No. 657,591. Patented Sept. 11, 1900.

# S. H. CROCKER.

## LETTER COPYING BOOK.

(Application filed June 12, 1899.)

(No Model.)

Fig. 1

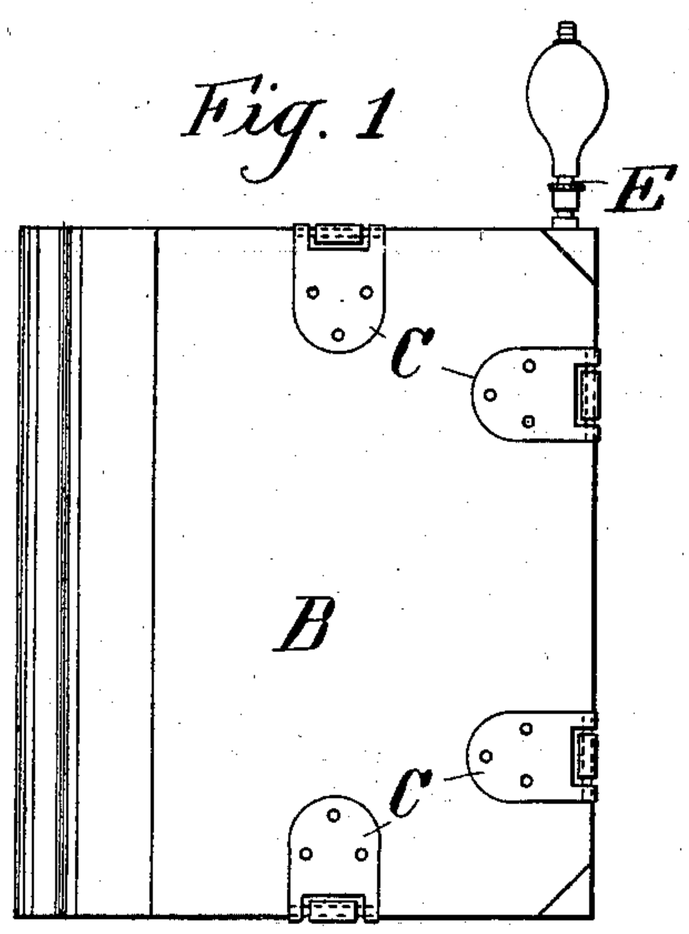



Fig. 3.

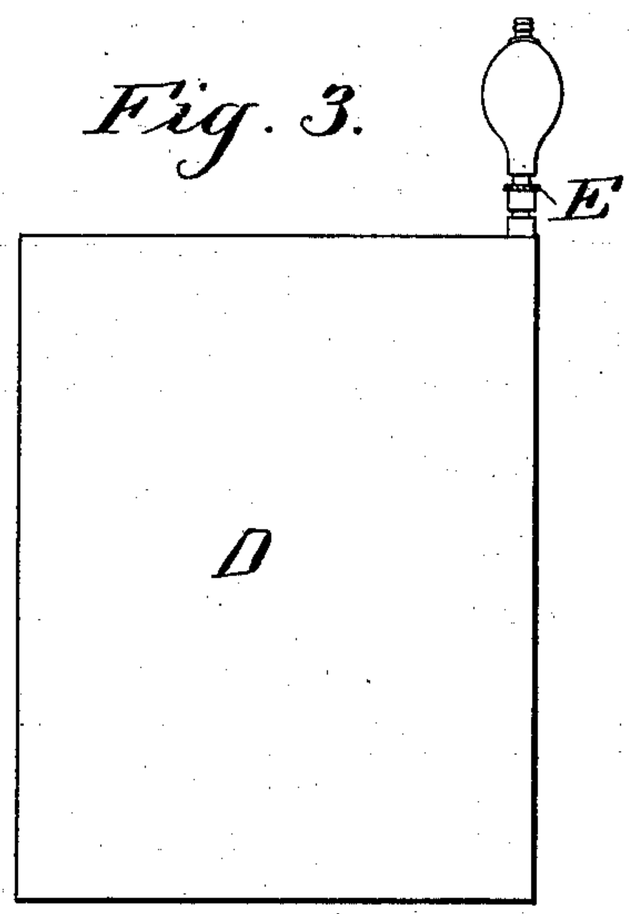



Fig. 4.

