

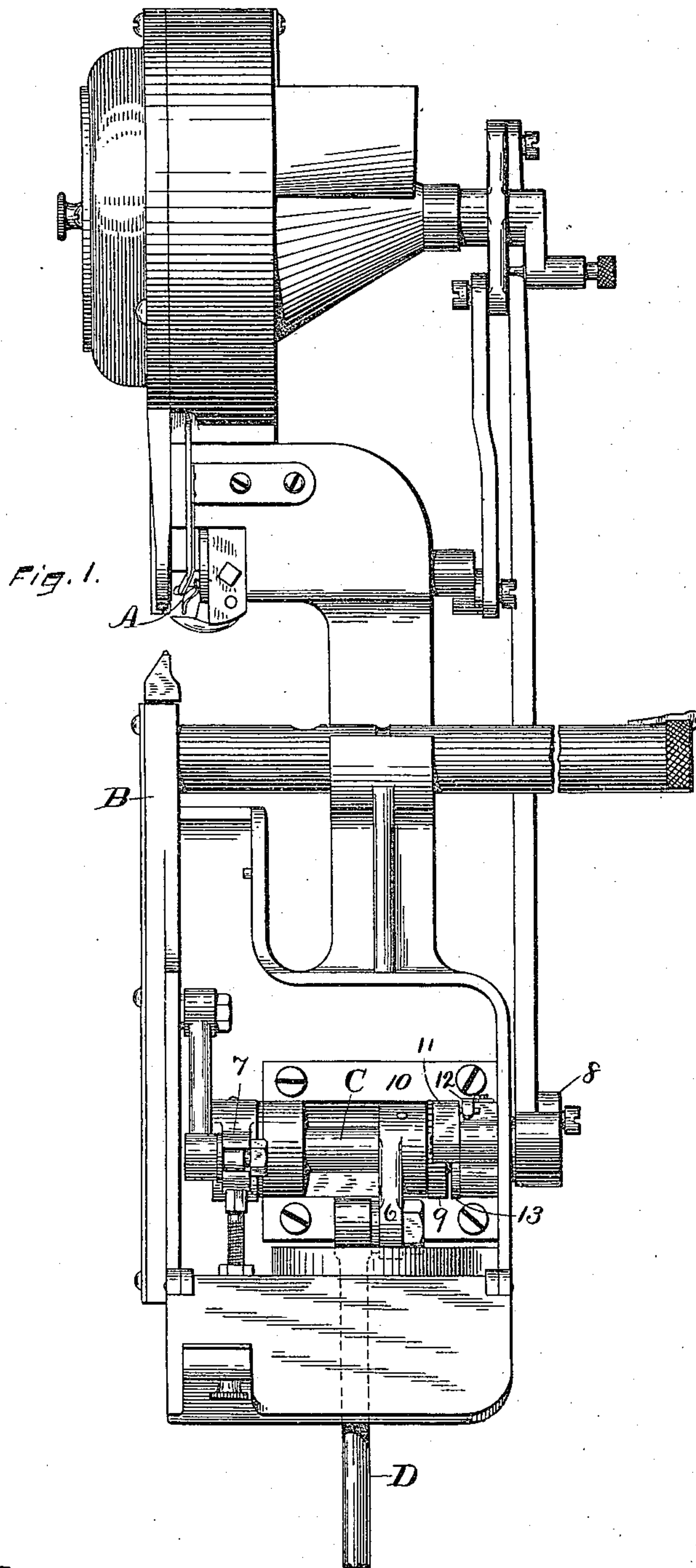
(No Model.)

2 Sheets—Sheet 1.

G. M. GRISWOLD.  
BUTTON SETTING MACHINE.

No. 440,893.

Patented Nov. 18, 1890.



WITNESSES.  
John Edwards Jr.  
J. N. Camp.

INVENTOR,  
George M. Griswold.  
By James Shepard. Atty.

