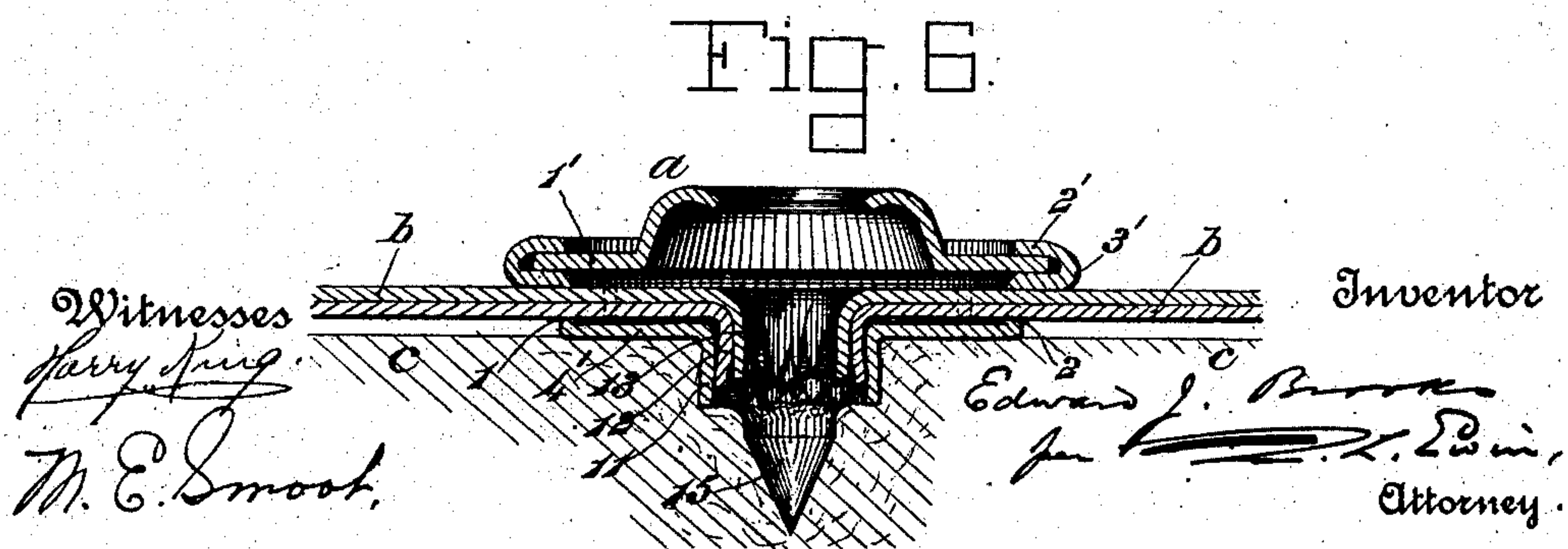
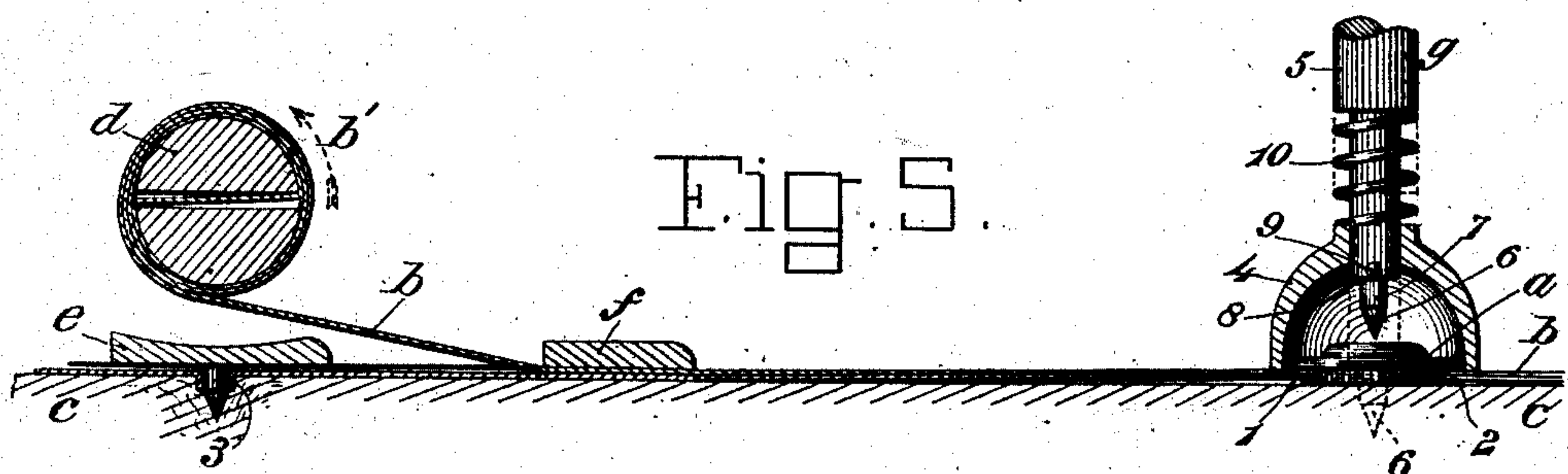
