

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

GD ENERGY PRODUCTS, LLC,
Petitioner,

v.

KERR MACHINE COMPANY,
Patent Owner.

PGR2025-00031
Patent 12,152,582 B2

Before CARL M. DeFRANCO, BRENT M. DOUGAL, and
RYAN H. FLAX, *Administrative Patent Judges*.

FLAX, *Administrative Patent Judge*.

JUDGMENT
Final Written Decision
Determining All Challenged Claims Unpatentable
35 U.S.C. § 328(a)

I. INTRODUCTION

Kerr Machine Company (“Patent Owner”) is the owner of U.S. Patent 12,152,582 B2 (Ex. 1001, “the ’582 patent”). Paper 4, 1 (Patent Owner’s Mandatory Notices). On February 6, 2025, GD Energy Products, LLC (“Petitioner”) filed a Petition for post-grant review challenging the patentability of claims 1–15 of the ’582 patent (all claims). Paper 1, 1 (“Pet.”); *see also* Paper 5 (Notice of Filing Date on Feb. 28, 2025). The Board instituted trial on July 10, 2025. Paper 12 (“Institution Decision” or “DI”).

On September 22, 2025, during a conference call between the parties and the Panel, Patent Owner expressed that it would not file a response to the Petition (or Institution Decision), or any other papers or evidence in this proceeding, but that it did not expressly abandon the proceeding, and requested that the Board enter a final decision in due course. *See* Paper 15. During the same conference call, Petitioner also requested that a final decision be entered in due course. *Id.* True to its statement, Patent Owner did not file a response in this proceeding, and no briefing or evidence was filed by either party after institution of trial.

We have considered the record in this proceeding in view of Petitioner’s assertions and arguments in the Petition, weighing such in view of the Petitioner’s burden to prove unpatentability of each challenged claim by a preponderance of the evidence. *See Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015); 35 U.S.C. § 326(e) (2018); 37 C.F.R. § 42.1(d) (2023). We conclude that Petitioner proves by a preponderance of the evidence that the challenged claims of the ’582 patent are unpatentable. Our reasoning is discussed below.

A. REAL PARTIES-IN-INTEREST

Petitioner states “GD Energy Products, LLC is the real party-in-interest for [the] Petition.” Pet. 29. Patent Owner identifies “Kerr Machine Company” as the real party-in-interest. Paper 4, 1.

B. RELATED MATTERS

The parties state that there are no related matters. Pet. 30; Paper 4, 1.

C. THE ’582 PATENT AND RELEVANT BACKGROUND

The ’582 patent, titled “FLUID END ASSEMBLY,” which Petitioner refers to in the Petition as “Foster” (the surname of the first listed inventor), issued on November 26, 2024, from U.S. Application 18/321,054, which was filed on May 22, 2023. Ex. 1001, codes (10), (45), (21), (22). The ’582 patent indicates priority to a series of prior applications as continuations, and to an earliest-filed provisional application 62/532,574, filed on July 14, 2017. *Id.* at codes (60), (63). Petitioner does not contest that the ’582 patent’s claims are entitled to this July 14, 2017, priority date. Pet. 6.

The ’582 patent indicates its invention relates to:

A fluid end having its fluid flow bores sealed without threading a retaining nut into the walls of each bore. The fluid ends may be assembled using a plurality of different kits that each comprise a fluid end body, a component, a retainer element, and a fastening system. The retainer element holds the component within each of the bores formed in the fluid end body and the fastening system secures the retainer element to the body.

Ex. 1001, Abstract. A fluid end is a part of an assembly, which the ’582 patent states is “typically used in oil and gas operations to deliver[] highly pressurized corrosive and/or abrasive fluids to piping leading to the wellbore.” *Id.* at 1:60–62. The ’582 patent states that prior art fluid ends were sealed by inserting a plug into each bore and installing a “large

includes first bores 306 as holes into the side face of the block and second bores 308 as holes into the top face of the block, each bore 306, 308 having an opening 310. *Id.* at 8:13–19. Not shown in this figure is that bores 306, 308 intersect inside fluid end 300. *See, e.g., id.* at 2:35–39, Fig. 3 (reproduced below). Components 312, 314, which are suction and discharge plugs, are shown for insertion into bores 306, 308 and are held therein by retaining elements 316, which are rectangular plates. *Id.* at 8:24–51. Retaining elements 316 are secured to fluid end 300 via fastening system 320, which includes threaded studs 322 to be screwed into threaded openings 322 in fluid end 300 around each opening 310, through respective openings 318 in retaining elements 316, which are to be secured by nuts 326. *Id.* at 8:41–9:7.

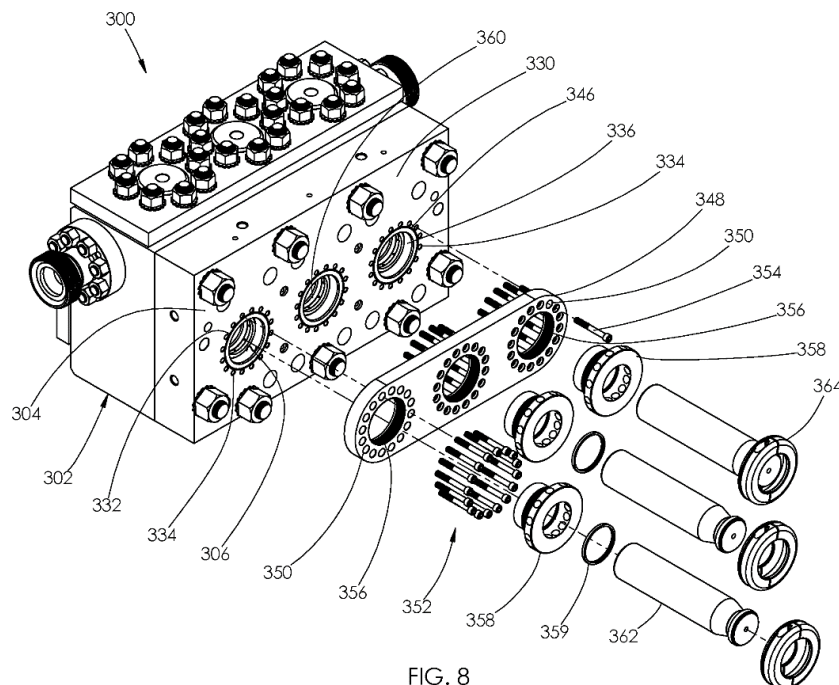


FIG. 8

“FIG. 8 is a partially exploded view of a plunger end of the fluid end body shown in FIG. 7,” hence, Figures 7 and 8 show different perspective views

of the same or similar structure, rotated generally 180°. *Id.* at 1:38–39. Figure 8 shows the opposite side of bores 306, also having openings 332, in which is shown component 336, which is tubular, includes packing seals 360 (not shown), and is sized to receive plunger 362. *Id.* at 9:8–65. In a similar fashion as components 312, 314, components 336 are secured in bores 306 by retainer element 348, which is another plate held to fluid end 300 by similar fastening system 352 composed of screws 354 (rather than studs 322) to be inserted through openings 350 and into threaded openings 334. *Id.*

A cross-section view of a fluid end is shown by Figure 3 below:

