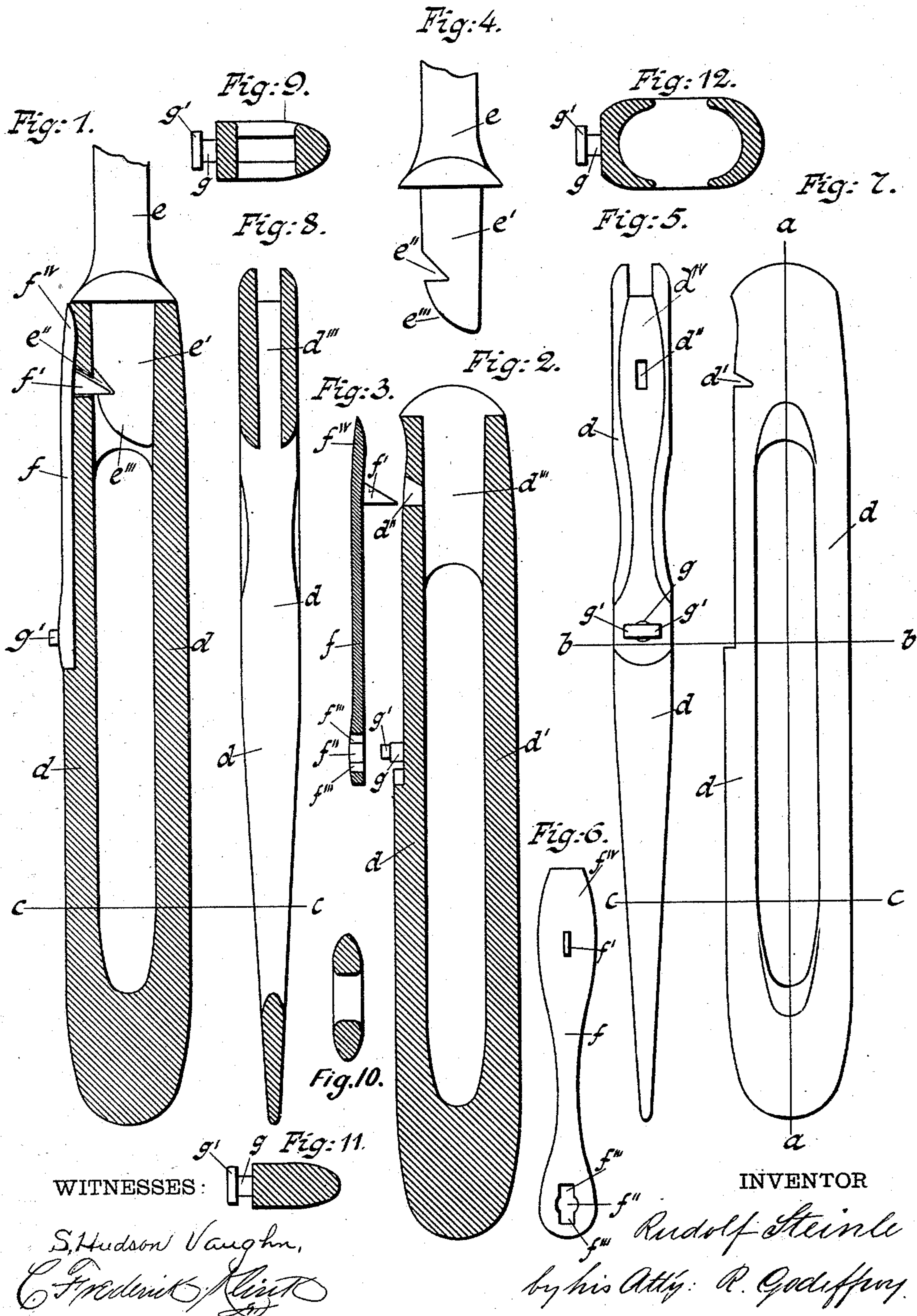


(No Model.)

R. STEINLE.
SCALPEL.

No. 485,236.

Patented Nov. 1, 1892.



UNITED STATES PATENT OFFICE.

RUDOLF STEINLE, OF PHILADELPHIA, PENNSYLVANIA.

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SPECIFICATION forming part of Letters Patent No. 485,236, dated November 1, 1892.

Application filed April 30, 1892. Serial No. 431,290. (No model.)

To all whom it may concern:

Be it known that I, RUDOLF STEINLE, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Antiseptic Handles for Surgical and Veterinary Instruments; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to improvements in antiseptic handles for surgical and veterinary instruments with interchangeable blades. The principle governing the construction of such handles is to use a non-organic material which will not allow any particles of blood to penetrate into pores nor will resist the process of cleaning, and to give the same and its single parts such shapes as to allow an easy cleaning and disinfecting of the same, and to construct them in such a manner that they may be quickly taken apart or set together in order to avoid any delay in the operations. I attain these objects by the construction illustrated in the accompanying drawings.