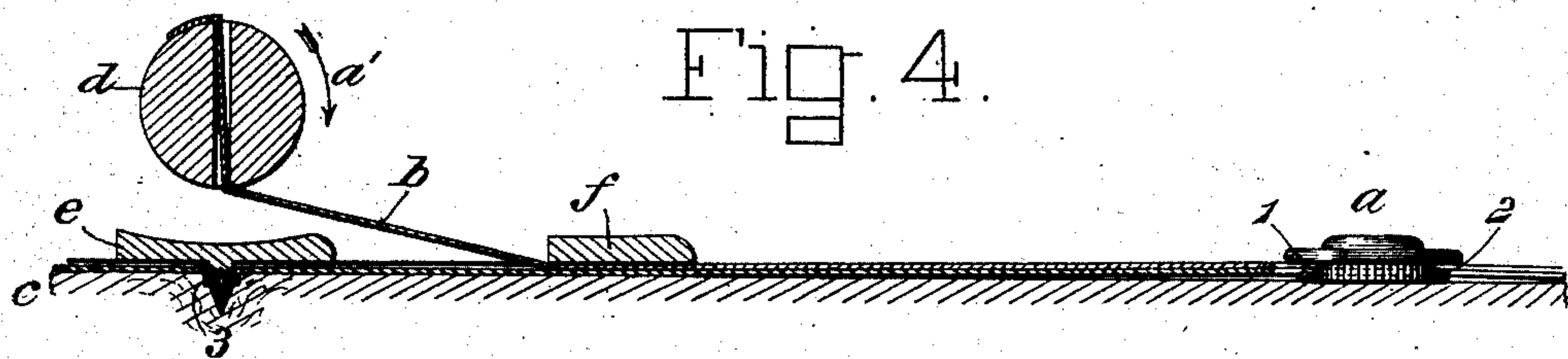
