

(Model.)

C. H. SCHEERMESSE.  
TUBE DRAWING MANDREL.

No. 246,346.

Patented Aug. 30, 1881.

Fig. 1.

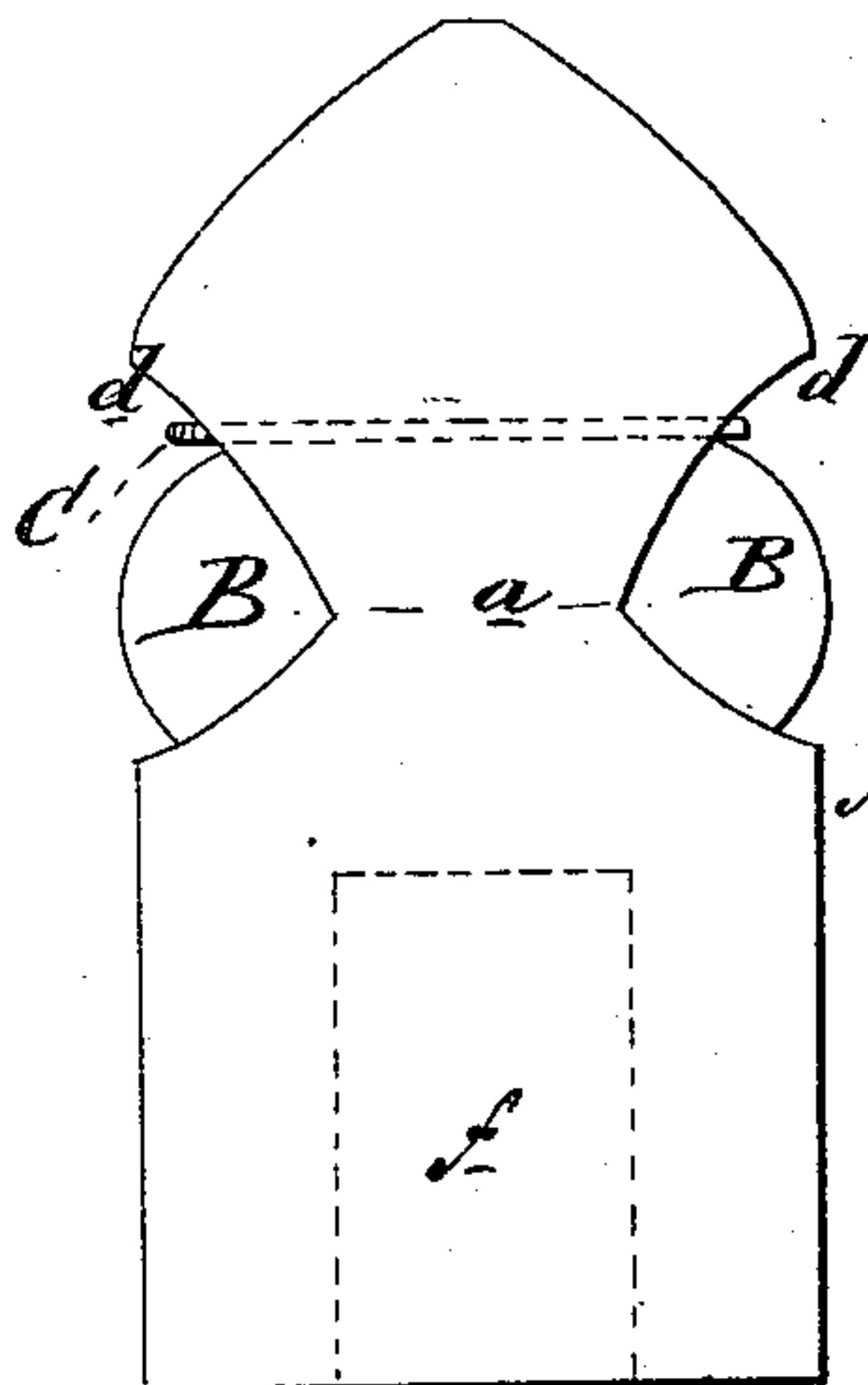


Fig. 2.

