

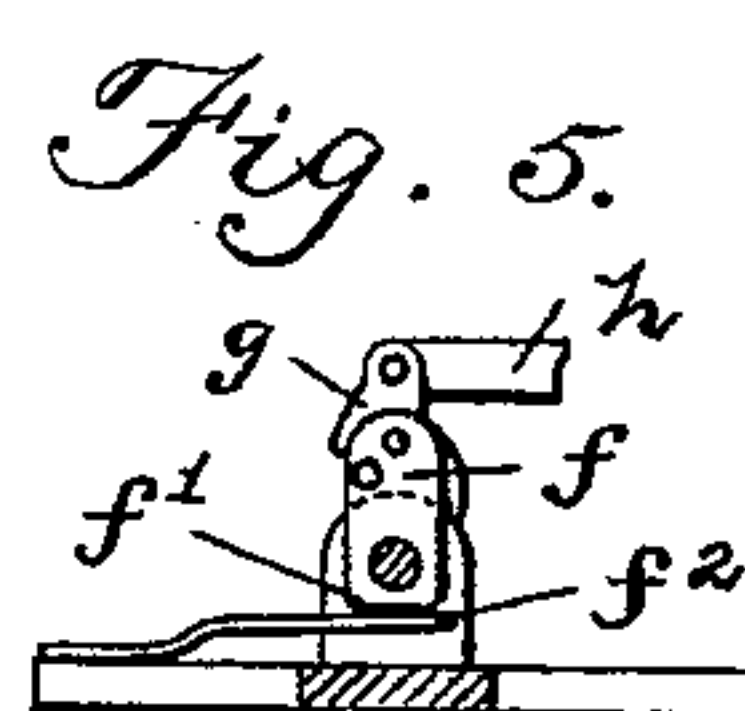