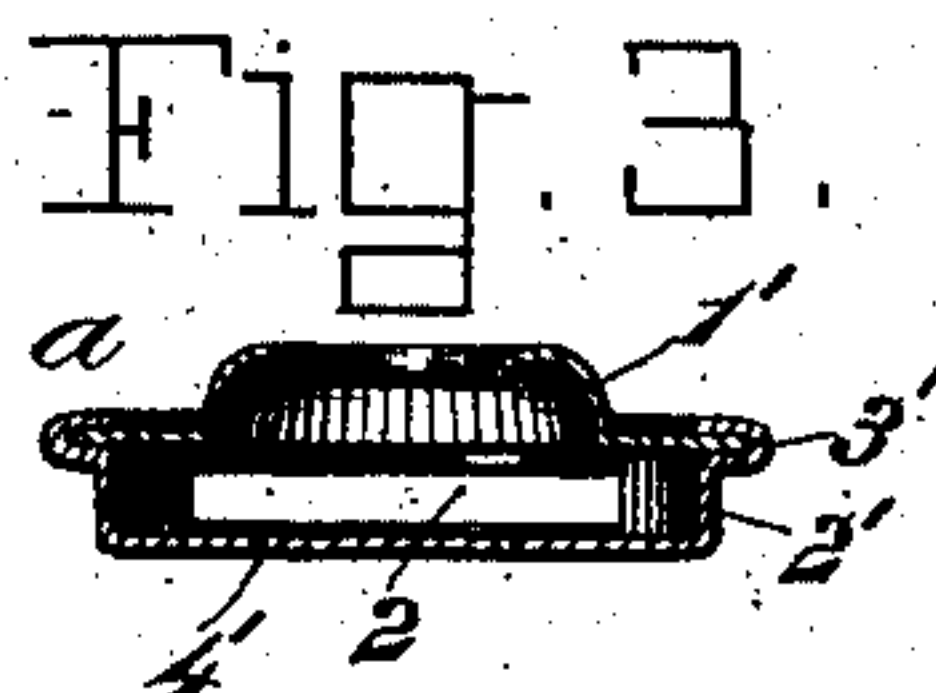
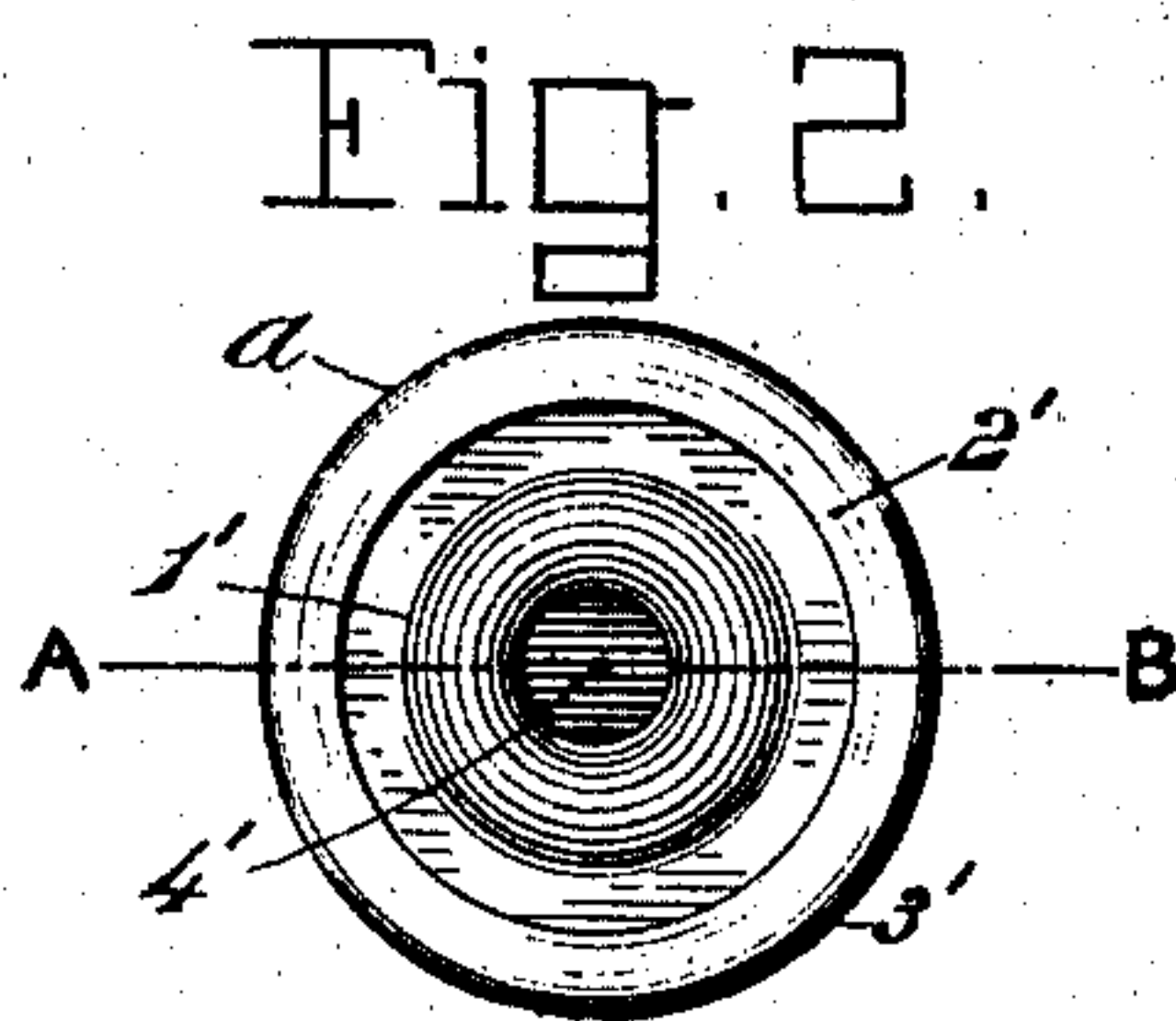
