

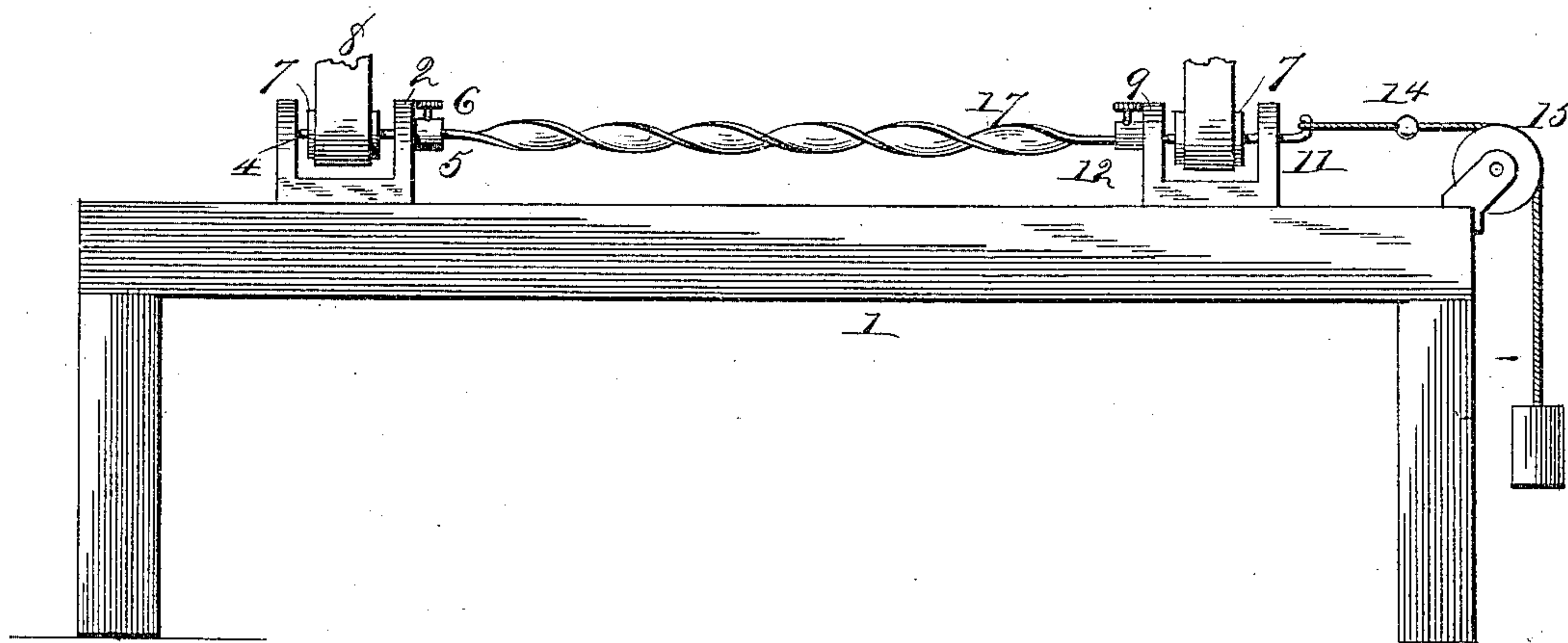
(No Model.)

M. HARDSOCC.

METHOD OF TWISTING AUGERS.

No. 392,119.

Patented Oct. 30, 1888.



WITNESSES,
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MARTIN HARDSOCC, OF OTTUMWA, IOWA.

METHOD OF TWISTING AUGERS.

SPECIFICATION forming part of Letters Patent No. 392,119, dated October 30, 1888.

Application filed March 16, 1888. Serial No. 267,373. (No model.)

To all whom it may concern:

Be it known that I, MARTIN HARDSOCC, a citizen of the United States, and a resident of Ottumwa, in the county of Wapello and State of Iowa, have invented certain new and useful Improvements in the Method of Twisting Augers; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawing, which forms a part of this specification, and in which is shown a side elevation of a machine applicable for carrying out my improved method of twisting drills, augers, &c.

My invention has relation to an improved method of manufacturing drills, augers, or other twisted metallic bars; and it has for its object to provide a method whereby the bar for making the drill, auger, or other twisted object may be twisted evenly and without any strain upon the same, as will be hereinafter more fully described, and pointed out in the claims.

The method consists, essentially, in supporting the bar to be twisted at its ends in the devices for holding it and twisting it, and for admitting one or both of these devices moving inward toward the other, so as to remove the strain upon the bar caused by twisting it, and admitting of the twisted bar being of the same width and thickness as the blank bar used for producing the twisted bar.

The machine shown in the drawing is the simplest and most preferable form, and consists of the base-piece or bench 1, upon which are secured two uprights, 2, at one end and two other movable uprights, 9, at or near the other end. The uprights 2 have bearings at their upper ends, in which a shaft, 4, is journaled, while another shaft, 11, is journaled in bearings 10 in the upper ends of the other uprights, 9. The inner end of the shaft 4 is provided with a socket, 5, and the inner end of the shaft 11 is provided with a similar socket, 12, and each of the sockets is provided with a set-screw, 6. These shafts are driven in opposite directions by means of the belts 8 8, passing around the pulleys 7 7 upon them between the uprights.

In operation the bar to be twisted is secured in the sockets, as shown at 17, and the shafts

revolved in opposite directions at the same time. As the bar is thus twisted around a central axis, it is gradually shortened, and the movable supports 9 are drawn toward the stationary supports 2 at the other end of the bench. In this way there will be no drawing strain upon the bar being twisted, except such as is exerted by the weight 16 at the end of the chain 14. The chain 14 is secured to the outer end of the shaft 11 and passes over the pulley 15, and is also provided with a swivel-joint, 13, which permits of the portion that is connected to the shaft to revolve without revolving or twisting the entire chain.

It is obvious that if the auger is twisted at one end only the cylindrical form cannot be maintained, but the auger will taper from the rotative shaft toward the fixed point; but when both shafts rotate simultaneously and with the same speed in opposite directions the auger will be practically cylindrical. In other words, the perimeter of the twist from end to end will have the same radii. It is also evident that by causing both ends to be twisted at the same time the auger can be formed in one-half the time it would take if it were twisted from one end only.

If desired, the carriages or sleds having the revolving shafts may be moved toward or from each other by means of a screw, 20, which may either be turned by hand or operated by suitable gearing to the power revolving the shaft. It follows that this form may be either used with one or two sliding carriages.

The sliding support or supports for the bar may be moved by means of gearing connected to the gearing driving the twisting shaft or shafts, or the draw of the twisting of the bar may be partly counteracted by springs or any other ordinary means, which it is not necessary to illustrate; but I do not wish to confine myself to any specific form of machinery by means of which my method may be carried out, but wish to confine myself simply to the method of twisting metallic bars between supports movable toward each other, the ends of the bars being simultaneously twisted in opposite directions.

Having thus described my invention, I claim and desire to secure by Letters Patent of the United States—

1. The method of twisting bars for drills,

augers, &c., which consists in simultaneously twisting the ends of the bar in opposite directions, substantially as set forth.

2. The method of twisting bars for drills,
5 augers, &c., which consists in twisting the ends of the bar in opposite directions simultaneously, the ends being drawn toward each other under an even resistance, substantially as set forth.

In testimony that I claim the foregoing as my own I have hereunto affixed my signature in presence of two witnesses.

MARTIN HARDSOCC.

Witnesses:

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P. RIORDAN.