(No Model.)

G. HAVELL.

CASE FOR SURGICAL INSTRUMENTS.

No. 600,002. Patented Mar. 1, 1898.

Fig. 1.

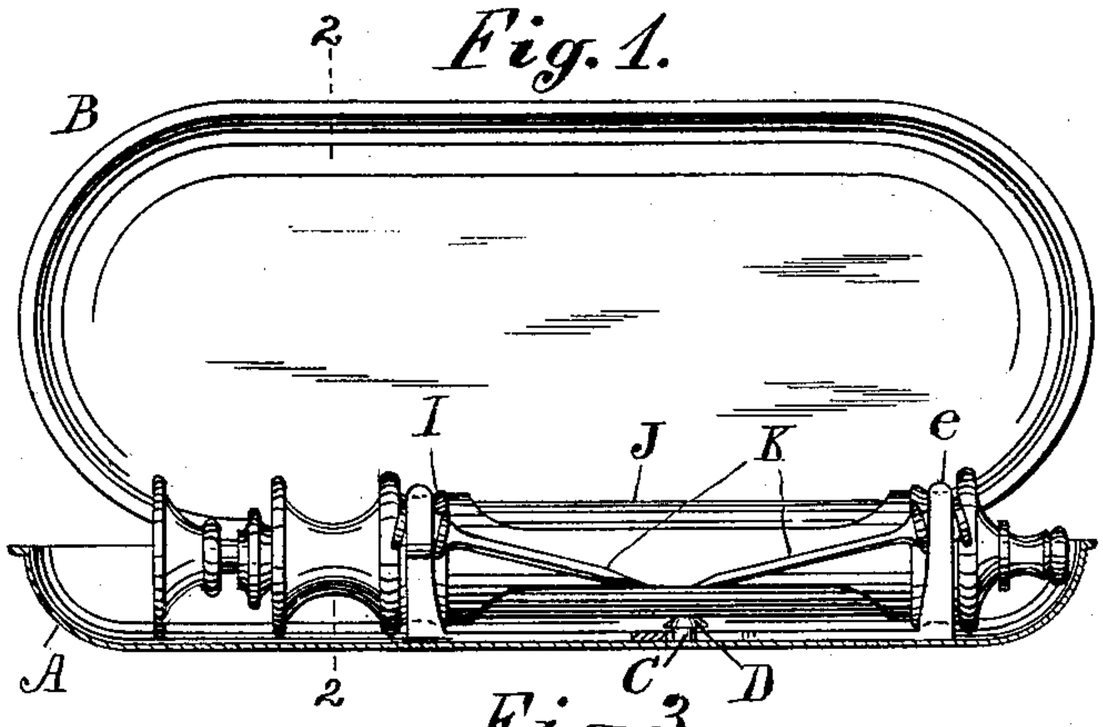


Fig. 2.

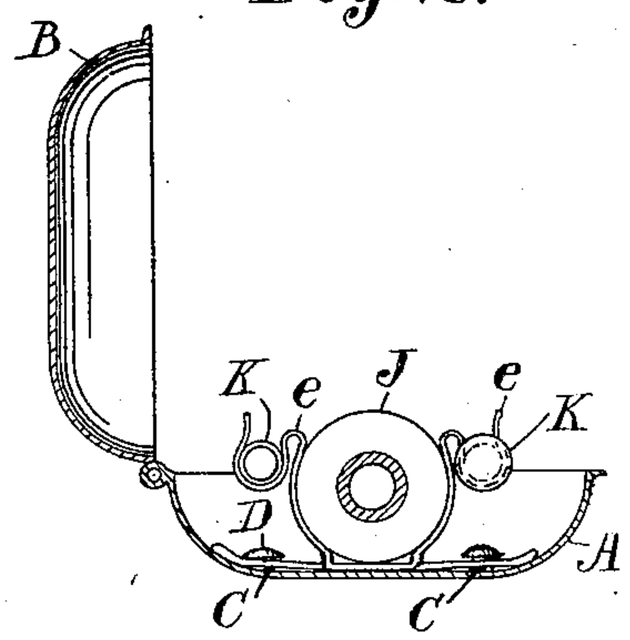


Fig. 3.