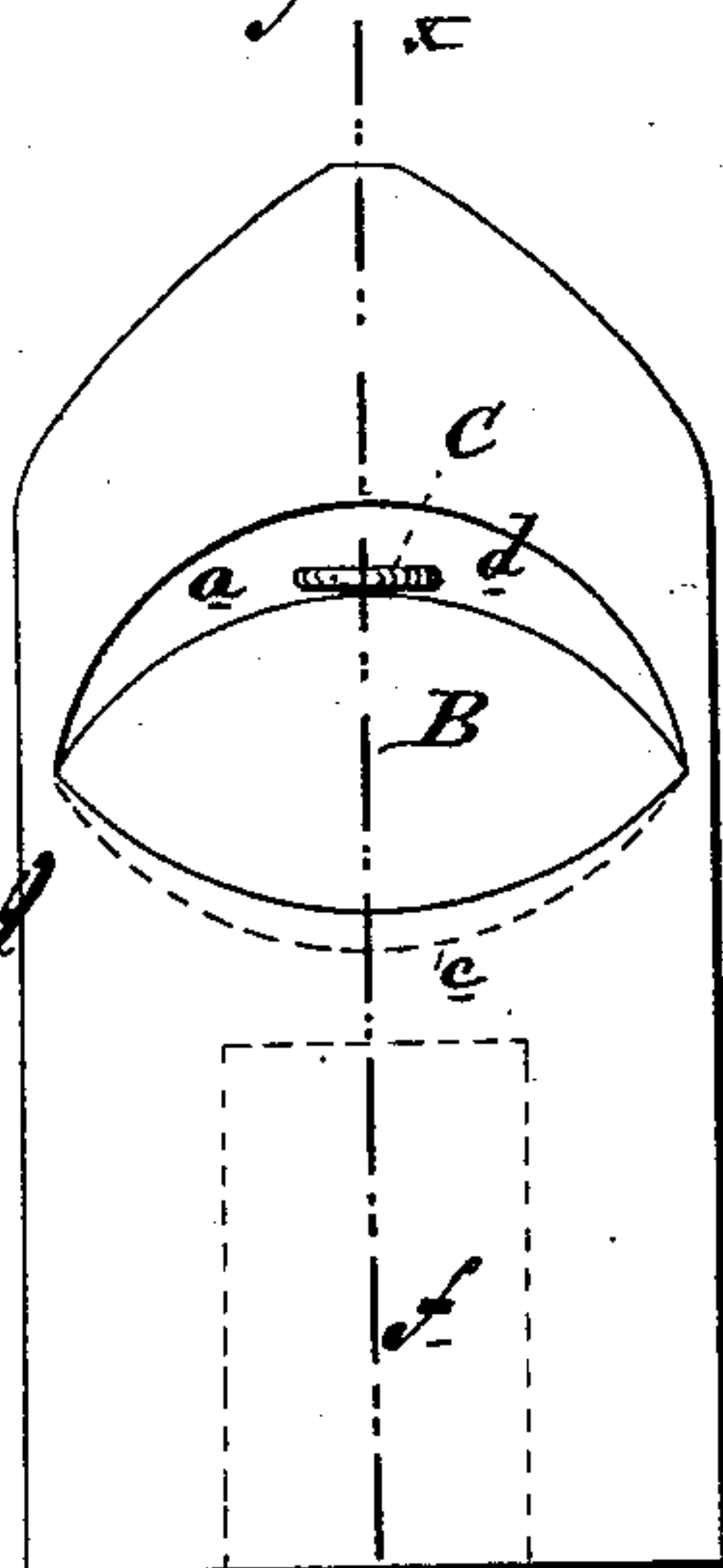


Fig. 3.