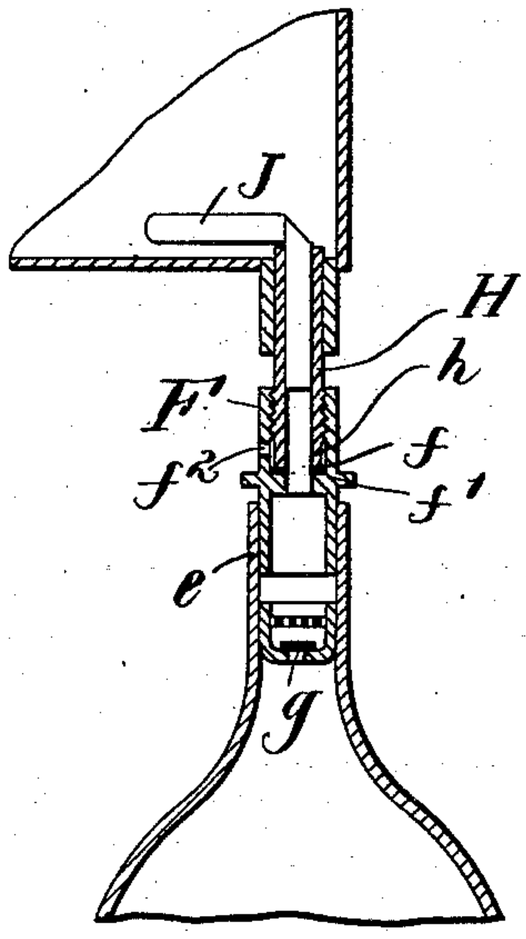
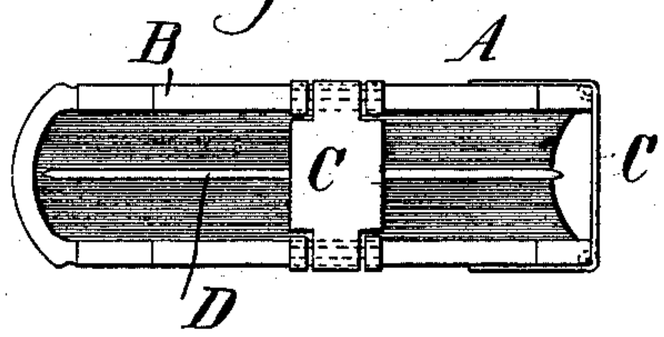



Fig. 2.

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# UNITED STATES PATENT OFFICE.

SAMUEL HY. CROCKER, OF LONDON, ENGLAND.

## LETTER-COPYING BOOK.

SPECIFICATION forming part of Letters Patent No. 657,591, dated September 11, 1900.

Application filed June 12, 1899. Serial No. 720,242. (No model.)

*To all whom it may concern:*

Be it known that I, SAMUEL HY. CROCKER, a subject of the Queen of Great Britain and Ireland, residing at 31 Furnival street, Holborn, London, England, have invented certain new and useful Improvements in Letter-Copying Books, of which the following is a specification.

This invention relates to improvements in letter-copying books which are capable each within themselves of providing the necessary pressure for copying letters, thereby dispensing with any pressure whatever from the outside of the book for copying purposes. The book is strongly bound with covers of sufficient strength to resist the applied internal pressure. Each book is provided with strong clasps, which when closed prevent the book from opening when internal pressure is applied, and this internal pressure is produced by pneumatic means through the agency of an air bag or holder being placed within the book and expanded by suitable means. An escape-valve is furnished to release the pressure when required. The importance of placing the inflating-bag within the covers of the book will be readily understood, as the pneumatic pressure then acts directly upon the copying-leaves.

In order that the invention may be more clearly understood, reference is had to the accompanying sheet of drawings, in which—

Figure 1 is a plan of a book constructed according to my invention. Fig. 2 is an end view of the book, showing the pneumatic device in position between the leaves. Fig. 3 shows the pneumatic bag detached, and Fig. 4 is a detail view of the valve through which air is supplied and allowed to escape.