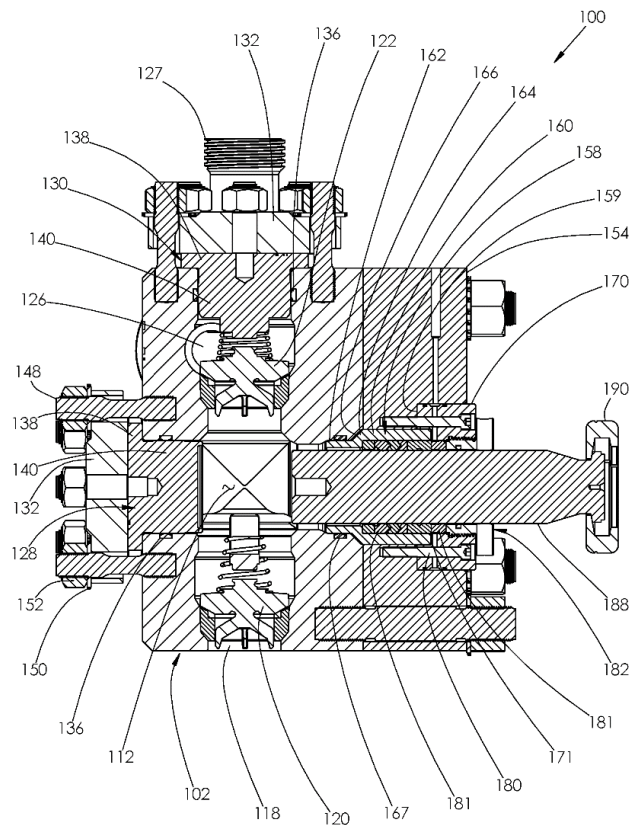


FIG. 3

“FIG. 3 is a cross-sectional view of [a] fluid end” 100 and shows, *inter alia*, intersecting bores 106, 108 (not labeled in figure), plug 128, plunger 188,

component 158, seal 167, valves 120, 122, threaded screws 180, retainer element 170, packing seals 181, and packing nut 182. *Id.* at 2:31–5:41. “The internal functions of the fluid end 300 [shown in Figs. 7 and 8] are identical to those described with reference to fluid end 100, shown in FIG. 3.” *Id.* at 8:21–23. For context, plunger 188 is in horizontal bore 106 and valves 120, 122 are in vertical bore 108. *Id.* at 2:57–58, 5:30–31.

The ’582 patent concludes with fifteen claims, of which claims 1 and 7 are independent claims. Ex. 1001, 16:14–18:50 (claims). Claim 1 is representative and is reproduced below:

1. A fluid end assembly, comprising:
 - a housing made of a single, integrally-formed piece and comprising:
 - a first horizontal bore and a first vertical bore formed within the housing, the first vertical bore intersecting the first horizontal bore to form a first internal chamber;
 - a second horizontal bore and a second vertical bore formed within the housing, the second vertical bore intersecting the second horizontal bore to form a second internal chamber;
 - in which the second horizontal bore, the second vertical bore, and the second internal chamber are situated in a side-by-side relationship with the first horizontal bore, the first vertical bore, and the first internal chamber;
 - a first pair of valves, each valve installed within the first vertical bore and positioned on opposite sides of the first internal chamber;
 - a second pair of valves, each valve installed within the second vertical bore and positioned on opposite sides of the second internal chamber;

a first plug and a first reciprocating plunger installed within the first horizontal bore and positioned on opposite sides of the first internal chamber;

a second plug and a second reciprocating plunger installed within the second horizontal bore and positioned on opposite sides of the second internal chamber;

a plate fastened to the housing along an exterior surface containing openings to the first and second horizontal bores;

a first component having a central opening formed therein, at least a portion of the first component installed within the first horizontal bore and at least a portion of the first reciprocating plunger installed within the central opening of the first component;

a first plurality of packing seals installed within the first component and engaging the first reciprocating plunger; and

a first packing nut attached to the first component and holding the first plurality of packing seals within the first component.

Id. at 16:14–55. Independent claim 7 is very similar, but omits the elements of claim 1 relating to plugs. *Id.* at 17:19–18:3.

The record indicates that Patent Owner has statutorily disclaimed claim 15 as of April 28, 2025. Ex. 2206.

D. PETITIONER’S ASSERTED GROUNDS FOR UNPATENTABILITY

Petitioner asserts the following grounds for unpatentability:¹

Ground	Claims Challenged	35 U.S.C. §	Reference(s)/Basis
1	1–14	103	Kerr ²
2	1–14	103	Aplex, ³ Stanton ⁴
3	1–14	103	Blume, ⁵ Stanton, Wilkinson ⁶
4	1–14	103	sale of “Kerr Pump” ⁷

Pet. 31–32. In support of these grounds for unpatentability, Petitioner submits, *inter alia*, the Declaration of William D. Marscher, P.E. (Ex. 1003). There is no dispute in this proceeding that Mr. Marscher is competent and qualified to testify as to the subject matter of his Declaration. As mentioned earlier, Patent Owner did not submit any evidence on this record after institution of trial.

¹ Petitioner’s fifth ground for unpatentability challenged only claim 15 under 35 U.S.C. § 112 for indefiniteness. Pet. 31. Because claim 15 is statutorily disclaimed by Patent Owner, the ground is dismissed as moot and neither it nor claim 15 is addressed further herein. *See* Ex. 2106.

² Kerr Pump Corporation, Service Manual: Kerr KP-3300HP Plunger Pump, dated March 10, 2006. Ex. 1004 (“Kerr”).

³ Dupagro B.V., Manual: SC-65 Triplex Plunger Pump, Rev. Feb. 21, 2006. Ex. 1005 (“Aplex”).

⁴ E.N. Stanton & M.L. Strickland, US 2005/0200081, pub. Sept. 15, 2005. Ex. 1007 (“Stanton”).

⁵ G.H. Blume, US 7,186,097 B1, issued Mar. 6, 2007. Ex. 1006 (“Blume”).

⁶ B.S. Wilkinson, US 4,773,833, issued Sept. 27, 1988. Ex. 1008 (“Wilkinson”).

⁷ Petitioner asserts the “Kerr Pump” is a product identified in a “spec sheet” as KP-3300HP, offered for sale as of December 28, 2014. Ex. 1011.

II. DISCUSSION

A. LEGAL STANDARDS CONCERNING PATENTABILITY

“In a[] [post-grant review], the petitioner has the burden from the onset to show with particularity why the patent it challenges is unpatentable.” *Harmonic*, 815 F.3d at 1363 (citing 35 U.S.C. § 312(a)(3), requiring petitions to identify “with particularity . . . the evidence that supports the grounds for the challenge to each claim,” which is also applicable to § 322(a)(3)). The burden of persuasion never shifts to Patent Owner. *See Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015) (discussing the burden of proof in AIA review proceedings).

All grounds at issue are based on obviousness. The Supreme Court in *KSR International Co. v. Teleflex Inc.*, 550 U.S. 398 (2007), reaffirmed the framework for determining obviousness set forth in *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1 (1966). The *KSR* Court summarized the four factual factors set forth in *Graham* (383 U.S. at 17–18) to be applied in determining whether a claim is unpatentable as obvious under 35 U.S.C. § 103(a) as follows: (1) determining the scope and content of the prior art; (2) ascertaining the differences between the prior art and the claims at issue; (3) resolving the level of ordinary skill in the art;⁸ and (4) considering objective evidence indicating obviousness or non-obviousness.⁹ *KSR*, 550 U.S. at 406.

⁸ *See infra* Section II.B.

⁹ There is no evidence of objective indicia of obviousness or non-obviousness on this record.

“The combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results.” *Id.* at 416. “[W]hen the question is whether a patent claiming the combination of elements of prior art is obvious,” the answer depends on “whether the improvement is more than the predictable use of prior art elements according to their established functions.” *Id.* at 417. *KSR* explains that “‘if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill.’” *Intel Corp. v. PACT XXP Schweiz AG*, 61 F.4th 1373, 1380 (Fed. Cir. 2023) (quoting *KSR*, 550 U.S. at 417; and *Intel Corp. v. Qualcomm Inc.*, 21 F.4th 784, 797 (Fed. Cir. 2021)). If addressing a known problem, the prior art combination need not be “the *best* option, only . . . a *suitable* option.” *Id.* at 1380 (quoting *Intel*, 21 F.4th at 800 (emphasis original)).”

