F. M. & J. W. Thompson.

Bit Stock.

No. 87,309. Patented Feb. 23, 1869.

Fig. 1.

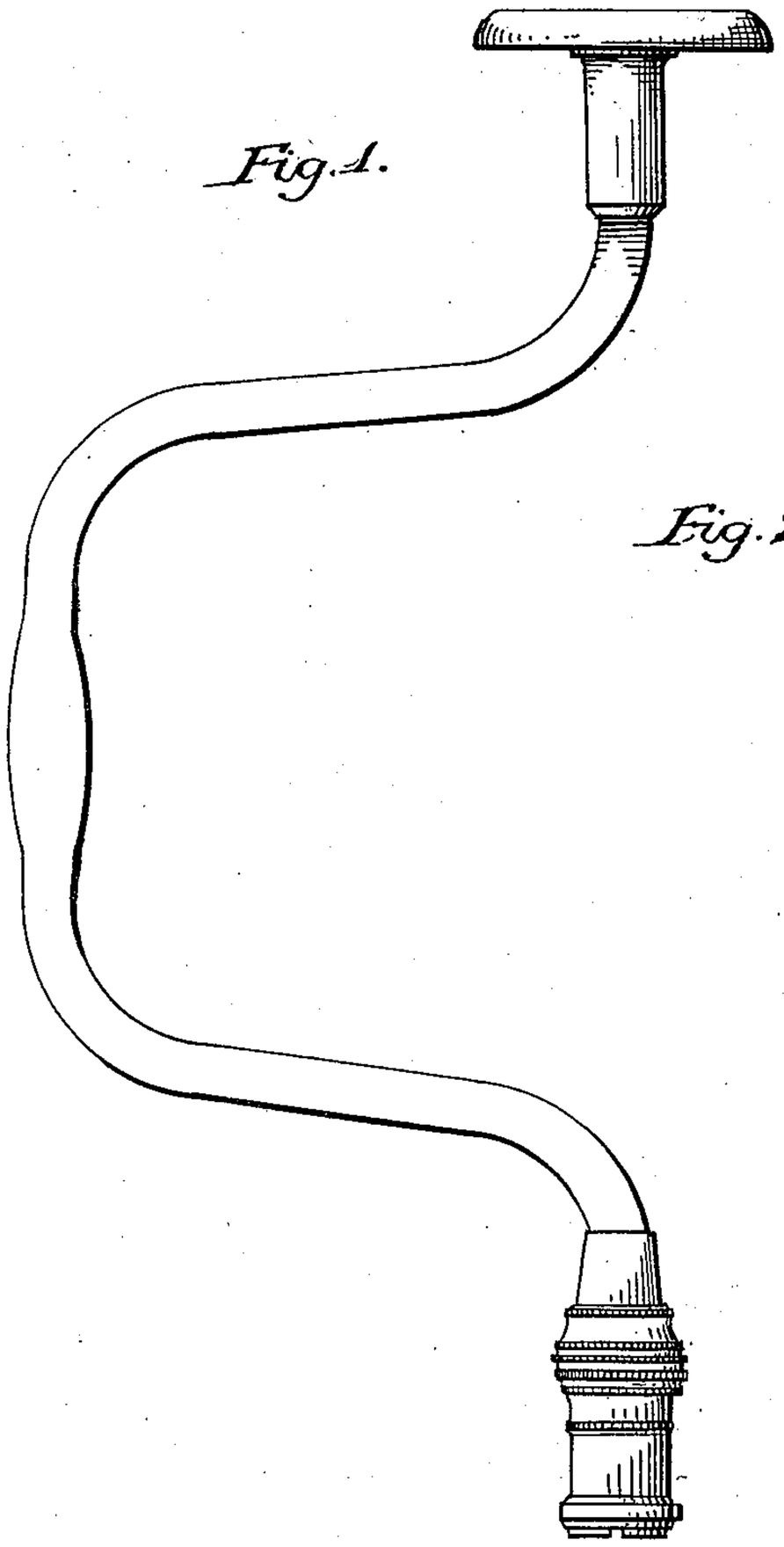

Fig. 2

Fig. 3.

