

CLAIMS

1. A disposable absorbent article comprising:

a central body defining a first waist end region including a first end edge, a second waist end region spaced longitudinally from the first waist end region and including a second end edge, and a crotch region positioned therebetween; and

an absorbent core situated between the end edges, the core including a plurality of elastics incorporated therewith such that the core is laterally contracted in a narrowed region about the elastics; and

wherein the absorbent core has a shape that includes a pair of end regions that are non-elasticized and have a lateral width wider than a lateral width of the narrowed region.

2. The disposable absorbent article of claim 1, wherein the elastics are longitudinally spaced apart and extend laterally between longitudinally extending side margins of the absorbent core at the crotch region.

3. The disposable absorbent article of claim 1, wherein the absorbent core includes a first core element formed by materials imparting absorbent properties and a second core element formed by materials imparting absorbent properties, the second core element superimposing the first core element to form a multi-layer primary absorbent region of the absorbent core having an absorption capacity per unit area increased from an absorption capacity per unit area in the end regions of the absorbent core; and

wherein the multi-layer absorbent region substantially coincides with the narrowed region ; and

wherein each of the first and second core elements includes a plurality of elastics incorporated therewith to form a narrowed region of the core element; and

wherein the narrowed regions of the core elements are positioned adjacent one another to substantially form the narrowed region of the absorbent core.

4. The disposable absorbent article of claim 2, wherein ends of the elastics are positioned proximate the side margins to provide a concavity in each said side margin proximate the elastics.

5. The disposable absorbent article of claim 3, wherein the core includes a first core element at least partially superimposing the second core element to form a multi-layer primary absorbent region having an absorption capacity per unit area increased from an absorption capacity per unit area of other regions of the absorbent core, the narrowed regions of the core elements being situated to provide a laterally contracted primary absorbent region ; and
wherein the second core element includes slits that provide voids penetrating through the second core element in the substantially laterally contracted primary absorbent region.

6. The disposable absorbent article of claim 1, wherein a plurality of said elastics are adhered to the core element at a plurality of adhesion locations positioned and spaced apart along the length of the elastic to form a plurality of laterally spaced apart ridges in the core element in between adhesion locations.

7. The disposable absorbent article of claim 6, wherein the adhesion locations associated with each elastic are longitudinally aligned with adhesion locations on other elastics to form a plurality of longitudinally aligned and laterally spaced apart sets of adhesion locations that form ridges that are longitudinally extended and spaced laterally between sets of adhesion locations.

8. The disposable absorbent article of claim 7, wherein the ridges are spaced apart to form a plurality of longitudinally extending void spaces below said ridges and a plurality of channels between laterally spaced apart ridges.

9. The disposable absorbent article of claim 7, wherein the absorbent core further includes a second absorbent core element placed below the at least one absorbent core element and the plurality of elastics.

10. The disposable absorbent article of claim 1, wherein the elastics are placed within said absorbent core.

11. The disposable absorbent article of claim 1, wherein the elastics are placed, pre-tensioned, on a top or bottom surface of the absorbent core.

12. The disposable absorbent article of claim 1, wherein the absorbent core includes a first core element and a second core element, said elastics being disposed between said first core element and said second element.

13. A disposable absorbent article comprising:

a central body defining a first waist end region including a first end edge, a second waist end region spaced longitudinally from the first waist end region and including a second end edge, and a crotch region positioned therebetween; and

an absorbent core situated between the end edges, the absorbent core including at least one absorbent core element and a plurality of spaced apart elastics incorporated with the core element; and

wherein a plurality of said elastics are adhered to the core element at a plurality of adhesion locations positioned and spaced apart along the length of the elastic to form a plurality of spaced apart ridges in the core element in between adhesion locations; and

wherein the adhesion locations associated with each elastic are aligned with adhesion locations on other elastics to form a plurality of spaced apart sets of adhesion locations that form ridges that are extended and spaced between sets of adhesion locations.