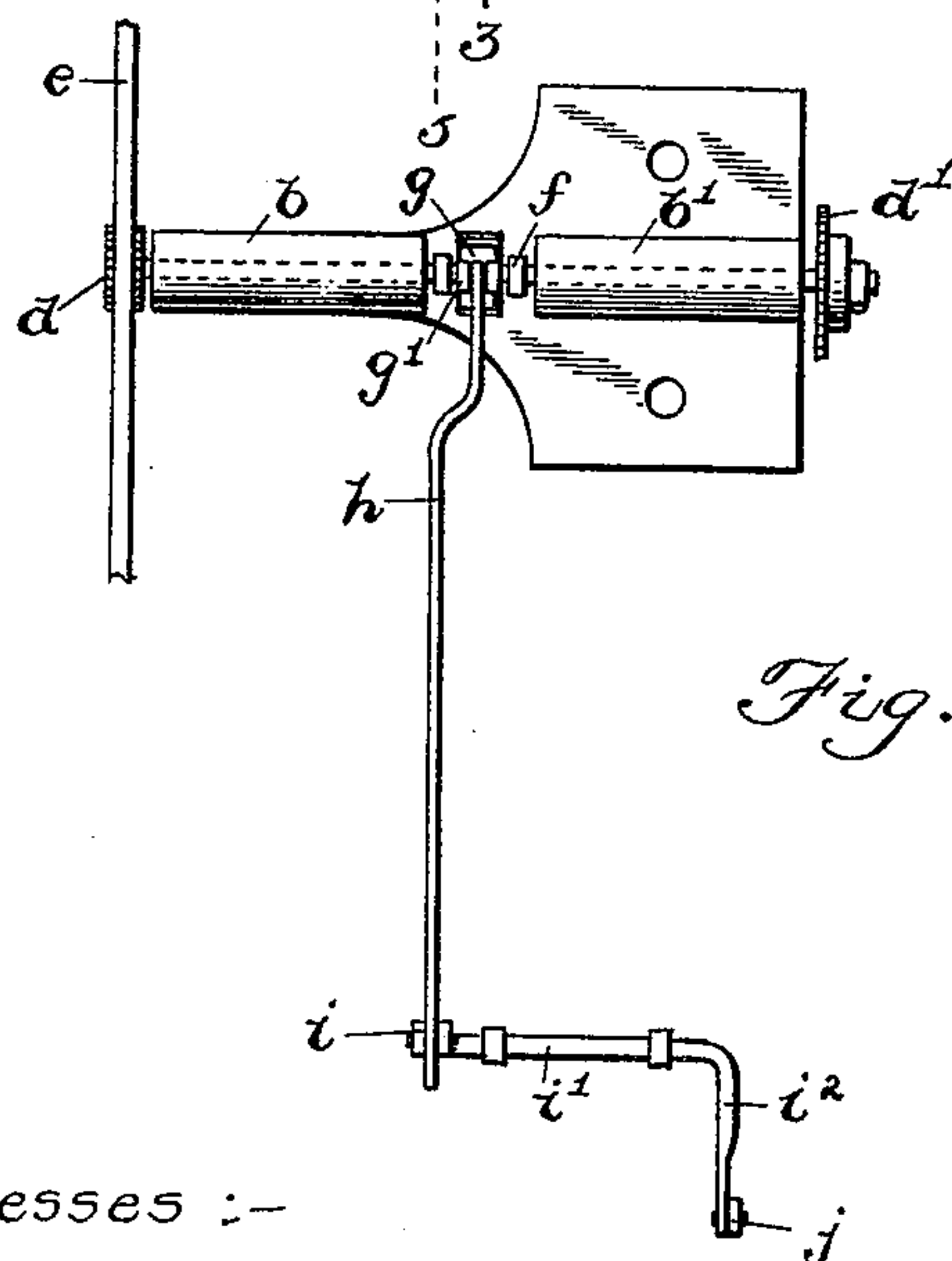
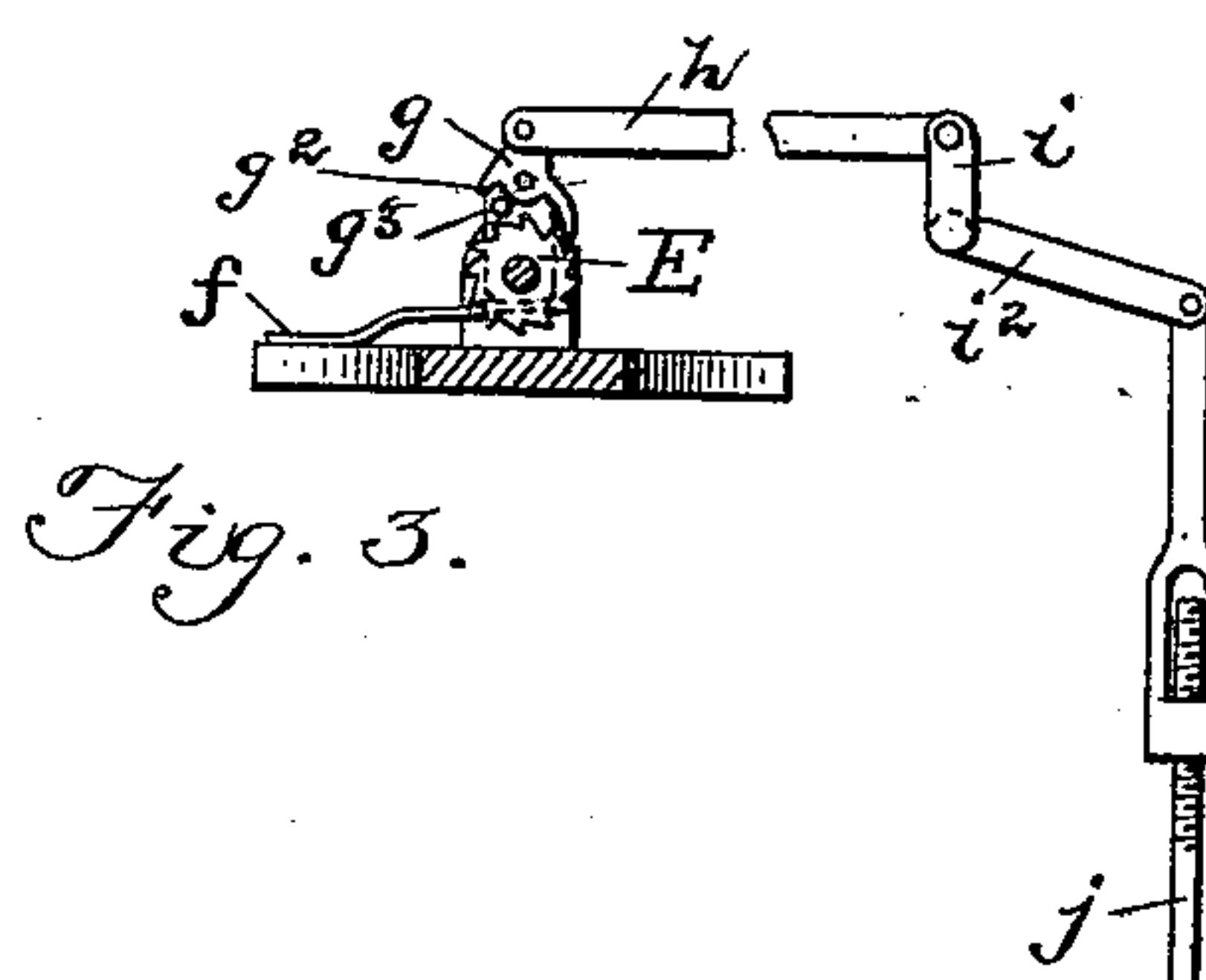
