

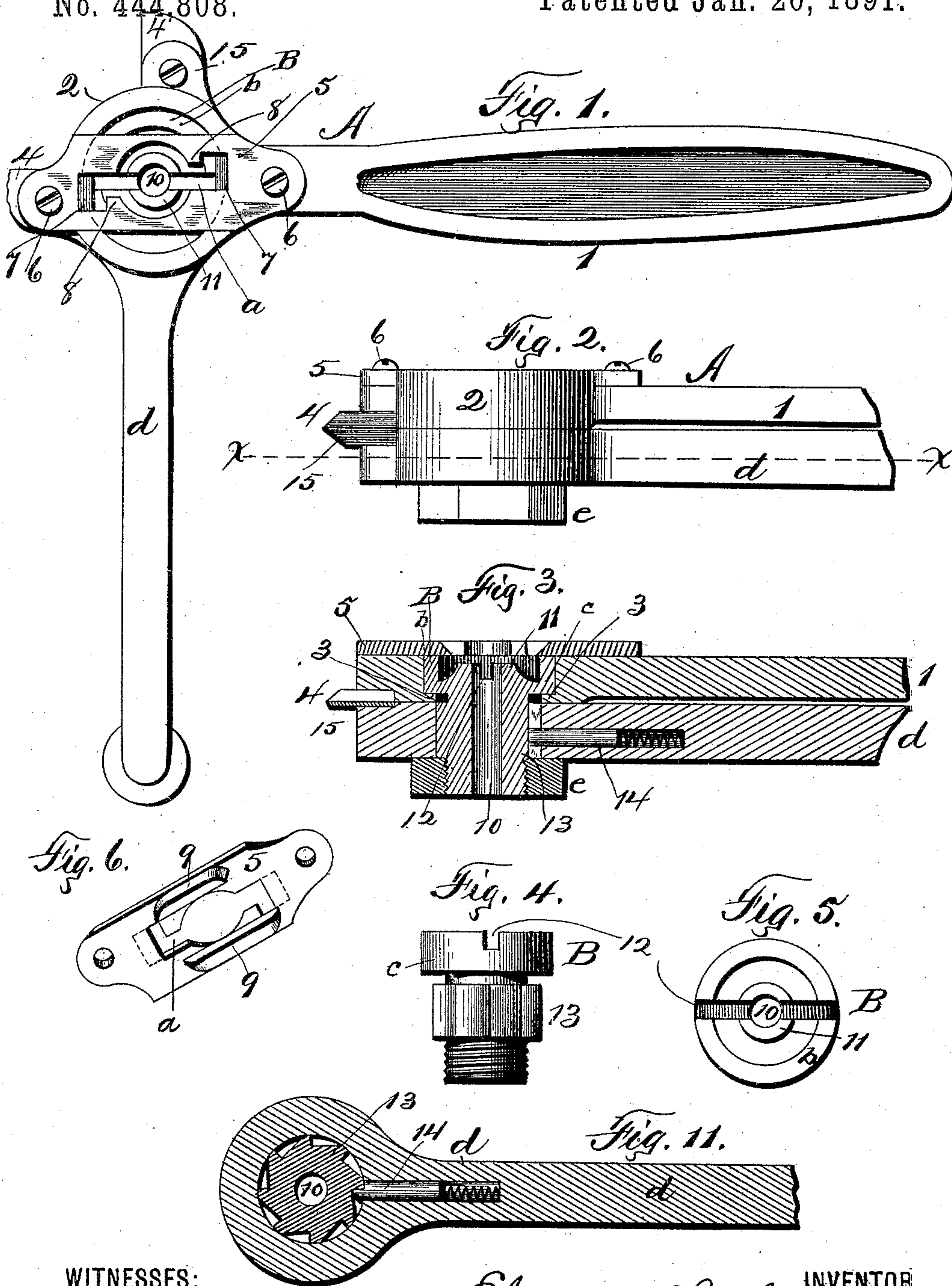
(Model.)

2 Sheets—Sheet 1.

E. BEALS.
TOOL FOR TWISTING WIRE.

No. 444,808.

Patented Jan. 20, 1891.



WITNESSES:

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Ebenezer Beals INVENTOR

BY *Smith & Demison*
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(Model.)

2 Sheets—Sheet 2.

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Fig. 7.