14. The disposable absorbent article of claim 13, wherein the absorbent core further includes a second absorbent core element placed below the at least one absorbent core element and the plurality of elastics incorporated therewith, the second absorbent core element including a plurality of said elastics incorporated therewith to form a narrowed region of the second absorbent core element, wherein narrowed regions of the core elements are positioned adjacent one another to substantially form a narrowed region of the absorbent core.

15. The disposable absorbent article of claim 14, wherein the absorbent core further includes a material layer positioned below the first core element and the elastics incorporated therewith and a second material layer positioned below the second core element and the elastics incorporated therewith.

16. The disposable absorbent article of claim 13, wherein the elastics are longitudinally spaced apart and adhesion locations are longitudinally aligned to form longitudinally extending, laterally spaced apart ridges.

17. The disposable absorbent article of claim 13, wherein the ridges are spaced apart to form a plurality of longitudinally extending void spaces below said ridges and a plurality of channels between laterally spaced apart ridges.

18. The disposable absorbent article of claim 13, wherein the absorbent core further includes a second absorbent core element placed below the at least one absorbent core element and the plurality of elastics; and

wherein the second core element includes a plurality of elastics adhered thereto at a plurality of adhesion locations, and wherein the adhesion locations associated with each elastic are longitudinally aligned with adhesion locations on other elastics in the plurality of elastics to form a plurality of longitudinally aligned and laterally spaced apart sets of adhesion locations that form ridges that are longitudinally extended and spaced laterally between sets of adhesion locations.

19. A disposable absorbent article comprising:
a central body defining a first waist end region including a first end edge, a second waist end region spaced longitudinally from the first waist end region and including a second end edge, and a crotch region positioned therebetween; and
an absorbent core situated between the end edges, the absorbent core including at least one unitary absorbent core element and a plurality of elastics incorporated with the core element such that the core element is substantially laterally contracted in a narrowed region of the core element about the elastics; and

wherein the absorbent core includes at least one end region that is substantially non-elasticized, the at least one end region having a lateral width wider than a lateral width of the narrowed region of the core element; and

wherein the elastics are concentrated in a central region of the core element between the end regions to form a concavity in the side margins.

20. The disposable absorbent article of claim 19, wherein, in the narrowed region of the core element, longitudinally extending elastics are positioned in laterally spaced apart relation with the side margins to form said concavity in the side margins.

21. The disposable absorbent article of claim 1, wherein laterally-oriented rows of said elastics are arranged in the narrowed region in rows of varying pitch to define a curved shape to said narrowed region of the core element.

22. The disposable article of claim 1, wherein laterally-oriented rows of said elastics are arranged in the narrowed region in rows of varying tension to provided a curved shape to said narrowed region.

23. The disposable absorbent article of claim 1, wherein laterally-oriented rows of said elastics are arranged in the narrowed region in rows of varying shape to achieve the shape of the absorbent core.

24. The disposable absorbent article of claim 1, wherein laterally-oriented rows of said elastics are arranged in the narrowed region in rows of varying type to achieve the shape of the absorbent core.

25. The disposable absorbent article of claim 1, wherein laterally-oriented rows of elastics are arranged in rows of varying length to achieve the shape of the absorbent core.

26. The disposable absorbent article of claim 14, wherein the first and second core elements are mutually adhered by a bonding strip extending continuously across longitudinally

aligned adhesion locations of multiple spaced apart elastics such that a plurality of said bonding strips are mutually spaced apart and directed transversely to said elastics.

27. The disposable absorbent article of claim 14, wherein said elastics are adhered to said first and second core elements at said adhesion locations.

28. The disposable absorbent article of claim 27, wherein a plurality of ridges are formed in the second core element such that a plurality of mutually spaced apart and extended void spaces are formed between the core elements.

29. The disposable absorbent article of claim 28, wherein each of said void spaces is formed between a ridge on the first core element and a corresponding ridge on the second core element that protrudes in a direction away from the first-core element.

30. The disposable absorbent article of claim 13, further comprising:
a topsheet disposed over the absorbent core such that mutually-spaced apart and extended void spaces are formed between the topsheet and the absorbent core.