A product (“Kerr Pump”) alleged to be offered for sale before the ’582 patent’s priority date is also asserted as prior art in this proceeding. The on-sale bar is not limited solely to products that anticipate a patent’s claims, it also applies if “the subject matter of the sale or offer to sell . . . would have rendered the claimed invention obvious by its addition to the prior art.” *Pfaff v. Wells Elecs., Inc.*, 124 F.3d 1429, 1436 (Fed. Cir. 1997) (quoting *UMC Elecs. Co. v. United States*, 816 F.2d 647, 656 (Fed. Cir. 1987)). Under such an unpatentability theory, what was offered for sale before a critical date becomes “a [prior art] reference under section 103 against the claimed invention.” *Id.* (quoting *Baker Oil Tools v. Geo Vann, Inc.*, 828 F.2d 1558, 1563 (Fed. Cir. 1987)).

B. ORDINARY LEVEL OF SKILL IN THE ART

Petitioner contends:

The person of ordinary skill in the art would have a minimum of a bachelor's degree in mechanical or petrochemical engineering, or a comparable engineering discipline, and a minimum of 3-5 years of work experience in the design and/or manufacturing of reciprocating pumps and valves, including fluid ends and/or comparable high pressure fluid components, for industrial applications, including for use in the oil and gas industry. *See, e.g.*, EX1003, ¶32.

Pet. 31.

This definition is uncontested and we accept and use Petitioner's proposed definition of the ordinarily skilled artisan, as it appears to comport with the level of skill in the art reflected in the prior art of record and the '582 patent, itself. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001) ("the prior art itself [may] reflect[] an appropriate level" as evidence of the ordinary level of skill in the art) (quoting *Litton Indus. Prods., Inc. v. Solid State Sys. Corp.*, 755 F.2d 158, 163 (Fed. Cir. 1985)).

C. CLAIM CONSTRUCTION

Petitioner states that, "[f]or purposes of this Petition, Petitioner submits that all claim terms in the Challenged Claims should be given their ordinary and customary meaning as understood by the POSITA and no further construction is necessary at this time." Pet. 31. Patent Owner neither disputes this position nor offers any proposed claim interpretations.

"[W]e need only construe terms 'that are in controversy, and only to the extent necessary to resolve the controversy.'" *Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999)). We decline to expressly construe any claim language.

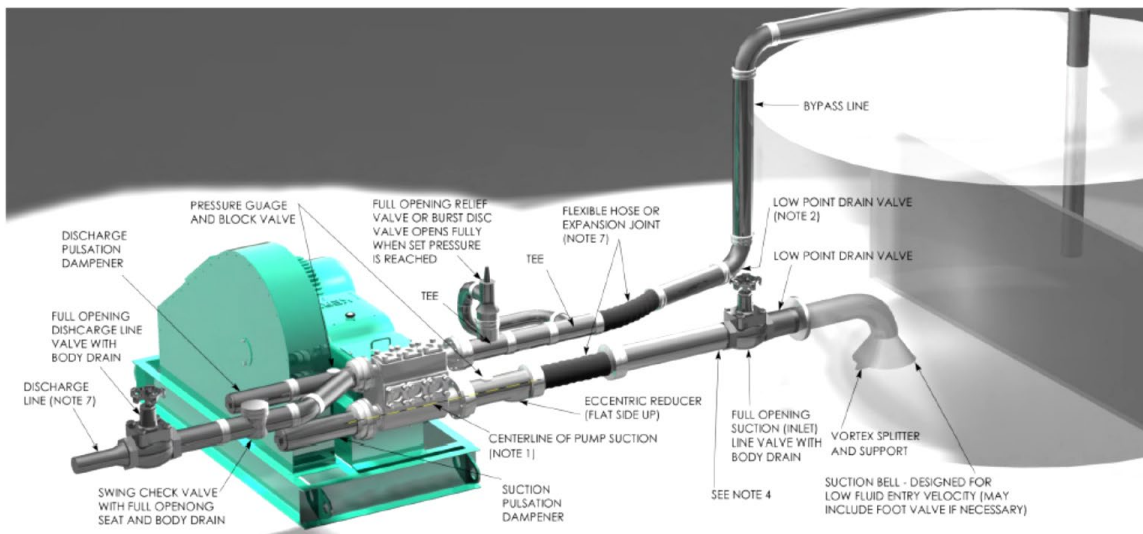
D. PETITIONER’S ASSERTED PRIOR ART

We review and summarize Petitioner’s asserted prior art references below. There is no dispute that each constitutes prior art.

1. Kerr (Ex. 1004)

Kerr is a service manual for a Kerr KP-3300HP Plunger Pump, indicating on its face to have been produced by Kerr Pump Corporation as an “eighteenth edition,” and (internally) bearing a date of March 10, 2006. Ex. 1004, 1, 13–16 (we refer to the page numbering added by Petitioner at the lower right corner of each page). Petitioner asserts that Kerr is prior art. Pet. 10, 23–29 (citing Ex. 1003 ¶¶ 64, 69; Ex. 1009); *see also* Ex. 1003 ¶ 63 (asserting “Kerr was publicly available no later than March 17, 2016”).

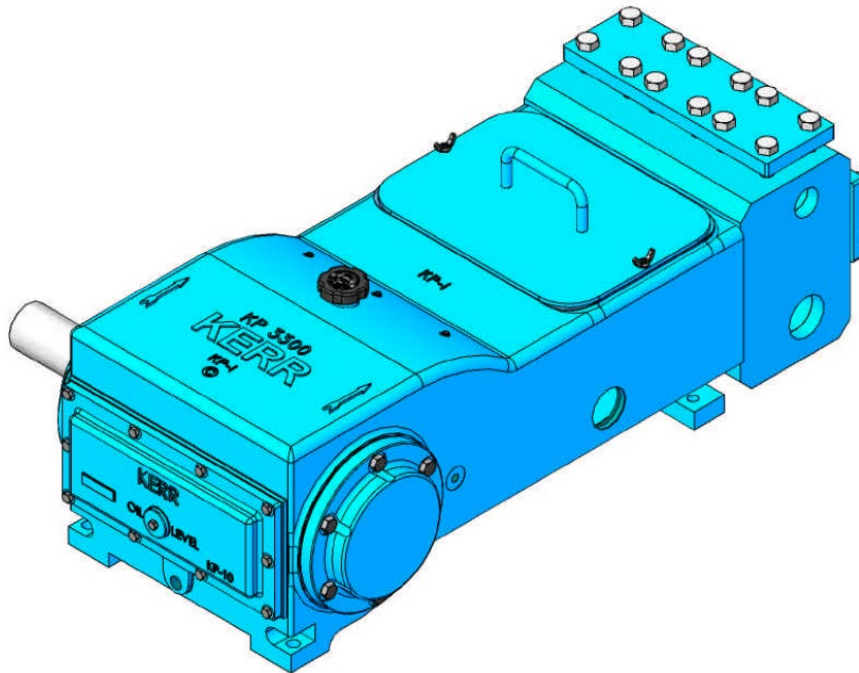
Kerr discloses a plunger pump for pumping fluid and illustrates a system in the image reproduced below:



The illustration above shows a pump mechanism (green) having a pump portion (a power end) connected to a fluid end (silver, labeled “centerline of pump suction”) for a suction inlet, which is connected via plumbing on one

side to a fluid reservoir (partial cylindrical tank) and on the opposite the side to a discharge line and a “suction pulsation dampener.” Ex. 1004, 6, 12.