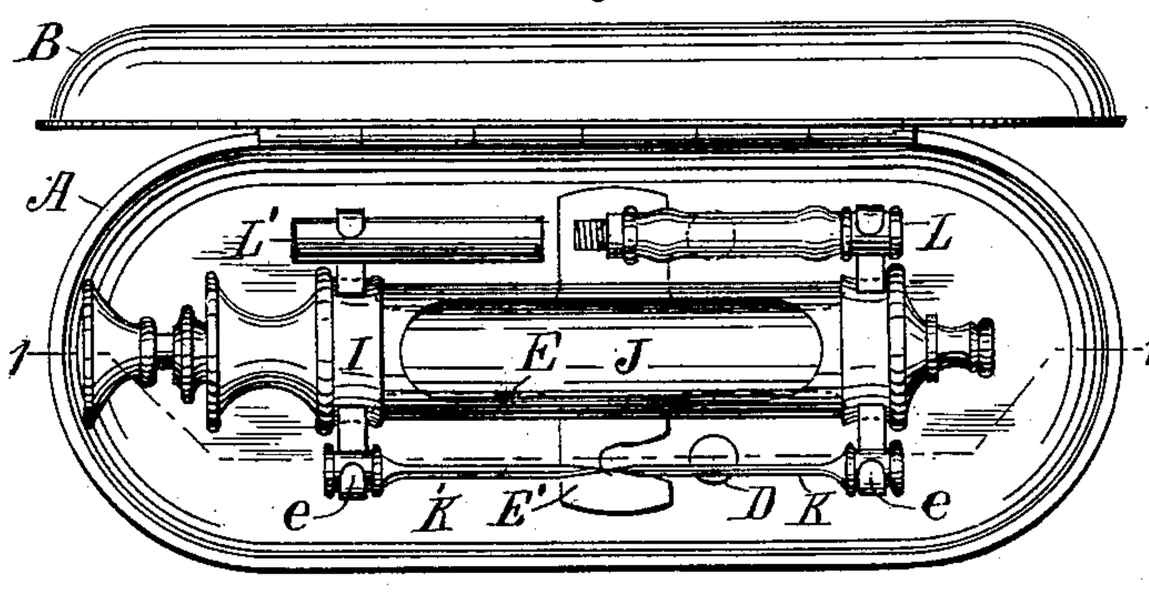


Fig. 5.

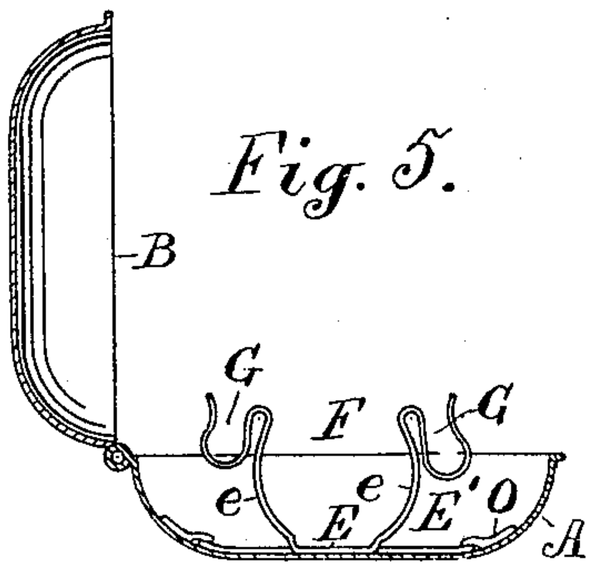


Fig. 4.