CLAIMS

1. A disposable absorbent article comprising:
 - a central body defining a first waist end region including a first end edge, a second waist end region spaced longitudinally from the first waist end region and including a second end edge, and a crotch region positioned therebetween; and
 - an absorbent core situated between the end edges, the absorbent core including a first absorbent core element including superabsorbent particles and extending laterally across the crotch region and a plurality of elastics that are generally laterally extended, mutually longitudinally spaced apart and attached to the first absorbent core element such that the first absorbent core element is laterally contracted in a narrowed region of the first core element about the plurality of elastics; and
 - wherein the absorbent core has a shape that includes a pair of end regions that are non-elasticized and have a lateral width wider than a lateral width of the narrowed region;
 - wherein each of said plurality of elastics extends laterally from a location proximate one side margin of the first core element in the narrowed region to a location proximate an opposite side margin of the first core element in the narrowed region; and
 - wherein the plurality of elastics are disposed together in one concentration of elastics in a central region of the first core element between the end regions and within the side margins of the first core element, and wherein the elastics are arranged in longitudinally spaced apart rows; and
 - wherein the absorbent core further includes a second core element, said plurality of elastics being disposed between said first core element and said second core element.
2. The disposable absorbent article of claim 1, wherein the plurality of elastics are longitudinally spaced apart and extend laterally between longitudinally extending side margins of the absorbent core at the crotch region.
3. The disposable absorbent article of claim 2, wherein ends of the plurality of elastics are positioned proximate the side margins to provide a concavity in each said side margin proximate the plurality of elastics.
4. The disposable absorbent article of claim 1, wherein the absorbent core includes the first core element formed from materials imparting absorbent properties and the second core

element formed from materials imparting absorbent properties, the second core element superimposing the first core element to form a multi-layer primary absorbent region of the absorbent core having an absorption capacity per unit area increased from an absorption capacity per unit area in the end regions of the absorbent core; and

wherein the multi-layer absorbent region substantially coincides with the narrowed region; and

wherein each of the first and second core elements includes a plurality of elastics incorporated therewith to form a narrowed region of the respective core element; and wherein the narrowed regions of the core elements are positioned adjacent one another to substantially form the narrowed region of the absorbent core.

5. The disposable absorbent article of claim 1, wherein the plurality of elastics are placed within said absorbent core.

6. The disposable absorbent article of claim 1, wherein the plurality of elastics are placed, pre-tensioned, on a planar absorbent surface of the absorbent core.

7. The disposable absorbent article of claim 1, wherein the rows of said elastics are arranged in the narrowed region in rows of varying pitch to define a curved shape to said narrowed region of the first core element.

8. The disposable absorbent article of claim 1, wherein the rows of said elastics are arranged in the narrowed region in rows of varying tension to provide a curved shape to said narrowed region.

9. The disposable absorbent article of claim 1, wherein rows of said elastics are arranged in the narrowed region in rows of varying shape to achieve the shape of the absorbent core.

10. The disposable absorbent article of claim 1, wherein the rows of said elastics are arranged in the narrowed region in rows of varying type to achieve the shape of the absorbent core.

11. The disposable absorbent article of claim 1, wherein the rows of said elastics are arranged in rows of varying length to achieve the shape of the absorbent core.

12. A disposable absorbent article comprising:

a central body defining a first waist end region including a first end edge, a second waist end region spaced longitudinally from the first waist end region and including a second end edge, and a crotch region positioned therebetween; and

an absorbent core situated between the end edges, the absorbent core including a first absorbent core element including superabsorbent particles and extending laterally across the crotch region and a plurality of elastics that are generally laterally extended, mutually longitudinally spaced apart and attached to the first absorbent core element such that the first absorbent core element is laterally contracted in a narrowed region of the first core element about the plurality of elastics; and

wherein the absorbent core has a shape that includes a pair of end regions that are non-elasticized and have a lateral width wider than a lateral width of the narrowed region; and

wherein the absorbent core includes the first core element formed from materials imparting absorbent properties and a second core element formed from materials imparting absorbent properties, the second core element superimposing the first core element to form a multi-layer primary absorbent region of the absorbent core having an absorption capacity per unit area increased from an absorption capacity per unit area in the end regions of the absorbent core; and