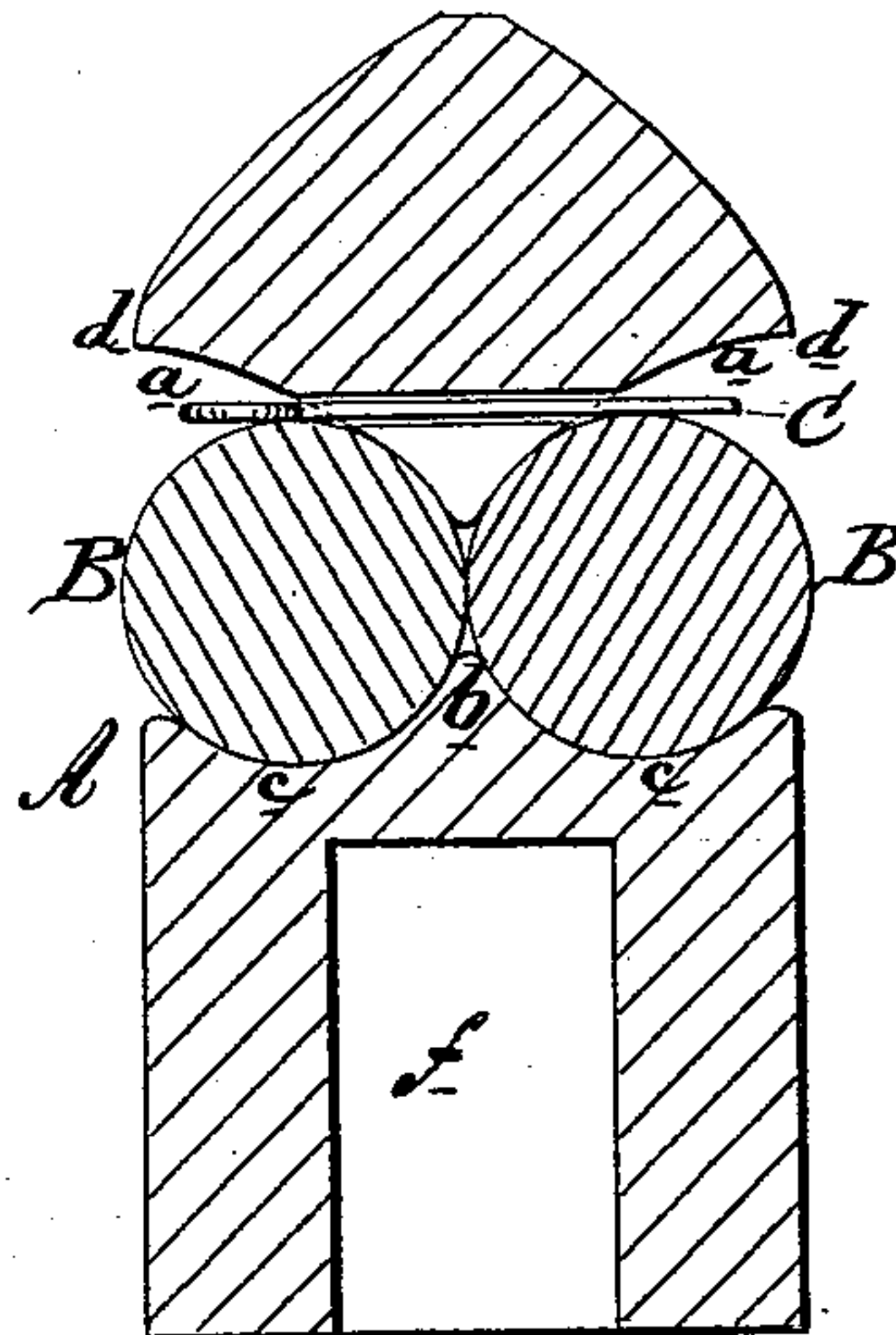


Fig. 4.

