

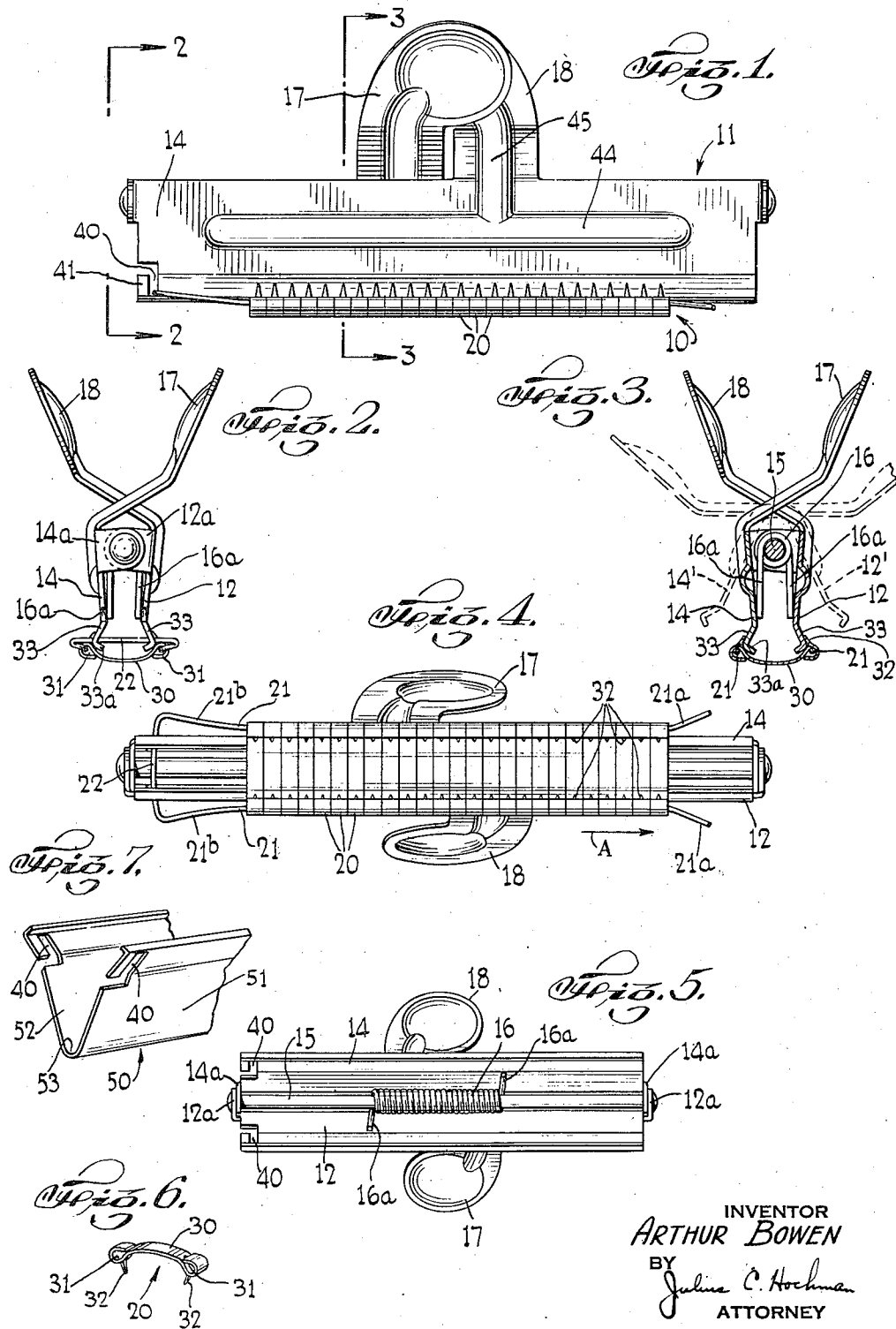
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WOUND CLIP PROTECTOR

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WOUND CLIP PROTECTOR

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This invention relates generally to surgical devices. More particularly my invention relates to improved means for protectively supporting wound clips.

It is well known that wound clips of the type generally employed by physicians and surgeons today are provided with relatively small sharp projecting points in order to cause a minimum of pain to the patient when applied and so that no scars will remain after removal. It is therefore obvious that these projecting points are necessarily exceedingly delicate and easily injured, and that a wound clip with bent or dulled points must be discarded.

Wound clips are today sold in units, each of which comprises a series of said clips, of a certain size, slidably mounted on a bent wire carrier. In order to efficiently meet the physician's and surgeon's needs for dealing with different types and sizes of wounds, wound clips are made in a variety of sizes.

Before use, it is necessary to sterilize wound clips; and when a wound clip unit is dropped into a sterilizer along with heavier surgical instruments, the sharp projecting points of the clips are frequently damaged.

