

Heerema Engineering Services, BV,

Plaintiff,

versus

Transocean, Inc., *et al.*,

Defendants.

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Civil Action H-08-1200

Opinion on Claim Construction

I. *Background.*

Drilling an oil well requires a drill string to reach from the surface machinery to the bottom of the hole. The drill string is formed by attaching joints of pipe to the top of the drill string as it descends. The pipe arrives at the well in short segments – called joints – about 32-foot long. Joints may be connected together to the extent of the derrick’s vertical capacity; when connected, they are called stands.

A derrick, named for a hangman, is a structure – generally a metal frame – that supports something else – usually by suspending it. The derrick supports the hoist and drill string during assembly and drilling. Drilling is stopped while the derrick’s hoist connects stands and attaches them to the drill string. Removing the pipe requires similar delays because each stand has to be detached and stacked successively. Onshore the stands are limited by the height of the derrick, which is in turn limited to components transportable by truck. On offshore rigs derricks may be much higher and stands may be hung from the platform until they are needed.

Both of these techniques allow faster drilling, reducing the time the rig is needed. The vertical storage on the derrick also increases the amount of equipment besides pipe that may be prepared for immediate use, like valves and blowout preventers. The stands of pipe together with the other equipment are sometimes also called subassemblies.

2. *Technology.*

Heerema has patented a system for assembling offshore substrings outside of the drilling derrick. The substrings are assembled, stored, and transferred to the drilling derrick when needed. The drilling stops only long enough to attach the substring to the drill string; this replaces the delay of building new substrings within the drilling derrick, keeping it from being available from drilling.

Transocean's design contains two drilling systems and hoists within a single derrick. The combination is capable of drilling and assembling substrings simultaneously at the same location.

Heerema says that Transocean's design has two derricks. It says that the assembly occurs "outside" of the drilling derrick, violating its patent. It asserts that a drilling derrick is defined by its function. It says that Transocean's two-hoist design should be treated as two derricks – one for drilling and one for pipe assembly.

Transocean replies that its design is permissible because the patent literally covers substring assembly outside of the drilling derrick.

Both sides seek to resolve:

- (a) Is a *drilling* derrick is defined by structure or by function?
- (b) Does a hoisting assembly imply the inclusion of a top drive?

3. *Drilling Derrick.*

An offshore drilling platform may have several derricks and a single derrick may have multiple functions. To narrow the definition, an adjective is added that describes its application or a new word is substituted – gallows, draw works, crane. Here, the addition of drilling narrows the range of application to wells – oil, injection, sulphur, ventilation, water. The context of the patent's technology is oil and gas drilling. Naturally, a drilling derrick exists to hoist whatever needs lifting and lowering. Its function is to support literally and metaphorically the operations of drilling a well.

A drilling derrick or drilling rig refers to more than the derrick and hoists. A drilling rig implies the rest of the machinery needed to drill the well – a top drive, rotary table, or both as well as mud pumps, shakers, pipe racks, mechanical roughnecks, cables, hand tools, generators, and others.

Transocean joins pipe into strings or, if you prefer, subassemblies within a single, large derrick. That large derrick has other uses than assembly; it supports the hoisting for the drill string as it rotates into the seabed – the drilling directly. In the situation more favorable to Heerema, one set of sheaves, cables, and hooks assembles the strings, and within the same framework another set lowers the drill string or other equipment to the bore. More broadly, Transocean says that both hoists within the framework may drill or assemble in every combination.

To be technical, a drilling derrick is defined by its operation and structure. A derrick is a drilling derrick when it directly has the means to drill. It is what supports the hoist that holds the string for drilling. A drilling derrick used for assembly while not drilling is still a derrick. A derrick with a crown hoist for drilling may continue to have smaller derricks within it for subsidiary hoisting – often in the form of a boom rather than a tower. Adding additional hoisting capability does not create separate derricks. A house with two families is a crowded house, not two houses.

Heerema also insists that the motion-compensation structures are drilling derricks. These are minor extensions on the corners of the drilling derrick for dynamic adjustments for stability. They minimize the extraneous motion that is imparted to the drill string. Labeling it a mini-derrick does not make it a drilling derrick, and it illustrates that a drilling derrick is host to multiple hoists and other uses. The dog house is not a guest cottage.

3. *Hoisting Assembly.*

Heerema's patent mentions a "hoisting assembly," but it does not specify the method it covers. Heerema says that the patent need not specify the structure used to connect the pipes because an average driller would understand that a hoisting assembly includes a top drive. An old average ex-roustabout knows that pipes may be joined horizontally and vertically by mechanical and hydraulic power. A hoisting assembly does not imply a top drive because rigs with rotary tables require valves and piping below the hoist's hook. A hoisting assembly can be a derrick and boom somewhere remote from the drilling floor, which is what Heerema claims.

A patent is obliged to describe each component and its function in the invention. This specificity completes the inventor's duty to disclose and protects the public from expansion by unwarranted litigation. The structure need not be specified if it would be obvious to someone knowledgeable in the subject. The obvious, implied structure would have to be the one used.

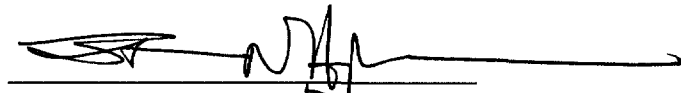
The most efficient or most preferred structures are not implied simply because of their popularity. When multiple things are capable of completing the stated function, and the patent does not specify the one that applies, then the patent's ambiguity prevents its enforcement.

Hoisting arrangements on a derrick may often include a top drive, but many do not. Cranes have derricks, and they may or may not hold a top drive. The existence of hoisting equipment does not necessitate or imply the range of additional equipment needed.

4. *Conclusion.*

A drilling derrick is defined by its operation and structure and cannot be arbitrarily divided because it contains multiple hoists. While a hoisting arrangement may include a top drive, one is not required or implied by the term. A duplex is not two houses.

Signed on September 30, 2013, at Houston, Texas.

A handwritten signature in black ink, appearing to read 'Lynn N. Hughes', written over a horizontal line.

Lynn N. Hughes
United States District Judge