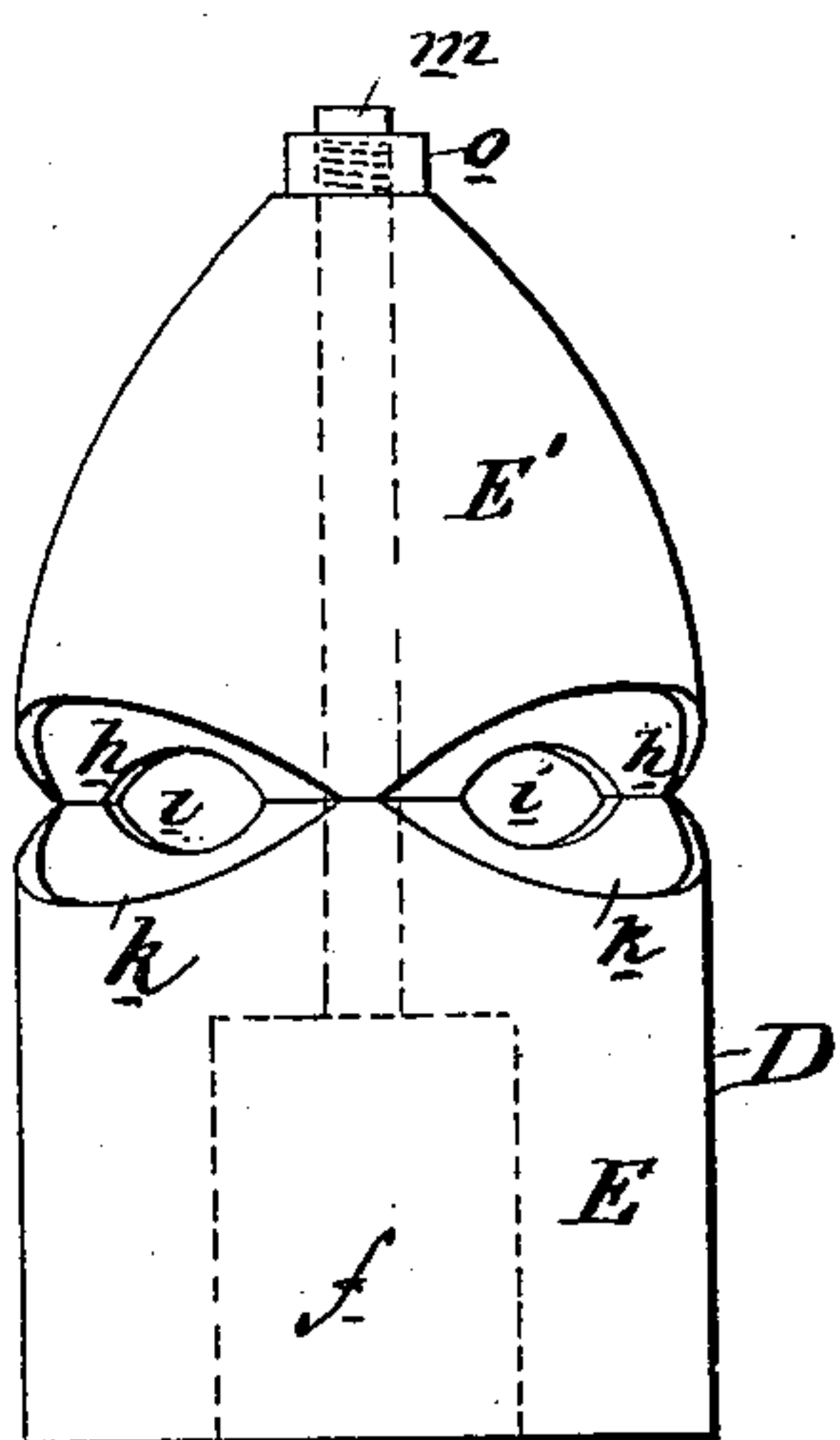


Fig. 5.