It is therefore one of the objects of my invention to provide a highly improved device for supporting a wound clip unit of the class described which shall be so constructed and arranged as to accommodate series of wound clips of different sizes and which at the same time shall prevent damage to the points thereof.

Another object of my invention is to provide a device for protectively supporting a wound clip unit of the class described having means to facilitate the removal of individual wound clips from the bent wire carrier.

Further objects of my invention will become apparent in the following detailed description thereof.

In the accompanying drawing,

Fig. 1 is an elevational view of a wound clip unit and a support therefor, constructed and arranged in accordance with my invention;

Fig. 2 is an end view thereof as viewed substantially along the line 2—2 of Fig. 1;

Fig. 3 is a cross-sectional view taken substantially along the line 3—3 of Fig. 1, and illustrating in dotted lines the manner of its use;

Fig. 4 is a bottom plan view of the assembled device shown in Fig. 1;

Fig. 5 is a view similar to Fig. 4, but of reduced size and with the wound clip unit removed;

Fig. 6 is a perspective view of one of the wound

clips shown in Figs. 1 through 4 and removed from its carrier; and

Fig. 7 is a perspective view of a wound clip unit support illustrating a modified form of my invention.

Referring now in detail to the drawing I have shown in Figs. 1 to 5 a wound clip unit 10 effectively mounted on a supporting device 11 constructed in accordance with my invention.

The support 11 comprises a pair of jaws or arms 12 and 14 provided at opposite ends thereof with pairs of apertured ears 12a and 14a respectively. A shaft 15 passing through aligned apertures of adjacently disposed ears 12a and 14a pivotally interconnects the said arms 12 and 14. A coil spring 16 surrounding the shaft 15 and having projecting end portions 16a pressing against the inner walls of the arms 12 and 14 serves to normally urge said arm to spread apart. To facilitate the movement of the arms 12 and 14 to closed position against the action of the spring 16, for purposes which will soon become apparent, angularly arranged finger gripping members 17 and 18 are provided. The said finger members 17 and 18 may be integral with the arms 12 and 14 respectively, as shown, or they may be connected in any other suitable manner.

As hereinbefore described the clip unit 10 illustrated in the drawing is of the standard type generally supplied to physicians and surgeons and comprises a series of wound clips 20 mounted on a bent wire carrier comprising the legs 21 interconnected at one of their ends by a transverse integral portion 22.

As shown in Fig. 6 of the drawing, each wound clip 20 may be of the well known type formed from a strip of suitable bendable material 30 provided with loops 31 at opposite ends thereof and having relatively small sharp points 32 projecting outwardly therefrom. The loops 31 are designed to slidably receive therethrough the legs 21 of the wire carrier to hold a predetermined quantity of wound clips 20 thereon. It is noted that the projections 32 are angularly inclined toward each other.

The following construction is provided to protect the points 32 of the wound clips 20 against damage until they are used.

A portion 33 adjacent the top longitudinal edges of each of the arms 12 and 14 is angularly outwardly flared as shown. The angle of the said portion 33 is such that the inner surfaces of the points 32 will contactively ride over the surfaces of the said portions 33 and there will thus be formed a protecting backing for the points 32.

It is noted that the legs 21 of the wire carrier are substantially parallel throughout their length with the exception of the opposite ends thereof. Portions 21a adjacent the free ends of the legs 21 and portions 21b adjacent the transverse portion 22 are outwardly flared to prevent the individual wound clips 20 from accidentally sliding off the carrier.

To provide smooth top edges for the flared portions of the arms 12 and 14, portions 33a adjacent said flared portions 33 are turned inwardly towards each other, as clearly shown in Figs. 2 and 3.

It is thus seen from the above described construction that in addition to providing a surgical device of the class described in which the points 32 of the wound clips are protected against damage until they are used, my device is so constructed and arranged that it may be satisfactorily employed for a variety of sizes of wound clips.

As illustrated by the dotted lines 12' and 14' of Fig. 3 of the drawing, when it is desired to use the device for smaller sized clips it is merely necessary to press the finger members 17 and 18 together, against the action of the spring 16, a sufficient amount so that the portions 33 and 33a will fit between the corresponding pairs of points 32. If larger sized clips are used, the normal action of the spring 16 will spread the arms apart and into contactive engagement with the points 32. To add rigidity and strength to the arms 12 and 14 and to the finger gripping members 17 and 18, I provide the reinforcing ridges 44 and 45.

In use, the physician or surgeon generally removes the clips 20 one at a time, as required, by sliding the same in the direction of the arrow A, past the flared ends 21a of the bent wire carrier and off the ends of the arms 12 and 14. In order to prevent the entire clip unit 10, including the bent wire carrier, from moving along with the clip 20, or to become disarranged or dislodged from its protective support 11 for any other reason, I provide the following construction:

Adjacent one transverse edge of each arm 12 and 14 I provide a notch 40 adapted to receive therein the transverse portion 22 of the bent wire carrier member. As clearly shown in Figs. 1 and 5 of the drawing, each of the said notches 40 comprise a horizontal portion extending inwardly from the transverse edges of the arms 12 and 14 and a vertical portion extending to a point adjacent the bent over edge portions 33a. There is thus provided an abutment portion 41 which also limits the movement of the bent wire carrier in a direction opposed to that of the arrow A.

