

housing of the blowout preventer whereby a force is generated therebetween. The ram wedge is engageable with the tubular ~~whereby the tubular is severed~~. The ram seat is positionable in the housing about the passage. The ram seat has a hole therethrough for receiving the tubular, and is engageable with the ram wedge and the housing of the blowout preventer when the ram shuttle and the ram wedge are moved to the extended position whereby a seal is formed therebetween.

In the extended position the ram wedge may form a fluid barrier between the channel and the ram seat. The ram assembly may also include a blade positionable on the ram wedge and engageable with the tubular whereby the tubular is severed. The ram shuttle may have a closed end or an open end. The ram shuttle and the ram wedge may move in the same direction or in opposite directions.

The tubular cavity may have a first portion and a second portion with a tapered shoulder therebetween, the first portion larger than the second portion. The wedge cavity may have a first portion for receiving a first portion of the ram wedge, and the wedge cavity may have a second portion for receiving the second portion of the ram wedge, the second portion of the ram wedge may be wider than the first portion of the ram wedge.

The ram shuttle and the ram wedge may have corresponding inclined surfaces for sliding engagement therebetween. The ram assembly may also include a piston and a cylinder operatively connectable to the ram shuttle and/or a piston and a cylinder operatively connectable to the ram wedge for driving movement thereof. The ram seat may be a metal to metal seal. The ram assembly may also include at least one additional seal.

In another aspect, the present disclosure relates to a blowout preventer for sealing the wellbore, the wellbore having a tubular extending therefrom for passing therethrough. The blowout preventer includes a housing having a passage ~~therethrough~~ for receiving the tubular and a ram channel therethrough, and at least one ram assembly. The ram assembly may include a ram shuttle, a ram wedge and a ram seat. The ram shuttle is slidably positionable in the ram channel between a retracted and extended position. The ram shuttle has a wedge cavity extending therethrough and an inclined surface thereon. The ram wedge has a tubular cavity therethrough for receiving the tubular, is slidably positionable in the wedge cavity between a retracted and an extended position, and has a corresponding inclined surface engageable with the inclined surface of the ram shuttle to wedge between the ram shuttle and the

housing of the blowout preventer whereby a force is generated therebetween, the ram wedge engageable with the tubular ~~whereby the tubular is severed~~. The ram seat may be positionable in the housing about the passage. The ram seat has a hole therethrough for receiving the tubular. The ram seat is engageable with the ram wedge and the housing of the blowout preventer when the ram shuttle and the ram wedge are moved to the extended position whereby a seal is formed therebetween. The blowout preventer may also include at least one controller.

Finally, in another aspect, the present disclosure relates to a method for sealing a wellbore. The wellbore has a tubular extending therefrom for passing therethrough. The method involves providing ~~thea~~ blowout preventer, comprising: a housing having a passage and a ram channel therethrough; and at least one ram assembly, comprising a ram shuttle slidably positionable in the ram channel and having a wedge cavity, a ram wedge slidably positionable in the wedge cavity, and a ram seat positionable in the housing about the passage, positioning a tubular through the passage, ~~thea~~ tubular cavity of the ram wedge and ~~thea~~ hole through the ram seat, and forming a seal between the ram seat and the ram wedge by moving the ram shuttle alongand the ram wedge to ~~thean~~ extended position and interlockingly engaging the ram wedge with the ram seat.

The forming may involve moving the ram wedge and the ram shuttle together, moving the ram wedge to a partially engaged position and then moving the ram wedge to fully engaged position by moving the ram shuttle to the engaged position, forming a fluid barrier between the channel and fluid in the wellbore, and/or generating a force by wedging the ram wedge between the ram shuttle and the housing.

BRIEF DESCRIPTION OF THE DRAWINGS

So that the above recited features and advantages of the present disclosure can be understood in detail, a more particular description of the invention, briefly summarized above, may be had by reference to the embodiments thereof that are illustrated in the appended drawings. It is to be noted, however, that the appended drawings illustrate example embodiments and are, therefore, not to be considered limiting of its scope. The figures are not necessarily to scale and certain features, and certain views of the figures may be shown exaggerated in scale or in schematic in the interest of clarity and conciseness.

FIG. 1 depicts a schematic view of an offshore wellsite having a blowout preventer (BOP) with a wedge ram assembly.

FIG. 2 is a partial cross-sectional view of a BOP with a wedge ram assembly.

FIGS. 3 A and 3B are horizontal and longitudinal cross-sectional views, respectively of

between the ram shuttle and the housing of the blowout preventer whereby a force is generated therebetween, the ram wedge engageable with the tubular; and

a ram seat positionable in the housing about the passage, the ram seat having a hole therethrough for receiving the tubular, the ram seat engageable with the ram wedge and the housing of the blowout preventer when the ram shuttle and the ram wedge are moved to the extended position whereby a seal is formed therebetween.

16. The blowout preventer of Claim 15, further comprising at least one controller.

17. A method for sealing a wellbore, the wellbore having a tubular extending therefrom for passing therethrough, comprising:

providing a blowout preventer comprising:

a housing having a passage and a ram channel therethrough; and

at least one ram assembly, comprising a ram shuttle slidably positionable in the ram channel and having a wedge cavity, a ram wedge slidably positionable in the wedge cavity, and a ram seat positionable in the housing about the passage;

~~a ram shuttle slidably positionable in the ram channel between a retracted and extended position, the ram shuttle having a wedge cavity extending therethrough and an inclined surface thereon;~~

~~a ram wedge having a tubular cavity therethrough for receiving the tubular, the ram wedge slidably positionable in the wedge cavity between a retracted and an extended position, the ram wedge having a corresponding inclined surface engageable with the inclined surface of the ram shuttle to wedge between the ram shuttle and the housing of the blowout preventer whereby a force is generated therebetween, the ram wedge engageable with the tubular; and~~

~~a ram seat positionable in the housing about the passage, the ram seat having a hole therethrough for receiving the tubular, the ram seat engageable with the ram wedge and the housing of the blowout preventer when the ram shuttle and the ram wedge are moved to the extended position whereby a seal is formed therebetween; and~~

positioning a tubular through the passage, ~~the~~ a tubular cavity of the ram wedge, and the a
hole through the ram seat; and
forming a seal between the ram seat and the ram wedge by moving the ram shuttle along
~~and the ram wedge to the~~ an extended position and interlockingly engaging the
ram wedge with the ram seat.

18. The method of Claim 17, wherein the forming comprises moving the ram wedge and the ram shuttle together:

19. The method of Claim 17, wherein the forming comprises moving the ram wedge to a partially engaged position and then moving the ram wedge to fully engaged position by moving the ram shuttle to the engaged position.

20. The method of Claim 17, wherein the forming comprises forming a fluid barrier between the channel and fluid in the wellbore.

21. The method of Claim 17, wherein the forming comprises generating a force by wedging the ram wedge between the ram shuttle and the housing.