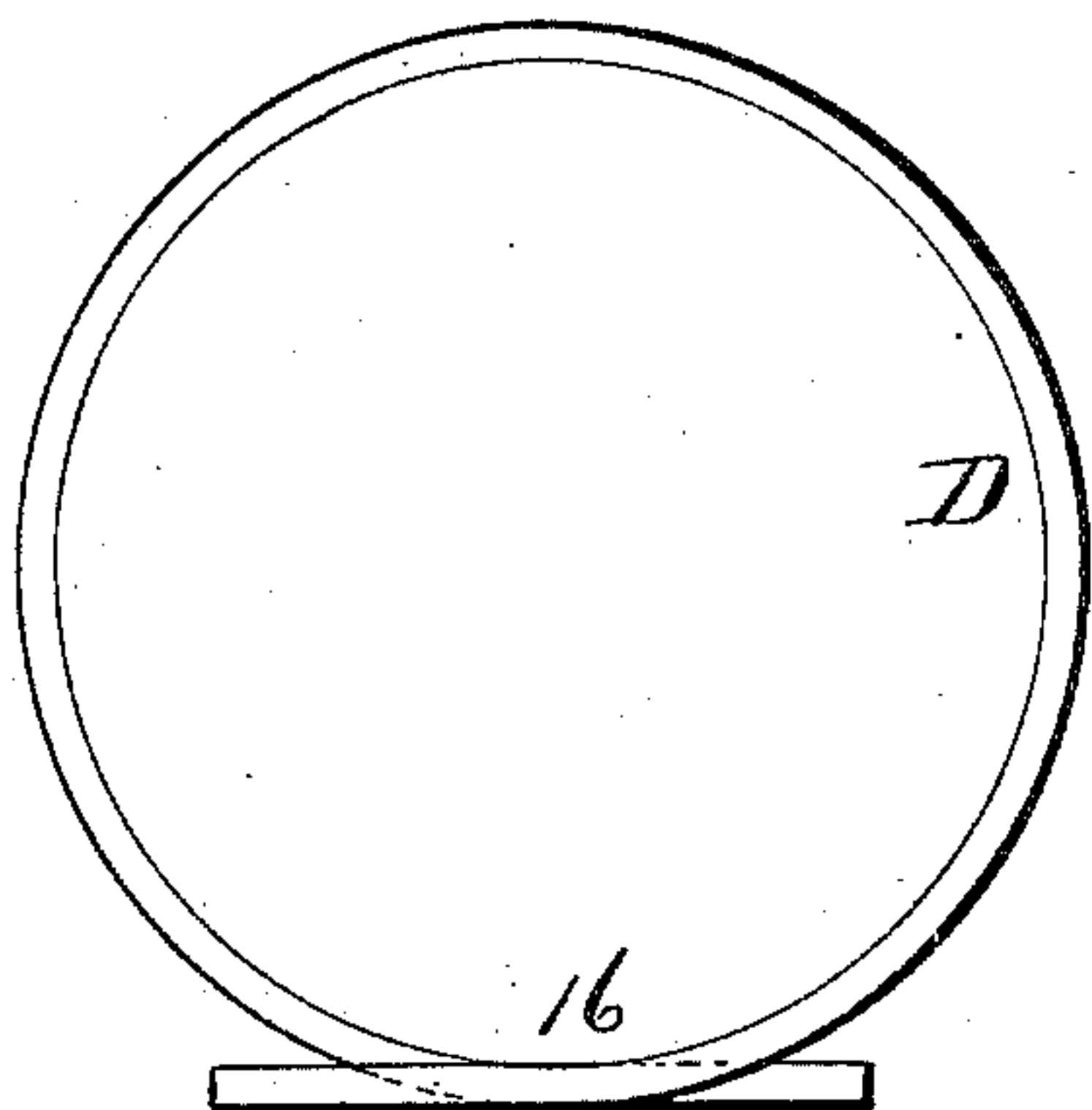


Fig. 8.