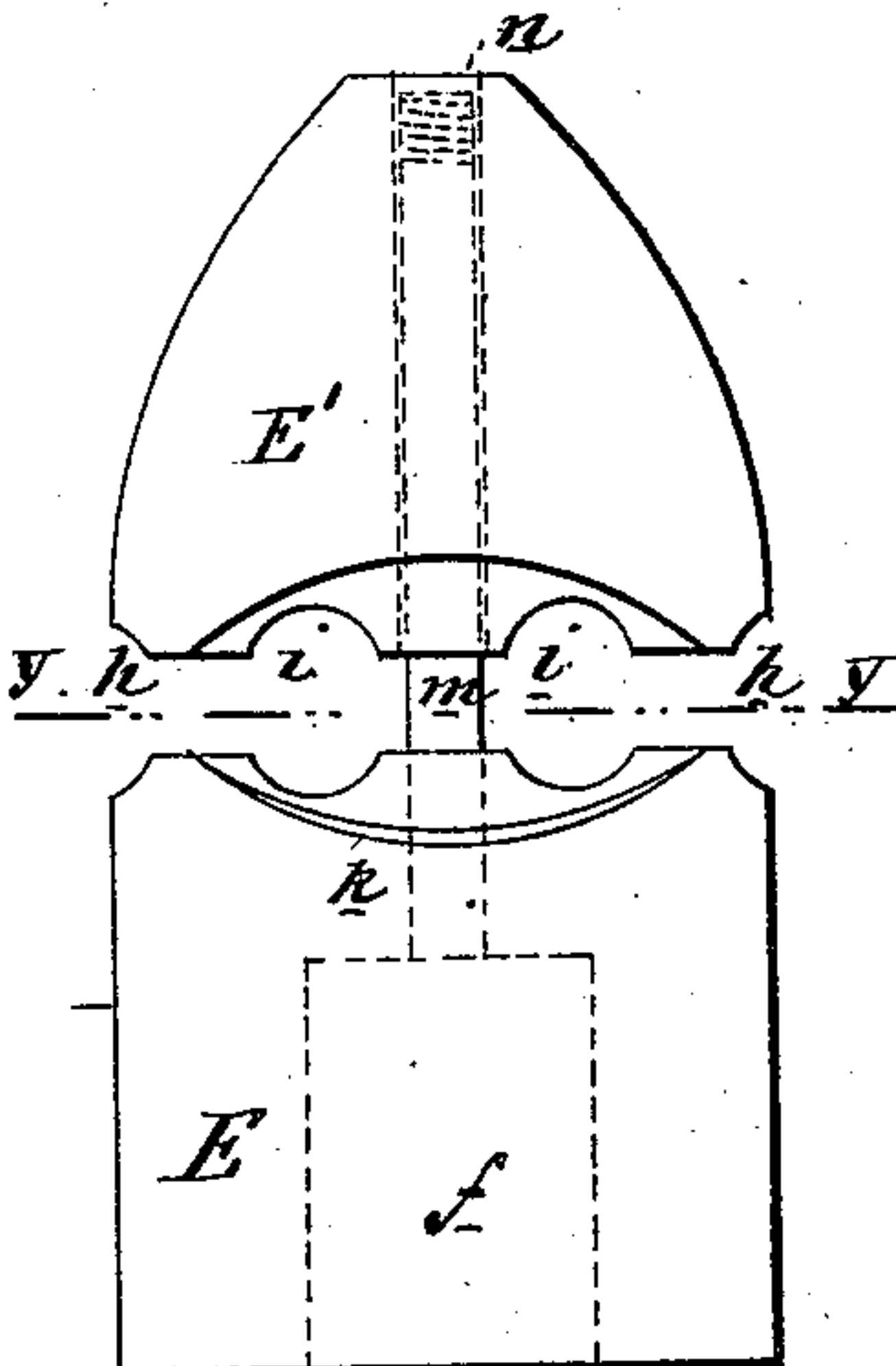


Fig. 6.