WITNESSES:

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FRANCIS M. THOMPSON AND JOHN W. THOMPSON, OF GREENFIELD, MASSACHUSETTS.

Letters Patent No. 87,309, *dated February* 23, 1869.

IMPROVEMENT IN BIT-STOCKS.

The Schedule referred to in these Letters Patent and making part of the same.

Know all men by these presents:

That we, FRANCIS M. THOMPSON and JOHN W. THOMPSON, both of Greenfield, in the county of Franklin, and Commonwealth of Massachusetts, have invented a new and improved Mode of Manufacturing Bit-Stocks, or Braces for Bits; and we hereby declare the following to be a full and plain description thereof, sufficient to enable any person skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

Figure 1 shows a finished bit-stock made as described.

Figure 2 shows a blank of gas-pipe wholly drawn from the middle both ways, complete.

Figure 3 shows a blank of gas-pipe, one-half drawn, for the stem or shank.

The nature of our invention consists in a peculiar manner of forming the shanks of bit-stocks, as hereafter described.

In an article so much used, not only by mechanics, but by men of every class, in the every-day occupations of life, one great thing sought for is to combine sufficient strength of material with convenient lightness.

The old imported stocks, of wood, were too clumsy. Iron braces, forged and turned off, are heavy. These are sometimes made with an iron bulge, or gripe, and sometimes with a wooden one, secured to the iron shank. Bit-stocks have also been made of a small-size gas-pipe, having a wooden gripe fastened to the middle of the shank.

We purpose, however, to use gas-pipe, or any other tubing, of a size large enough to form the bulge, and by rolling it each way from the middle, so reduce the size as to make the lightest, and strongest, and most convenient bit-stock in use.

We take gas-pipe, or tubing, of any desired size, say three-quarters of an inch in diameter, cut off a blank about two-thirds the length of what the shank is to be, (*i. e.*, a blank twelve inches long is, by our process, drawn to about nineteen inches,) and roll it, as described.

The machinery for accomplishing this is a pair of heavy iron rolls, running one over the other, each having on its face eight or ten grooves, correspondingly made with the others, of a size decreasing from one end.

One-third, or more, of each roll, in diameter, and for its whole length, is cut away deep enough to let in the full size of the pipe, and both are so geared together as always to present the same surface to each other, and revolve toward the operator.

The first groove is but little smaller than the full size of the pipe, and they decrease in size, to the desired size of the shank or stem of the brace.

The pipe being heated, is grasped at one end by tongs, which have a guide or stop attached, to regulate the distance the pipe is to be rolled, and when the blank parts of the rolls are together, is thrust quickly into the first groove, clasped by the rolls, and pushed out. It is then thrust successively into each succeeding groove till the desired size is obtained.

If two swells are desired, one in the middle and one at the end, the space between the swell, for the handle and the end swell, is left much shorter than it is otherwise, as the pipe stretches while being rolled in each successive groove. For instance, we cut in the rolls a blank of just what we wish to roll in them, allowing in each smaller groove a little more length of the smaller or compressed part, for the stretch of the iron.

The blanks of pipe are always put into the rolls from the middle of the swell, and rolled each way, always pushing out.

In this way our blanks are rolled out with rapidity, evenness, uniformity, and truth. They are then finished up in the usual manner, bent, the breast end and socket attached, and we have a bit-stock, strong, yet light and graceful in appearance, and having, as a part of it, the bulge, or swell, so necessary to give a good gripe for the hand when turning it.

Having described our invention,

What we claim, and desire to secure by Letters Patent, is—

As a new article of manufacture, a bit-stock, constructed substantially as described.

FRANCIS M. THOMPSON.
JOHN W. THOMPSON.

Witnesses:

ALMON BRAINARD,
CHARLES T. WALCOTT.