C. BESOZZI.

PROCESS FOR MANUFACTURING ARTILLERY BUSHES.

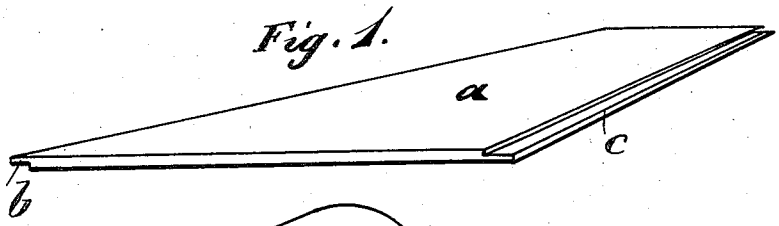
APPLICATION FILED AUG. 17, 1915.

1,200,803.

Patented Oct. 10, 1916.

2 SHEETS—SHEET 1.

Fig. 1.



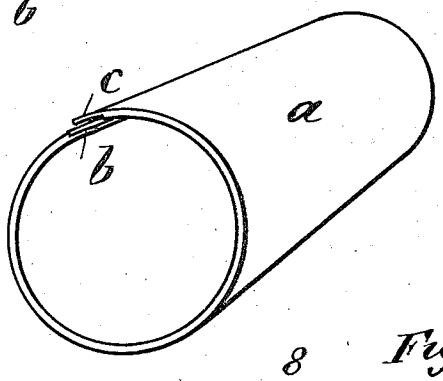


Fig. 2.

Fig. 4.

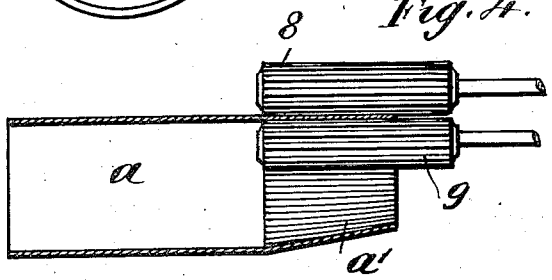


Fig. 5.

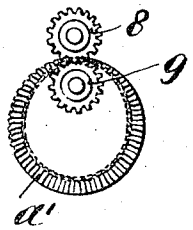
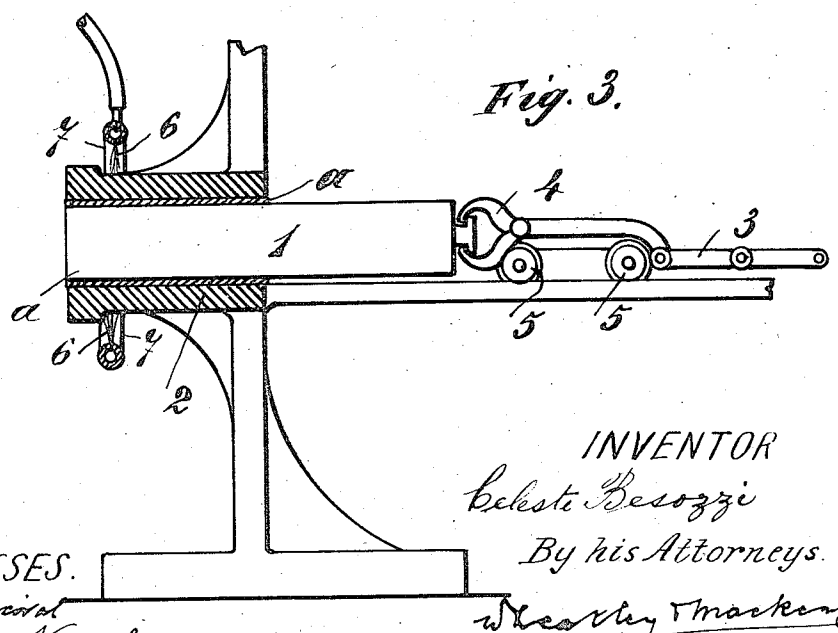


Fig. 3.



INVENTOR

Celesti Besozzi

By his Attorneys.

Wesley Mackenzie

WITNESSES.

Samuel Percival

Peregrine Varnals.

C. BESOZZI.

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APPLICATION FILED AUG. 17, 1915.

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2 SHEETS—SHEET 2.

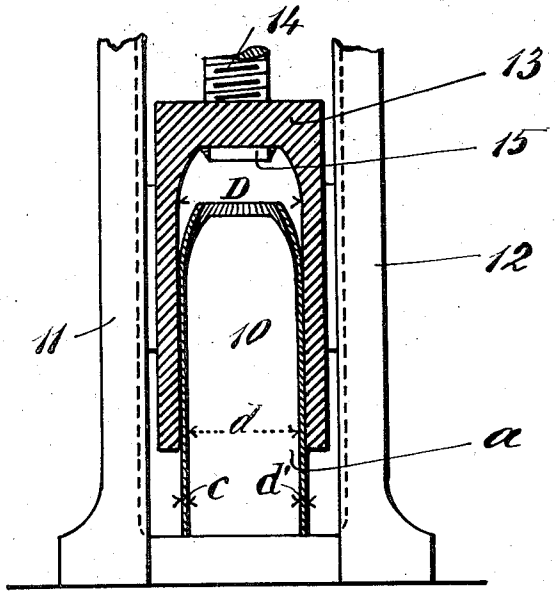
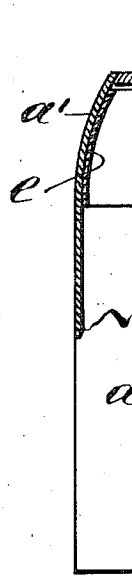


Fig. 6.