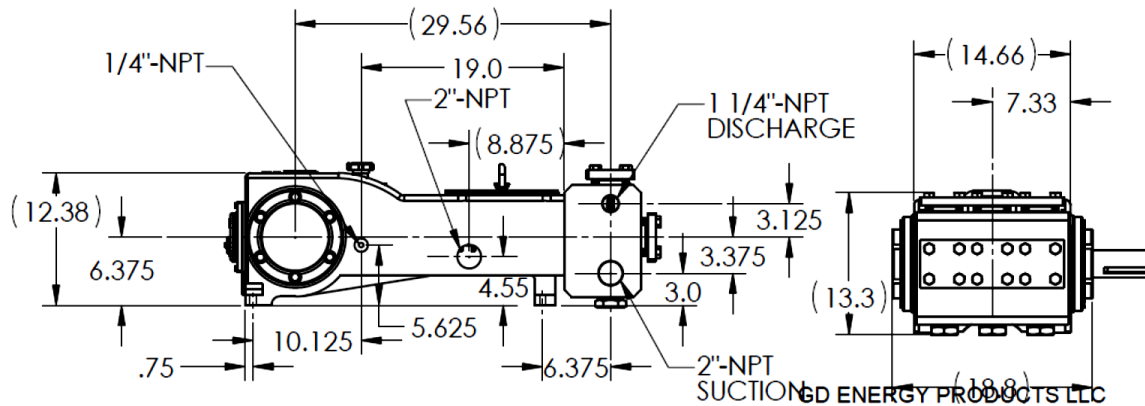
Kerr also provides the following illustration of the pump’s power and fluid ends:



KP-3300HP

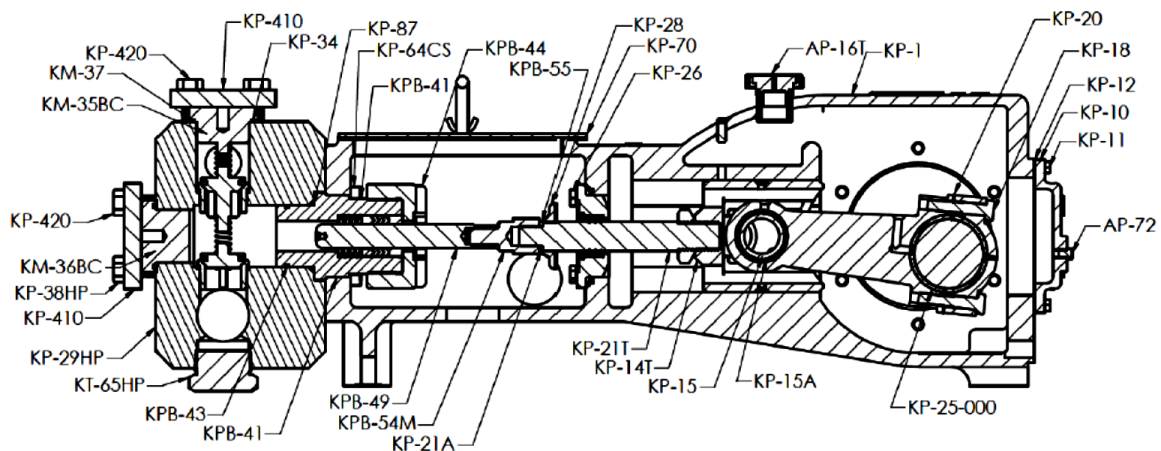
The image above shows a perspective illustration of a KP-3300HP pump, colored blue; the power end is shown nearer in the image and the fluid end is shown farther away in the image. *Id.* at 24. A rectangular plate is illustrated as bolted to the top of the fluid end, and the edge of what appears to be a similar plate, and two bolts is shown along the far side of the fluid end. *Id.*

Schematic side and end views of the KP-3300HP pump are also disclosed; they are reproduced below:



The image above shows a schematic side view of the pump (at left) and an end view from the end of the fluid end (at right), denoting the dimensions of the components. *Id.* at 25. The figure shows that the power end and fluid end are connected on one side of the fluid end. *Id.* The fluid end is illustrated as having rectangular plates bolted to the top and end sides thereof. *Id.*

A 180° horizontally rotated cross-section view of the structure shown in the image at above-left is also disclosed; it is reproduced below:

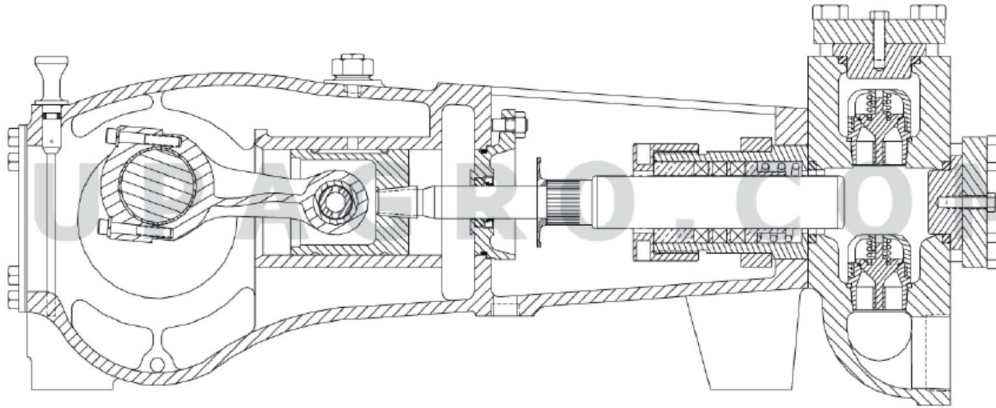


The figure above shows a cross-section view of the KP-3300HP plunger type pump and shows that the power end (right side, KP-1 (pump case)) includes a crankshaft, which is connected to a rod and thereby to a piston (KPB-49), which is shown partially within a horizontal bore portion of the fluid end (left side, KP-29HP (fluid end vessel)) and within an assembly of generally cylindrical parts (KPB-41, KPB-43, KPB-44, KPB-58) in/on the horizontal bore of the fluid end, and a cap screw (KP-64CS). *Id.* at 27–34. The fluid end is shown as having intersecting bores, one vertical and one horizontal, each capped to the exterior and covered by a rectangular plate (KP-410 (top and end plug cover plate) over the exterior of the fluid end, secured thereto by screws (KP-420). *Id.* at 27–34. Valves (KM-96 (discharge), KM-97 (suction) (not labeled) are provided in the vertical bore. *Id.* at 27.

2. Aplex (Ex. 1005)

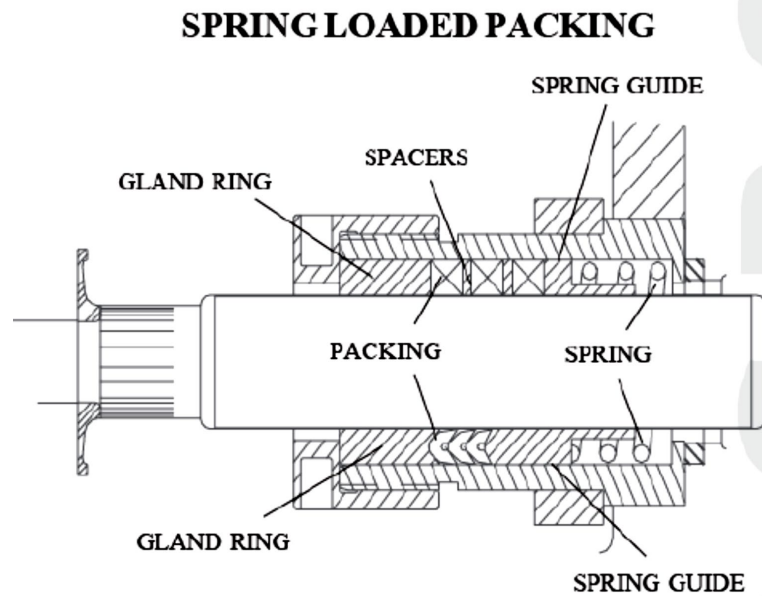
Aplex is a manual for an “SC-65 Triplex Plunger Pump,” is indicated as having been produced by Dupagro, Myers/Aplex Industries, Inc. or Aplex, Inc., and (internally) bears a date of February 21, 2006. Ex. 1005, 1, 4, 6 (we cite the page numbering added by Petitioner at the lower right corner of each page). Petitioner asserts that Aplex was available in 2016, e.g., it is prior art. Pet. 17, 19, 23–29 (citing Ex. 1003 ¶¶ 64, 69; Ex. 1009); *see also* Ex. 1003 ¶ 68 (asserting “Aplex is prior art”).