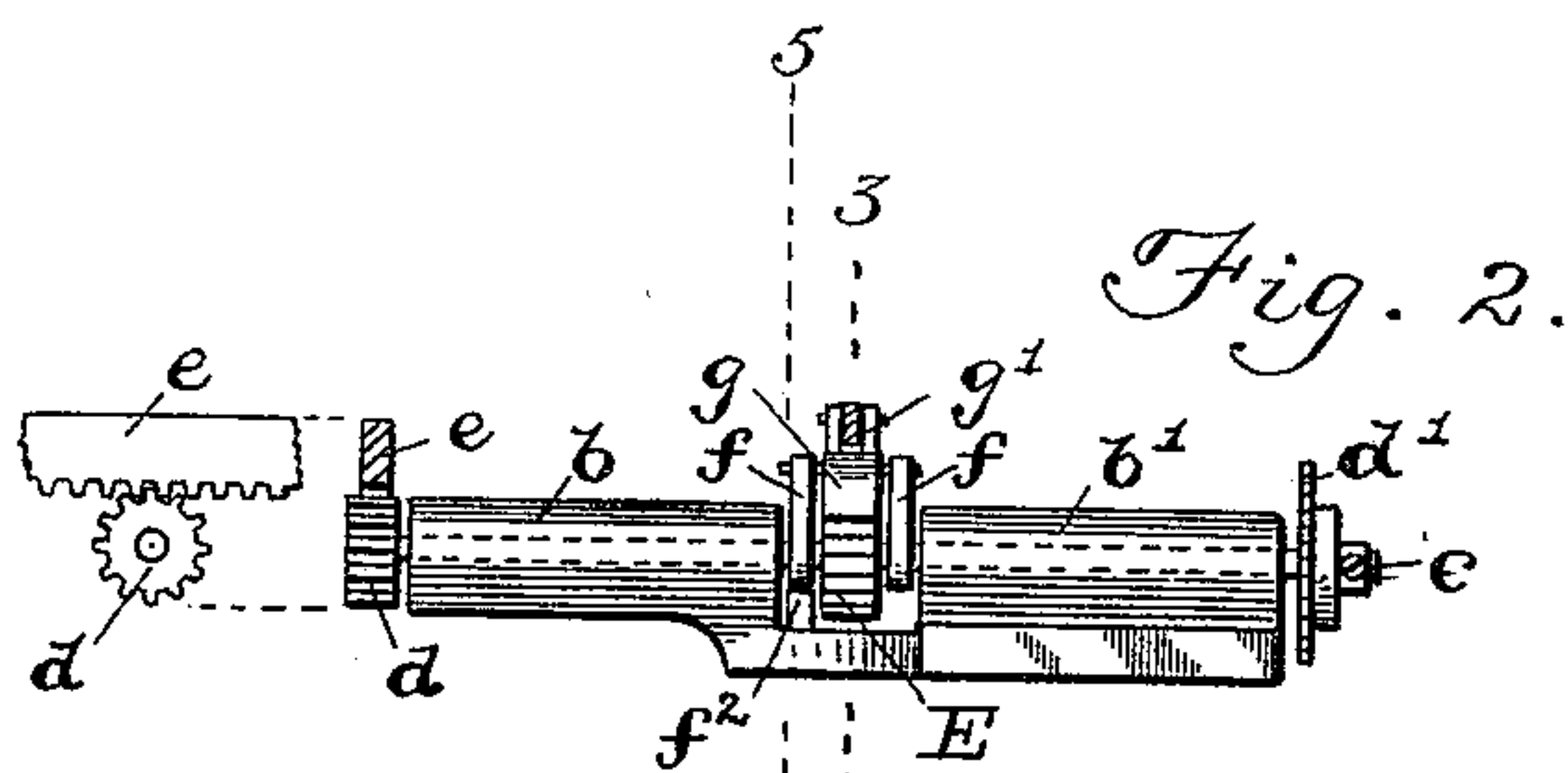