wherein the multi-layer absorbent region substantially coincides with the narrowed region of the absorbent core; and wherein each of the first and second core elements includes a plurality of elastics incorporated therewith to form a narrowed region of the respective core element; and

wherein the narrowed regions of the core elements are positioned adjacent one another to substantially form the narrowed region of the absorbent core wherein each of said plurality of elastics extends laterally from a location proximate one side margin of the respective core element in the narrowed region thereof to a location proximate an opposite side margin of the respective core element in the narrowed region thereof; and

wherein each of said plurality of elastics are disposed together in one concentration of elastics in a central region of the respective core element between the end regions and within the side margins of the respective core element, and wherein the elastics are arranged in longitudinally spaced apart rows; and

wherein the narrowed regions of the core elements are situated to provide a laterally contracted primary absorbent region; and wherein the second core element includes slits that

provide voids penetrating through the second core element in the substantially laterally contracted primary absorbent region.

13. A disposable absorbent article comprising:

a central body defining a first waist end region including a first end edge, a second waist end region spaced longitudinally from the first waist end region and including a second end edge, and a crotch region positioned therebetween; and

an absorbent core situated between the end edges, the absorbent core including a first absorbent core element including superabsorbent particles and extending laterally across the crotch region and a plurality of elastics that are generally laterally extended, mutually longitudinally spaced apart and attached to the first absorbent core element such that the first absorbent core element is laterally contracted in a narrowed region of the first core element about the plurality of elastics; and

wherein the absorbent core has a shape that includes a pair of end regions that are non-elasticized and have a lateral width wider than a lateral width of the narrowed region;

wherein each of said plurality of elastics extends laterally from a location proximate one side margin of the first core element in the narrowed region to a location proximate an opposite side margin of the first core element in the narrowed region; and

wherein the plurality of elastics are disposed together in one concentration of elastics in a central region of the first core element between the end regions and within the side margins of the first core element, and wherein the elastics are arranged in longitudinally spaced apart rows; and

wherein said plurality of elastics are adhered to the first absorbent core element at a plurality of adhesion locations positioned and spaced apart along the length of each elastic of said plurality of said elastics adhered to the first absorbent core element to form a plurality of laterally spaced apart ridges in the first core element in between adhesion locations.

14. The disposable absorbent article of claim 13, wherein the adhesion locations associated with each elastic are longitudinally aligned with adhesion locations on others of the plurality of elastics to form a plurality of longitudinally aligned and laterally spaced apart sets of adhesion locations that form ridges that are longitudinally extended and spaced laterally between sets of adhesion locations.

15. The disposable absorbent article of claim 14, wherein the ridges are spaced apart

to form a plurality of longitudinally extending void spaces below said ridges and a plurality of channels between laterally spaced apart ridges.

16. The disposable absorbent article of claim 14, wherein the absorbent core further includes a second absorbent core element placed below the first absorbent core element and the plurality of elastics.

17. A disposable absorbent article comprising: a central body defining a first waist end region including a first end edge, a second waist end region spaced longitudinally from the first waist end region and including a second end edge, and a crotch region positioned therebetween; and

an absorbent core situated between the end edges, the absorbent core including a first absorbent core element including superabsorbent particles and imparting absorbent properties, and extending laterally across the crotch region, and a plurality of spaced apart elastics incorporated with the first core element; and

wherein said plurality of elastics are adhered to the first core element at a plurality of adhesion locations positioned and spaced apart along the length of each elastic of said plurality of said elastics adhered to the first core element to form a plurality of spaced apart ridges in the first core element in between adhesion locations; and

wherein the adhesion locations associated with each elastic are aligned with adhesion locations on other elastics of said plurality of said elastics adhered to the first core element to form a plurality of spaced apart sets of adhesion locations that form ridges that are extended and spaced between sets of adhesion locations; and

wherein the absorbent core further includes a second absorbent core element placed below the first absorbent core element and the plurality of elastics incorporated therewith, the second absorbent core element including a plurality of elastics incorporated therewith, each of the plurality of elastics forming a narrowed region of the respective absorbent core element, wherein narrowed regions of the core elements are positioned adjacent one another to substantially form a narrowed region of the absorbent core.

