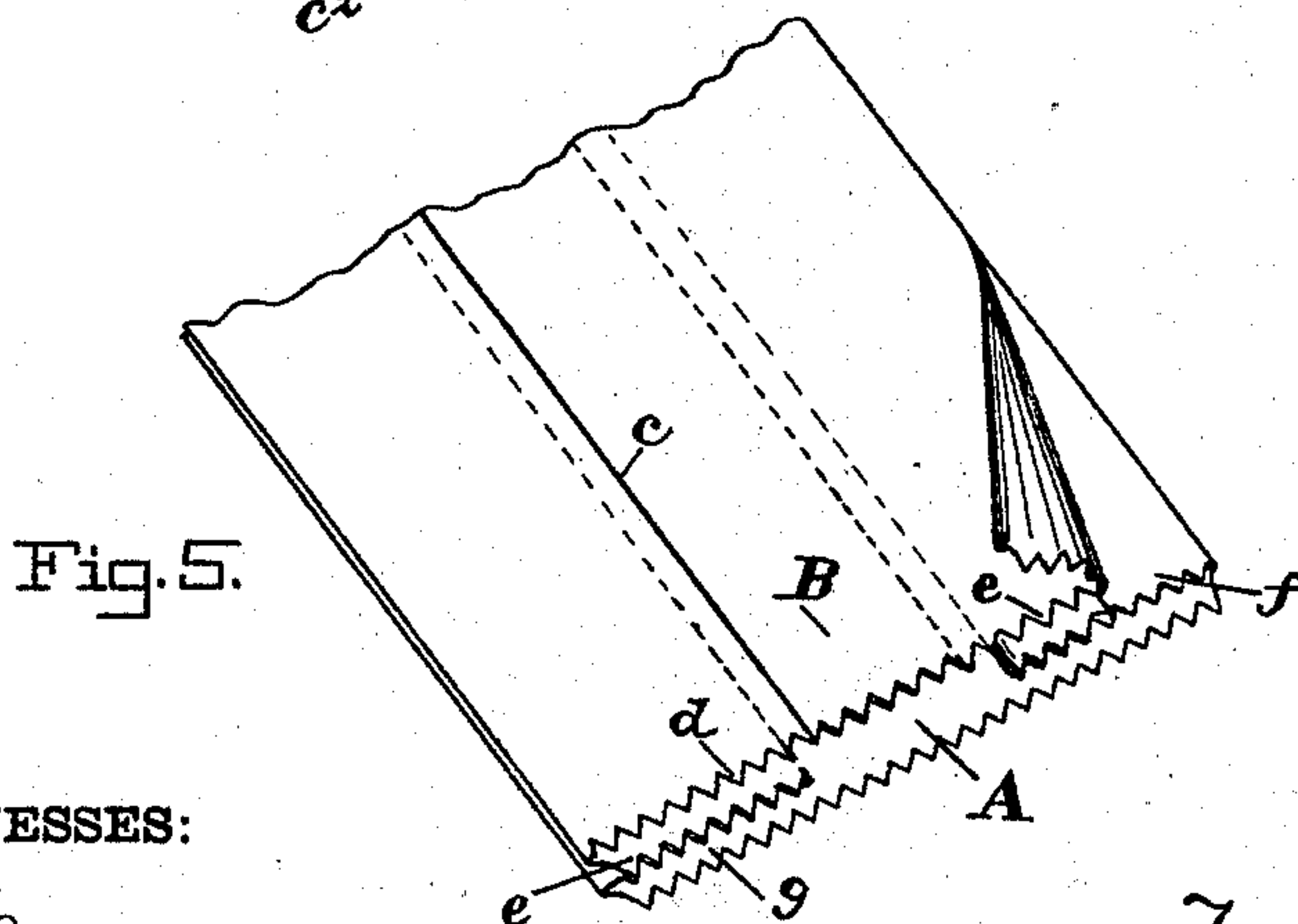
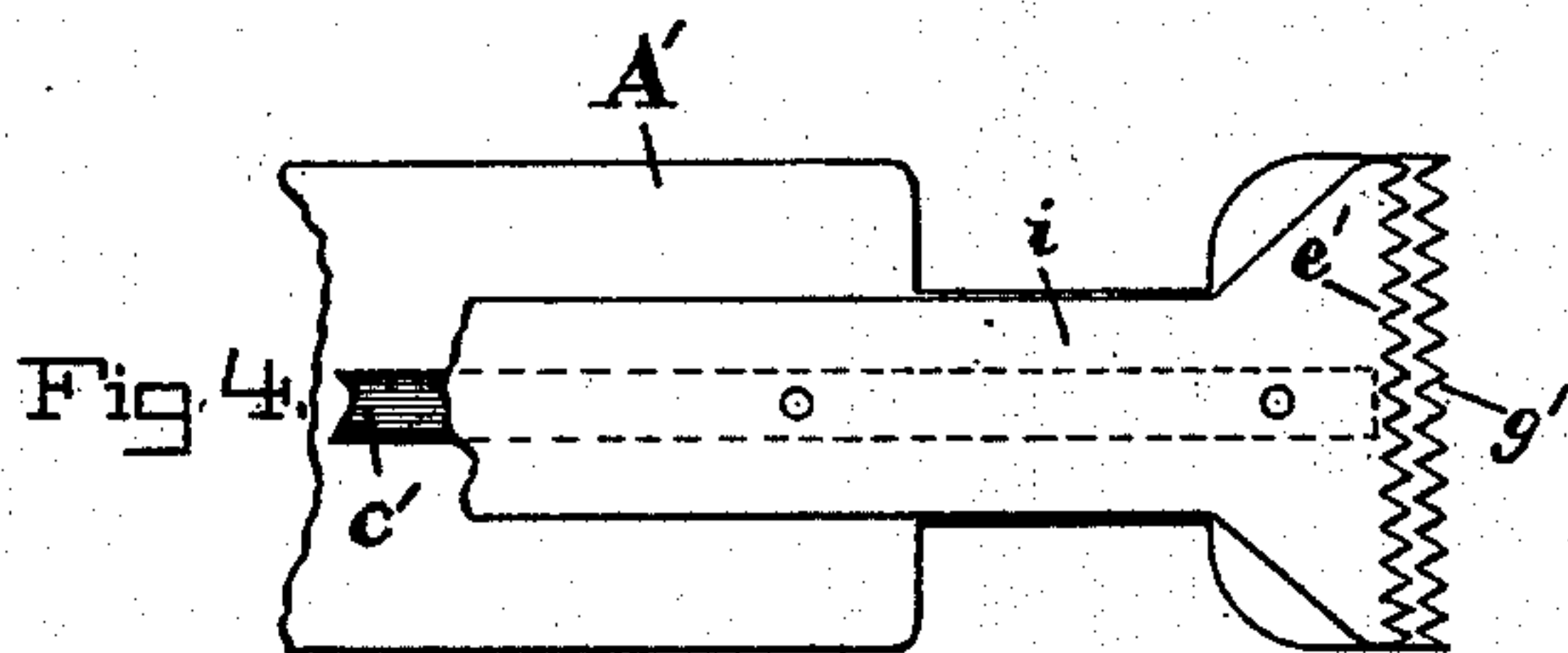
