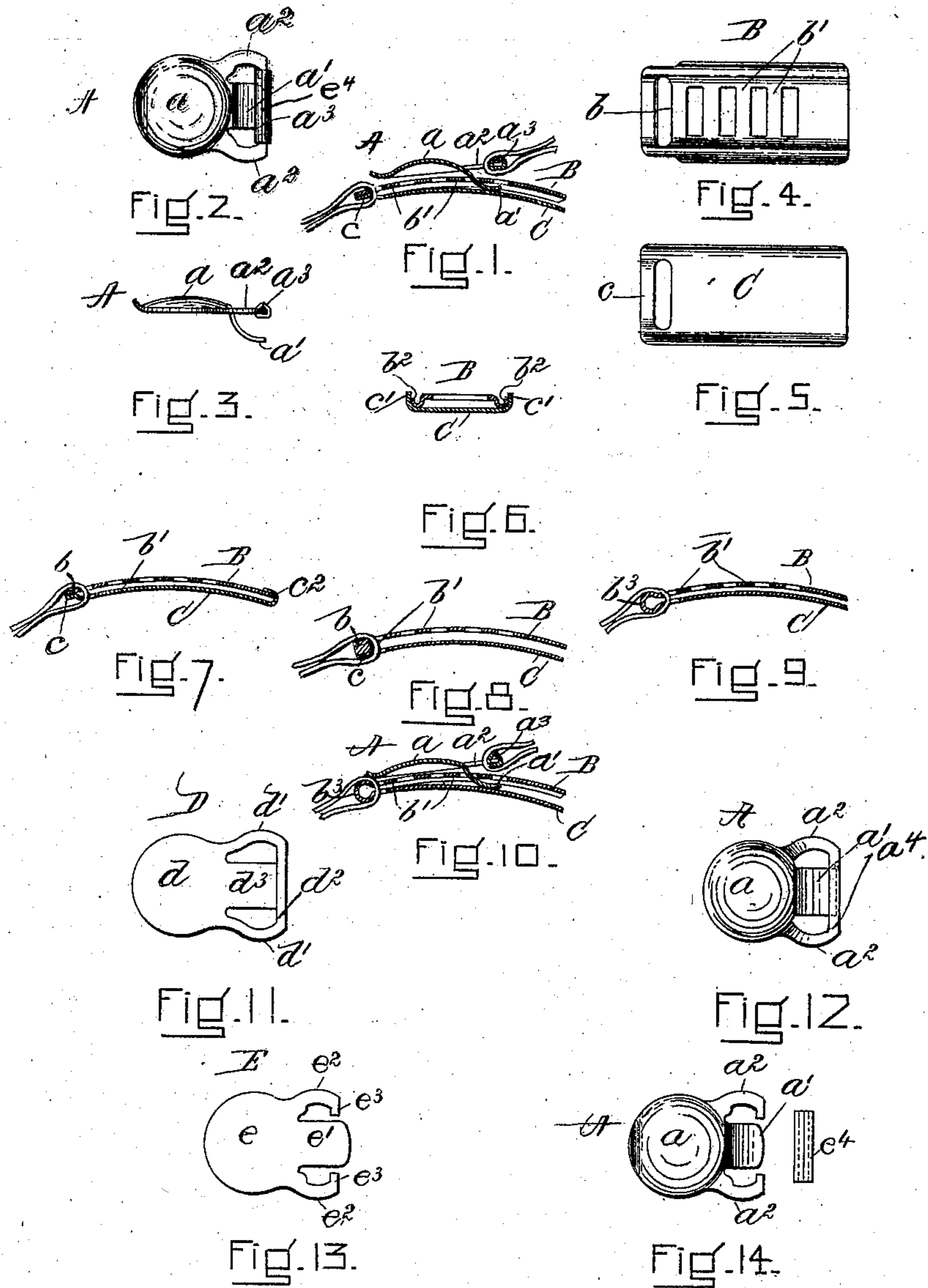


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PATENTED MAR. 20, 1906.

E. J. KRAETZER.  
BUCKLE.

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WITNESSES:

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# UNITED STATES PATENT OFFICE.

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## BUCKLE.

No. 815,538.

Specification of Letters Patent.

Patented March 20, 1906.