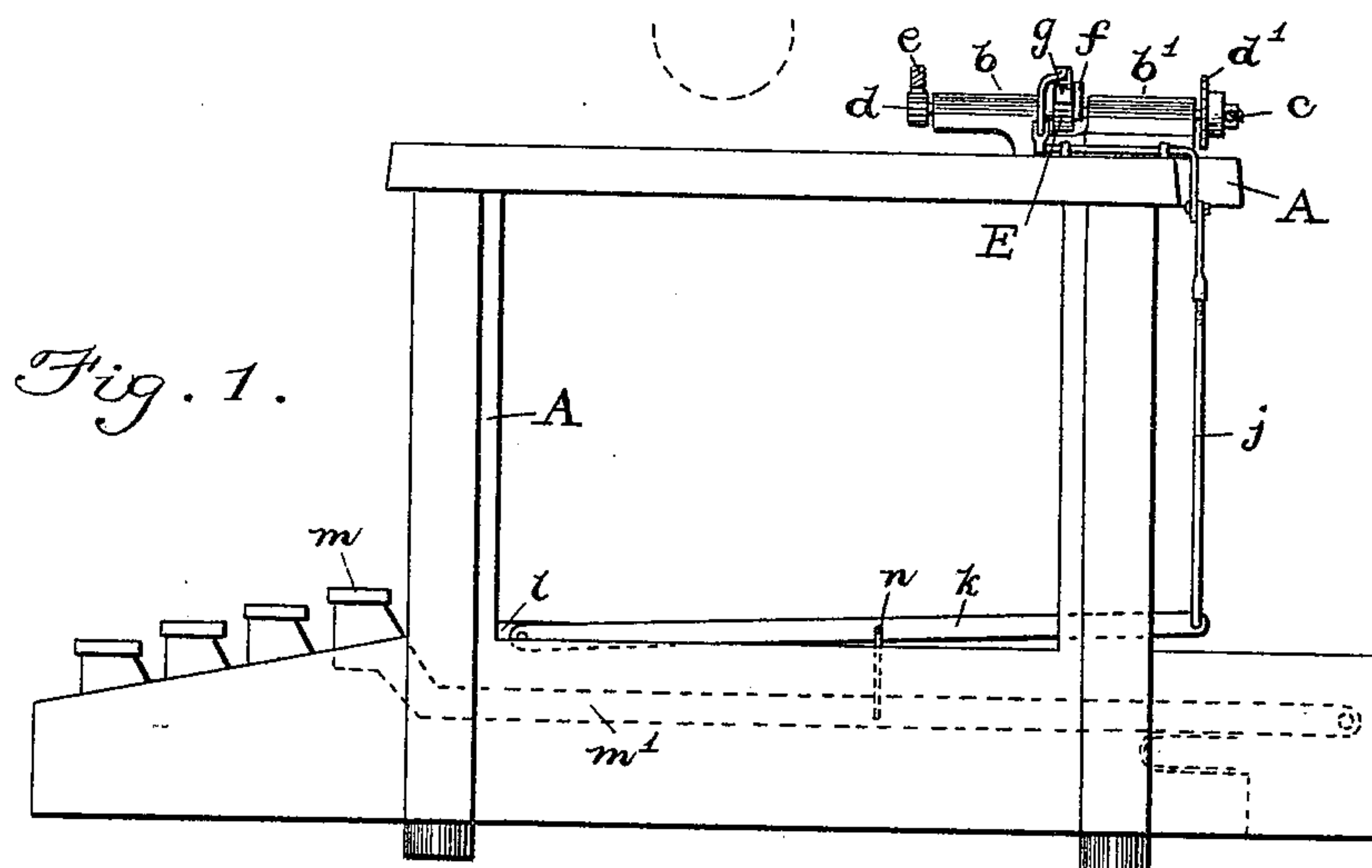
No. 636,709.