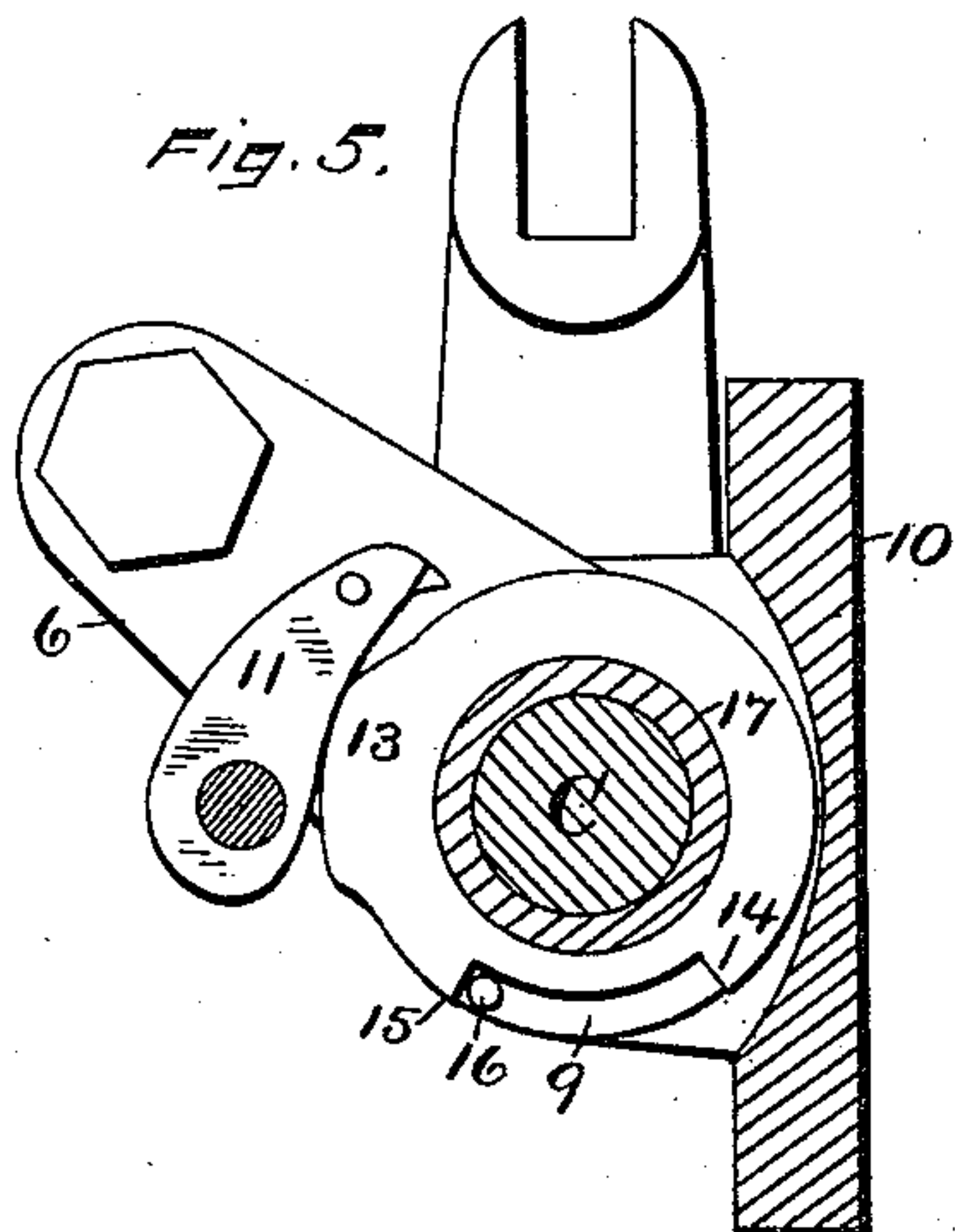
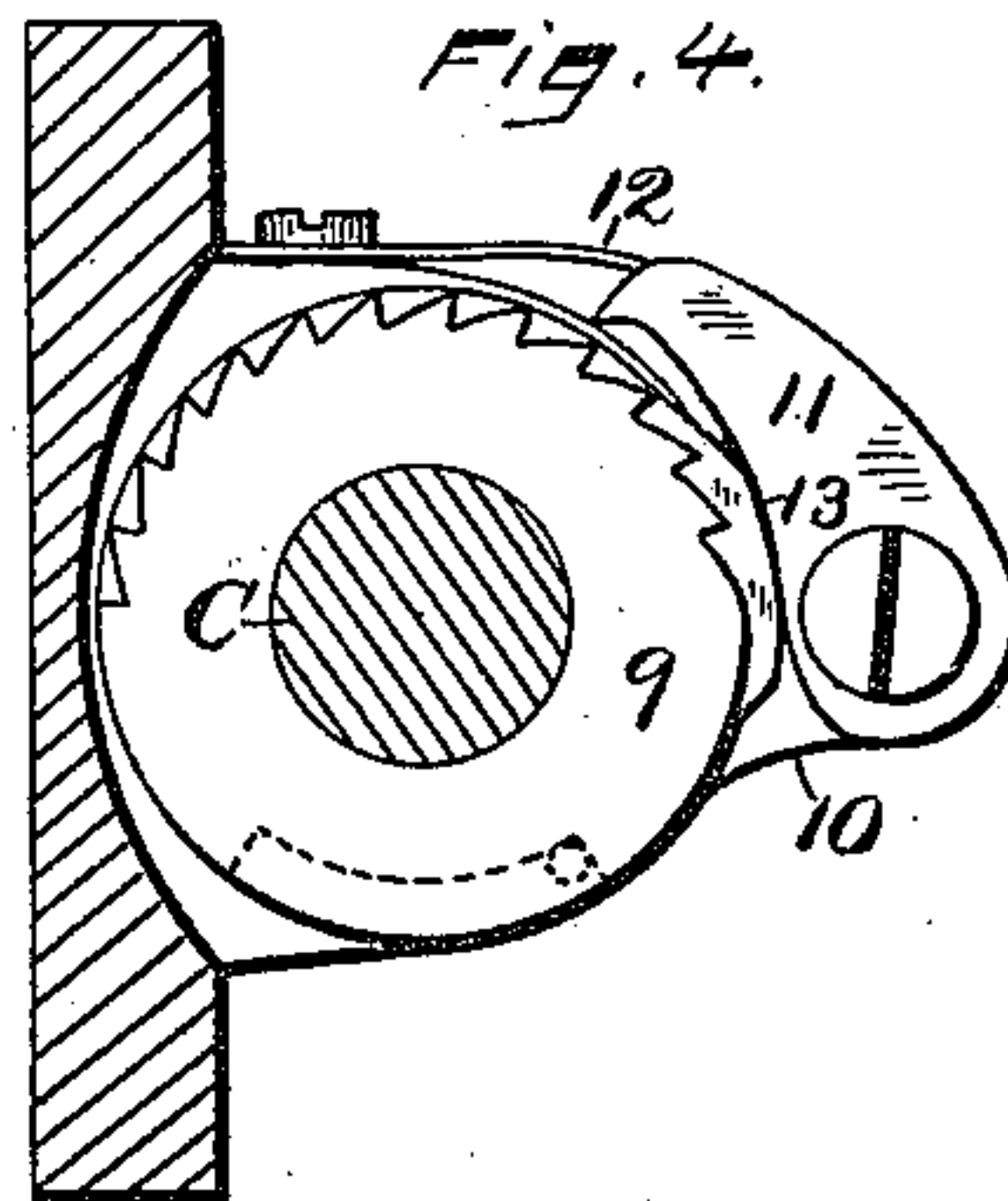