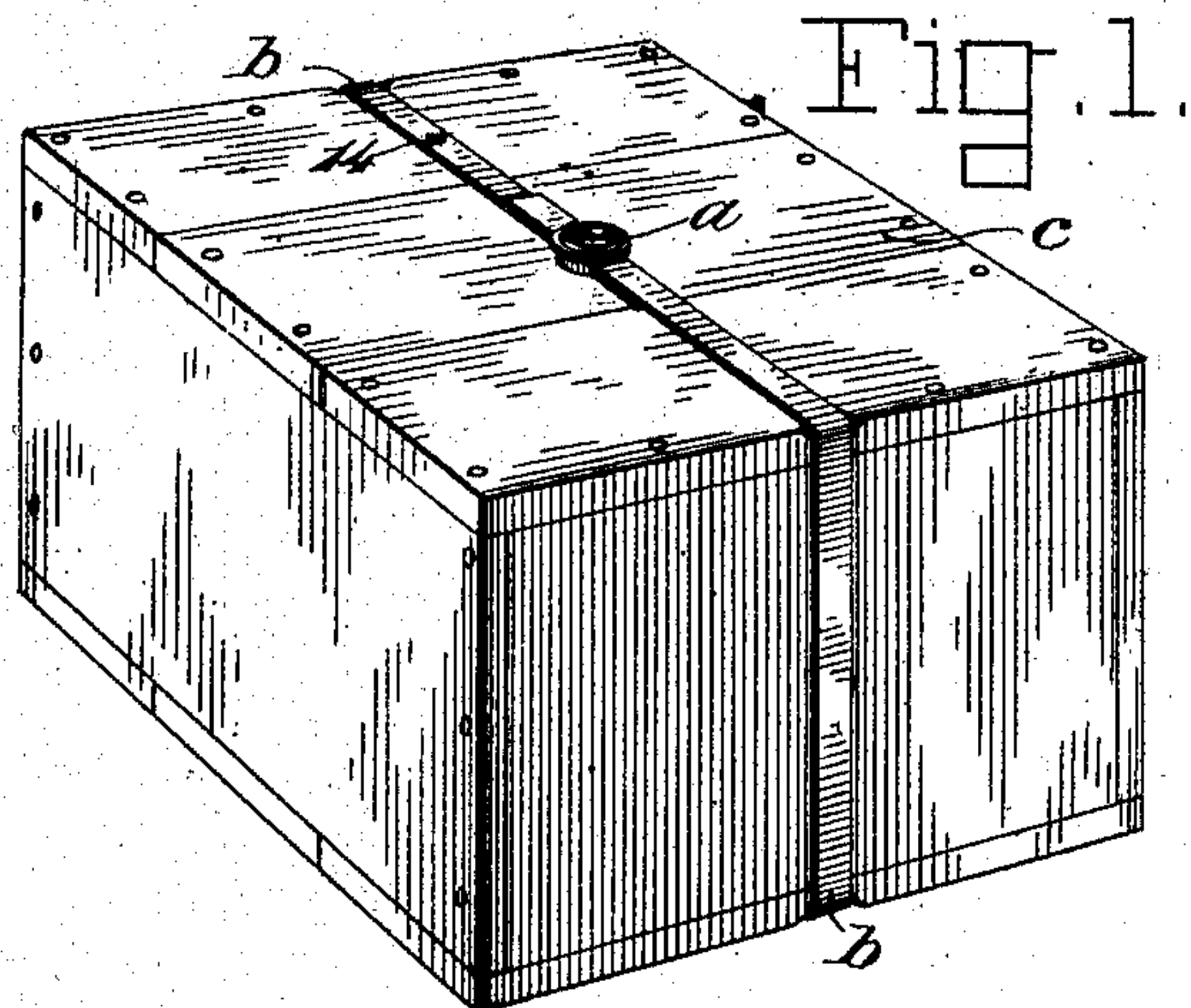