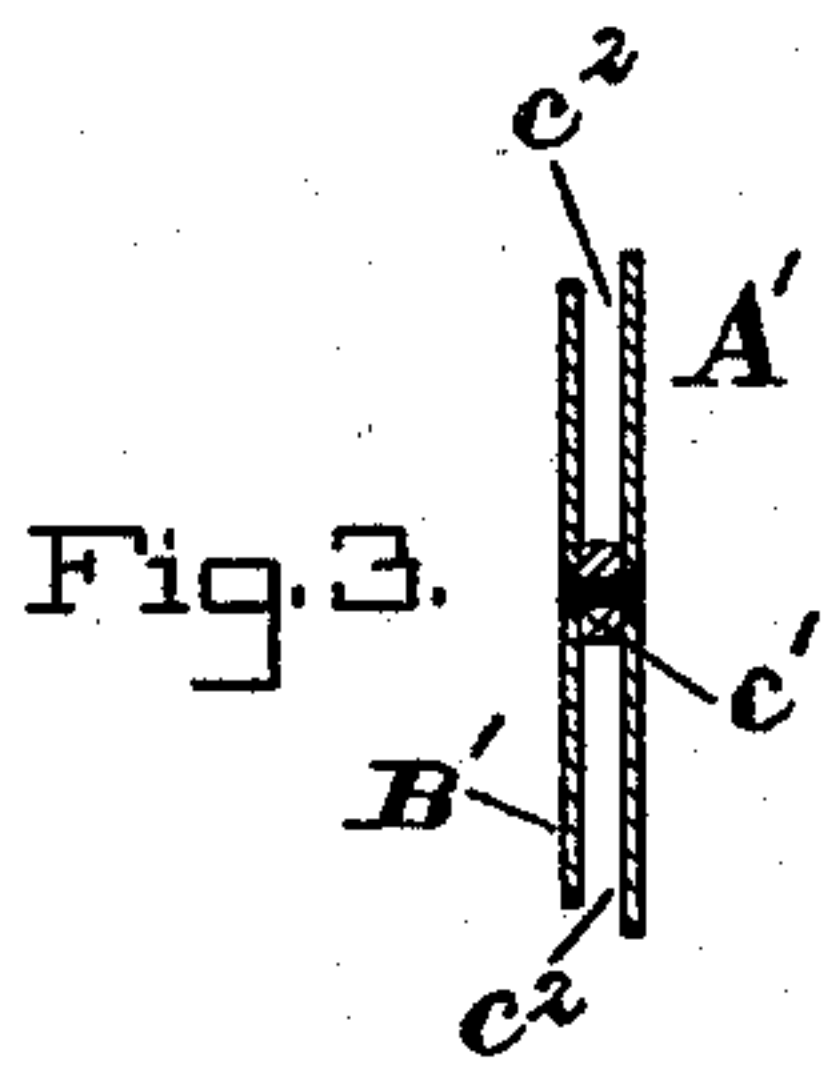
