

(No Model.)

J. BROPSON.
PIPE BENDER.

No. 539,378.

Patented May 14, 1895.

Fig. 1.

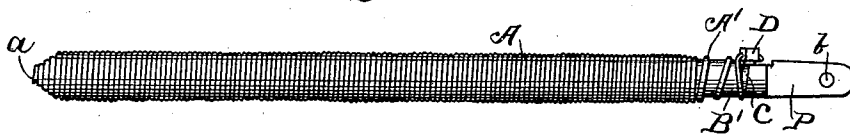


Fig. 2.

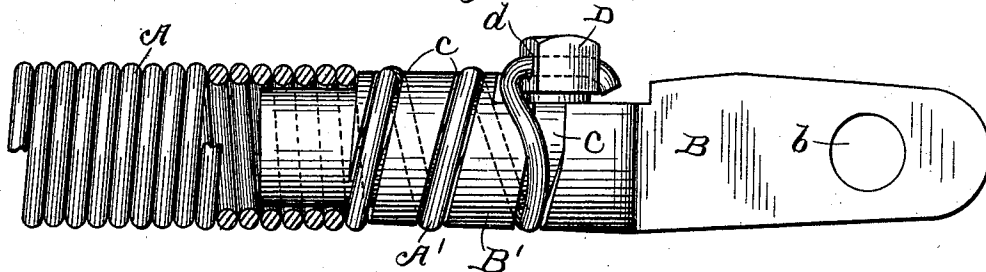


Fig. 3.

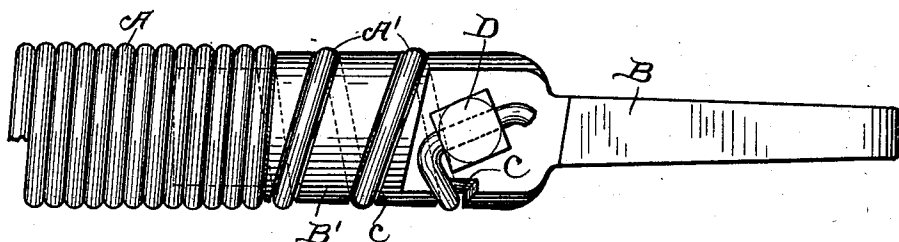
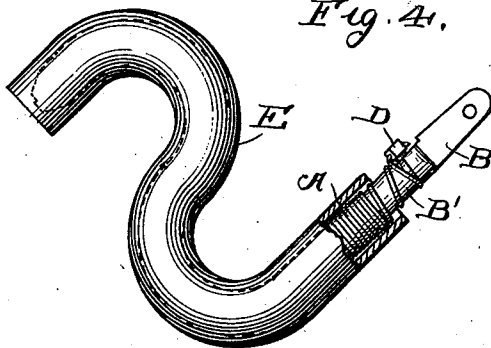


Fig. 4.



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UNITED STATES PATENT OFFICE.

JAMES BROPSON, OF CHICAGO, ILLINOIS.

PIPE-BENDER.

SPECIFICATION forming part of Letters Patent No. 539,378, dated May 14, 1895.

Application filed August 29, 1894. Serial No. 521,578. (No model.)

To all whom it may concern:

Be it known that I, JAMES BROPSON, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Pipe-Benders, of which the following is a specification.

This invention relates to improvements in a device to be used for bending lead pipes, or pipes of soft or ductile material, and it consists in certain peculiarities of the construction, novel arrangement, and operation of the parts thereof, as will be hereinafter more fully set forth and specifically claimed.

The objects of my invention are, first, to provide a bender, which shall be simple and inexpensive in construction, strong and durable, yet more effective and satisfactory in its operation than benders now in ordinary use; second, such a bender, which when inserted in the pipe will support the interior thereof and prevent the same being flattened or crushed in the operation of bending, yet may be readily withdrawn from the pipe, after the same has been formed with numerous curves, and, third, a bender, which is provided with a handle or hand-piece having means for adjustably engaging the same with the wire coil, in such a manner that the latter may be contracted, when it is desired to withdraw it from the bent pipe, and in case of breakage of the wire, may be quickly and readily readjusted to the handle.

In order to enable others skilled in the art to which my invention pertains to make and use the same, I will now proceed to describe it, referring to the accompanying drawings, in which—

Figure 1 is a view in side elevation of my bender, showing its parts in position ready for use. Fig. 2 is a similar view, partly in section, of a portion of the wire coil, showing the manner of securing the same to the hand-piece or handle. Fig. 3 is a plan view of a portion of the bender; and Fig. 4 is a view of a piece of pipe, showing the bender inserted therein.

Similar letters refer to like parts throughout the different views of the drawings.

A, represents a wire coil, which may be made of any suitable dimensions, and is preferably formed at its end opposite from the

handle or hand-piece with a slight taper or contracted portion *a*, in order to facilitate its insertion into the pipe, which is to be bent. This coil is of substantially the same size in diameter throughout its entire length, and is made of good spring wire, which is convolved, as shown in the drawings, and is connected at its end opposite the contracted part *a*, with a handle or hand-piece B, the body B', of which is preferably cylindrical in shape, and is provided with a spiral groove *c*, for the reception and retention of a portion of the wire A', of which the coil A, is formed.

The inner portion of the body B', of the handle or hand-piece is reduced, as is clearly shown in Fig. 2 of the drawings, in order to fit within the spring-coil A, and may extend therein any suitable distance, thus giving to the outer end of the coil stiffness and rigidity. Near the outer portion of the body B', and near the termination of the spiral groove *c*, the handle or hand-piece is provided with a screw threaded opening, into which is inserted a screw-bolt D, which is formed with a horizontal opening *d*, through which the end of the wire A', constituting the spring coil is passed and secured, which screw may be turned in its socket, so as to firmly secure the wire in the spiral groove around the hand-piece, as is obvious.

As shown in the drawings, the outer end of the handle or hand-piece may be flattened, and provided with an opening *b*, so that it can be readily engaged by means of a wrench or other device for turning the same.

From the foregoing and by reference to the drawings, it will be seen and readily understood that by the use of my invention, the spring coil A, may be inserted into a piece of pipe E, when the same may be bent with a curve of any degree, or as many curves as is desired, the spring coil internally supporting the soft material, and preventing it from being crushed or mis-shaped. When the desired bend or curve of the pipe has been attained, the bender may be withdrawn therefrom by simply turning the hand-piece in the direction to cause the spring to be contracted, thus reducing its diameter, and permitting of its easy removal.

It is also apparent that if the end of the wire strand A', engaging the screw bolt D,

should be broken, it can be readily readjusted to the hand-piece by again passing it through the opening *d*, in the screw-nut.

Having thus fully described my invention, 5 what I claim as new, and desire to secure by Letters Patent, is—

1. As an improved article of manufacture, a pipe-bender, consisting of a spring-coil, and a handle or hand-piece extending a slight distance into said coil and having a spiral groove 10 in its inner portion for the reception of a portion of the wire of the coil, and a projection provided with an opening to engage and secure the wire, substantially as described.

2. As an improved article of manufacture, 15 a pipe bender consisting of a spring-coil, and a handle or hand-piece extending a slight distance into said coil and having its inner end reduced to fit within the coil, and provided with a spiral groove to receive a portion of 20 the wire of the coil, and a screw-bolt set in the hand-piece and having an opening to engage and secure the wire, substantially as described.

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