18. The disposable absorbent article of claim 17, wherein the absorbent core further includes a material layer positioned below the first core element and the plurality of elastics incorporated therewith and a second material layer positioned below the second core element and the plurality of elastics incorporated therewith.

19. The disposable absorbent article of claim 17, wherein the elastics of each of the plurality of elastics are longitudinally spaced apart and include adhesion locations that are longitudinally aligned to form longitudinally extending, laterally spaced apart ridges.

20. The disposable absorbent article of claim 17, wherein the ridges are spaced apart to form a plurality of longitudinally extending void spaces below said ridges and a plurality of channels between laterally spaced apart ridges.

21. The disposable absorbent article of claim 17, wherein said plurality of elastics of said second core element includes elastics adhered thereto at a plurality of adhesion locations, and wherein the adhesion locations of the second core element associated with each said elastic are longitudinally aligned with adhesion locations of the second core element on others of said elastics in the plurality of elastics of the second core element to form a plurality of longitudinally aligned and laterally spaced apart sets of adhesion locations of the second core element that form ridges that are longitudinally extended and spaced laterally between sets of adhesion locations of the second core element.

22. The disposable absorbent article of claim 17, wherein said plurality of elastics incorporated with the first core element and said plurality of elastics incorporated with the second core element are respectively adhered to said first and second core elements at said adhesion locations.

23. The disposable absorbent article of claim 22, wherein a plurality of ridges are formed in the second core element such that a plurality of mutually spaced apart and extended void spaces are formed between the core elements.

24. The disposable absorbent article of claim 23, wherein each of said void spaces is formed between a ridge on the first core element and a corresponding ridge on the second core element that protrudes in a direction away from the first core element.

25. A disposable absorbent article comprising:

a central body defining a first waist end region including a first end edge, a second waist end region spaced longitudinally from the first waist end region and including a second end edge, and a crotch region positioned therebetween; and

an absorbent core situated between the end edges, the absorbent core including a first absorbent core element and a plurality of elastics attached to the first core element; and

a second absorbent core element and a plurality of elastics attached to the second core element, the first and second core elements being superimposed to provide a narrowed region of the absorbent core in the crotch region;

wherein for each core element, one elastic of said plurality of elastics of the core element extends longitudinally along a side margin of the core element and is disposed in a central region of the core element to form a concavity in the core element, wherein the central regions of the first and second core elements and the concavities thereof provide, at least partially, the narrowed region, wherein the concavities and the longitudinally extending elastics are situated on portions of the narrowed region outside a portion provided by superimposed portions of the first and second core elements; and wherein each of said plurality of elastics of each core element is disposed incorporated with the respective core element and within opposite side margins of the respective core element.

26. A disposable absorbent article comprising:

a central body defining a first waist end region including a first end edge, a second waist end region spaced longitudinally from the first waist end region and including a second end edge, and a crotch region positioned therebetween; and

an absorbent core situated between the end edges, the absorbent core including at least one absorbent core element including superabsorbent particles and imparting absorbent properties, and extending laterally across the crotch region, and a plurality of spaced apart elastics incorporated with the core element and attached to the absorbent core element such that the absorbent core element is laterally contracted in a narrowed region of the core element about the plurality of elastics; and

wherein said plurality of elastics are adhered to the core element at a plurality of adhesion locations positioned and spaced apart along the length of each elastic of said plurality of elastics adhered to the core element to form a plurality of spaced apart ridges in the core element in between adhesion locations; and wherein the adhesion locations associated with each elastic are aligned with adhesion locations on other elastics of said plurality of elastics adhered to the core element to form a plurality of spaced apart sets of adhesion locations that form ridges that are extended and spaced between sets of adhesion locations; and a topsheet disposed over the absorbent core such that mutually-spaced apart and extended void spaces are formed between the

topsheet and the absorbent core.

