

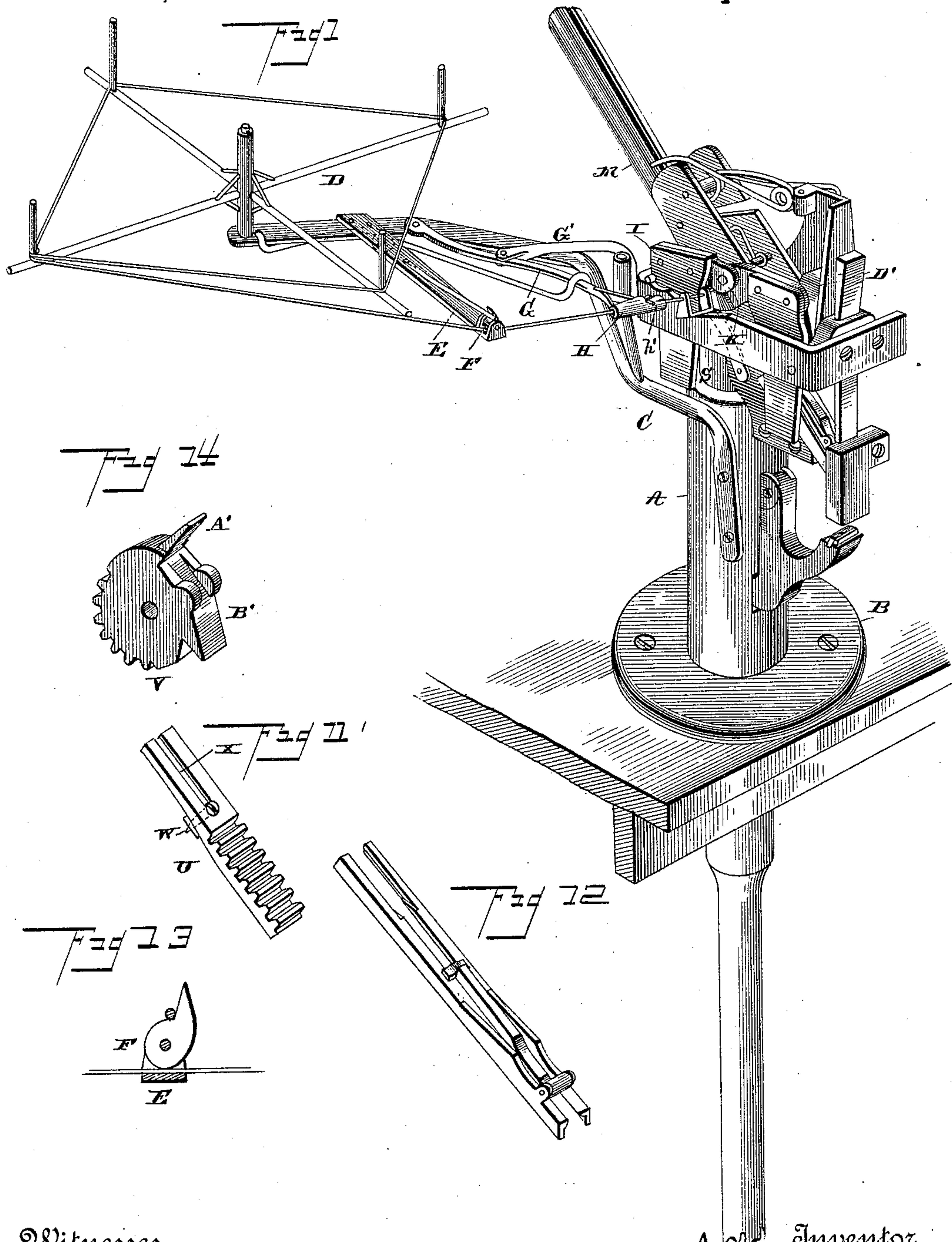
(No Model.)

3 Sheets—Sheet 1.

D. J. BUSHORR.  
BUTTON SETTING MACHINE.

No. 435,993.

Patented Sept. 9, 1890.