Aplex includes a cross-section drawing of a pump, which we reproduce below:



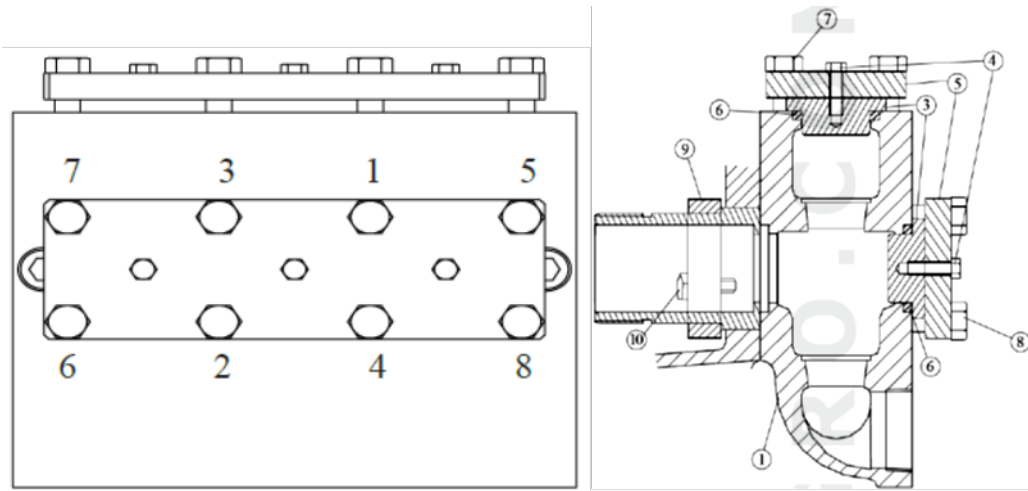
Id. at 7. The image above appears to show a power end (left) of a pump, connected to a fluid end (right, Aplex also calls it a “liquid” end). *Id.*; *see also id.* at 13 (image depicting the pump connected to a system including plumbing to a fluid reservoir and a discharge line). The power end is depicted as including a crank and rod, connected to a piston, which is shown partially within a horizontal bore of the fluid end, which intersects with a vertical bore therein, which includes valve structures above and below that intersection point. *Id.* at 7. The exterior openings of the bores appear to be capped with rectangular (in cross-section) plates, held to the fluid end via screws. *Id.*

Aplex includes a figure depicting a closer cross-section view of the plunger and a system of rings and packing holding it in the system, which we reproduce below:



The figure above shows the pump's plunger held within a “replaceable stuffing box[],” which includes a spring, a spring-guide ring, spring loaded packing (3 rings), and a gland ring. *Id.* at 22. A support ring and a follower (between the packing, not labeled in this figure), and a gland nut (left-end of the assembly, not labeled in this figure), are also provided. *Id.* at 23; *see also id.* at 43–46 (also illustrating the stuffing box and plunger).

Aplex discloses that stuffing boxes “are retained by large bolts which extend through the liquid end, serving to clamp the box tightly against the fluid end face,” and illustrates this in the following figures:



Id. at 23–24, 38. The figures above show a block, understood to be the pump’s fluid end, from an end view (left) and from a side cross-section view (right) rotated 90° from the first image, where the block has a rectangular retainer plate affixed to its end and one affixed to its top, each held by 8 hex-capped screws. *Id.* These plates (5) are positioned over the outsides of the vertical and horizontal bores and cover head plugs (3) in the bores. *Id.* at 38.

Aplex also discloses two types of valve assemblies to be used with its pump. *Id.* at 25. These valves are illustrated as provided in a vertical bore of the fluid end on either side of its intersection with the horizontal bore. *Id.* at 7, 21.

3. Stanton (Ex. 1007)

Stanton, titled “PACKING CARTRIDGES AND PRESSURE-DAMPENING ELEMENTS FOR PLUNGER-TYPE PUMPS,” is the September 15, 2005 publication of U.S. Application 10/798,693, which was filed on March 11, 2004. Ex. 1007, codes (21), (22), (43), (54). Petitioner asserts that Stanton is prior art. Pet. 18; *see also* Ex. 1003 ¶ 74 (asserting “Stanton is prior art”).

Regarding its invention, Stanton states:

A package cartridge is provided for use in the maintenance of a packing bore for a plunger-type pump. According to one aspect, a packing cartridge includes; a generally-cylindrical sleeve adapted to be at least partially positioned in the packing bore, a first abutment ring positioned in the sleeve, and a second abutment ring positioned in the sleeve and co-axially spaced apart from the first abutment ring. Telescoping structures are operatively positioned between the first abutment ring and the second abutment ring. According to another aspect, a structure forming a circumferential pressure-ring groove is provided. A pressure ring is positioned in the pressure-ring groove, the pressure ring having at least one smaller external dimension than an internal dimension of the pressure-ring groove, whereby at least one clearance is provided between the pressure-ring groove and the pressure ring. These aspects can be advantageously practiced together.

Ex. 1007, Abstract.

4. Blume (Ex. 1006)

Blume, titled “PLUNGER PUMP HOUSING AND ACCESS BORE PLUG,” issued on March 6, 2007, from U.S. Application 10/662,578, which was filed on September 15, 2003. Ex. 1006, codes (21), (22), (45), (54). Petitioner asserts that Blume is prior art. Pet. 21; *see also* Ex. 1003 ¶ 72 (asserting “Blume is prior art”).

Blume states its invention relates to:

Suction valve spring retainers mounted using an access bore plug are described for use in plunger pump housings having an offset access bore and incorporating structural features for stress-relief. These pump housing structural features accommodate access bore plugs that secure suction valve spring retainers that are internally located substantially centrally over the suction bore transition area of the plunger pump housing. Access bore plugs are secured in place on the pump housing using one or more threaded retainers. Plunger pumps so

constructed are relatively resistant to fatigue failure because of stress-reducing structural features, and they may incorporate a variety of valve styles, including top and lower stem-guided valves and crow-foot-guided valves, in easily-maintained configurations. Suction valve spring retainers mounted in plunger pump housings may also incorporate a suction valve top stem guide. Further, certain structural features of access bore plugs may be dimensioned to aid in improving volumetric efficiency of the pumps in which they are used.

Ex. 1006, Abstract.

