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B. A. STEVENS.

APPARATUS FOR PLACING INSERTIONS IN RUBBER ARTICLES.

(Application filed June 11, 1902.)

(No Model.)

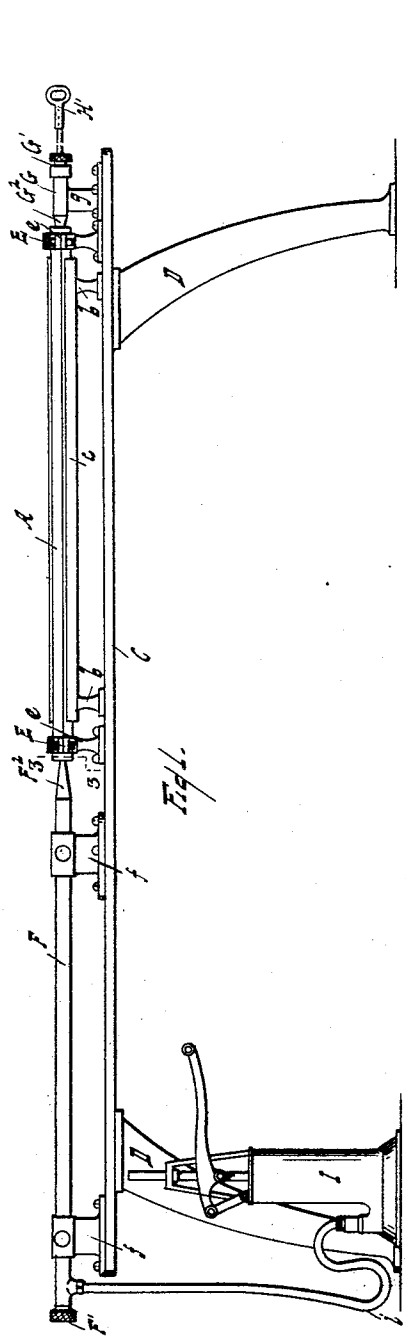


Fig. 1.

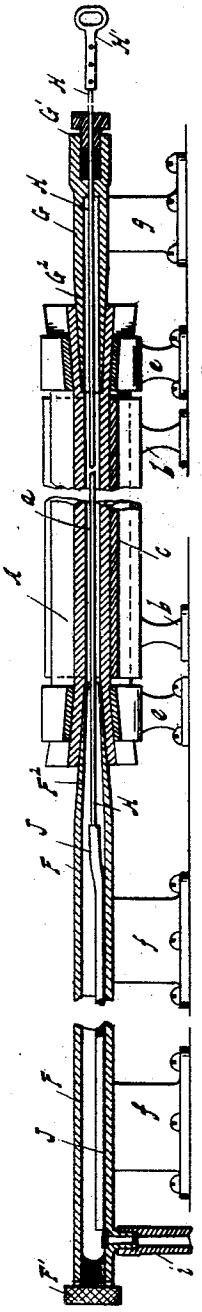


Fig. 2.

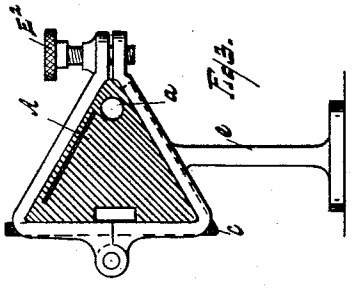


Fig. 3.

WITNESSES

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APPARATUS FOR PLACING INSERTIONS IN RUBBER ARTICLES.

SPECIFICATION forming part of Letters Patent No. 710,817, dated October 7, 1902.

Application filed June 11, 1902. Serial No. 111,118. (No model.)

To all whom it may concern:

Be it known that I, BENJAMIN A. STEVENS, a citizen of the United States, residing at Toledo, county of Lucas, State of Ohio, have invented a certain new and useful Improvement in Apparatus for Placing Insertions in Rubber Articles; and I declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to apparatus for placing insertions in rubber articles; and the object of my improvements is to provide means by which a strip or core may be readily inserted in an aperture formed in rubber.

In billiard-cushions and in some other articles made in whole or in part of rubber it is often desirable to form such articles with apertures in them and to insert more or less tightly fitting cores into said apertures. This has hitherto been found difficult or impracticable because of the adhesive nature of the material.

Referring to the accompanying drawings, Figure 1 is a side elevation of an apparatus embodying my invention. Fig. 2 is an elevation of the same on a larger scale and partly in section, part being broken away to economize room. Fig. 3 is a section on the line 3 3 of Fig. 1.

A is a section of rubber billiard-cushion, which is usually made in pieces nine (9) feet long.

a is a cylindrical aperture formed through the section A near the edge against which the balls impinge when the cushion is upon the table.

C is a bench or table-top supported upon legs D D.

b b are standards upon the bench C.

c is a support upon the standard *b b*. The billiard-cushion section A is laid upon the support *c* and is supported thereby.

e e are standards rising from the bench C and supporting clamps E E, by which the ends of the section A are fastened.

F is a tube supported on standards *f f* upon the bench C in line with the aperture *a* in the section A. One end of the tube F is reduced in size, forming the conical extension F^2.

F′ is a plug by which the unreduced end of the tube F may be opened or closed.

i is a piece of rubber hose communicating with the interior of the tube F.

I is an air-pump adapted to force air through the hose *i* into the tube F. The tube F is a little longer than the section A.

G is a second tube secured at the upper end of a standard *g*, rising from the bench C. The tube G has a conical end G^2 entirely similar to F^2.

G′ is a gland or stuffing-box adapted to close the unreduced end of the tube G. Said tube is located in line with the aperture *a* and at the opposite end of the section A to that at which the tube F is located.

J is the core or insertion to be placed in the aperture *a*.

H is a wire passing through the stuffing-box G′ and tube G and provided at its end with the handle H′. The wire H may be made of sufficient length to pass through the section A and tube F.

The method of adjusting the above-described apparatus and its operation are as follows: The section A is laid upon the support *c* and its end secured by clamps E by means of the thumb-screws E^2. The end of the wire H is secured to one end of the core J, and the core is drawn into the tube F by means of said wire, and the end of said tube is closed by the plug F′. The tubes F and G are then forced toward each other, forcing their conical ends tightly into the ends of the aperture *a*. Air is then forced into the tube F, and consequently into the aperture *a*, by means of the pump I until it has reached a pressure of perhaps sixty pounds. This expands the aperture *a*, and the core J may be then drawn freely into it by drawing upon the wire H by means of the handle H′ or otherwise. The core is drawn through until both ends protrude from the ends of the aperture. The tubes F and G are then withdrawn, when the material of the section A contracts and embraces the core tightly.

What I claim is—

1. In an apparatus for the purpose of placing cores, or insertions in apertures in rub-

ber articles, a vessel adapted to contain the core, and to close the end of said aperture while communicating therewith, means for forcing a fluid-pressure into said tube, and means for moving said core into said aperture while under pressure.

2. In an apparatus for the purpose of placing cores, or insertions in apertures through rubber articles, a vessel adapted to contain the core, and to close one end of said aperture while communicating therewith, a vessel adapted to close the other end of said aperture while communicating therewith, a piece adapted to pass tight through the second vessel and to be secured to the end of the core at its interior end.

In testimony whereof I sign this specification in the presence of two witnesses.

BENJAMIN A. STEVENS.

Witnesses:

GEO. P. KIRBY,

J. K. HAMILTON.