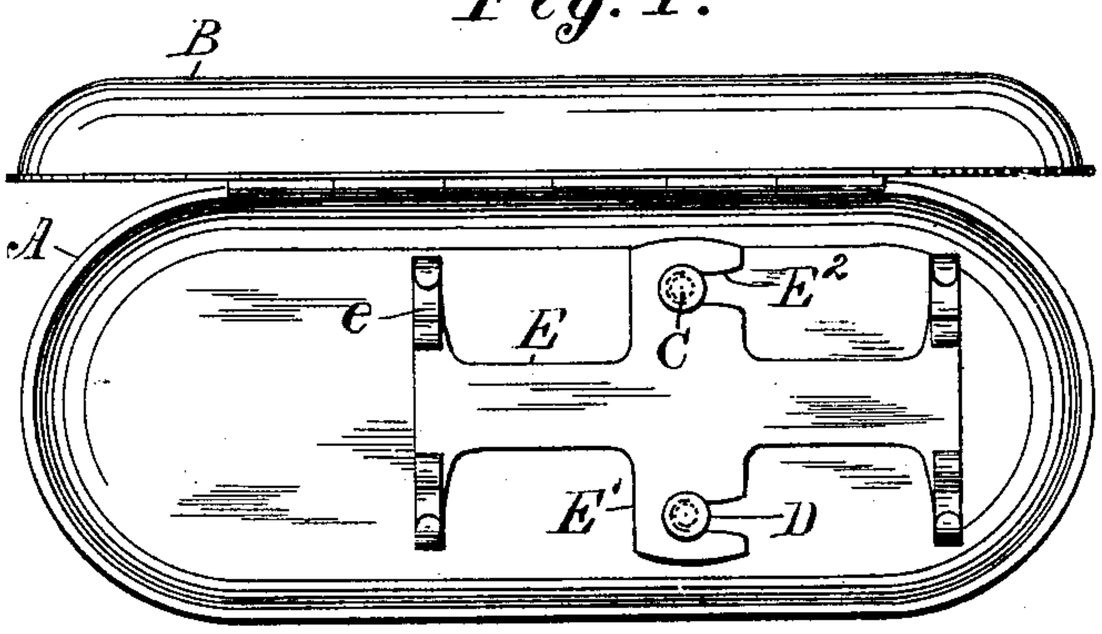


Fig. 6.

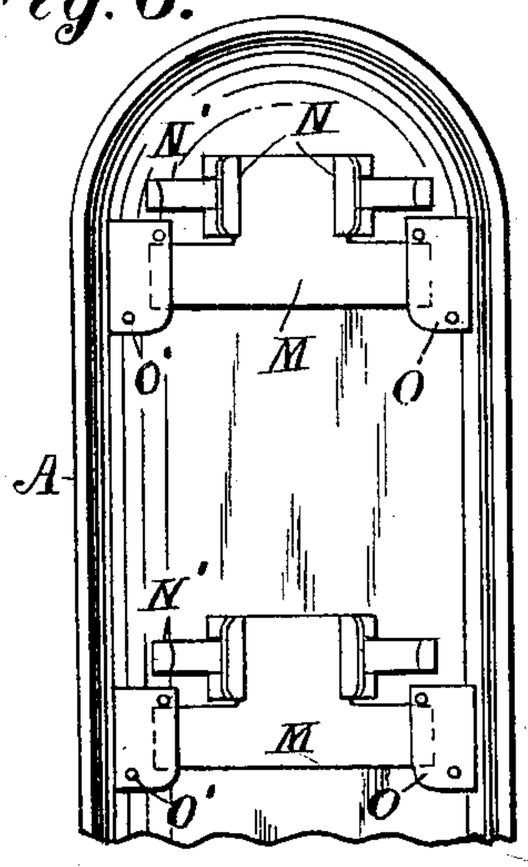


Fig. 7.

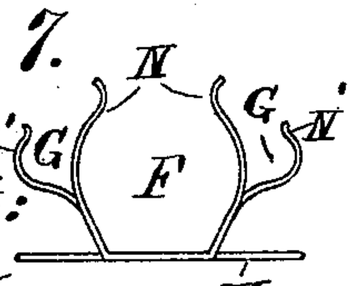
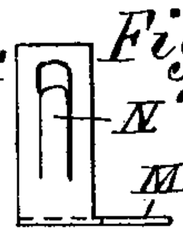


Fig. 8.