Witnesses

John Smilie  
G. L. Tucker

By his Attorney

Inventor  
D. J. Bushorr  
H. E. Emis

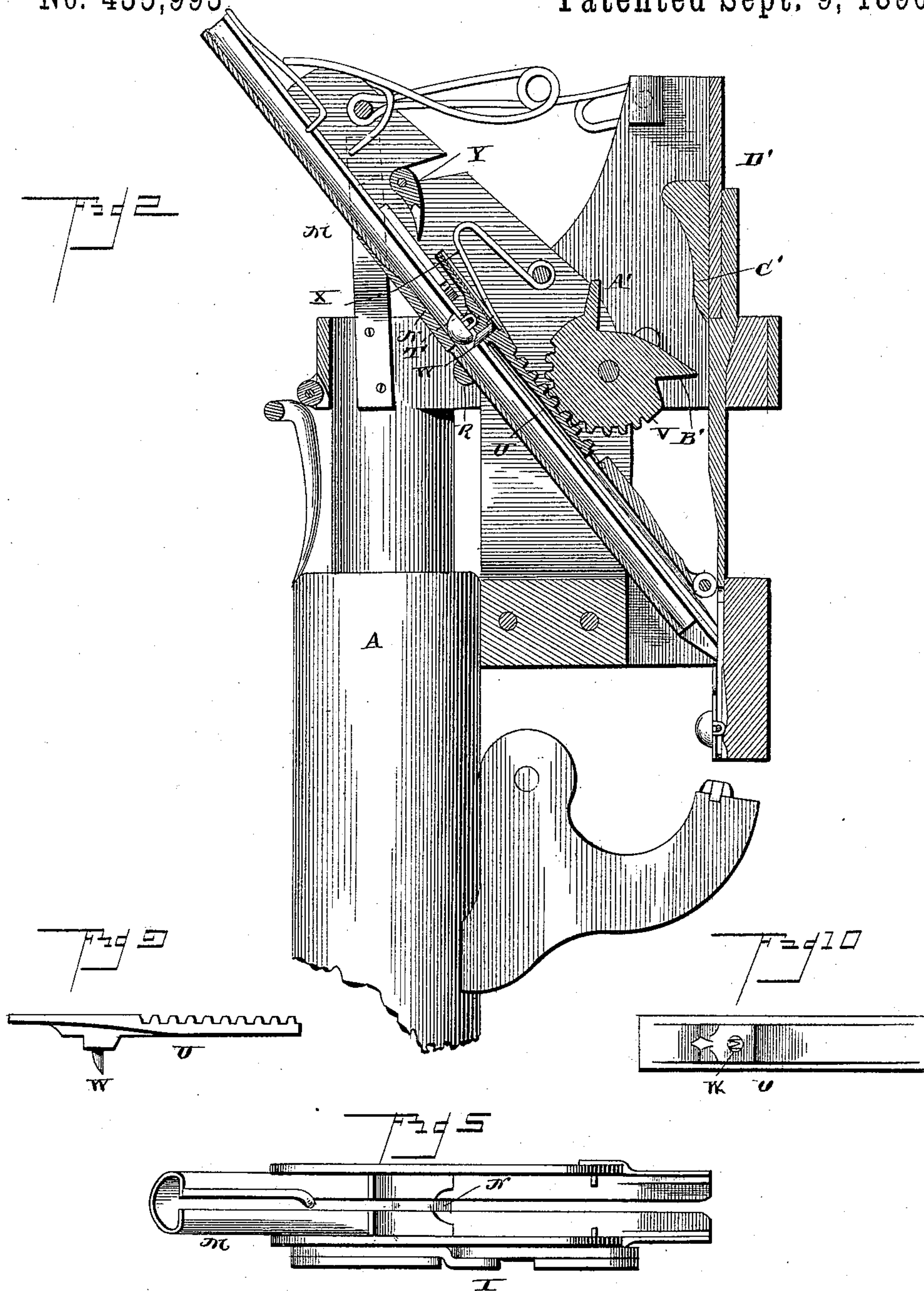
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*John Amie*  
*G. Lee Foster*