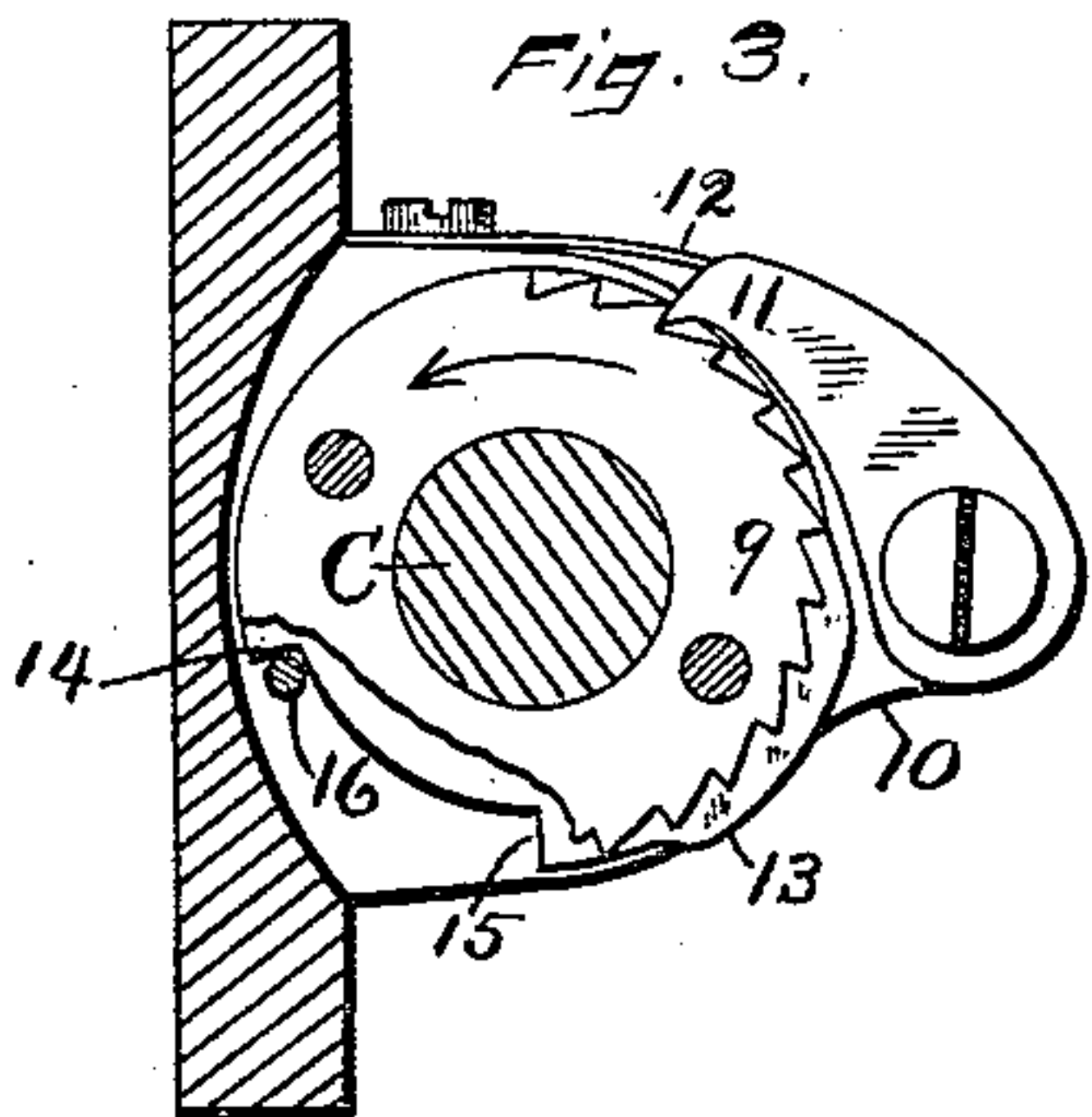
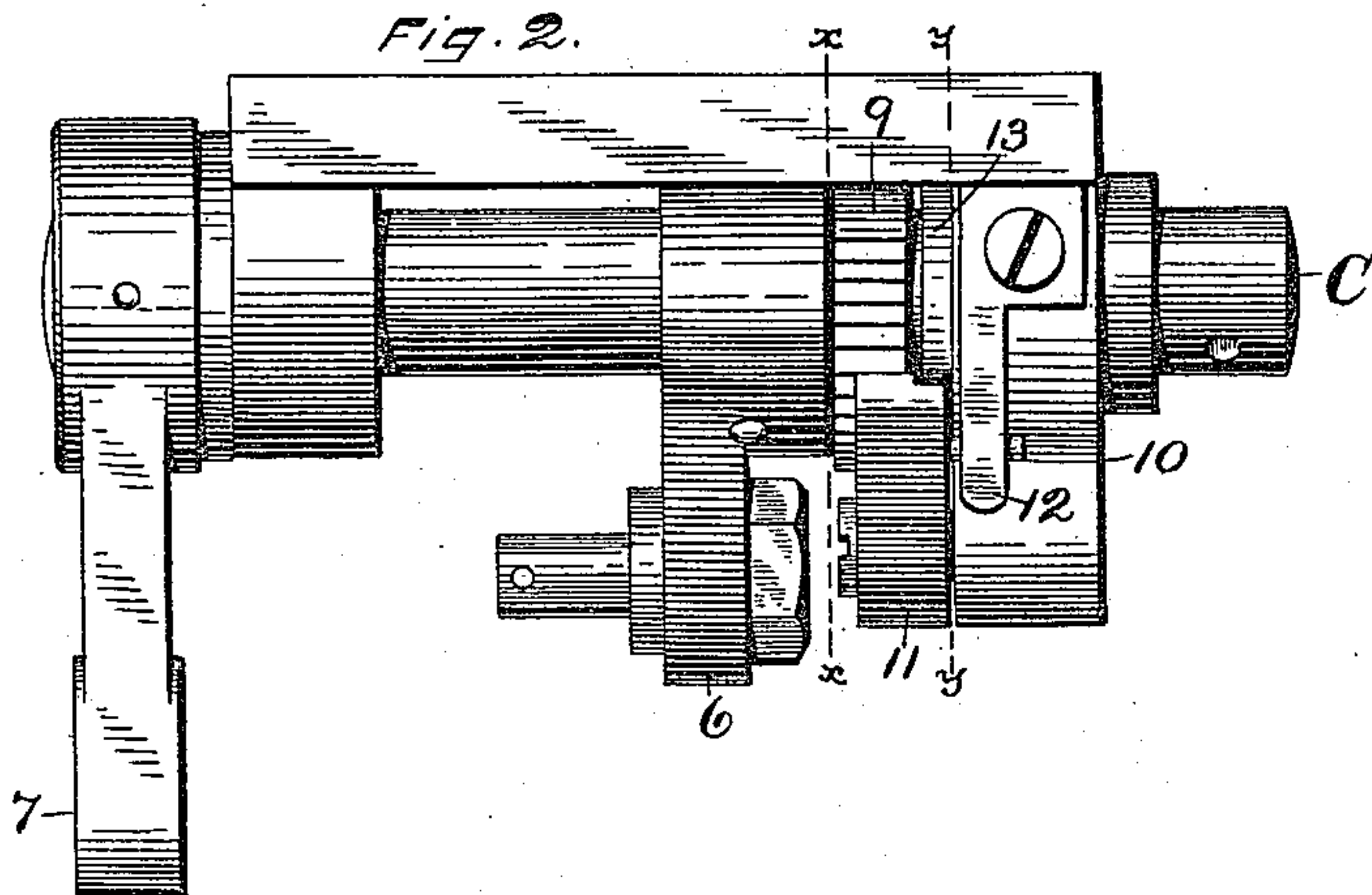
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John Edwards W.  
J. H. Camp.