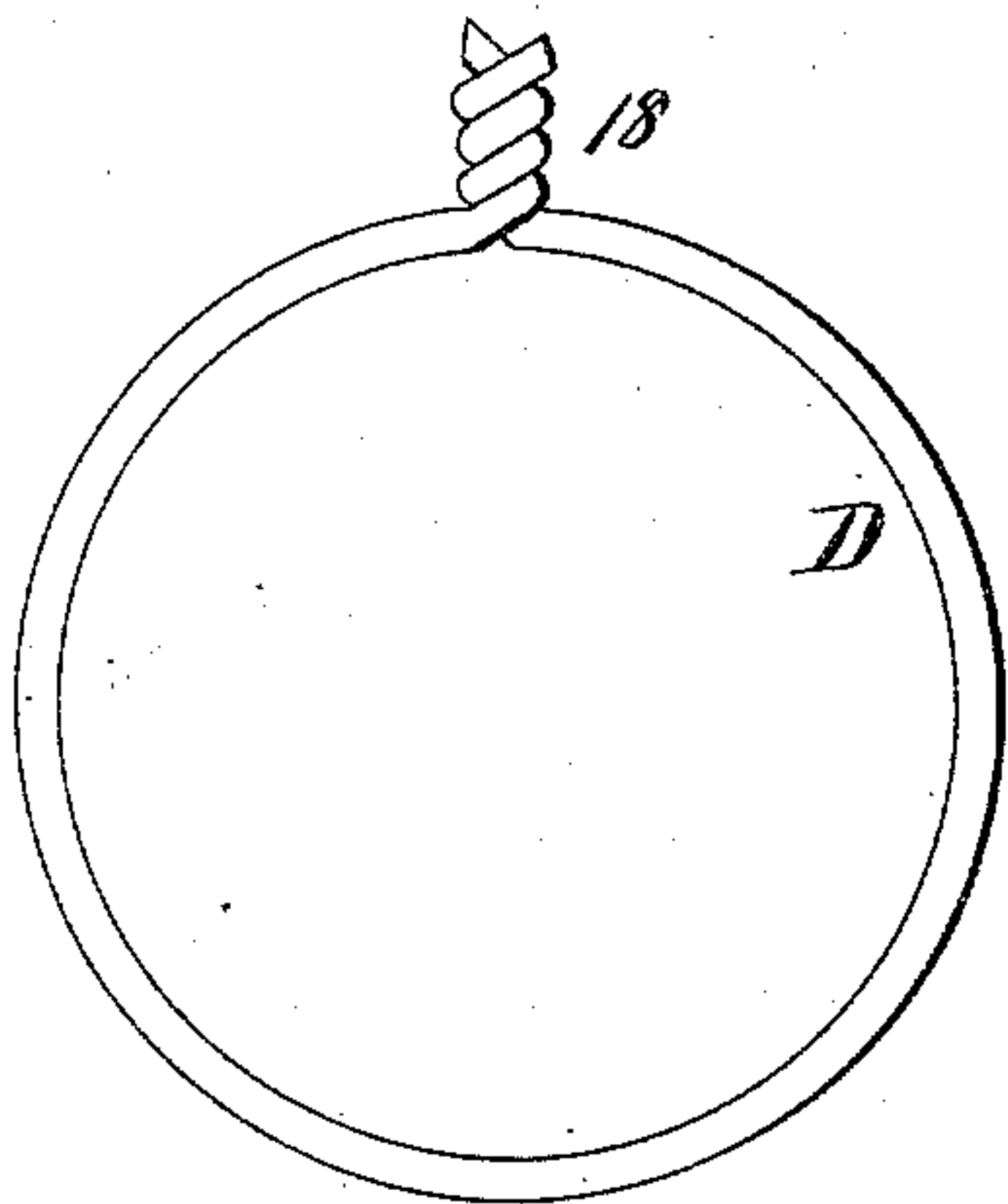


Fig. 9.