By his Attorney

Inventor  
*D. J. Bushorr*  
*H. F. Amie*



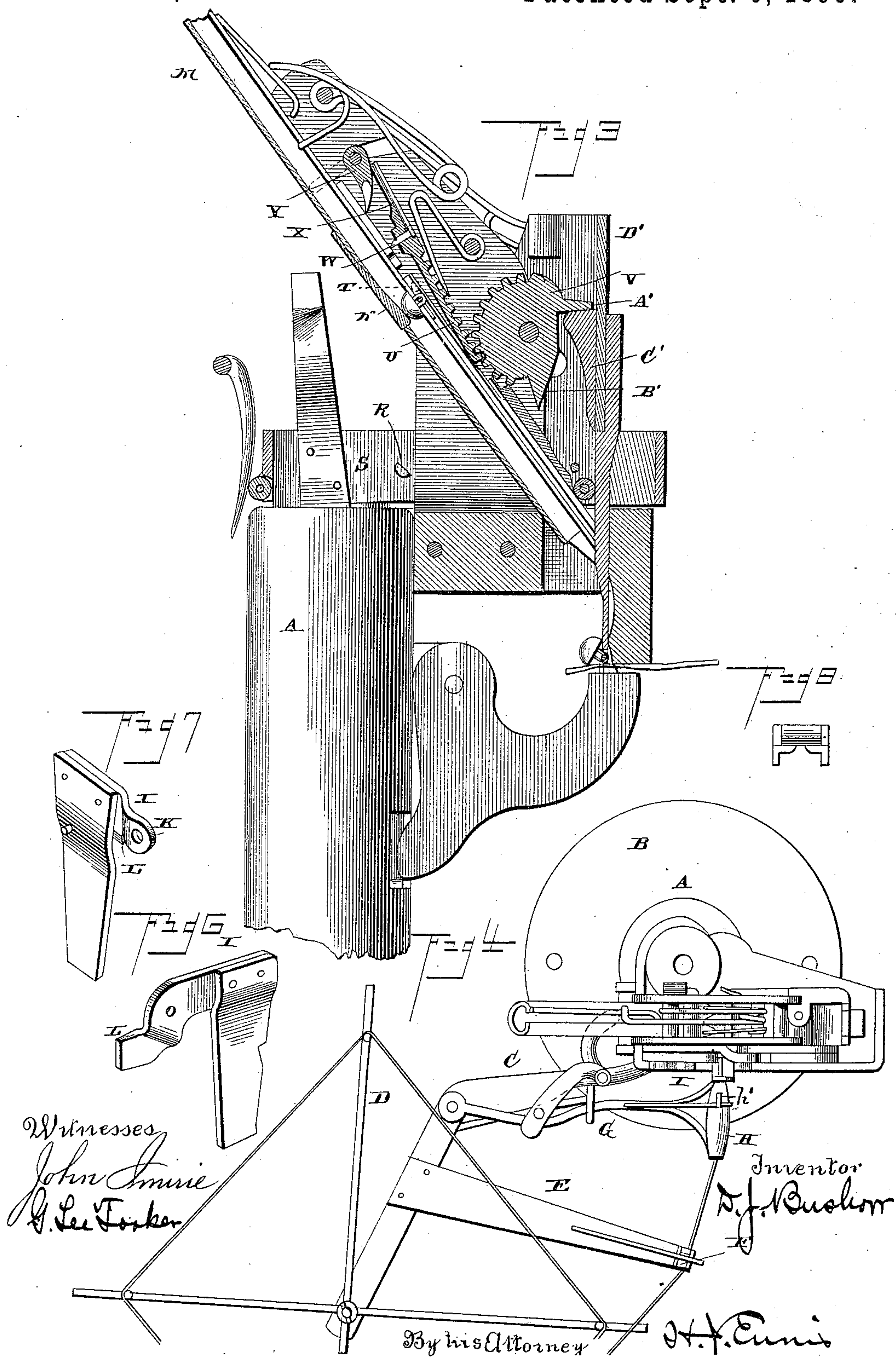
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# UNITED STATES PATENT OFFICE.