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*To all whom it may concern:*

Be it known that I, EDWIN J. KRAETZER, a citizen of the United States, residing at Somerville, in the county of Middlesex and State of Massachusetts, have invented a new and useful Improvement in Buckles, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification, in explaining its nature.

My invention relates to an improvement in buckles of a type like that referred to in Letters Patent of the United States, No. 741,677, granted to me on October 20, 1903, in which active and passive members attached to individual or separate parts are combined by an interlocking tongue.

My invention consists, primarily, in combining with said members a guard which prevents the interlocking tongue of the active member, projecting through, as it does, to extend from the under side of the passive member, from cutting into or wearing upon any material with which it comes in contact. The buckle is especially applicable for use on rubber overshoes or "arctics," so called, and I have found by experiment that with the buckle hugging tight, as it does, over the instep of the wearer unless some preventing means is provided the projecting tongue cuts or wears holes in the cloth of the overshoe. Such preventive means is provided by the guard.

My invention consists also in the improved construction of the active member of the buckle, particularly with reference to the ease and economy of its manufacture, for which purpose its elements of structure are peculiarly characterized.

Referring to the drawings, Figure 1 shows my improved buckle in longitudinal vertical section, the members thereof being shown in interlocking relation. Fig. 2 shows the active member of the buckle in plan. Fig. 3 shows the same in side elevation. Fig. 4 shows a plan of the passive member. Fig. 5 shows the guard in plan. Fig. 6 shows a cross-section of the passive member and guard combined. Figs. 7, 8, and 9 show in longitudinal vertical section different modes of combining the passive member and guard. Fig. 10 shows in longitudinal vertical section the members of the buckle combined with

the guard acting to hold the tongue of the active member locked in place. Fig. 11 shows in plan a blank for forming the active member. Fig. 12 shows in plan the same struck up. Fig. 13 shows another form of blank for forming the active member. Fig. 14 shows in plan the same struck up and with an auxiliary part, to which reference will hereinafter be made.

In the drawings, A is the active member of the buckle, having a thumb portion *a*, by which the member may be grasped to be turned, a curved tongue *a'* projecting from the edge thereof, which tongue forms the interlocking portion of the buckle, and the arms *a<sup>2</sup>* *a<sup>3</sup>*, projecting also from said thumb portion, to carry a strap-bar *a<sup>3</sup>*, by which the member may be attached to one of the parts to be brought together. The relative disposition of the members also is such that the strap-bar will be in line with said thumb portion of the member, and the curve of the tongue *a'* is such that it will lie throughout its curved extension at about the same radial distance from the strap-bar.

B is the passive member, having a strap-bar *b*, with adjacent slot, by which it may be attached to the other part of those to be brought together. This member is also represented as having a number of retaining-bars *b'* and cross openings or slots adjacent to or between them, which receive the interlocking tongue of the active member. As shown in the drawings, the member B is curved in order that it may conform to the shape of the instep of the wearer when used on shoes to which it is peculiarly applicable, especially rubber overshoes or "arctics," so called. According to the operation of this type of buckle the members combine, as shown, by the curved tongue of the active member interlocking with any one of the retaining-bars of the passive member, this by the tongue projecting through the slot adjacent to said bar.

C represents a guard on the under side of the passive member, against which may bear the tongue of the active member projecting through any one of the slots in the passive member. The guard acts to shield the cloth or material beneath said buckle from the contact of the projecting tongue, which might otherwise wear holes in or cut said material. This cutting or wearing action of the tongue

is perhaps worse when the tongue is made relatively short, as shown in the drawings, for then the end of the tongue projects to present an almost direct cutting or wearing edge.

5 If the tongue be made longer, its end will extend to lie in closer to the passive member. Still even then its effect is injurious, as before explained.

