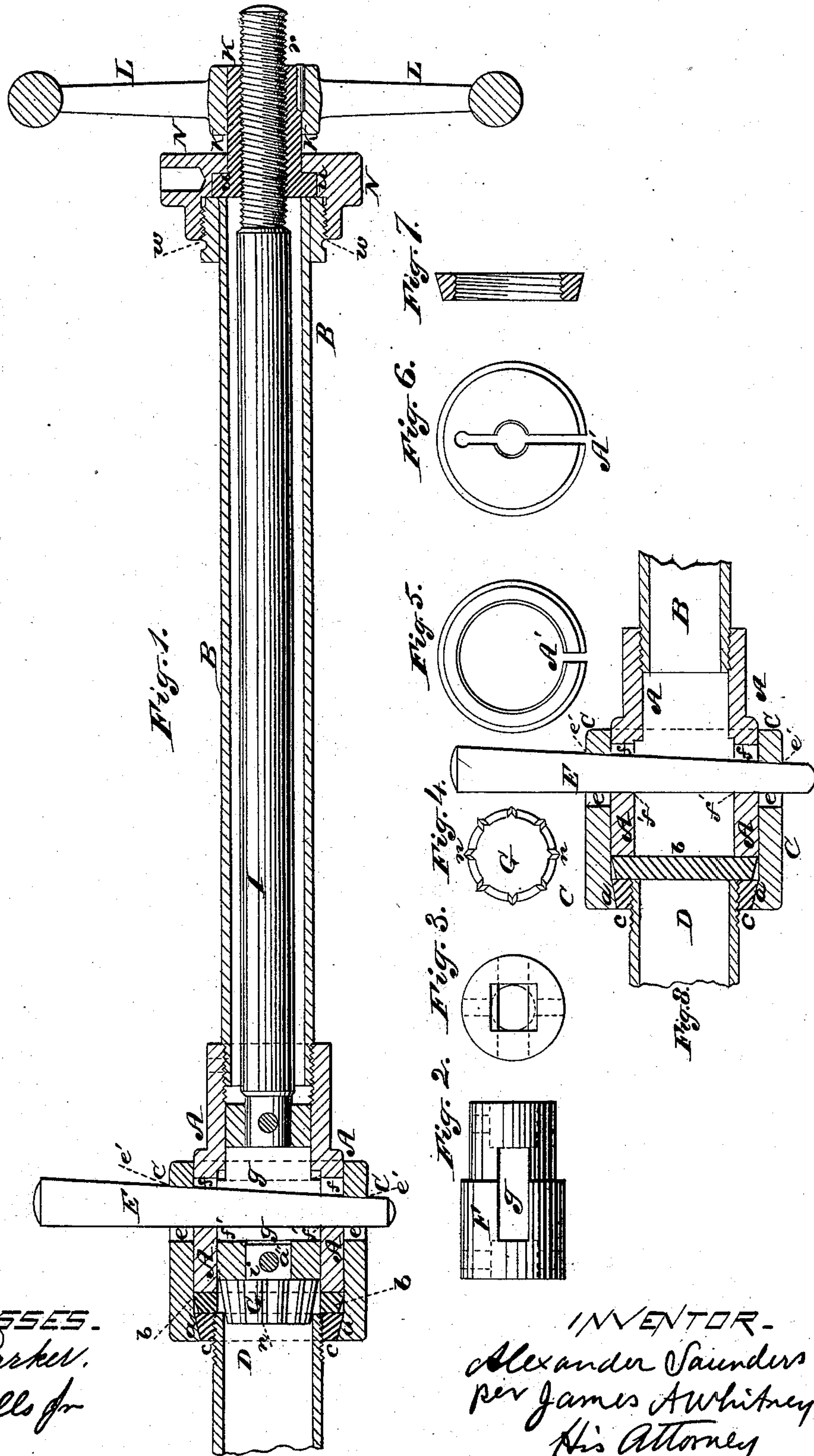


(No Model.)

A. SAUNDERS.
Nipple Chuck.

No. 235,902.

Patented Dec. 28, 1880.



WITNESSES.
H. P. Parker.
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UNITED STATES PATENT OFFICE.

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NIPPLE-CHUCK.

SPECIFICATION forming part of Letters Patent No. 235,902, dated December 28, 1880.

Application filed September 22, 1880. (No model.)

To all whom it may concern:

Be it known that I, ALEXANDER SAUNDERS, of the city, county, and State of New York, have invented certain Improvements in Nipple-Chucks, of which the following is a specification.

The object of this invention is to provide a nipple-chuck which may be used and applied for holding nipples or other threaded tubular articles, whether the same have a right-hand or left-hand thread.

The invention comprises certain novel combinations of parts whereby said object is attained.

Figure 1 is a central longitudinal sectional view, representing an instrument complete embracing my said invention. Figs. 2, 3, 4, 5, 6, and 7 are detail views of certain parts thereof. Fig. 8 is a sectional view of certain parts thereof.

In Fig. 1 the apparatus is represented as constructed and applied for holding nipples or similar articles having a left-hand thread. It is to be understood that the usual motion of a lathe adapted to receive and operate my said invention is such as would tend to turn a screw-thread upon the right-hand thread of an ordinary nipple, and consequently such as would unscrew or remove a screw from the thread of a left-hand nipple.