Blume illustrates a (then) prior art fluid end bulkhead of a plunger pump at Figure 1, which we reproduce below:

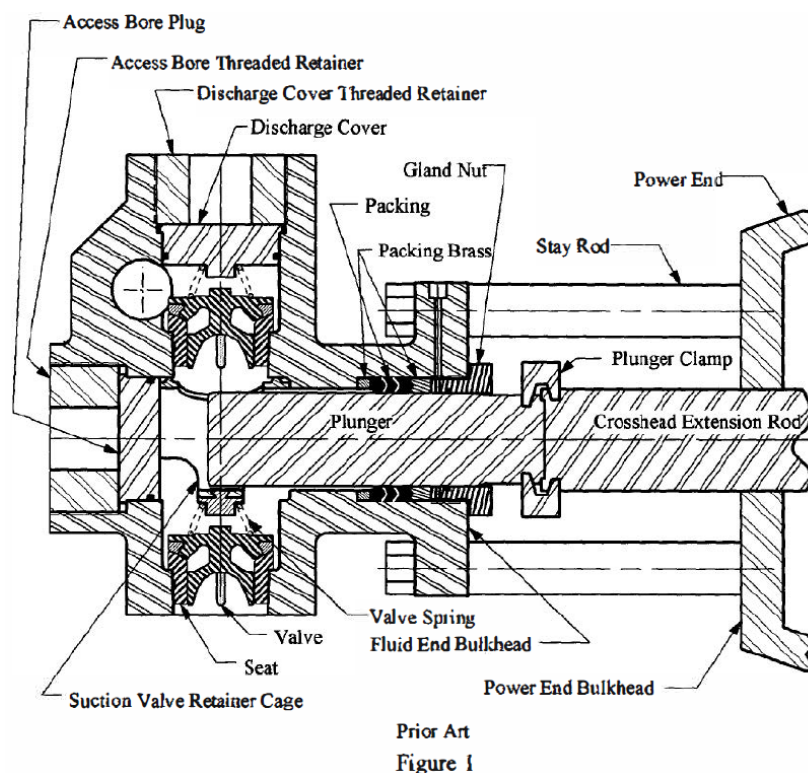


Figure 1 shows fluid end bulkhead connected to power end bulkhead of a plunger pump, which Blume identifies as a “Triplex fluid section design.” *Id.* at 1:18–31. Extending from a rod from the power end is a plunger, which extends into a horizontal bore in the fluid end. The horizontal bore

intersects a vertical bore, which has a valve on either side of the intersection. Surrounding the plunger in the horizontal bore are packing, packing brass, and a retaining gland nut. *See id.* at 2:4–23, Fig. 6. A discharge cover and discharge cover threaded retainer close the outer opening of the vertical bore and an access bore plug and access bore threaded retainer close the outer opening of the horizontal bore.

5. Wilkinson (Ex. 1008)

Wilkinson, titled “HIGH PRESSURE HOMOGENIZER PUMP,” issued on September 27, 1988, from U.S. Application 37,560, which was filed on April 13, 1987. Ex. 1008, codes (21), (22), (45), (54). Petitioner asserts that Wilkinson is prior art. Pet. 22; *see also* Ex. 1003 ¶ 76 (asserting “Wilkinson is prior art”).

Regarding its invention, Wilkinson states:

A homogenizer comprises a homogenizing valve mounted to a pump block. Sets of three suction valves and discharge valves are positioned in valve bores in opposite faces of the block. Each of the valve bores has a hemispherical termination. The hemispherical termination of a pump chamber is formed in an adjacent surface of the block and is in communication with the valve bores through oblique conduits. The pump cylinder is formed in a packing box mounted in the block by bolts extending through the block. Integral valve assemblies removable as units are positioned in the valve bores. A pressure sensor is coupled to a discharge manifold through an isolating piston.

Ex. 1008, Abstract.

Wilkinson illustrates such a pump assembly at Figure 1, reproduced below:

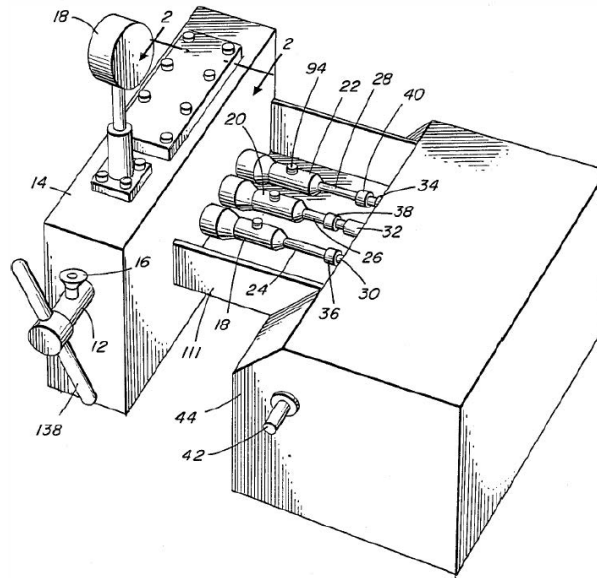


FIG. 1

“FIG. 1 is a perspective view of a homogenizer valve and pump assembly,” and shows pump block 14 integrated with three plungers 24, 26, 28, connected to respective drive shafts 30, 32, 34, driven by an electric motor in box 44. *Id.* at 2:65–66, 3:8–25. Not illustrated are respective suction and discharge valves in the pump block for the three pump plungers, which are accessible behind plate 44. *Id.* 3:25–29; *see id.* Figs. 2, 4.

6. Kerr Pump (e.g., Ex. 1011)

Petitioner asserts that a product identified as KP-3300HP pump was publicly offered for sale by Kerr Machine Co. no later than December 28, 2014, as evidenced by its inclusion as a sale item on Kerr’s website before this date. Pet. 143 (citing Ex. 1009). Petitioner asserts that the Kerr Pump is detailed in a Kerr “spec sheet,” of record at Exhibit Ex. 1011. *Id.* at 144.

The Kerr spec sheet includes images and specification for the KP-330HP 76.4 BHP Triplex Plunger Pump, Intermittent Duty. Ex. 1011, 1. The Kerr spec sheet includes images that are basically the same as those provided in Exhibit 1004 (Kerr), discussed above, without showing the pump in any cross-sectioned views. *Compare* Ex. 1011 *with* Ex. 1004.

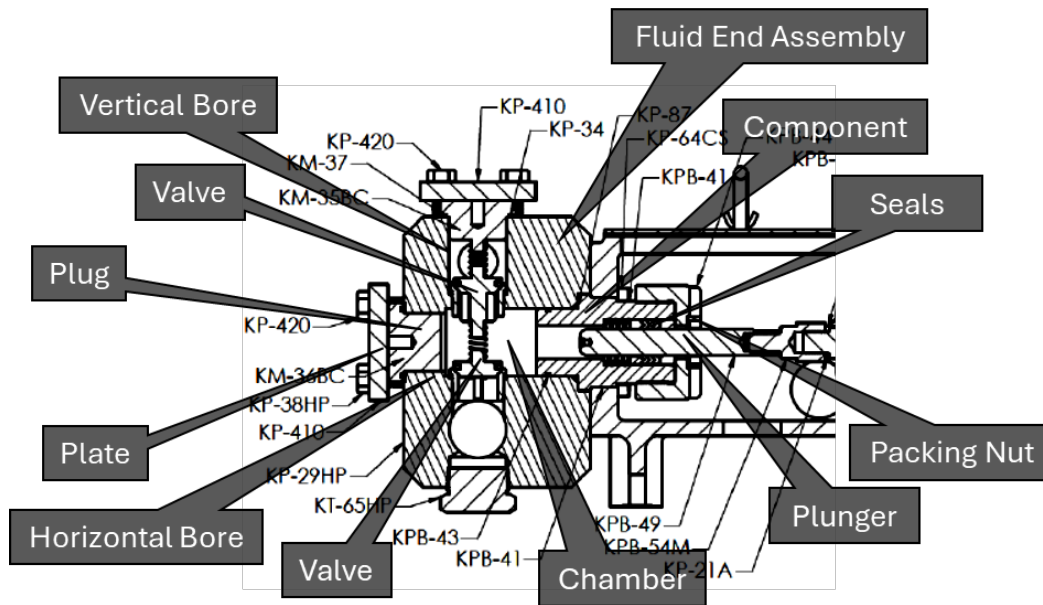
E. GROUND 1—ALLEGED OBVIOUSNESS OVER KERR

Under Ground 1, Petitioner asserts that claims 1–14 would have been obvious over Kerr and, therefore, are unpatentable. Pet. 31–65 (citing Ex. 1001, 4:15–16, 6:66–67, 9:17–20, 11:2–4, Fig. 2; Ex. 1003 ¶¶ 79–171; Ex. 1004, 12, 20, 25–27, 29, Figs.). As noted above, Patent Owner offers no opposition to the Petition’s merits.

