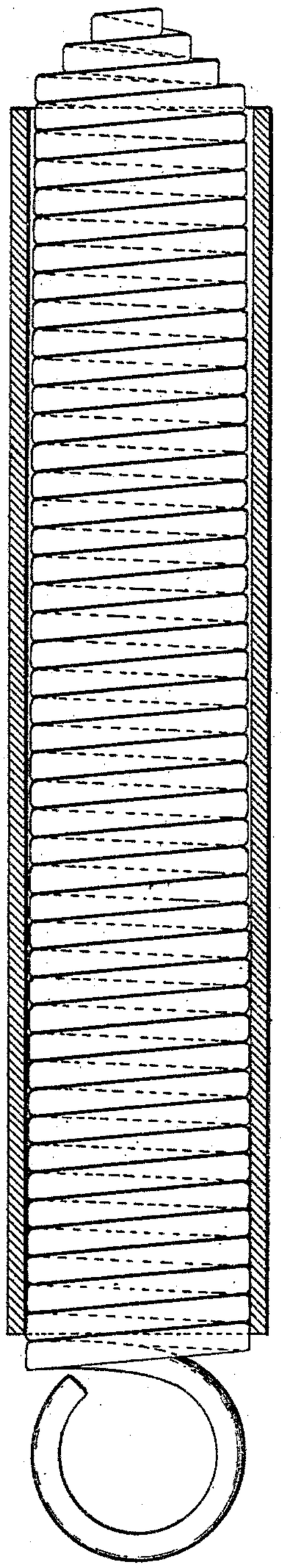

Fig. 1.

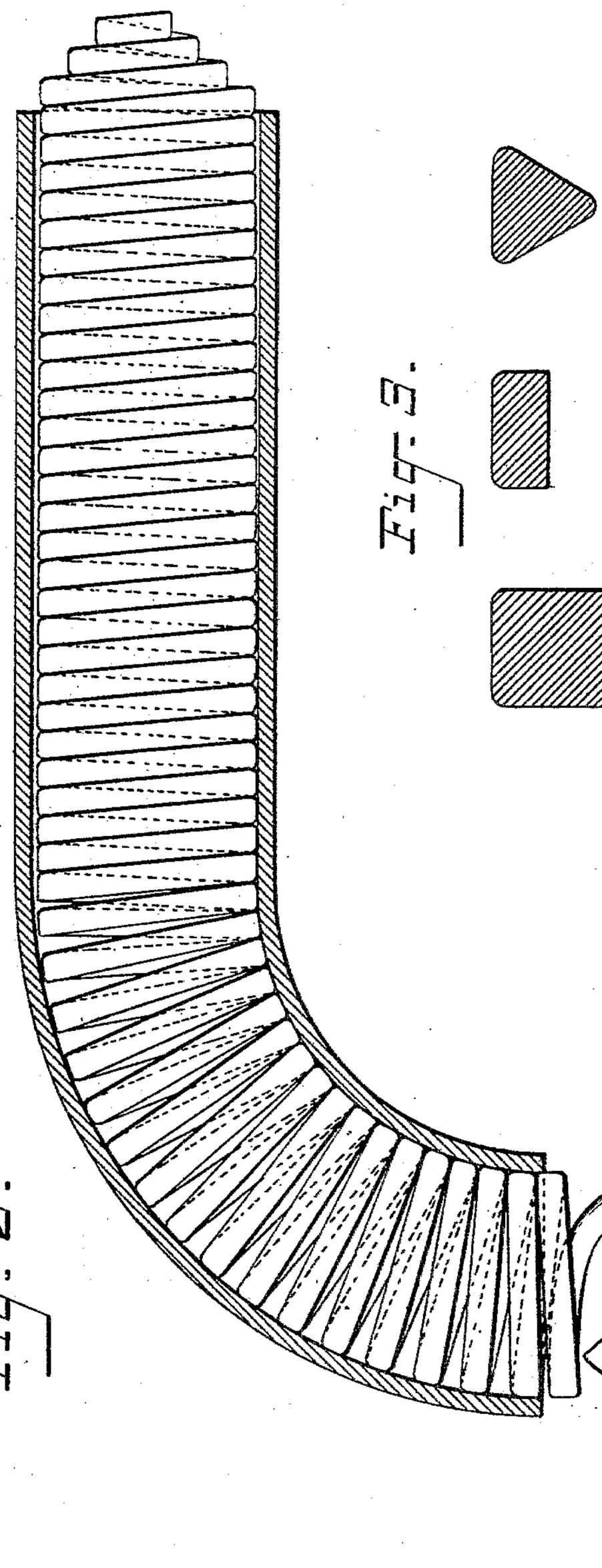

Fig. 2.

Fig. 3.

Witnesses.
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HENRY MARTYN BRIGHAM, OF BROOKLYN, NEW YORK.

DEVICE FOR BENDING METAL PIPE.

SPECIFICATION forming part of Letters Patent No. 411,756, dated September 24, 1889.

Application filed July 13, 1889. Serial No. 317,371. (No model.)

To all whom it may concern:

Be it known that I, HENRY MARTYN BRIGHAM, a citizen of the United States, and a resident of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Devices for Bending Metal Pipe, of which the following is a specification.

In the process of bending metal pipes or tubes it has been customary to use a flexible spiral coil of wire, which is inserted into the pipe, and which, although flexible enough to be easily bent with the pipe into any desired form, still possesses sufficient strength to prevent the pipe from collapsing. The best form of wire out of which to construct such a spring is that having the exterior surface flattened, so as to give as large a bearing-surface as possible to the inner surface of the pipe. There should be no sharp edges, as they are liable to cut into the pipe and render it difficult to withdraw the spring when the pipe has been bent; but even with this device it has been found to be very difficult to withdraw the spring after the pipe is bent. The spring is usually withdrawn by turning the spring in the direction which will reduce the diameter of the coil. Then pull it until the spring is withdrawn a short distance. In doing this the spring will turn in the pipe, and the coil return to its original form. This operation must be repeated several times before the spring can finally be withdrawn. This process soon weakens the best spring that can be made and renders the work of removing the spiral coil very laborious.

My improvement consists in making a spiral coil which is slightly less in diameter at the end which is inserted into the pipe, and gradually tapered from the larger to the smaller end. The advantage of this construction will be readily seen, for when the spring has once been turned and withdrawn a short distance it is then less in diameter than the pipe at all points where they come in contact with each other, and the spring can then be removed with little effort. My invention thus saves the spring and economizes time and labor.

In the accompanying drawings, Figure 1 is a view of a section of pipe in which my device has been inserted ready for use, and shows the tapering of the spring. Fig. 2 is a section of pipe, showing my invention after the pipe has been bent and before the coil has been withdrawn. Fig. 3 shows enlarged cross-sections of some of the best forms of wire out of which my invention may be constructed.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A tapering spiral coil of wire for bending metallic pipe.

2. A tapering spiral coil of wire for bending metallic pipe, having the surface of the wire forming the exterior of the coil somewhat flattened.

3. A tapering spiral coil for bending metallic pipe constructed of wire, having a flat or plane surface on the side forming the exterior of the coil.

4. A tapering spiral coil for bending metallic pipe constructed of wire, having a flat or plane surface on the side forming the exterior of the coil, and having the edges of such plane or flat surface rounded off.

Signed at New York city, in the county of New York and State of New York, this 12th day of July, A. D. 1889.

HENRY MARTYN BRIGHAM.

Witnesses:

BYRON WHEELER,

RICHARD L. SWEEZY.