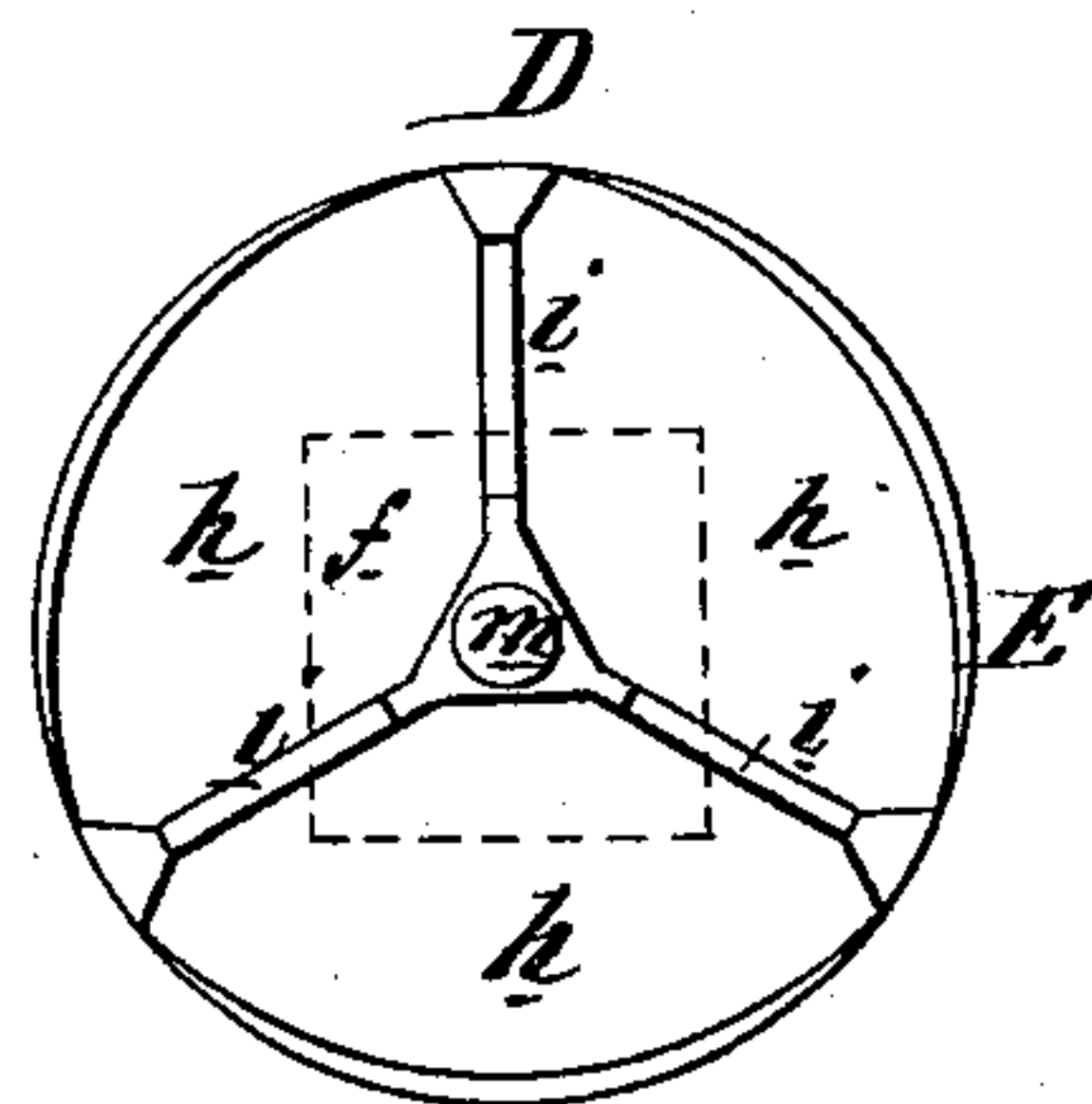
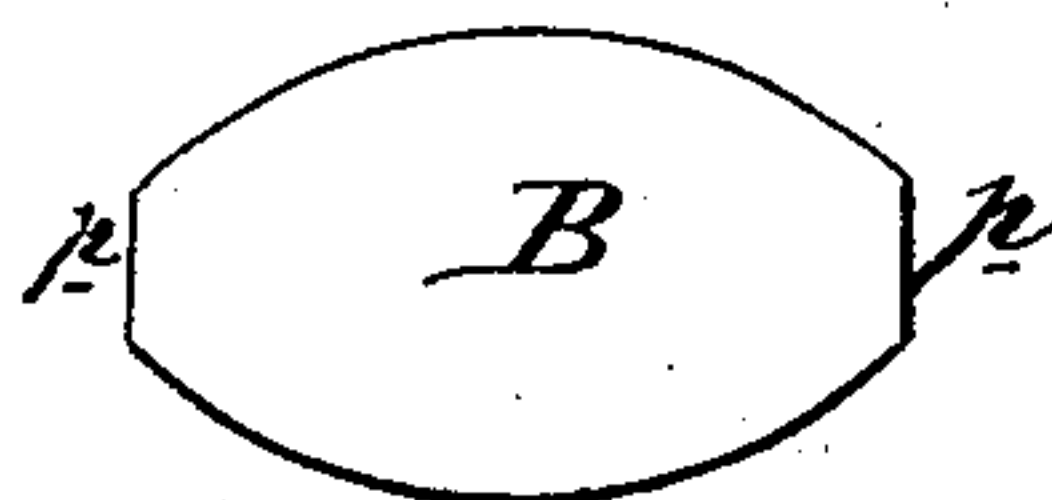


Fig. 7.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

CHRISTIAN H. SCHEERMESSE, OF McKEESPORT, PENNSYLVANIA.