To generally summarize the invention of independent claim 1, the claim is directed to a fluid end assembly having a single, integrally-formed housing with a pair of side-by-side, intersecting vertical and horizontal bores, each vertical bore having a pair of valves on either side of a respective chamber defined by the bores’ intersection, and each horizontal bore’s exterior opening being closed with a plug and the two openings fastened with a plate, and one of the horizontal bores has a component around a plunger and seals, held in via a packing nut. *See* Ex. 1001, 16:14–55.

Petitioner asserts that Kerr teaches such a fluid end and maps its disclosure to claim 1. Pet. 32–47 (citing Ex. 1001, 4:15–16, 6:66–67, 9:17–20, 11:2–4; Ex. 1003 ¶¶ 79–104; Ex. 1004, 12, 25, 27, 29). Petitioner’s assertions include far greater detail than we discuss below, but, as we did in our Institution Decision (at 26), we summarize Petitioner’s assertions as to

how Kerr teaches or suggested each element of claim 1 using the following annotated figure from Kerr:



We label a portion of Kerr's figure from page 27 of the reference (*see supra* Section II.D.1 for the entire image), focusing on the fluid end illustrated, and annotating the figure to identify the components of Kerr's fluid end as Petitioner has mapped them to the elements of claim 1. *See id.*; *see also generally* Ex. 1004. The image above shows a cross-section of a fluid end assembly labeled to show it includes a vertical bore, a horizontal bore, a chamber, two valves, a plug, a plate, a component, a plunger, seals, and a packing nut.

Petitioner asserts that Kerr teaches a fluid end housing as an integral piece, having side-by-side sets of horizontal and vertical bores that intersect to provide internal chambers, where each vertical bore has a valve on either side of the chamber, each horizontal bore has a plug closing one end and a plunger in the other end, where a plate covers the several plugs of the

horizontal bores, and a stuffing box component surrounds the plunger in the horizontal bore and includes seals and is held in via a packing nut, all as shown above. Pet. 33–47 (citing, *inter alia*, Ex. 1003 ¶¶ 79–104; Ex. 1004, 12, 20, 25, 27, 29 (various figures)). As for claim 1’s requirement that there be two sets of such horizontal and vertical bores provided side-by-side (as well as the bores’ valves) and the claim’s requirement that the plate cover the respective openings of adjacent horizontal bores, Petitioner asserts that Kerr discloses a “triplex” pump having three identical sets of bores arranged side-by-side, which is shown in Kerr’s photographs, for example, at pages 20–23. *See* Pet. 36–41, 42–43.

Again, none of Petitioner’s assertions is contested. On this record, we agree with Petitioner that Kerr teaches or suggests each and every element of claim 1.

Independent claim 7 is very similar to independent claim 1, discussed above. For example, claim 7 similarly recites the same housing, first and second horizontal and vertical intersecting bores, valves, plate, component, plunger, seals, and packing nut elements as claim 1. Petitioner points to the same disclosures of Kerr as teaching such elements. Pet. 56– (citing, *inter alia*, Ex. 1003 ¶¶ 123–143). None of this is contested, and we find Kerr also teaches each element of claim 7.

Turning to the dependent claims, claim 2 depends from claim 1 and adds that the plate is held on by fasteners in threaded openings in the housing. Claim 11 is similar to claim 2, and the same evidence supports the unpatentability of each. Petitioner asserts that Kerr discloses the claimed fasteners, having “capscrews” with hex heads, that pass through openings in the plate and engage with threaded openings in the housing. Pet. 47–50, 64

(citing Ex. 1003 ¶¶ 105–109 154–159; Ex. 1004, 20 (figures), 26 (figure and table)).

Claim 3 depends from claim 1 and adds that fasteners hold the plate on the housing. Claim 12, which depends from claim 7, is similar to claim 3, and the same evidence supports the unpatentability of each. Again, as with very similar claim 2, Petitioner asserts that Kerr discloses the recited fasteners of claims 3 and 12. Pet. 50, 64 (citing Ex. 1003 ¶¶ 111–112, 160–161; Ex. 1004, 20).

Claim 4 depends from claim 3 and adds that the fasteners are threaded. Claim 13, which depends from claim 7, is similar to claim 4, and the same evidence supports the unpatentability of each. Again, Petitioner asserts that Kerr teaches threaded fasteners, as they have hex heads for using a ratchet or wrench for screwing them into the housing. Pet. 50–51, 64 (citing Ex. 1003 ¶¶ 113–115, 162–163; Ex. 1004, 20 (photo showing this ratcheting of the fasteners in progress), 26).

Claim 5 depends from claim 1 and adds that a (third) plug is in the first vertical bore between an external surface of the housing and the valves. Claim 10, which depends from claim 7, is similar to claim 5, and the same evidence supports the unpatentability of each. Petitioner asserts that Kerr teaches a plug in the vertical bore between the valves and the external surface of the housing. Pet. 52–53, 63 (citing Ex. 1003 ¶¶ 116, 153; Ex. 1004, 27 (figure)).

Claim 6 depends from claim 1 and adds a second component, second plunger, second seals, and second packing nut, like the first, but at the second horizontal bore. Petitioner asserts that Kerr discloses a second set of intersecting bores and all of their internal components, exactly like the first

set discussed above regarding claim 1, as part of Kerr's multiplex pump. Pet. 53–56 (citing Ex. 1003 ¶¶ 117–122; Ex. 1004, 27 (figures)).

Claim 8 depends from claim 7 and recites similar elements to those of claim 1, i.e., the plug and plunger of the first and second set of bores and their relationship to the plate. Petitioner points to the same disclosure of Kerr discussed above regarding claim 1 as teaching such elements. Pet. 59–61 (citing, *inter alia*, Ex. 1003 ¶¶ 144–151; Ex. 1004, 26 (figure)).

Claim 9 depends from claim 7 and adds that the recited plate abuts the first and second plugs. Petitioner asserts that Kerr teaches this as its plate spans the several horizontal bores and their associated plugs. Pet. 62–63 (citing Ex. 1003 ¶¶ 149, 152; Ex. 1004, 20, 25, 26 (figures)).

Claim 14, which depends from claim 7, recites similar subject matter to claim 6, and also adds certain limitations of claim 1, and the same evidence supports the unpatentability of each claim. Claim 14 adds a second component, second plunger, second seals, and second packing nut, like the first, but at the second horizontal bore. Petitioner asserts that Kerr teaches these elements as it teaches identical adjacent bores and features therein. Pet. 65 (citing, *inter alia*, Ex. 1003 ¶¶ 164–170).

In summary, as was the case with independent claim 1, Petitioner has shown that Kerr teaches or suggests each and every element, as claimed, of claims 2–14, by a preponderance of the evidence. This is uncontested by Patent Owner.

We find that Petitioner has shown by a preponderance of the evidence that claims 1–14 are unpatentable as obvious over Kerr.