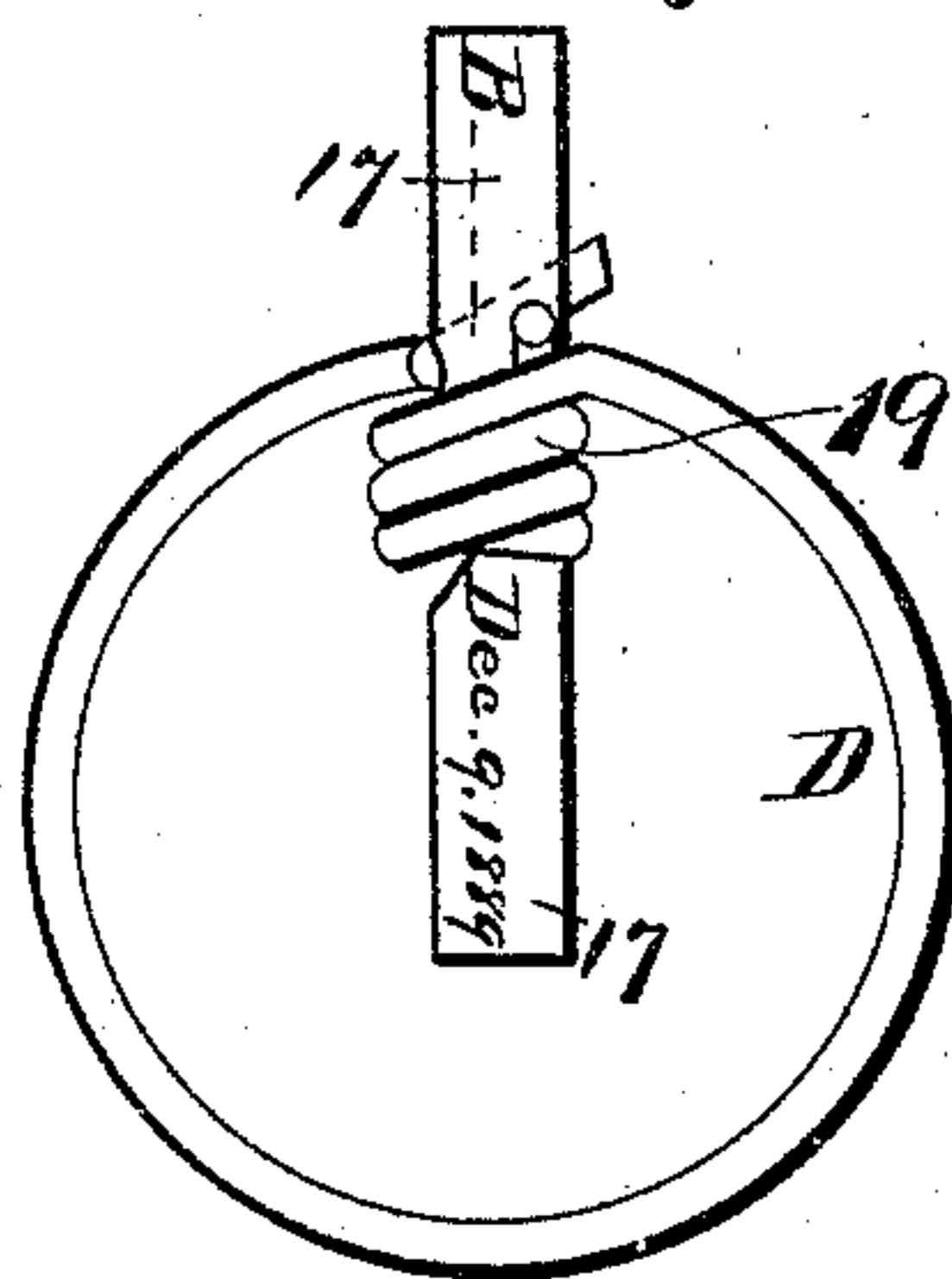


Fig. 10.

B. 17. Dec. 9, 1889

Witnesses

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UNITED STATES PATENT OFFICE.

EBENEZER BEALS, OF NORWICH, NEW YORK.

TOOL FOR TWISTING WIRE.

SPECIFICATION forming part of Letters Patent No. 444,808, dated January 20, 1891.

Application filed February 12, 1890. Serial No. 340,122. (Model.)

To all whom it may concern:

Be it known that I, EBENEZER BEALS, of Norwich, in the county of Chenango, in the State of New York, have invented new and useful Improvements in Tools for Twisting Wire, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

My invention relates to implements for twisting and winding wire, helically or spirally, and more especially to implements for twisting and winding the wire loops or rings used as a part of car-seals.

The object of my invention is to produce a wire twister and winder which is adapted to receive the ends of the wire ring, either with or without the sealing-strip, and first twist the ends together separately or around and over the sealing-strip, and then, by a continuance of the same rotation of the wire-receiver, to wind the body of the wire ring around and over the twist longitudinally and helically or spirally, and around and over the sealing-strip, where one is used.

My invention consists in the several novel features of construction and operation hereinafter fully described, and which are specifically set forth in the claim hereto annexed. It is constructed as follows, reference being had to the accompanying drawings, in which—

Figure 1 is a plan view of the front face of the implement, open and ready to receive the wire. Fig. 2 is a side elevation of my implement with the crank-handle below the other, the handles being broken off. Fig. 3 is a vertical longitudinal section of the implement and handles, as in Fig. 2. Fig. 4 is a side elevation of the twisting and winding head detached. Fig. 5 is a top plan of the same. Fig. 6 is an isometrical elevation of the wire-holder detached, taken from underneath. Fig. 7 is a plan view of a wire loop or ring with overlapping ends, ready to be inserted into the implement. Fig. 8 is a plan view of the same, with the ends twisted, without the sealing-strip. Fig. 9 is a like view of the same ring after the wire has been twisted and then helically wound or coiled back over the twist, and also showing a sealing-strip either held by the twist or the coiling, or by both. Fig. 10 is a plan view of the sealing-strip detached, and ready to be twisted between the

ends of the wire or coiled in over the twist and under the coil. Fig. 11 is a longitudinal horizontal section on the line *xx* in Fig. 2, showing more especially the pawl and ratchet mechanism.