INVENTOR.  
George M. Griswold.  
By James Shepard.  
Att'y.



# UNITED STATES PATENT OFFICE.

GEORGE M. GRISWOLD, OF NEW HAVEN, ASSIGNOR TO THE AMERICAN  
BUTTON FASTENER COMPANY, OF NEW BRITAIN, CONNECTICUT.

## BUTTON-SETTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 440,893, dated November 18, 1890.

Application filed August 19, 1889. Serial No. 321,199. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE M. GRISWOLD, a citizen of the United States, residing at New Haven, in the county of New Haven and State of Connecticut, have invented certain new and useful Improvements in Button-Setting Machines, of which the following is a specification.

My invention relates to button-setting machines or other machines that are driven by an oscillating crank-shaft; and the object of my improvement is to provide means whereby the shaft when once started must be carried substantially the full length of its stroke before its motion can be reversed.

In the accompanying drawings, Figure 1 is a side elevation of my machine, the door of the case being opened so as to show the inclosed driving mechanism. Fig. 2 is a detached plan view of the crank-shaft and connected parts. Fig. 3 is a transverse section thereof on line *x x* of Fig. 2, with the parts in their normal position. Fig. 4 is a like view of the same, with the parts at the opposite end of their movement; and Fig. 5 is a transverse section on the line *y y*, looking toward the left, the parts being in the same position as in Fig. 4.