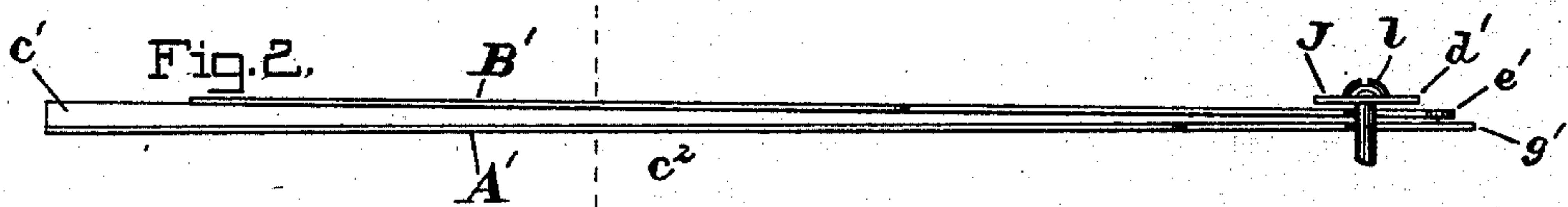
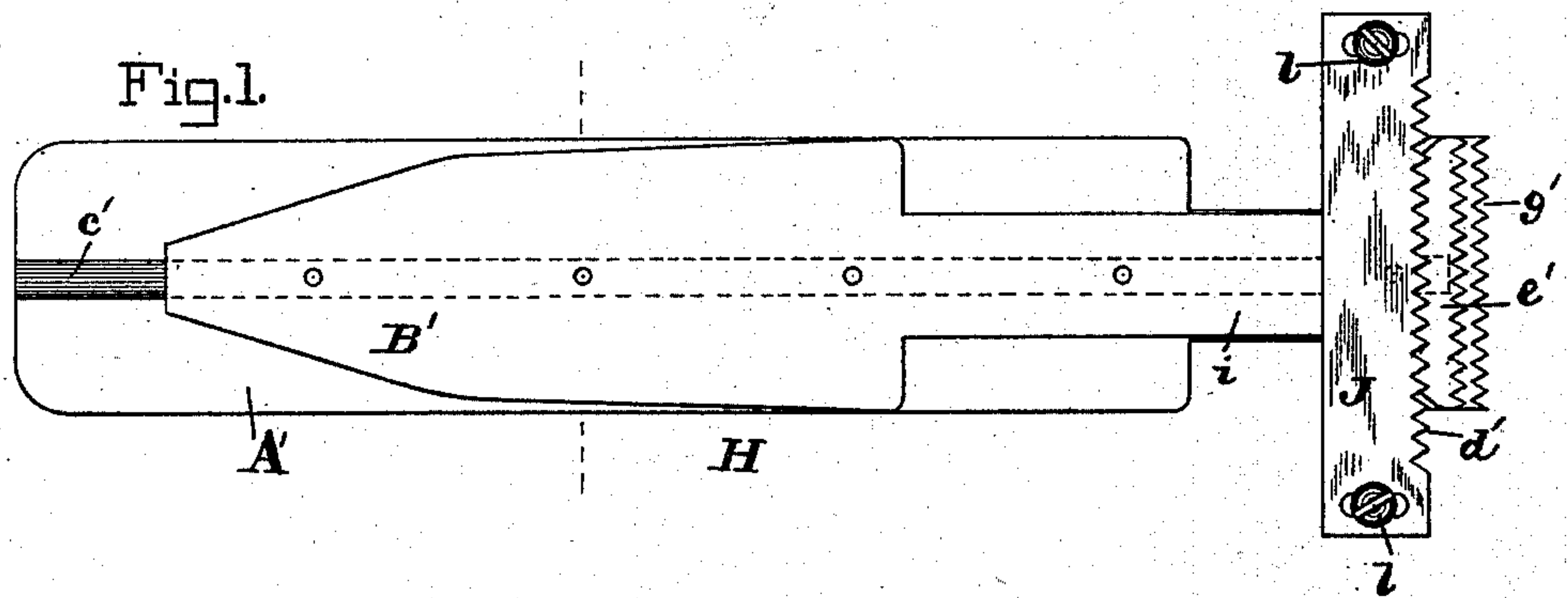