DORRICK J. BUSHORR, OF LINCOLN, KANSAS.

## BUTTON-SETTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 435,993, dated September 9, 1890.

Application filed June 27, 1890. Serial No. 356,925. (No model.)

*To all whom it may concern:*

Be it known that I, DORRICK J. BUSHORR, a citizen of the United States, residing at Lincoln, in the county of Lincoln and State of Kansas, have invented certain new and useful Improvements in Button-Threaders and Staple-Formers for Fastening Buttons on Shoes; and I do 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 appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to certain improvements in that class of machines by means of which buttons are supplied with staples and the staples inserted and fastened to the article to which the buttons are to be secured; and it has for its objects to provide for automatically cutting the wire from which the staples are formed so as to present pointed inserting ends to the same; to provide an improved former for bending the wire after being inserted through the shank or eye of the button, and to provide for simultaneously forming the staple of one button and fastening a preceding button in the fabric or article to which it is to be attached, as more fully hereinafter set forth, and particularly pointed out in the claims.

The above-mentioned objects I attain by the means represented in the accompanying drawings, in which—

Figure 1 represents a perspective view of a machine embodying my invention; Fig. 2, a vertical sectional view thereof, showing the wire from which the staple is formed passed through the eye or shank of the button. Fig. 3 represents a similar view showing the staple formed and one of the buttons in position to be secured to a fabric or article. Fig. 4 represents a top or plan view of the machine complete. Fig. 5 represents a detached view of the button-chute. Fig. 6 represents a detached perspective view of one of the cutting jaws or shears. Fig. 7 represents a similar view of the corresponding jaw. Fig. 8 represents a detached front view of the reciprocating bar, by means of which the staples are inserted and fastened in the material to which

the button is to be attached. Fig. 9 represents a detached view in side elevation of the staple-former. Fig. 10 represents a face view of the same. Fig. 11 represents a detached perspective view of the staple-former. Fig. 12 represents a perspective view of the button-fastening device. Fig. 13 represents a detached view of a cam under which the staple-forming wire passes; and Fig. 14 represents a detached view of a stop-cam, by means of which the article is held while the button is being applied.

Referring to the drawings, the letter A indicates a hollow upright standard having a base B, by means of which it can be secured to a bench or other support, and C indicates a bracket extended from the upper part of said standard and provided with a reel D, which carries the wire for the formation of the staples to be inserted through the eyes or shanks of the buttons.

The letter E indicates an arm secured to the bracket C, having at its extremity a cam F, under which passes the staple-wire to the staple cutting and forming devices. The object of said cam is to serve as a check on the staple-wire, permitting the said wire to pass through and onto the staple-former, and checking it against moving backward by the action of the arm G in its motion backward and causing it to be fed with more wire. To the said bracket is also yieldingly secured an arm G, which is provided with a guide-sleeve H for the staple-wire, the delivery end of said tube being just opposite the wire-entrance to the button-chute and in front of the shears by which the wire is cut. The sleeve is provided with a slot *h'*, in which sets a steel ball and the free end of a spring *i*, which permits the wire to feed forward, but wedges against it on a reverse movement, thus forcing the wire and feeding it to the staple-former.

The letter I indicates the shears, which consist of two levers fulcrumed at K and having oppositely-beveled cutting-edges L, so as to give the staple-wires when cut pointed extremities, which will readily pass through the material to which the button is to be fastened.

The letter M indicates the button-chute, which is similar to the button-chutes in this



class of machines, but which is slotted at its lower end and its under side and provided with a spring bearing-arm N, which presses the descending button normally upward so as to keep the shank or eye of the button in the longitudinal slot of the button-chute and better facilitating the threading of same with the staple-wire. The button-chute is formed with a longitudinal slot at its upper edge, through which the eyes or shanks of the buttons pass on their downward movement, and with a slide-guide, Fig. 12, which guides the staples, with buttons attached, on their way to the staple-fastening devices at the forward end of the apparatus.