E. J. BROOKS.
BOX SEAL.
APPLICATION FILED MAR. 19, 1909

925,450.

Patented June 22, 1909.



UNITED STATES PATENT OFFICE.

EDWARD J. BROOKS, OF EAST ORANGE, NEW JERSEY.

BOX-SEAL.

No. 925,450.

Specification of Letters Patent.

Patented June 22, 1909.

Application filed March 19, 1909. Serial No. 484,347.

To all whom it may concern:

Be it known that I, EDWARD J. BROOKS, a citizen of the United States of America, and a resident of East Orange, in the State of New Jersey, have invented a new and useful Improvement in Box-Seals, of which the following is a specification.

This invention relates to the combination of metallic seal parts and box straps as means for sealing wooden packing cases or boxes so as to insure the detection of any opening thereof for the abstraction of the contents.

Heretofore it has been customary to unite the seal part and box strap and to complete the sealing operation by means of a nail driven through the seal part and strap ends, or through the latter at least, into the wood of the box. This necessitated the location of the seal part on the box over an end or side of the box to provide sufficient depth of wood to receive the nail. Otherwise the seal nail might do serious damage to the contents of the box. And it has been customary to arrange a sealed box strap over the row of nails in the box proper at each of its ends. Examples of such box seals are set forth in my previous specification forming part of United States Letters Patent No. 847276 dated March 12, 1907, and previous specifications therein referred to, and in my companion specification forming part of an application for United States Letters Patent filed March 3, 1909, Serial No. 481201.

The leading objects of the present invention are to render such "box seals" nailless, and thus to provide for using a single box strap if desired with a single seal part located centrally on the box cover or on the bottom or one of the ends or sides, or in any desired position, without endangering the contents of the box at the sealing operation.

Other objects will be set forth in the general description which follows.

The invention consists in a nailless box seal, as hereinafter more particularly described and claimed.

A sheet of drawings accompanies this specification as part thereof.

Figure 1 is a perspective view of a box sealed according to the present invention; Fig. 2 is a face view of the metallic seal part represented in Fig. 1 as it appears before being used; Fig. 3 represents a section on the line A—B, Fig. 2; Figs. 4 and 5 are fragmentary sectional views illustrating the sealing

operation; and Fig. 6 represents a magnified section through the seal part and box strap as they appear after the sealing operation.

Like reference characters refer to like parts in all the figures.

In carrying this invention into effect, a metallic seal part, *a*, and a metallic box strap, *b*, are employed in connection with a wooden box cover or like box part, *c*, and with a box-strap tool or tightener, parts of which are represented at *d*, *e* and *f*, in Figs. 4 and 5, and a suitable sealing tool, *g*, Fig. 5, which may be an ordinary nail punch having a suitable point, but is preferably of the construction represented in Fig. 5 and herein-after described. The seal part *a*, shown detached in Figs. 2 and 3 and magnified in Fig. 6, is of a construction shown at Figs. 7 and 8 in my drawings forming part of said Letters Patent No. 847276, and its construction forms no part of the present invention. It may be described, however, as disk shaped and composed of two pieces, 1' and 2', of suitable sheet metal permanently united with each other by a circumferential joint, 3', which adapts the seal part to be made with a bottom, 4', immediately above which a pair of threading holes, 1 and 2, are formed in the sides of the cup-shaped bottom piece 2' of the seal part. For the purposes of the present invention the seal part *a* may be of any known or improved construction adapting it to embrace the ends of the box strap *b*, and to provide a portion (4') parallel with the box-strap ends adapted to be interlocked therewith and with the box part *c* in the manner hereinafter described. The box strap *b* may be cut from a continuous length of suitable strap iron, and requires no preliminary treatment.