## TUBE-DRAWING MANDREL.

SPECIFICATION forming part of Letters Patent No. 246,346, dated August 30, 1881.

Application filed November 27, 1880. (Model.)

*To all whom it may concern:*

Be it known that I, CHRISTIAN H. SCHEERMESSE, of McKeesport, in the county of Allegheny and State of Pennsylvania, have invented a new and Improved Mandrel for the Manufacture of Tubes and Pipes, of which the following is a specification.

The object of this invention is to provide a mandrel for forming lap-welded tubes that will not stick in the tubes and will permit their quicker and easier drawing and cause their better welding.

Figures 1 and 2 represent side elevations of an improved mandrel having two oval or elliptical sockets and balls. Fig. 3 is a vertical sectional elevation on line *x x*, Fig. 2. Fig. 4 is a side elevation of a mandrel having three oval or elliptical sockets. Fig. 5 is a side elevation of a mandrel having three oval or elliptical sockets, showing the conical top of mandrel lifted for the insertion or removal of the balls. Fig. 6 is a plan of the three-socketed mandrel on line *y y*, Fig. 5. Fig. 7 is an elevation of an obtuse-pointed ball.

Similar letters of reference indicate corresponding parts.

In the drawings, A represents a mandrel provided on opposite sides with two oval or elliptical sockets, *a a*, that may centrally connect with each other, as shown at *b*, Fig. 3, and that have their bottoms depressed or sunken, as shown at *c*, and their upper portions flaring outward and upward, as shown at *d*, in order to easily admit and hold in proper position the oval or elliptical balls or rollers B, that are placed in said sockets *a a* at right angles to the long axis of the mandrel A; and said balls or rollers B are held in place by means of a spring-pin, C, that is passed transversely through the head of said mandrel A, just above the balls or rollers B, and in contact therewith, said balls B being readily removed on withdrawal of the pin C.

In the bottom of the mandrel A is a square socket, *f*, for the attachment of the usual handle or rod.

In Figs. 4, 5, 6 is shown a mandrel, D, provided with three lateral sockets, *h h*, formed at equal distances apart, and designed to contain corresponding oval or elliptical balls or rollers B. Said sockets *h h* are cut away or com-

municate with each other as shown at *i i*, for the purpose of admitting a larger ball or roller B than could otherwise be introduced in them, and they are depressed or recessed, as shown at *k*, to correspond with the shape of the rollers or balls B. In this case the balls B are not introduced into their respective sockets from the front, as shown in Figs. 1, 2, 3, and therefore the said sockets *h h* are not made flaring. This mandrel D is constructed with a lower cylindrical portion, E, and an upper conical portion, E', the former being provided with a central vertical pin, *m*, that extends through a corresponding bore, *n*, in the part E', the division-line between the two parts E E' being centrally through the sockets *h h*. The balls B being put in place in the sockets *h h*, the upper part, E', is set upon the pin *m*, and secured in place by screwing the nut *o* on the top of the said pin *m*. This mandrel D is also provided with the usual handle-socket, *f*.

In Fig. 7 is shown a ball or roller, B, with its ends made obtuse, as shown at *p*, instead of pointed, as shown in Fig. 2. For using this roller the mandrel-socket will be formed with corresponding obtuse ends.

In drawing tubes a mandrel, A D, is held within the tube at the "bite" of the rolls, so that the balls or rollers B, instead of the smooth face of the mandrel, as usual, shall sustain the pressure of the rolls, and thereby permit the tubes to be more easily and quickly drawn, and by the use of these balls or rollers the internal pressure upon the tubes is a rolling instead of a drawing pressure, as is usual, and thereby the weld is made more secure.

The number of sockets and balls or rollers in a mandrel will usually correspond with the number of rolls used in drawing the tubes.

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

The combination, with the mandrel A, provided with lateral sockets *a a*, and rollers B, of the pin C, substantially as herein shown and described, whereby said balls are held in place.

CHRISTIAN HEINRICH SCHEERMESSE.

Witnesses:

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