The letter U indicates the staple-former, which is one of the essential features of my invention. The said former consists of a flat bar having cogs on one side and a projection on the opposite side, the projection constituting the staple-forming die and the cogs serving, in connection with a rotating cog-segment V, to give motion to the former.

The former is mounted and adapted to move in the button-tube, and has extending through the staple-forming projection a pin W, which is pressed normally downward by means of a spring X and releases the button with staple attached at the proper time.

At the rear of the staple-former is located a cam Y, which serves at the proper time in the upward movement of the staple-former to disengage said former from the staple, thus permitting said former, with its pin W, to pass upward and onward till the pin W shall have passed and engaged above the eye or shank of the button with the staple attached, so that in the former's downward motion by means of the pin W the button, with the staple attached, is liberated and moves downward to the button-attaching devices.

The segment-cog disk is provided on its periphery with two laterally-extending arms A' B', the lower one B' of which is beveled and adapted to engage the beveled edge of a projection C' on the vertically-reciprocating bar D' of the machine, so as to elevate it when the machine is working in one direction and depress it when working in the opposite direction to fasten the staples of the button in the fabric or material to which the buttons are to be attached, as shown in Fig. 3 of the drawings.

The reciprocating bar D' is set in guide-ways at the front of the apparatus and is arranged to move vertically thereon in front of the lower end of the inclined button-chute, so as to receive a button on its descent, carry it below, and fasten it to the article to which it is to be attached. The lower end of said bar is bifurcated and provided with an intermediate slot, the arms of the bifurcated portion operating to engage the ends of the staple-wires in the eyes or shanks of the buttons and fasten the buttons to the fabric or article to which they are to be attached.

The operation of my invention is as follows: Upon reciprocating the upright shaft carrying the button-distributing devices the staple-former is first carried backward, in which movement it bends the wire (cut and threaded through the eye of an adjusted button) in a staple form, passing on the cam at the rear, and being disengaged from said staple by the cam, which leaves a passage open for the descent of the button and staple attached to the lower end of the button and staple-chute, ready to be engaged by the vertically-reciprocating bar, and fastened on the material to which it is to be attached. In the reverse action of the staple-former it moves downward and off of the cam, dropping into its normal position on the button and staple chute in time to catch the eye or shank of a liberated button holding the same in position.

It will be observed that the staple-wire passes from the reel on its way to the staple forming and cutting devices, between the flanges of an arm E and beneath an oscillating cam F, held in a biting position by a spring wire. Thence the wire passes through a sleeve H, also provided with a gripping device, which sleeve is secured to a vibrating arm G, actuated synchronously with the movements of other parts of the machine to feed at proper times the wire forward after a staple-blank is cut. As the said sleeve is moved backward, it slides freely on the wire, and cam F prevents the wire from being moved backward, or buckled. It will also be observed that after a forward movement of the wire, as described, that portion of it which is designed to form a staple and which is cut from the main wire by the shears crosses the path of the pin W in front of shoulders on the slotted tube M, so that as this pin descends it bends the piece of wire about itself and forms the staple.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination, in a machine for setting the staples in the shanks or eyes of buttons, of a button-chute and a staple-former consisting of a flat bar having cogs on its upper side and a staple-forming projection on its lower side, and mechanism whereby said former may be reciprocated to bend the staples around the shank or eye of the button, substantially as specified.

2. The combination, in a machine for setting the staples in the shanks or eyes of buttons, of a button-chute and a staple-former, the latter being provided with cogs on its upper surface and a staple-forming projection below, and an intergearing cogged segment whereby the former may be reciprocated to form the staples in the button shanks or eyes, substantially as specified.

3. The combination, in a machine for setting and fastening the staples in buttons and



securing said buttons to an article or fabric,  
of the button-chute, the staple-former with  
its pin W, the cogged segment having lateral  
arms, and the fastening-bar operating said  
5 arms, whereby the buttons are stapled and  
fastened to the article or fabric, substantially  
as specified.

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

DORRICK J. BUSHORR.

Witnesses:

MILTON H. CULLUM,  
J. D. SHERRICK.