The guard has a strap-bar  $c$  and is shown 10 held in place by the same strap which secures the passive member to the part with which it is combined and this by the strap passing through a slot cut in the end of said guard in line with the slot in the passive member 15 through which the strap passes. In size the guard is preferably the same as the passive member and is separated from the same by a space sufficient for the entry of the interlocking tongue. Otherwise, if too closely contiguous, it might act to retard the interlocking 20 ingress of the tongue. This spacing of the guard from the passive member may be readily obtained by simply turning down the side edges  $b^2$  of the passive member. (See Fig. 6.) 25 In this connection it is also to be noted that preferably the guard is kept from lateral play relatively to the passive member by its side edges  $c'$  being turned up outside the downturned edges of the passive member above 30 mentioned. By means of these coördinating edges the guard is kept laterally in place with respect to the passive member, and such relative disposition is maintained even when the members are spread apart some considerable 35 amount. The guard is also preferably united or fixed to the passive member. This may be done by turning up the end  $c^2$  of the guard around the end of the passive member, as shown in Fig. 7, or as in Fig. 8, where the ends, 40 and preferably the strap ends, of the respective members are shown permanently united by welding or otherwise. In Fig. 9 the passive member and guard are made integral, with the metal folding back beneath the pas- 45 sive member to form the guard. The fold in the metal  $b^3$  is preferably made at the strap end, where it forms an exceedingly good strap-bar for both members.

By uniting the passive member and guard 50 at one end also the guard may be made a spring member. Assuming the guard to be so disposed that it must yield somewhat to the ingress of the tongue into the space between it and the passive member, then by 55 making the guard of some resilient metal and fixing it at one end to the passive member it may not only yield to the ingress of the tongue, but after such yielding may spring back and act to hold the tongue locked in 60 place. I have shown this capability of the guard in Fig. 10, where the tongue is shown retained by that form of guard before referred to, which is made integral with the passive member and in which, moreover, the fold in

the metal forms a natural spring for the 65 guard.

Referring now to the active member of the buckle, which, as said before, comprises a thumb portion  $a$ , from which there projects a curved tongue  $a'$ , and also the extending arms 70  $a^2 a^2$ , bearing the strap-bar  $a^3$ , it is to be noted that the tongue projects to curve from the edge of said thumb portion of the member with the arms bearing the strap-bar extending straight out from the said thumb portion 75 on either side of said tongue. The structure of the member is thus peculiarly characterized, for the reason that it may be easily made or struck up from a flat or blank piece of metal. This can best be illustrated by the 80 two forms of blank which I have shown.

One form of blank D is shown in Fig. 11. This blank has a main portion  $d$ , from which project side portions  $d' d'$ , connected by a portion  $d^2$ , while between the side portions 85  $d' d'$  there also extends from the main portion  $d$  a separate portion  $d^3$ . These portions when the blank is struck up form, respectively, various parts of the active member of the buckle. (See Fig. 12.) In other words, 90 the main portion  $d$  forms the thumb portion  $a$  of said member, which is preferably made slightly concave to resemble a button-top. The portion  $d^3$  forms the tongue  $a'$  of the member. This, it is to be noted, projects at 95 an angle with respect to the thumb portion to which it is attached and in a direction directly away and outwardly from said thumb portion without being bent or extending beneath the same. The tongue can accord- 100 ingly easily be struck up or formed. The side portions  $d' d'$  form the arms  $a^2 a^2$  of the member carrying the strap-bar  $a^4$ , which is the portion  $d^2$  of the blank. The strap-bar may be disposed at a proper relative distance 105 from the tongue by crimping or bending back its carrying-arms  $a^2 a^2$ . By means of this form of blank I am enabled to form the active member of the buckle complete, including the strap-bar. I prefer, however, to em- 110 ploy a form of blank which requires the strap-bar to be an auxiliary part. This form of blank E is shown in Fig. 13. It comprises the portion  $e$ , forming, as shown in Fig. 2, the thumb portion  $a$  of the member, the portion 115  $e'$  forming the tongue  $a'$ , which projects from the thumb portion in the manner before explained, and on either side thereof the portions  $e^2 e^2$ , forming the arms  $a^2 a^2$ , carrying the strap-bar. These portions  $e^2 e^2$  of the blank are 120 shown with inturned ends  $e^3 e^3$ , adapted to receive the strap-bar, which is an auxiliary part or sleeve  $e^4$ . This is slipped over the inturned ends of the carrying-arms  $a^2 a^2$  and when thus combined forms a strap-bar  $a^3$ . The active 125 member of the buckle is then complete. This last makes a very excellent form of blank for forming the active member of the buckle, in-

asmuch as the portion  $e'$ , forming the tongue, may be made of any length and so the tongue struck therefrom made to have just such degree of angular or curved extension as may be desirable. The side portions  $e^2$   $e^2$  of the blank may also be stamped out to have just such relative length to that of the retaining or carrying arms as to hold the sleeve forming the strap-bar at a proper distance from the tongue, thereby dispensing with any further operation in forming or arranging the parts as with the form of blank first mentioned. Moreover, the auxiliary sleeve  $e^4$  makes a very efficient strap-bar, for it is one which will not cut the strap when the active member is turned, a rounding strap such as is obtained by the sleeve being desirable on this account.

