CLAIMS

1. An integrally bladed rotor comprising:

an outer rim having a plurality of blades extending radially outwardly of said outer rim;

a plurality of channels being formed radially inwardly of said outer rim; and

a discontinuity formed at a radially outer surface of said outer rim, including a first thin slot at a radially outer face of said outer rim with an enlarged seal holding area, a second thin slot positioned radially inwardly of said seal holding, said first and second thin slots being thinner circumferentially than said enlarged seal holding area, and a seal inserted into said seal holding area, said seal not extending into said first and second thin slots and said seal not extending into said channels;

wherein:

said discontinuity is formed non-parallel to a blade stacking line of said blades;

said discontinuity is formed non-parallel to a central axis of said integrally bladed rotor;

said channels are formed non-parallel to a the blade stacking line of said blades; and

said channels are formed non-parallel to said central axis of said integrally bladed rotor.

2. The integrally bladed rotor as set forth in claim 1, wherein there are a plurality of discontinuities formed between said blades.

3. The integrally bladed rotor as set forth in claim 1 or claim 2, wherein said discontinuity is formed at an angle relative to said blade stacking line such that it relieves stress on ~~shields~~ a leading edge of one of said blades and a trailing edge of the adjacent blade.

4. The integrally bladed rotor as set forth in any preceding claim ~~1~~, wherein said channels are formed radially inward of said blades.

5. The integrally bladed rotor as set forth in any preceding claim, wherein said channels are formed radially inward of a leading edge of said blades and a trailing edge of said blades.

6. The integrally bladed rotor as set forth in any preceding claim, wherein said channels include a first essentially flat portion on a radially inward side of said channel, and a second essentially flat portion on a radially outward side of said channel.

7. The integrally bladed rotor as set forth in any preceding claim, wherein said leading edges and said trailing edges of said blades are softened.

8. A gas turbine engine comprising:

a compressor section including at least one rotor having a plurality of blades, said blades not being parallel to a central axis of said rotor, with said at least one rotor being an integrally bladed rotor as set forth in any preceding claim.

CLAIMS

1. An integrally bladed rotor comprising:

an outer rim having a plurality of blades extending radially outwardly of said outer rim;

a plurality of channels being formed radially inwardly of said outer rim said channels being obround in shape, separated by lugs and including a first essentially flat portion on a radially inward side of said channel, and a second essentially flat portion on a radially outward side of said channel; and

a discontinuity formed at a radially outer surface of said outer rim, including a first thin slot at a radially outer face of said outer rim with an enlarged seal holding area, a second thin slot positioned radially inwardly of said seal holding area, said first and second thin slots being thinner circumferentially than said enlarged seal holding area, and a complementary seal inserted into said seal holding area, said seal not extending into said first and second thin slots and said seal not extending into said channels;

wherein:

said discontinuity is formed non-parallel to a blade stacking line of said blades;

said discontinuity is formed non-parallel to a central axis of said integrally bladed rotor;

said channels are formed non-parallel to said blade stacking line of said blades; and

said channels are formed non-parallel to said central axis of said integrally bladed rotor, and wherein;

a) the radial dimension of each lug separating adjacent channels, is small, on account of the curved edges of respective adjacent obround channels; and
b) the seal holding area is substantially the same shape as the channel.

2. The integrally bladed rotor as set forth in claim 1, wherein there are a plurality of discontinuities formed between said blades.

3. The integrally bladed rotor as set forth in claim 1 or claim 2, wherein said discontinuity is formed at an angle relative to said blade stacking line such that it relieves stress on a leading edge of one of said blades and a trailing edge of the adjacent blade.

4. The integrally bladed rotor as set forth in any preceding claim, wherein said channels

are formed radially inward of said blades.

5. The integrally bladed rotor as set forth in any preceding claim, wherein said channels are formed radially inward of a leading edge of said blades and a trailing edge of said blades.

6. The integrally bladed rotor as set forth in any preceding claim, wherein said leading edges and said trailing edges of said blades are softened.

7. A gas turbine engine comprising:

a compressor section including at least one rotor having a plurality of blades, said blades not being parallel to a central axis of said rotor, with said at least one rotor being an integrally bladed rotor as set forth in any preceding claim.