A is the body, comprising the handle 1, a tubular head 2, rabbeted so as to create a circular shelf 3, and on its outer end provided with one part of a shear-cutting wire-cutter 4. The head 2 is mortised to receive the wire-holder 5, secured in place by the screws 6. This holder consists of a plate of metal having the internal slotway *a*, widened at the ends creating the shoulders 8, and beveled at the ends of the slot, as at 7, and the central portion of the slot is enlarged, as shown in Fig. 6, this enlargement being approximately circular and concentric with the opening through the head. Upon the under side of this holder I place longitudinal parallel ribs 9, the inner edge of each rib being in line with the outer end of the widened portions of the slot *a*, and abutting or standing along side of the enlargement.

In the head 2 I place the twister B, consisting of a tubular piece of metal having a central bore 10, a circumferential flange *b*, created by cutting out the center, substantially as shown in Fig. 3, and also an inner flange 11, one wall of which is the wall of the bore 10, and its outer wall slopes downward and outward, as shown. Both flanges *b* and 11 are bisected by the diametrical groove 12. The periphery is provided with an outward flange *c*, which supports the twister upon the shelf 3. A ratchet 13 is formed upon or secured to the lower part of the twister, and 14 is a spring-pawl mounted in a recess in the crank *d*, and engaging with the ratchet, as shown by Fig. 11, when the twister is inserted into the head 2. A nut *e* upon the lower end of the twister holds it in the head and bears against the lower face of the crank. This crank is provided with a tubular end fitting over the lower part of the twister and engaging therewith through the pawl and ratchet, so that the rotation of the crank rotates the twister. Upon the outer end of the crank, as at 15, I place the other blade of the wire-cutter 4.

The device is operated as follows: To seal the door of a freight-car I pass the wire D

through the staple and eye, and bend it into the shape shown at 16 in Fig 7, with the ends overlapping. Then the overlapping ends of the wire are introduced in the slot *a* and inserted into the groove 12 in the twister B. Then by turning the crank the twister is rotated, and this twists the ends of the wire, as at 18, the body of the wire being held by the holder 5, and the twisting throws the sides of the wire loop into the widened ends of the slot and behind the shoulders 8. When these ends are thus twisted, the continuance of the rotation of the crank will coil the wire helically around and over the twist, as shown in Fig. 9 at 19, the twist and coil then lying in the enlargement of the slot *a*. When I use the sealing-strip 17, I insert it vertically between the overlapping ends of the bent wire, and then when the ends of the wire are inserted into the slot *a* and the twister the lower end of this strip will lie in the hole 10 in the twister, and then the wire ends are twisted upon the strip, crimping it to conform to the spiral of the twist, and perfectly locking it in the twist, and then the coiling over the twist further locks it, and the whole operation so twists and coils the wire and binds the strip that the seal cannot be tampered with without discovery.

The ratchet-and-pawl mechanism enables me to perform the operation of twisting and coiling the wire by giving the crank only partial rotation forward and back. The shear points enable me to cut the wire to proper length or to open the sealing of the car.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a wire-tyer, the combination of a handle, a tubular twister mounted therein and provided with a diametrical groove in its outer end, a wire-holder secured to the handle and extending across the end of the twister and having a slot through which the overlapping

ends of the wire are inserted and which holds the end portions thereof, and a crank connected to the twister, as set forth.

2. The combination, with the stationary handle provided with a top plate slotted centrally and longitudinally and provided with notches on opposite sides at the ends of the slot and beveled on the ends of the slot, of the rotating winder and twister mounted in the stationary handle, and the turning handle connected by a pawl and a ratchet to the twister and winder, as set forth.

3. The combination of the wire-holding plate secured upon the head of the stationary handle and provided with a longitudinal slot-way having end notches and beveled ends, with the twisting and winding head having a central opening, annular flanges next to the opening, and radial grooves, and means for rotating the twisting and winding head in its seat in the stationary handle, as set forth.

4. The combination, with the handle, the wire-holder secured on top of the outer end thereof and provided with a slot enlarged centrally and widened at the ends on opposite sides, creating shoulders 8, and beveled at the widened ends, and provided also with parallel ribs upon its inner face on each side of the slot, of the tubular twister seated in the handle under the wire-holder and provided on its upper face with a diametrical groove and with inner and outer concentric flanges, a ratchet on the body of the twister, a crank fitting over the ratchet, a pawl in the crank engaging with the ratchet, and means for securing the crank and handle together.

In witness whereof I have hereunto set my hand this 6th day of December, 1889.

EBENEZER BEALS.

In presence of—

EMORY L. SMITH,
CURTIS E. RATHBUN.