Figure 1 shows the instrument set together, the body of the handle in section, and side views of the spring and lower part of the blade. The latter will in the following always be called the "blade." Fig. 2 shows the section of the handle alone; Fig. 3, the section of the spring; Fig. 4, the side view of the blade alone. Fig. 5 shows the back view of handle without spring; Fig. 6, the inverted view of the spring; Fig. 7, a side view of the handle; Fig. 8, a section through the handle on line *a a*, Fig. 7; Fig. 9, a section through the handle on line *b b*, Figs. 5 and 7; Fig. 10, a section through the same on line *c c*, Figs. 1, 5, 7, and 8; Fig. 11, a cross-section through a massive handle for smaller instruments; Fig. 12, a cross-section through a handle for large instruments.

Similar letters refer to similar parts throughout the several views.

The handle, Figs. 1 to 10, inclusive, is intended for medium-sized instruments. Smaller instruments may have handles with mass-

ive bodies, as shown in cross-section, Fig. 11. For larger instruments the cross-section of the handle proper may have a shape like Fig. 12.

All figures on the drawings are about double size.

I make the handle proper of metal, this being the only material which is absolutely impervious to any organic matter, as blood. All the borings, piercings, and open-work in the handle go through or connect at one end with a through-opening. They are open at both ends. Consequently there is no secret cavity, which would be inaccessible to the antiseptic fluid, into which the instruments will be laid before use. As the spring *f* can easily be removed, as will be shown hereinafter, there is no possibility of blood gathering, drying, or decomposing between the spring and the handle.

When required for an operation, the handle, spring, and blade will be separately laid in the antiseptic fluid, as required by the newest principles of surgery, where they may stay till the moment of use has arrived. The handle and spring will then be taken from the antiseptic fluid. The spring *f* will be attached to the handle *d* by holding it at a right angle to the latter and slipping the opening *f''*, with the slots *f'''* of the spring *f*, over the arms *g'* of the cleat *g*, then turning the spring *f* to the left around the pivot of the cleat *g*, at the same time lifting the flat end *f^{iv}* with tooth or pawl *f'* of the spring *f* till this tooth or pawl *f'* has passed the indentation *d'*, Fig. 7, of the handle *d*. When released, the spring *f* will snap down on its seat *d^{iv}*, Fig. 5, and the tooth or pawl *f'* will enter the slot *d''* of the handle *d*, Figs. 2 and 5. This tooth *f'* will then project into the open space or mortise *d'''*, Figs. 2 and 8. Then the shank *e'* of the blade *e*, Figs. 1 and 4, will be inserted into this mortise *d'''*. The inclined or curved edge *e''* will raise the tooth *f'* and with it the upper end *f^{iv}* of the spring *f* till the indentation *e''* reaches the point of the tooth *f'*, which will then snap into this indentation *e''* and hold the blade firm in place, ready for use.

For separating the single parts of the instrument after use lift the flat end *f^{iv}* of the spring *f* and pull the blade *e* out. Then lift

again the flat end f^{iv} , at the same time turning the spring to the right till it forms a right angle with the handle proper. Then the slots f''' will be even with the arms g' of the cleat g and the spring f can be lifted from the handle.

In using the instrument any pressure of the fingers on the spring will only help to hold the blade firm in place, while the strength of the spring prevents the blade from being accidentally separated from the handle. The handle may also be constructed in such a way that the movements for separating or joining the parts may be made on the left side of the handle, or the spring may have the cleat and the handle the slots therefor.

The great importance which newer experience in surgery lays in proper antiseptic treatment of the instruments before use, for the purpose of securing a proper success in operations by excluding all possibilities of dangerous germination in the instruments that may cause inflammations in the wounds, as well as for the benefit of those who might be hurt handling the instruments, has convinced me that all existing systems of handles for surgical or veterinary instruments are imperfect, because they are either made of a material that does not exclude the possibility of germination or does not allow a perfect disinfection, as rubber, ebony, or ivory, especially when provided with unremovable metallic ferrules, screws, rivets, or springs, between which and the body of the handles inaccessible minute cavities or joints will be unavoidable, which will admit parts of the blood and form regular breeding-places for disastrous germination, which endangers the success of operations. It is, therefore, that I have endeavored to construct an antiseptic handle for surgical and veterinary instruments which, consisting merely of metal without any inaccessible cavities or joints whatever, without

breeding-places for germs, and without any parts which cannot be directly exposed to any antiseptic medium, will answer the strictest requirements of modern surgery.

The appliances of the spring with a tooth or pawl, as well as the shape of the shank of the blade, with incline to lift this tooth, and an indentation by which the tooth of the spring holds the blade in place have been in use before now; but these springs could not be called "removable," being fastened with screws or rivets or some other manner, which made it either impossible to separate them from the handles or caused too much delay for practical use in separating or joining the parts.

As any loss of time in surgical operations can have fatal consequences, it was necessary to construct a handle in which all parts could easily and quickly be separated or set together.

I am aware that prior to my invention surgical and veterinary instruments with interchangeable blades, with springs, and with metallic handles have been manufactured and used and that attachments by means of cleats, similar to the attachment of the spring to the handle, are not new; but

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

A spring for a metallic handle for surgical or veterinary instruments with interchangeable blades, provided with slots at lower end, fitting cleat of handle, and tooth or pawl at lower side of other end, all substantially as set forth.

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

RUDOLF STEINLE.

Witnesses:

JIM R. WANDSLEBE,
JNO. H. ZELSTERLING.