The book A is formed with the stout covers B, which may be of wood or any material capable of giving the required resistance, and they are bound together, preferably, with a strong fabric secured to their outsides and afterward bound with leather in the ordinary way. At suitable intervals around the edges of the book are fixed the strong clasps C, which hold the book in closed position.

D is the air-chamber, which may consist of an ordinary pneumatic bag of rectangular form to correspond with the book and of any flexible material impervious to air. To one corner of this air-bag is fitted an inflating device E, shown as an ordinary pneumatic ball, such as is commonly used in spray-producers and known as a "bellows-valve." The inflator E is provided with inlet and outlet non-return valves of the kind well known in this class of inflator, and in Fig. 4, which is drawn to an enlarged scale, the outlet-valve is marked *g*. In this figure the inflator is shown terminating with the rubber tube *e*, in which is fitted the short tube F. This tube F is screw-threaded internally at its outer end to receive the tubular connection H, which screws into it and meets the centrally-perforated seating *f* at the inner end of the socket part *f'*. When the tube F is properly screwed up to the tubular connection H, a clear air-passage is formed from the outlet-valve of the inflator through H to the bag without any opportunity for the air to escape in other directions. The socket end *f'* of the tube F is formed with the small escape-hole $f^2$, and the end of the connection H is preferably slightly reduced in diameter at *h*, so that when the tube F is unscrewed, so as to part the end of the connection H from its seating *f*, an outlet is provided through $f^2$ to the atmosphere for the purpose of deflating the air-bag. The end of the connection H is inserted in a small rubber tube, which is securely fixed in the corner of the bag D, so as to form an air-tight joint. To render the arrangement more secure and to prevent any injury to the joint on partially unscrewing the inflator from the connection H, (in order to deflate the bag or remove the inflator,) a small metal strip J is fixed in the end of the connection and is bent at about right angles, so as to lie along the side of the bag at the corner, as shown in Fig. 4. The piece J may consist, as shown, of a thin strip of metal of about the width of the passage of the connection H and is forced into the passage, so as to bind within it, and then it is bent over after it has been inserted in the bag, so as to lie in the required position. The metal should be of a quality to permit of its being bent when inside the bag without injury to the same. The object of this strip J is to prevent any twisting of the connection H when the tube

F is being screwed off and on, and it is held in position by the pressure of the book when closed.

The process of copying is as follows: The page on which the letter is to be copied is moistened in the usual manner and covers the writing to be copied. The air-bag is placed within the book, preferably in juxtaposition to the letters to be copied, and the book is then closed and clasped. Air is then pumped into the bag until the required pressure is obtained. After a short time the air is allowed to escape by unscrewing the tube F, attached to the inflator, from the connection H sufficiently to allow the air to pass to the small hole $f^2$, which affords an outlet for the compressed air and allows the bag to collapse rapidly. On its collapse the book can be unclasped and opened, when the letter will be copied. The pressure so provided is evenly distributed over the whole copying-surface, and as all the copying parts are included within the covers of the book a copying device is provided which requires no pressure external to the book. The inflating-valve can be unscrewed and removed and an ordinary-sized copying-book remains, which is as easy of transport as the present copying-book, which requires a mechanical press to be of effective service.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. A letter-copying book the covers of which are provided with clasps by which they can be held in closed position, an air-bag placed within the book and means for producing air-pressure in the bag, substantially as and for the purposes specified.

2. In an internal inflatable air-bag for use in a clasped letter-copying book an inflator having a tubular connecting-piece, non-return valves and a deflating device, the metal piece J fixed in the tubular connecting-piece attached to the air-bag, said piece J being bent around in the bag and operating when the book is closed to prevent the tubular connecting-piece turning around when the screwed socket is being attached or detached therefrom, substantially as and for the purposes specified.

In witness whereof I have sworn and set my hand in the presence of two witnesses.

SAM. HY. CROCKER.

In presence of—

ALBERT EDWARD ALLEN,

CHRISTOPHER EVANS ACRES.