The upper part of the machine contains a button feeding and holding mechanism A, and the lower part contains a button-fastener-driving mechanism B, the machine being designed for setting buttons by the aid of metallic fasteners. These mechanisms in the drawings are the same as shown and described in another application of even date herewith; but it is not essential to this application that any particular button-setting mechanisms be employed, and any known mechanisms for such purpose may be substituted for those herein shown, provided they are operated through the medium of an oscillating crank-shaft.

In machines for setting buttons it is important, when the machine is started, that it shall be carried far enough in its movement to complete the operation of setting a button before it is allowed to make its return movement; but the operators, through inadvertence or other causes, oftentimes let the machine

make its return-stroke prematurely, and thereby get more than one fastener in front of the driver at one time, so as to interfere with the proper operation of the machine. Other machines that have a reciprocating movement imparted by a rock-shaft, or what I have termed an "oscillating crank-shaft," are liable to the same action, and my improvement in the driving mechanism, although primarily designed for a button-setting machine, is applicable to foot-presses and analogous machines in general.

C designates a crank-shaft having a crank-arm 6, to which is attached the driving-rod D, Fig. 1, for operating said crank-arm to impart an oscillating movement to said crank-shaft. Said crank-shaft also carries a crank-arm 7, that moves the button-fastener-driving mechanism B, and a crank-arm 8, Fig. 1, that moves the button feeding and holding mechanism A. The crank-arms are of course rigidly secured to the crank-shaft, and secured to the side of the hub of the crank-arm 6 there is a ratchet 9, which therefore necessarily moves with the crank-shaft. Upon a part of the stationary frame 10 there is pivoted a pawl or dog 11, that is forced toward the ratchet by means of the spring 12. By the side of the ratchet 9 there is a cam 13, loosely mounted on a stationary sleeve or boss 17, Fig. 5, which is formed on or secured to a part of the frame 10. The crank-shaft passes through said sleeve and is concentric therewith. The cam is mounted on said sleeve instead of being loosely mounted directly on the shaft, in order to avoid frictional contact of shaft and cam, which would have a tendency to move said cam with said shaft. This cam 13 is provided with shoulders 14 and 15. In one side of the ratchet there is a pin or projection 16 for engaging said shoulders. The pawl not only engages the teeth of the ratchet, but it is provided with a portion on its inner face for engaging the edge of the cam.

Figs. 1, 2, and 3 show the parts in their normal position. The crank-arm 6 is first moved upwardly to drive the crank-shaft and ratchet in the direction indicated by the dart in Fig. 3. The cam 13 remains stationary until the pin



16 engages the shoulder 15, after which the cam moves with the ratchet, and its edge soon engages an inner face of the pawl and forces said pawl out of engagement with the ratchet, as shown in Figs. 4 and 5. This disengagement of the pawl takes place when the crank-arm has substantially—that is, almost—completed its stroke, and prior to that time the motion of the crank-arm cannot be reversed. The point in the movement of the crank-shaft where the disengagement of the pawl and ratchet takes place can of course be located wherever it may be desired by changing the location of the shoulders of the cam with reference to the projecting edge of said cam. After the cam engages the pawl to lift it out of the ratchet-teeth the movement of the crank-arm 6 and shaft C may be reversed and the cam will remain stationary to hold the pawl out of engagement with the ratchet to permit said reversal, until at the end of the return-stroke the cam is withdrawn from under the pawl by means of the pin 16 engag-

ing the shoulder 14 and moving the cam with the crank-shaft into their normal position. 25

I claim as my invention—

1. The combination of button feeding and holding mechanism and button-fastener-driving mechanism with the actuating oscillating crank-shaft and a ratchet, pawl, and cam for preventing a reverse motion of said shaft until after it has passed a given point, substantially as described, and for the purpose specified. 30

2. The combination of the oscillating crank-shaft C, the ratchet 9, having pin or projection 16, the dog or pawl 11, and the cam 13, loosely mounted on its axis and having shoulders for engagement with said projection, substantially as described, and for the purpose specified. 35 40

GEORGE M. GRISWOLD.

Witnesses:

C. S. COOKE,  
F. H. CAMP.