Patented Nov. 7, 1899.

E. M. BENNETT.
TYPE WRITING MACHINE.

(Application filed Aug. 4, 1898.)

(No Model.)



Witnesses :-

Lee J. Van Horn.
Charles B. Mann Jr.

Inventor :-

Emmet M. Bennett
By Chas B. Mann
Attorney.

UNITED STATES PATENT OFFICE.

EMMET M. BENNETT, OF BALTIMORE, MARYLAND, ASSIGNOR OF ONE-HALF
TO HARRY L. BEAN, OF SAME PLACE.

TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 636,709, dated November 7, 1899.

Application filed August 4, 1898. Serial No. 687,717. (No model.)

To all whom it may concern:

Be it known that I, EMMET M. BENNETT, a citizen of the United States, residing at Baltimore, in the State of Maryland, have invented certain new and useful Improvements in Type-Writing Machines, of which the following is a specification.

This invention relates to improvements in attachments for type-writing machines.

10 It consists, as hereinafter fully described, in certain mechanism used in connection with spring-actuated paper-carriages whereby the carriage may be returned or moved back step by step one space at a time or to the point
15 where the last letter or any particular letter has been printed, whereby a letter may be re-printed or another letter printed in the same space already having the impression of the type.

20 In the accompanying drawings, Figure 1 is a side elevation of the frame of a type-writing machine, showing the relative position of the improved mechanism. Fig. 2 is a view, on a larger scale, of the escapement-wheel,
25 rack, and pinion for letter-spacing, and also shows the improved mechanism for back spacing. Fig. 3 is a section on line 3 3 of Fig. 2. Fig. 4 is a plan view of the improved mechanism as it appears on a type-writing
30 machine. Fig. 5 is a cross-section on the line 5 5 of Fig. 2.

The invention is designed to be attached to any of the well-known makes of type-writing machines where spring-actuated paper-carriages are employed. It may be readily at-
35 tached to machines now in the hands of users.

In the drawings the letter A designates the frame of the machine, and $b\ b'$ bearings mounted on top of the frame. A shaft c is mounted
40 in the bearings $b\ b'$ and carries at one end a pinion d , which engages a rack e , attached to the paper-carriage, whereby the spring-actuated movement of the carriage is communicated to the shaft c through the rack and
45 pinion d . At the other end of the shaft c is an escapement-wheel d' , by means of which the step-by-step motion for the purpose of forward letter-spacing is accomplished by the operation of the ordinary space-bar and levers.

50 The parts thus far described are old and are

found on various machines now in use and do not comprise any part of my attachment.

A ratchet-wheel E is fixed on the shaft c between the two bearings $b\ b'$ and revolves with said shaft. At each side of the ratchet-wheel is an arm f , loosely mounted on the shaft
55 and free to oscillate. Said two arms carry a pawl g , which is normally out of engagement, but in operation engages the ratchet-wheel E. The pawl g at the top has two projecting ears
60 g' to receive the rod h , which is connected therewith, so as to allow of an oscillatory motion of the arms. A stop-shoulder g^2 on the pawl engages a stop-pin g^3 on the arm f . The
65 rod h at its other end is pivoted to an arm i of a rock-shaft i' , and another arm i^2 of said rock-shaft is pivoted to a vertical rod j . The vertical rod j has a screw device to permit of vertical adjustment, shortening, or lengthening of
70 the rod, so as to regulate the extent of throw of the rock-shaft. The lower end of the vertical rod j is connected to a bar k , which in turn is pivoted near one end to a projection l at the front of the machine.

An ordinary key m and key-bar m' , fulcrumed at the back of the machine, connect
75 with the said bar k by a link n . This key is the back-spacing key.

The operation is as follows: Suppose the operator in writing fails to hit a key hard
80 enough to make a good impression, but the carriage nevertheless moves along one letter-space, or for some other reason the operator desires to move the carriage back one space. Instead of removing the hands from the key-
85 board and delicately adjusting the carriage so as to move it back one space, the operator simply depresses the back-spacing key m , and thereupon the key-bar m' pulls down the bar
90 k , the vertical rod j , and rock-arm i^2 , turns the rock-shaft i' , moves back the rock-arm i and rod h , and draws the pawl g , which revolves the ratchet-wheel E, shaft c , and pinion
95 d , which finally moves the rack e and carriage back one space. The arms f have a flat or angular bottom f' , and a spring f^2 presses against this flat bottom to cause the pawl to be returned to its normal position after it has been drawn by the rod h .

I am aware that prior to my invention type- 100

writers had been patented in which provision was made for a step-by-step movement of the paper-carriage backward by repeated depressions of a key, and I do not herein claim such
5 to be my invention. My claim relates to the improved construction of parts shown by which they may be attached to old machines now in use.

Having thus described my invention, what
10 I claim is—

A back-spacing attachment for type-writing machines having a spring-actuated paper-carriage provided with a rack, *e*, and a shaft, *c*,
15 mounted in bearings on top of the machine and carrying at one end a pinion engaging said rack and at the other end an escapement-wheel, *d'*, said attachment comprising a ratchet-wheel, *E*, mounted on the said shaft

between the pinion and escapement-wheel; arms, *f*, loosely mounted on the shaft at the
20 sides of the ratchet-wheel and free to oscillate; a pawl carried by said arms and engaging the ratchet-wheel when it is desired to move the carriage back, but normally out of engagement with the ratchet-wheel; a rock-
25 shaft, *i'*, mounted on top of the machine; a rod connecting the said pawl with the rock-shaft; and means connecting between the said rock-shaft and a key, substantially as set forth.

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

EMMET M. BENNETT.

Witnesses:

CHAPIN A. FERGUSON,
CHARLES B. MANN, Jr.