CLAIMS

We claim:

1. A prosthetic socket for a prosthetic limb, the prosthetic socket comprising:

a socket body comprising a distal end and a top edge opposite the distal end, and wherein the distal end comprises a prosthetic component attachment mechanism, and

a first structural member comprising a first straight portion, a second straight portion, and a first arch portion, and wherein the first structural member is disposed on an exterior surface of the socket body; and

wherein the first straight portion of the first structural member comprises a first end fixed to a second end of the second straight portion of the first structural member, a third end of the first arch portion is fixed to a fourth end of the first straight portion, and a fifth end of the first arch portion is fixed to a sixth end of the second straight portion of the first structural member.

2. The prosthetic socket of claim 1 wherein the socket body further comprises a medial fin disposed on the top edge of the socket body and the first arch member of the first structural member is disposed on the medial fin of the top edge of the socket body.

3. The prosthetic socket of claim 2 wherein the socket body further comprises a second structural member having a third straight portion, a fourth straight portion, and a second arch portion, and wherein the second structural member is disposed on an lateral exterior surface of the socket body.

4. The prosthetic socket of claim 3 wherein the third straight portion of the second structural member comprises a seventh end fixed to an eighth end of the fourth straight portion of the second structural member, a ninth end of the second arch portion is fixed to a tenth end of the third straight portion, and an eleventh end of the first arch portion is fixed to a twelfth end of the fourth straight portion of the second structural member.

5. The prosthetic socket of claim 4 wherein the socket body further comprises a lateral fin disposed on the top edge of the socket body and the second arch member of the second structural member is disposed on the lateral fin of the top edge of the socket body.

6. The prosthetic socket of claim 5 wherein a first cross section of the socket body includes a first wall thickness from about 0.1 mm to about 20mm.

7. The prosthetic socket of claim 6 wherein a second cross section of the first structural member includes a second wall thickness from about .25mm to about 100mm.

8. The prosthetic socket of claim 7 wherein the socket body further comprises a posterior edge and an anterior edge, the posterior edge is disposed on the top edge connecting the medial fin with the lateral fin, the anterior edge is disposed on the top edge opposite the posterior edge connecting the medial fin to the lateral fin, and the posterior edge and anterior edge have a scalloped shape.

9. The prosthetic socket of claim 8 wherein the socket body further comprises an interior surface having a negative shape of a residual limb of a wearer.

10. A prosthetic socket for a prosthetic limb, the prosthetic socket comprising:

a socket body comprising a distal end and a top edge opposite the distal end, and wherein the distal end comprises a prosthetic component attachment mechanism and the top edge comprises a medial fin, a lateral fin, a posterior edge and an anterior edge;

a first structural member comprising a first straight portion, a second straight portion, and a first arch portion, and wherein the first structural member is disposed on a medial exterior surface of the socket body, and

a second structural member having a third straight portion, a fourth straight portion, and a second arch portion, and wherein the second structural member is disposed on an lateral exterior surface of the socket body; and

wherein the first straight portion of the first structural member comprises a first end fixed to a second end of the second straight portion of the first structural member,

a third end of the first arch portion is fixed to a fourth end of the first straight portion, and a fifth end of the first arch portion is fixed to a sixth end of the second straight portion of the first structural member.

11. The prosthetic socket of claim 10 wherein the first arch member of the first structural member is disposed on the medial fin of the top edge of the socket body.

12. The prosthetic socket of claim 11 wherein the third straight portion of the second structural member comprises a seventh end fixed to an eight end of the fourth straight portion of the second structural member, a ninth end of the second arch portion is fixed to a tenth end of the third straight portion, and an eleventh end of the first arch portion is fixed to a twelfth end of the fourth straight portion of the second structural member.

13. The prosthetic socket of claim 12 wherein the second arch member of the second structural member is disposed on the lateral fin of the top edge of the socket body.

14. The prosthetic socket of claim 13 wherein a first cross section of the socket body includes a first wall thickness from about 0.1 mm to about 20mm.

15. The prosthetic socket of claim 14 wherein a second cross section of the first structural member includes a second wall thickness from about .25mm to about 100mm.

16. The prosthetic socket of claim 15 wherein the socket body further includes a posterior edge and an anterior edge, the posterior edge is disposed on the top edge connecting the medial fin with the lateral fin, the anterior edge is disposed on the top edge opposite the posterior edge connecting the medial fin to the lateral fin, and the posterior edge and anterior edge have a scalloped shape.