27. A disposable absorbent article comprising:

a central body defining a first waist end region including a first end edge, a second waist end region spaced longitudinally from the first waist end region and including a second end edge, and a crotch region positioned therebetween; and

an absorbent core situated between the end edges, the absorbent core including a first absorbent core element including superabsorbent particles and extending laterally across the crotch region and a plurality of elastics that are generally laterally extended, mutually longitudinally spaced apart and attached to the first absorbent core element such that the first absorbent core element is laterally contracted in a narrowed region of the first core element about the plurality of elastics; and wherein the absorbent core has a shape that includes a pair of end regions that are non-elasticized and have a lateral width wider than a lateral width of the narrowed region;

wherein each of said plurality of elastics extends laterally from a location proximate one side margin of the first core element in the narrowed region to a location proximate an opposite side margin of the first core element in the narrowed region; and

wherein the plurality of elastics are disposed together in one concentration of elastics in a central region of the first core element between the end regions and within the side margins of the first core element, and wherein the elastics are arranged in longitudinally spaced apart rows; and

wherein the rows of said elastics are arranged in the narrowed region in rows of varying pitch to define a curved shape to said narrowed region of the first core element.

28. The disposable absorbent article of claim 27, wherein the absorbent core further includes a second core element, said plurality of elastics being disposed between said first core element and said second core element.

29. The disposable absorbent article of claim 27, wherein the absorbent core includes the first core element formed from materials imparting absorbent properties and a second core element formed from materials imparting absorbent properties, the second core element superimposing the first core element to form a multi-layer primary absorbent region of the absorbent core having an absorption capacity per unit area increased from an absorption capacity per unit area in the end regions of the absorbent core; and wherein the multi-layer absorbent

region substantially coincides with the narrowed region; and wherein each of the first and second core elements includes a plurality of elastics incorporated therewith to form a narrowed region of the respective core element; and wherein the narrowed regions of the core elements are positioned adjacent one another to substantially form the narrowed region of the absorbent core.

30. The disposable absorbent article of claim 27, wherein ends of the plurality of elastics are positioned proximate the side margins to provide a concavity in each said side margin proximate the plurality of elastics.

31. A disposable absorbent article comprising:

a central body defining a first waist end region including a first end edge, a second waist end region spaced longitudinally from the first waist end region and including a second end edge, and a crotch region positioned therebetween; and

an absorbent core situated between the end edges, the absorbent core including a first absorbent core element including superabsorbent particles and extending laterally across the crotch region and a plurality of elastics that are generally laterally extended, mutually longitudinally spaced apart and attached to the first absorbent core element such that the first absorbent core element is laterally contracted in a narrowed region of the first core element about the plurality of elastics; and

wherein the absorbent core has a shape that includes a pair of end regions that are non-elasticized and have a lateral width wider than a lateral width of the narrowed region;

wherein each of said plurality of elastics extends laterally from a location proximate one side margin of the first core element in the narrowed region to a location proximate an opposite side margin of the first core element in the narrowed region; and

wherein the plurality of elastics are disposed together in one concentration of elastics in a central region of the first core element between the end regions and within the side margins of the first core element, and wherein the plurality of elastics are arranged in longitudinally spaced apart rows; and wherein the plurality of elastics are placed within said absorbent core.

32. The disposable absorbent article of claim 31, wherein the absorbent core includes the first core element formed from materials imparting absorbent properties and a second core element formed from materials imparting absorbent properties, the second core element superimposing the first core element to form a multi-layer primary absorbent region of the

absorbent core having an absorption capacity per unit area increased from an absorption capacity per unit area in the end regions of the absorbent core; and

wherein the multi-layer absorbent region substantially coincides with the narrowed region; and wherein each of the first and second core elements includes a plurality of elastics incorporated therewith to form a narrowed region of the respective core element; and

wherein the narrowed regions of the core elements are positioned adjacent one another to substantially form the narrowed region of the absorbent core.

33. The disposable absorbent article of claim 32, wherein ends of the plurality of elastics are positioned proximate the side margins to provide a concavity in each said side margin proximate the plurality of elastics.