A is the head of the chuck, which is secured upon one extremity of a tubular shaft, B. Upon the enlarged outer portion of the head A slides a sleeve, C, the interior of which, at its outer extremity, is contracted to a conical shape, as represented at *a*. Placed against the end of the head A is an annular washer, *b*. Placed against the outer surface of the washer *b*, and within the conically-formed portion *a* of the interior of the sleeve C, is a conical ring, *c*, the inner surface of which is threaded to screw upon the right-handed thread of the nipple D, and which is divided, as shown at A' in Figs. 5 and 6, in such manner that when the ring is compressed by pressure applied to its circumference its internal diameter will be diminished, it being, of course, understood that the original internal diameter is approximately proportioned to the size of

the nipple or article to be gripped or chucked. Thus the size of the said interior of the ring may be proportionately large, as shown in Fig. 5, or of very moderate dimensions, as represented in Fig. 6. The sleeve C has at its opposite sides longitudinal slots *e*. In like manner the head A has similar slots, *f*, substantially coincident with the slot *e* of the sleeve C.

E is a wedge or tapering key, which is driven through the slots *e f* in such manner that they bear against the ends *e'* of the slots *e* and the ends *f'* of the slots *f*. The said key, when driven inward, draws inward the sleeve C upon the head A, and thereby causes the conical portion *a* of the said head A to compress the divided ring *c* upon the nipple D. Where, as hereinafter more fully explained, and as represented in Fig. 8, the direction of movement of the lathe is such as to turn the thread of the divided ring *c* upon the screw-thread of the nipple D, the gripping of the said ring *c* upon the nipple D is sufficient to insure the hold of the chuck upon the nipple and the retention of the latter in place. When, however, as is to be explained with reference to Fig. 1, the direction of the movement of the chuck is such as to tend to unscrew the ring from the nipple the internal appliances represented in the last-named figure come into use and operation. These internal appliances consist of a sliding block, F, which is capable of a longitudinal movement within the head A, the latter being hollow, as represented in the drawings. The sliding block F is slotted transversely, in order that the key E may pass therethrough without being interfered with by the movement of the said sliding block F. In the front end of the latter is fitted a square shank, *i*, of a conical ram, G, the circumference of which is provided longitudinally with sharp radial projections *n*.

Into the rearmost end of the sliding block F is attached the inner end of a rod, I. This rod I has upon its opposite end a screw-thread, *r*, on which is placed a nut, K, which is provided at its outer end with a hand-wheel, L, for turning the said nut, and at its inner end with the flange *u*, which rests against the adjacent ex-

tremity of the tubular shaft B, there being upon said extremity of said shaft B an external screw-thread, *w*. A nut, N, the construction of which is represented in Fig. 1, aforesaid, is
 5 screwed upon the thread *w*, and, holding against the outer surface of the flange *u* of the nut K, holds the same in position at the extremity of the shaft B. By turning the hand-wheel L in the
 10 requisited direction, therefore, the rod I, and consequently the head A and ram G, may be forced outward with great power, whereupon the ram G is crowded into the open end of the nipple D, as represented in said Fig. 1, so that its
 15 radial projections *n* bite into the inner surface of the said end of the nipple, and thus prevent the same from being turned out of the internal ring, *c*, which is gripped thereon, as hereinbefore explained.

It will be understood, of course, that the
 20 sliding block F, and consequently the ram G, are incapable of an axial movement within the head A, inasmuch as said axial movement is prevented by the key E, which passes through the slot *g* in the sliding block F, in order that
 25 the ram G may not turn. With reference to the sliding block F, the shank *i* should be of rectangular form, fitted into a socket of corresponding shape in the adjacent end of the said block, and there secured by means of a cross-
 30 pin, *a*².

When the apparatus is to be used for nipples or similar articles having a right-hand thread, the rod I, head A, ram G, with the mechanism for giving movement thereto, may be re-
 35 moved, and in such case, also, the annular washer *b* should be replaced by a circular imperforate washer, (indicated by the same reference-letter in Fig. 8,) so that the inner end of the nipple D may butt against the said washer,
 40 when brought into position to be gripped by the

divided ring *c*, in the same manner as hereinbefore explained.

What I claim as my invention is—

1. The combination of the head A, constructed with the slot *f*, the sleeve C, constructed
 45 with the tapering or conical internal portion, *a*, and slot *e*, the conical internally-threaded divided ring *c*, and the wedge or tapering key E, all substantially as and for the purpose
 50 herein set forth.

2. The combination of a washer, *b*, with the conical internally-threaded and divided ring
 55 *c*, the head A, having the slot *f*, the sleeve C, having the slots *e* and conical internal portions, *a*, and the wedge or tapering key E, all substantially as and for the purpose herein set forth.

3. The combination of the slotted sliding block F, the ram G, having radial projections
 60 *n*, the slotted head A, the slotted sleeve C, having the internal conical portion, *a*, the conical internally-threaded divided ring *c*, and the key E, the whole arranged for joint operation, substantially as and for the purpose herein set forth.

4. The combination of the nut K, having the flange *u*, the nut N, placed over the said flange
 70 *w* and screwed upon one extremity of the tubular shaft B, the rod I, having at one extremity the screw-thread *r*, the slotted block F, the ram G, the slotted head A, the slotted sleeve C, having the conical internal portion, *a*, and the tapering internally-threaded divided ring *c*, all substantially as and for the purpose herein set forth.

ALEXANDER SAUNDERS.

Witnesses:

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