The tightener represented in Figs. 4 and 5 is or may be of the construction set forth in said companion specification (Serial No. 481201), and the parts represented in Figs. 4 and 5 are the slotted shaft of the tool, represented at *d*; a cross bar of the frame beneath said shaft, represented at *e*, and a cross bar at the front edge of the frame, represented at *f*. For the purposes of the present invention said cross bar *e* beneath the winding shaft may be provided with a spur, 3, which is driven through one of the box-strap ends into the wooden box part *c* to preliminarily and temporarily fasten that box-strap end for the tightening operation. Otherwise the tool may be of the construction set

forth in said companion specification (Serial No. 481201), or of any suitable known or improved construction.

The sealing tool *g*, represented in Fig. 5, includes a cup-shaped base, 4, which embraces the seal part *a*, and rests on the box strap *b* and box part *c*, and a vertically slidable plunger, 5, the lower end of which has a sharp tapered point, 6, with a cylindrical portion, 7, immediately above the same, and preferably a stop shoulder, 8, by which the penetration of the point is limited. The separation of these two parts, 4 and 5, is prevented by suitable means represented by a cross pin, 9, and a coiled retracting spring, 10, is preferably and conveniently located immediately above the base and beneath a shoulder of the plunger so as to retain the latter normally in the position in which it is shown in full lines in Fig. 5.

After passing the box-strap *b* loosely around the box (Fig. 1) in the desired position, both box-strap ends are threaded through the seal part *a*. The tightener *d*—*e*—*f* is then applied so as to drive its spur 3 through one end of the box strap into the wood of the box part *c*, and thus to preliminarily fasten one of the box-strap ends for the stretching operation. The other box-strap end, being uppermost, is drawn beneath the front cross bar *f* of the tightener, and temporarily interlocked with the shaft *d* by threading it through the slot of the latter and bending its extremity to resist withdrawal as represented in Fig. 4. The shaft *d* is then turned in the direction represented by the arrow *a'*, Fig. 4, until the box-strap *b* is under sufficient tension to embed it in the box corners, at least, as set forth in said companion specification.

With the box strap *b* under such tension, and the seal part *a* in the desired position, the sealing tool *g* is applied as in Fig. 5, and a blow on the plunger *g* by means of a hammer or the like drives the piercing point 6 and cylindrical shank 7 of the sealing tool through the two strap ends, and through the subjacent seal part portion 4', and completes the sealing operation. The stroke of the sealing-tool plunger is represented by dotted lines in Fig. 5, and the effect of the tool, which is immediately removed from the box, is represented by Fig. 6. After removing the sealing tool *g*, the shaft *d* of the tightener is turned backward, as represented by the dotted arrow *b'* in Fig. 5, to unwind the box-

strap end attached thereto; the tightener is then also removed, and the loose box-strap end is cut off close to the seal part *a* as represented in Fig. 1.

Referring to Fig. 6, it will be seen that in the manner above described locking portions 11, 12 and 13, of the two strap ends and of said seal-part portion 4' parallel therewith, are simultaneously made to project rigidly downward at right-angles to the top of the box part *c*, and to interlock with each other around an empty permanent indentation in the wood of the box part, so as to securely seal the box without the aid of nails driven through the seal part and box-strap ends as heretofore considered necessary. A single sealed box strap may in this manner be located midway between the ends of the box as in Fig. 1, or midway between the top and bottom of the box, as there is no seal nail to be driven through the cover into the ends as heretofore. The box-strap and seal part may also, of course, be otherwise arranged and duplicated if desired. The indentation by which one box-strap end is preliminarily fastened as above described is represented at 14 in Fig. 1, and the empty permanent indentation left in the wood by the sealing tool *g* is represented at 15 in Fig. 6.

As already stated, the seal part *a*, the tightener *d*—*e*—*f*, and the sealing tool *g* or any of them may be of any suitable known or improved construction; and other like modifications will suggest themselves to those skilled in the art.

Having thus described said improvement, I claim as my invention and desire to patent under this specification:

The combination with a wooden box and a superposed metallic box strap under tension, having overlapped ends, of a metallic seal part embracing the overlapped ends of said box strap and having a portion parallel with said box-strap ends, said box-strap ends and said portion of the seal part parallel therewith having locking portions projecting rigidly at right angles to the subjacent surface of the box, and interlocked with each other around an empty permanent indentation in the wood of the box whereby a nailless box seal is formed.

EDWARD J. BROOKS.

Witnesses:

J. T. McALLISTER,
E. J. SMITH.