(No Model.)

F. E. PORTER.  
PAPER BAG TUBE CUTTER.

No. 413,458.

Patented Oct. 22, 1889.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

FREDERICK E. PORTER, OF BALTIMORE, MARYLAND.

## PAPER-BAG-TUBE CUTTER.

SPECIFICATION forming part of Letters Patent No. 413,458, dated October 22, 1889.

Application filed July 16, 1889. Serial No. 317,672. (No model.)

*To all whom it may concern:*

Be it known that I, FREDERICK E. PORTER, a citizen of the United States, residing at Baltimore, in the State of Maryland, have invented certain new and useful Improvements in Paper-Bag-Tube Cutters, of which the following is a specification.

This invention relates to a particular construction and arrangement of the knife and the serrated cutters on the paper-tube former-plate of paper-bag machines.

The style of paper bag to which this invention appertains is the well-known bag in which the tube or body part is formed with "bellows" side folds and with a square bottom. As ordinarily made, a considerable proportion of these machine-formed bags are found, when opened preparatory to being filled, to be unpasted and unsecured at the lower cut edges of the "bellows fold," or tucked-in part, and consequently such bags will allow powdered or pulverized material to waste or leak out at the point named.

The object of my invention is to provide for cutting the tucked-in paper tube while in the bag-machine in such manner as to leave the cut end of the lower side of the bag exposed or projecting, as usual, and also to leave the cut ends of the upper portion of the bellows folds exposed beyond the cut end of the upper side of the bag in order that paste may be applied to said cut ends of the bellows folds.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 is a top view of the knife former-plate and serrated edges. Fig. 2 is an edge view of same. Fig. 3 is a cross-section. Fig. 4 is a top view of the serrated end of the former-plate. Fig. 5 is a view of the bag-tube, showing the end as cut by my improved cutting device.

By reference to Fig. 5 the improved cut of the bag-tube referred to will be understood. The bag-tube is of the ordinary bellows form. The letter A designates the lower side of the tube, B the upper side of the tube, and c the seam. The bellows fold is tucked in at each edge. The improved cut consists in cutting the serrated end d of the upper side B of the tube so as to leave the cut end of the

upper portion e of the bellows fold exposed or projecting, as shown. It will be seen that a bag thus cut may have paste applied not only to the projecting ends d g of the upper and lower sides of the tube, but also to the exposed end e of the upper portions of the bellows fold. It will be noticed that the cut ends e f of the upper and lower portions of the bellows fold are both exactly the same length, both being cut by the same serrated cutter, hereinafter described.

The paper-bag tube is formed about the former or mandrel H, consisting of thin lower and upper plates A' B', which are united along their longitudinal centers by a narrow strip c' of metal between them, extending from end to end and forming at each edge a deep tuck-groove c<sup>2</sup>, into and along which the bellows fold of the paper tube is to be drawn. The tucker-plates, which serve to tuck the bellows-fold part of the paper tube into the edge grooves c<sup>2</sup> of the former, are well known and are not here shown, as they form no part of my present invention. The body part of the two united plates of the mandrel and their narrow necks i are of shape heretofore used. Each mandrel-plate A' B' at its end beyond the neck has a serrated extremity g' and e', respectively. The former, which is the lower one, cuts the lower side of the bag-tube and projects beyond the upper one e', which latter cuts both the upper and lower portions e f of the bellows fold. A knife J, preferably having a serrated cutting-edge d', is secured above the mandrel-plates by screws l at its ends, and its cutting-edge d' is back from the serrated edge e' of the upper mandrel-plate B', so as to leave the latter edge e' exposed or projecting below said knife-edge d'. This knife cuts the end d of the upper side B of the paper-bag tube. Any suitable striker or "breaker" device—such as are used in paper-bag machines—will cause an upward deflection of the bag-tube and strain the latter across the said three serrated edges g' e' d' of the mandrel and knife, thereby severing or cutting the bag-tube in the desired way, as shown in Fig. 5, and as already described.

Having described my invention, I claim—  
The mandrel or former for paper-bag tubes,

consisting of a lower and an upper plate A' B',  
united along their longitudinal centers and  
having between them tuck-grooves  $c^2$  for the  
bellows fold, and each plate provided at its  
5 extremity with a serrated cutting-edge  $g' e'$ ,  
the said edge  $g'$  of the lower plate projecting  
beyond the edge  $e'$  of the upper one, in com-  
bination with a knife J, fixed above the man-  
drel and having its cutting-edge  $d'$  back from

and so as to expose the said serrated edge  $e'$  10  
of the upper plate, for the purpose set forth.

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

FREDERICK E. PORTER.

Witnesses:

JOHN E. MORRIS,  
JNO. T. MADDOX.