Fig. 7.



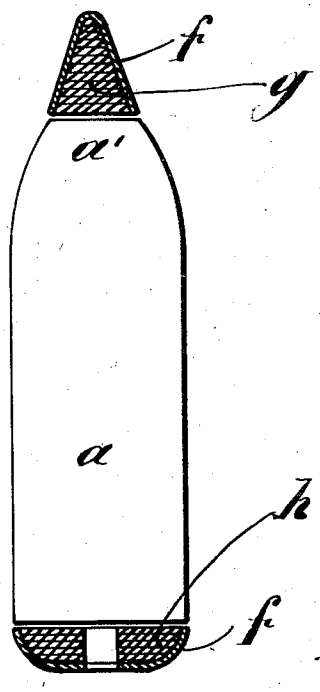


Fig. 8.

WITNESSES

Samuel Percival

Peregrine Varnals.

INVENTOR

Celeste Besozzi

By his Attorneys

Wheatley & Mackenzie.

UNITED STATES PATENT OFFICE.

CELESTE BESOZZI, OF MILAN, ITALY.

PROCESS FOR MANUFACTURING ARTILLERY-BUSHES.

1,200,803. Specification of Letters Patent. Patented Oct. 10, 1916.

Application filed August 17, 1915. Serial No. 45,991.

To all whom it may concern:

Be it known that I, CELESTE BESOZZI, manufacturer, subject of the Kingdom of Italy, residing at 24 Corso P. Nuova, Milan, in the region of Lombarvia, Italy, have invented certain new and useful Improvements in Processes for Manufacturing Artillery-Bushes, of which the following is a specification.

This invention relates to the manufacture of artillery bushes and has for its object to provide a new bush or case of fixed gage for explosives that shall be resistant to pressure, water proof and free from any dangerous action on the explosive contained therein.

The invention consists in first preparing a board from hemp fiber and an absorbent material such as talc or the like, cutting same into oblong rectangular blanks with the fibers arranged in the direction of the longer sides, treating the blanks in a bath containing starch, shaping them to cylindrical form and joining the edges, tapering the mouth of the cylinder, pressing and finally treating with vegetable oils, drying, polishing and varnishing.

The invention is hereinafter described with reference to the accompanying drawings in which:

Figure 1 is a perspective view of the rectangular blank, Fig. 2 is a similar view showing the cylinder formed from the blank, Fig. 3 is a sectional side elevation of a machine through which the cylinder is drawn and submitted to heat, Fig. 4 is a section of the cylinder showing corrugated rolls acting thereon to impart the required taper to the mouth thereof, Fig. 5 is an end elevation of the rolls and cylinder shown in Fig. 4, Fig. 6 is a sectional elevation of a finishing press, and Figs. 7 and 8 illustrate in section and elevation the finished bush or case.

In carrying out the invention a board made of hemp fibers and absorbing material such as plaster, chalk talc and the like is cut into rectangular sheets *a* dimensioned corresponding to the size of the bush required, Fig. 1, said rectangular sheets being then impregnated with a gelatinous preparation composed of water, starch, paraffin, turpentine and caustic potash. At the edges to be joined the sheets are then cut out or reduced in thickness as shown at *b* and *c* and an adhesive applied thereto after which the sheet is shaped in cylindrical form with the said edges overlapping as shown in Fig. 2. In order to join the overlapping edges and impart permanency to the shape, the cylinder is passed over an iron core 1 Fig. 3, the adhesive substance on the edge *b* is wetted and the other edge *c* is superposed on it by hand and the cylinder is guided on the core into a muff 2. A chain 3 connected to one end of said core, through a vise 4, draws said core and the cylinder through the muff. The chain is guided on suitable rolls 5 and driven by any suitable means. During this forming step, muff 2 is heated at its entrance end, by means of a ring of gas burners 6 connected to the gas pipe 7.

In order to give the cylinder or partly formed bush the required tapered shape at the mouth upon issuing from the muff it is acted upon by two corrugated rolls 8 9 revolving in opposite direction, as shown in Figs. 4 and 5. The bush or case is then transferred to the male former 10 Fig. 6 and the female former or die 13 slidably mounted on the vertical frame 11 12 is pressed over the bush by a screw 14. At the upper end of the former 13 there is fixed a circular knife 15 which cuts off the superfluous part of the bush.

The diameter D of the female former is greater than the diameter *d* of the male former by an amount *d'* representing the thickness of the bush. The bush is then taken off the former and a piece of paper *e* or the like is fixed at the interior of the tapered part, to reinforce same. The bush is thereupon dipped into a liquid preparation comprising vegetable oils and colophony where it is allowed to remain about five minutes, after which it is taken to a ventilated room where it is dried at the ordinary temperature for 24 hours. After this preliminary drying the bush is put into an oven heated to a temperature of 120° to 125° C. where it is left for six hours. It has now acquired the consistency and soundness of wood, and is finally polished and varnished.

The mentioned process in so far as applicable is also used for preparing the coatings *f* of the nose and base shields *g h* that form a complete arrangement for explosives.

Claim:

A process for manufacturing a bush for

explosives, consisting in first preparing a board from hemp fiber and an absorbent material, cutting the board into an oblong rectangular blank with the fibers arranged in the direction of the longer sides, treating the blank in a bath containing starch, shaping the blank to cylindrical form, joining the edges of the cylinder, tapering the mouth of the cylinder, pressing and finally treating with vegetable oils, drying, polishing and varnishing.

In testimony whereof I affix my signature in the presence of two witnesses.

CELESTE BESOZZI.

Witnesses:
GIOV. GIACOMO GUARNIERI,
LYLE ROBB.