In Fig. 7 I have shown a modified form of my invention in which the protective support 11 instead of being composed of a pair of pivotally interconnected arms, is formed from a single sheet of resilient material comprising the arms 51 and 52, interconnected by an integral portion 53. As illustrated the arms 51 and 52 are normally spread apart in a V-shaped formation and may be resiliently brought together by pressure of the fingers to cause the upper flared portions of the longitudinal edges to engage between corresponding pairs of points.

It will thus be seen that there is provided a device in which the several objects of this invention are achieved, and which is well adapted to meet the conditions of practical use.

As various possible embodiments might be made of the above invention, and as various changes might be made in the embodiment above set forth, it is to be understood that all matter herein set forth or shown in the accompanying drawing is to be interpreted as illustrative and not in a limiting sense.

Having described my invention, I claim as new and desire to secure by Letters Patent:

1. For use in combination with wound clips having projecting points, a device for protectively supporting said clips comprising a pair of arms having longitudinal edges, adapted to contactively engage said projecting points, and means for normally urging said arms apart to urge said longitudinal edges into contactive engagement with said projecting points to removably hold said clips thereon.

2. In combination, a wound clip unit comprising a plurality of wound clips, each of said clips having projecting points, and being slidably removably mounted on a bent wire carrier member, a device for supporting said unit, said device comprising a pair of arms having longitudinal edges, outwardly flared portions adjacent said longitudinal edges adapted to contactively engage said projecting points, said arms being normally resiliently urged apart to cause said flared portions to contactively engage said projecting points, and means for maintaining said carrier member against displacement while permitting the removal therefrom of said wound clips.

3. In combination, a wound clip unit comprising a plurality of wound clips, each of said clips having projecting points, and being slidably removably mounted on a bent wire carrier member, a device for supporting said unit, said device comprising a pair of arms having longitudinal edges, outwardly flared portions adjacent said longitudinal edges adapted to contactively engage said projecting points, said arms being normally resiliently urged apart to cause said flared portions to contactively engage said projecting points, and means for maintaining said carrier member against displacement while permitting the removal therefrom of said wound clips, said last named means comprising notches in said arms adapted to receive a portion of said wire carrier therein.

4. For use in combination with wound clips having projecting points, a device for protectively supporting said clips, comprising a pair of arms having longitudinal edges, outwardly flared portions adjacent said longitudinal edges adapted to contactively engage said projecting points, and means for normally urging said arms apart to urge said flared portions into contactive engagement with said projecting points to removably hold said clips thereon.

5. For use in combination with wound clips having projecting points, a device for protectively supporting said clips, comprising a pair of arms having longitudinal edges, outwardly flared portions adjacent said longitudinal edges adapted to contactively engage said projecting points and means for normally urging said arms apart to urge said flared portions into contactive engagement with said projecting points to removably hold said clips thereon, said last named means comprising a shaft pivotally interconnecting said arms and a spring for normally urging the pivotal movement of said arms.

6. The combination of a wound clip unit com-

prising a plurality of wound clips having projecting points and slidably mounted on a bent wire carrier with means for supporting said unit, said supporting means comprising elements resiliently urged into contact with said projecting points for protecting said points against damage.

7. The combination of a wound clip unit comprising a plurality of wound clips having projecting points and slidably mounted on a bent wire carrier, with a device for removably supporting said unit, said device comprising means for protecting said point against damage, and for slidably removably supporting said wound clips thereon, and means for limiting the relative axial movement between said device and said bent wire carrier.

8. In combination, a wound clip unit comprising a plurality of wound clips, each of said clips having projecting points and being slidably removably mounted on a bent wire carrier member, a device for supporting said unit, said device comprising a pair of arms having longitudinal edge portions adapted to contactively engage said projecting points, said arms being normally resiliently urged apart to cause said edge portions

to contactively engage said projecting points, and means for maintaining said bent wire carrier member against displacement while permitting the removal therefrom of said wound clips.

9. As an article of manufacture, a wound clip protector comprising a pair of hinged arms, said arms having longitudinal edge portions extending in parallel relation and formed to fit between the projecting points and the body portion of a wound clip, and spring means resiliently urging said edge portions apart.

10. A wound clip protector according to claim 9, in which the arms are provided with finger pieces, for conveniently bringing said edge portions closer together against the action of said spring means.

11. The combination according to claim 2, in which the said arms are provided with finger pieces for conveniently bringing said arms closer together.

12. The combination according to claim 8 in which the said arms are provided with finger gripping portions for conveniently bringing said arms closer together.

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