Having thus fully described my invention, I claim and desire to secure by Letters Patent of the United States—

1. A buckle of the character specified having an active member provided with a tongue, a passive member with which said tongue of the active member is adapted to engage, said passive member having also a slot and adjacent strap-bar, a guard for said tongue when making interlocking engagement with said passive member, said guard comprising a plate beneath said passive member and spaced therefrom, said guard having also a slot and adjacent strap-bar in line with the slot and strap-bar of said passive member, whereby said passive member and guard may be held by a single strap and thereby be connected at one end only thereof and said tongue enter freely between said passive member and guard when the members are combined.

2. A buckle of the character specified having an active member provided with a tongue, a passive member with which said tongue of the active member is adapted to engage, said passive member having also a slot and adjacent strap-bar, a guard for said tongue when making interlocking engagement with said passive member, said guard comprising a plate beneath said passive member and spaced therefrom, said guard having also a slot registering with the slot in said passive member and a strap-bar adjacent to its said slot, which strap-bar makes integral connection with the strap-bar of said passive member, whereby said passive member and guard are permanently connected at one end only thereof so as to be retained by a single strap and also spaced apart so that said tongue may enter freely between said passive member and guard, substantially as shown and described.

3. A buckle of the character specified having an active member provided with a tongue, a passive member with which said tongue of the active member is adapted to engage, said passive member having also a slot and adjacent strap-bar, a guard for said tongue

when making interlocking engagement with said passive member, said guard comprising a plate beneath said passive member and spaced therefrom, said guard having also a slot and adjacent strap-bar in line with the slot and strap-bar of said passive member, whereby said passive member and guard may be held by a single strap and said tongue enter freely between said passive member and guard when the members are combined, and which passive member and guard have also edges turned to interlock with one another, whereby said members may be retained in proper longitudinal alinement.

4. A member of a buckle having a thumb portion, a tongue turned down throughout its entire length from the edge of said portion, and arms extending from said thumb portion and angularly arranged with respect to said tongue for supporting a strap-bar, and a strap-bar.

5. A member of a buckle comprising a thumb portion, arms extending therefrom for supporting a strap-bar on the ends thereof, and between said arms, a curved tongue turned down from the edge of said thumb portion, and located throughout its entire length on a line of curvature substantially equally distant from the ends of said arms.

6. A member of a buckle comprising a thumb-portion, a tongue turned down from the edge thereof, arms extending from said thumb portion, and a sleeve carried by said arms and forming a strap-bar.

7. A member of a buckle comprising a thumb portion, a tongue turned down to project from the edge thereof, arms extending from the edge of said thumb portion alongside said tongue on either side thereof, and a strap-bar carried by said arms.

8. A member of a buckle comprising a thumb portion, a tongue attached thereto and projecting angularly therefrom, said tongue projecting in a direction directly away and outwardly from the thumb portion, arms also extending from said thumb portion, and a strap-bar.

9. A member of a buckle comprising a thumb portion, a tongue projecting from the edge thereof, and arms also extending from the edge of said thumb portion alongside said tongue on either side thereof for supporting a strap-bar and a strap-bar carried by said arms.

10. A member of a buckle having a thumb portion, a tongue turned down from the edge thereof, arms extending from said thumb portion on either side of said tongue, the projecting ends of which arms turn inwardly for supporting a strap-bar.

11. A member of a buckle comprising a thumb portion, a tongue struck down from the edge thereof, arms extending also from said thumb portion, the ends of which arms

turn inwardly for supporting a strap-bar, and a sleeve forming said strap-bar arranged on the inturned ends of said arms.

5 12. A blank from which is formed a member of a buckle, the same comprising a portion forming the thumb portion of said member, a portion forming a tongue projecting from the edge of said thumb portion, a por-

tion forming arms for supporting a strap-bar, and a portion forming said strap-bar arranged 10 on the ends of said arms.

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