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UNITED STATES PATENT OFFICE.

GEORGE HAVELL, OF NEWARK, NEW JERSEY, ASSIGNOR TO THE HAVELL MANUFACTURING COMPANY, OF NEW JERSEY.

CASE FOR SURGICAL INSTRUMENTS.

SPECIFICATION forming part of Letters Patent No. 600,002, dated March 1, 1898.

Application filed November 28, 1896. Serial No. 613,746. (No model.)

To all whom it may concern:

Be it known that I, GEORGE HAVELL, a citizen of the United States, residing at Newark, county of Essex, State of New Jersey, have invented certain new and useful Improvements in Cases for Surgical Instruments, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

The object of this invention is partly to furnish an economical construction for the holder to grasp or support the instruments within a portable case and partly to make such holder engage automatically with the case, so that it may be secured therein without operating any buttons, studs, locks, or other mechanical attachments. To cheapen the manufacture of the holder, it is preferably made of one piece of sheet metal, with integral tongues at the opposite ends bent to form one or more sockets adapted to support the opposite end of the instrument or instruments. The tongues are formed upon the holder in such a position that they may be bent in the direction of their thickness to form the holder-sockets, and their elasticity is thus developed to clamp the instruments in the sockets. To make the holder readily detachable from the case, the case is provided with guides to direct the feet of the holder and with overlapping flanges to retain the same in the case when fitted to the guides. With this construction the holder may be secured within the case by slipping the foot beneath such flanges, and the holder is thus automatically retained without operating any latches or locking devices.

The invention will be understood by reference to the annexed drawings, in which—

Figure 1 represents the case in section through one of the locking-studs on line 1 1 in Fig. 3 with the cover raised and the instruments supported in the holder, the latter being locked within the case by flanged studs. Fig. 2 is a section of the parts on line 2 2 in Fig. 1. Fig. 3 is a plan of the parts shown in Fig. 1 with the holder and instruments laid in the case in readiness to engage the locking-studs. Fig. 4 is a plan like Fig. 3 with the instruments removed from the holder and the latter engaged with the flanged studs. Fig. 5 is a section like Fig. 2 with the instruments removed from the holder and the edges of the foot fitted to retaining-flanges in the case. Fig. 6 is a partial plan of the case with the cover omitted for want of room upon the drawings and the holder shown of alternative construction and made in two parts, which are locked separately into the case by flanges at the edges of the feet. Fig. 7 is an elevation of one of the holders shown in Fig. 6, and Fig. 8 an edge view of such holder.

In the drawings the invention is illustrated by its application to a case for holding a hypodermic syringe and its attachments, as the needles and its extension-tubes.

In Figs. 1 to 4, inclusive, the case is shown formed with tray A, having cover B hinged at the edge. The tray is provided in the bottom with two studs C, having flanges D upon their heads, adapted to retain the foot of the holder. The holder is shown formed of one piece of sheet metal, the foot comprising the longitudinal bar E, having sockets at opposite ends to support the instruments, and cross-bar E′, which is provided upon the front side with slots E^2 to embrace the studs C below the flanged heads D. The ends of the bar E are formed with tongues *e* at opposite sides, which are projected upwardly and bent repeatedly to form the required number of sockets of suitable sizes to hold the opposite ends of the instruments. By bending the tongues repeatedly each tongue forms a part of more than one socket, and the sockets are made very elastic, and an adequate support is furnished for a plurality of instruments with an extremely light and cheap construction.

The tongues are shown bent to form opposite corresponding sockets F over the middle of the holder to receive the collars I of the hypodermic syringe J and lateral sockets G to receive the needles K and extension-tubes L L′. The tongues are bent so as to form elastic socket-clamps upon the opposite sides of each socket, which clamps hold the instrument in place by friction, so as to need no fastenings or cover to retain them in the holder.

When the collars I are fitted to the sockets F, the syringe is secured firmly in the holder by the elastic pressure of the tongues *e*, and

the holder and syringe may be readily lifted together and placed in the tray A of the case, as shown in Fig. 3, with the slots E^2 of the foot in proximity to the studs C.

The case is shown with a portion of its bottom flat and the margin curved upwardly all around, and the foot of the holder is preferably made to extend over the curved sides in some measure, so as to lift the foot of the holder naturally above the bottom of the tray.

To insert the foot beneath the flanges D upon the studs, the holder is sprung or pressed downward against the bottom of the tray, and a longitudinal movement of the holder then engages the slotted foot with the studs, as shown in Figs. 1, 2, and 4, where it is elastically held by the reaction of the foot against the under side of the flanges D, as shown in Fig. 2. The holder and instruments are thus held from derangement within the case when the cover is closed for transportation, while the holder is also retained with sufficient firmness to permit the instruments to be sprung out of their sockets one at a time for use.

When it is desired to disinfect the instruments and the holder, they may be separated or they may be removed from the case all together by sliding the holder longitudinally within the tray A until the foot disengages the studs, as shown in Fig. 3, when the whole may be lifted out together and boiled or soaked in disinfecting fluid.

Figs. 2 and 5 clearly show the method of forming a plurality of sockets by repeatedly bending the tongues *e*, and Figs. 6, 7, and 8 show a holder provided with a plurality of sockets by slotting or slitting tongues at opposite sides of the foot before bending them to the required shape.

Fig. 6 also shows the holders for the opposite ends of the instruments made separately and secured within the case separately by straight flanges applied to the edges of the foot. In this construction the foot is marked M, the primary tongues N, which are bent to form the large socket F, and the auxiliary tongues N′, which are stamped out of slots in the tongues N and projected laterally from such tongues and bent upward to form the sockets G. In this construction, as well as that shown in Fig. 4, the intermediate tongues which form the outer sides of the socket F also form the inner sides of the sockets G, and thus perform a double function. The foot M of each holder is furnished with rectilinear edges, and flanges O are secured within the edges of the tray A by rivets O′ and bent to overlap the edges of such foot.

In Fig. 4 similar flanges are represented applied to the edges of the transverse foot E′ upon the integral holder shown in Fig. 4, as such flanges are equally adapted with the studs C to operate with such integral holder. The flanges D, which form the heads of the studs C, perform precisely the same function as the flanges O, as they serve to secure the holder in the case by merely pressing the foot of the holder within the bottom of the case and sliding it longitudinally, thus avoiding the disengagement of any locking devices to insert or remove the holder.

Where separate holders are used for the opposite ends of the instruments, as shown in Fig. 6, the instruments would be preferably removed from the case for disinfection, the holders being also capable of separate removal, when necessary, for the same purpose.

From the above description it will be seen that the holder formed in one piece, as shown in Figs. 1 to 4, inclusive, is very light and cheap and greatly facilitates the simultaneous removal of all the instruments from the case for disinfection and serves to hold them all together during such operation, thus preventing their displacement or loss before they are restored to the case.

By the use of means to engage the holder automatically with the case I avoid the use of loose parts and attachments for securing the holder and instruments in the case and thus avoid the danger of losing such attachments as well as the inconvenience of operating the same when inserting the holder in the case or removing it therefrom.

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

1. A case for hypodermic syringe and its attachments comprising the tray A, provided with studs C, the holder having foot provided with slots E^2 to embrace the studs, and with spring-tongues at opposite ends bent to form the sockets F and G, to carry the syringe and its attachments respectively, the holder and the instruments being adapted for removal together from the tray, and for reëngagement by mere application of the slots to the studs, substantially as herein set forth.

2. A case for holding a plurality of surgical instruments, comprising the tray A, the cover B, and holder having a sheet-metal foot for securing it within the case, such foot having integral spring-tongues bent and arranged to form the central socket F and the lateral sockets G, and projected between the sockets F and G to form clamps for the central socket and the inner sides of the lateral sockets, substantially as shown and described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

GEORGE HAVELL.

Witnesses:
J. D. CLARK,
THOMAS S. CRANE.