F. GROUND 2—OBVIOUSNESS OVER APLEX AND STANTON

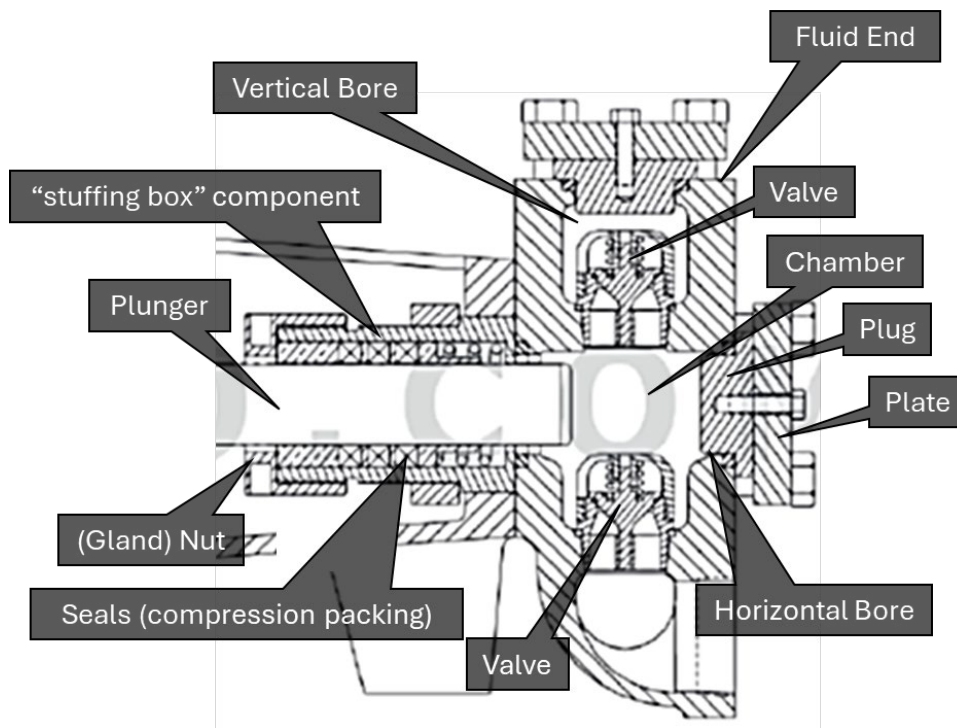
Under Ground 2 Petitioner asserts that claims 1–14 would have been obvious over Aplex and Stanton. Pet. 65–101 (citing, *inter alia*, Ex 1003 ¶¶ 172–266). Appellant takes the position that Aplex teaches all of the elements of the claimed fluid end assembly, supplemented by Stanton’s teaching of the recited stuffing/packing assembly (i.e., components, seals, packing nuts). Again, none of Petitioner’s assertions is contested in this proceeding.

Regarding the combining of Aplex and Stanton, Petitioner asserts that the ordinarily skilled artisan would have understood that providing a packing/stuffing arrangement, as taught by Stanton, within a fluid end housing, as taught by Aplex, would improve pressure and fluid isolation compared with an arrangement where the packing was bolted to the outside of the fluid end as in Aplex unmodified. Pet. 66 (citing Ex. 1003 ¶¶ 189, 236). Patent Owner does not dispute this rationale. We find this to be a reason, with rationale underpinning, why the person of ordinary skill in the art would have combined these references with a reasonable expectation of success.

Regarding independent claim 1, Petitioner asserts that Aplex teaches or suggests a pump with a fluid end as a single, integral housing (as does Stanton), having several identical and adjacent intersecting horizontal and vertical bores forming respective chambers (as does Stanton), also including respective reciprocating plungers connected to an associated power end of the pump and provided in the horizontal bores, valves in the vertical bores on either side of the chambers, plugs closing the horizontal bores, plates fastened over these plugs, with Stanton teaching providing a respective

component in the horizontal bores and surrounding the plungers and including seals (a stuffing box/packing sleeve (Aplex also teaches a similar stuffing box)) and held in via a packing nut. Pet. 66–83 (citing Ex. 1001, 4:15–16, 6:66–67, 9:17–20, 11:24; Ex. 1003 173–201; Ex. 1005, 3, 7–8, 38 (figures); Ex. 1007, Figs. 1–2). Petitioner asserts that, in such disclosures, the Aplex and Stanton combination teaches every element of claim 1 and, thus, renders it obvious. *Id.*

As we did above in relation to Ground 1, for convenience, we provide below an annotated version of a figure from Aplex to identify how Petitioner asserts it teaches essentially all (except the “component” *in* the horizontal bore, which is taught by Stanton) elements of claim 1:



The image above shows a cross-section view of a fluid end, labeled to show it includes a vertical bore, a horizontal bore, a chamber, two valves, a plug, a plate, a component, a plunger, seals, and a nut.

On this record, we agree with Petitioner that the combination of Apex and Stanton teaches or suggests each and every element of claim 1.

Independent claim 7 is similar to independent claim 1, as discussed above, and as with Ground 1, here Petitioner asserts the same evidence rendering claim 1 obvious (i.e., Apex and Stanton) also renders claim 7 obvious. Pet. 93–95 (citing, *inter alia*, Ex. 1003 ¶¶ 217–240).

Turning to dependent claims 2 and 11, which respectively depend from claims 1 and 7, and add that the plate is held on by fasteners in threaded openings in the housing, Petitioner asserts that Apex discloses the claimed fasteners, having cap-screws with hex heads, that pass through openings in the plate and engage with threaded openings in the housing. Pet. 83–86, 100 (citing Ex. 1003 ¶¶ 202–206, 249–253; Ex. 1005, 8, 38).

Claims 3 and 12 are similar and respectively depend from claims 1 (via 2) and 7; they add that fasteners hold the plate on the housing. Again, as with claim 2, Petitioner asserts that Apex discloses such fasteners. Pet. 87, 100 (citing, *inter alia*, Ex. 1003 ¶¶ 207, 254; Ex. 1005, 8, 38).

Claim 4 depends from claim 3, and similar claim 13 depends from claim 7; they add that the recited fasteners are threaded. Again, Petitioner asserts that Apex teaches threaded fasteners, as they have hex heads for using a ratchet or wrench for screwing them into the housing. Pet. 88–89, 101 (citing Ex. 1003 ¶¶ 208–209, 255; Ex. 1005, 8, 38).

As for claim 5 and claim 10, which are similar and depend from claims 1 and 7 and add that a third plug is in the first vertical bore between

an external surface of the housing and the valves, Petitioner asserts that Apex teaches a head plug in the vertical bore between the valves and the external surface of the housing. Pet. 89–90, 100 (citing Ex. 1003 ¶¶ 210, 248; Ex. 1005, 38).

Claim 6 depends from claim 1 and adds a second component, second plunger, second seals, and second packing nut, like the first, but at the second horizontal bore. Petitioner asserts that Apex discloses a second set of intersecting bores and all of their internal components, exactly like the first set discussed above regarding claim 1, which Stanton teaches would be like those claimed, as part of Apex’s (and Stanton’s) triplex pump. Pet. 90–92 (citing, *inter alia*, Ex. 1003 ¶¶ 211–214; Ex. 1007, Fig. 2).

Claim 8 depends from claim 7 and recites similar elements to those of claim 1, i.e., the plug and plunger of the first and second set of bores and their relationship to the plate. Petitioner points to the same disclosure of Apex and Stanton discussed above regarding claim 1 as teaching such elements, and notes that Apex’s plate is adjacent and abuts the plugs. Pet. 96–98 (citing, *inter alia*, Ex. 1003 ¶¶ 241–245; Ex. 1005, 8, 38).

Claim 9 depends from claim 7 and adds that the plate abuts the first and second plugs. Petitioner asserts that Apex teaches this as its plate spans the several horizontal bores and their associated plugs. Pet. 98–100 (citing Ex. 1003 ¶¶ 246–247; Ex. 1005, 8, 38).

Claim 14, which depends from claim 7, recites similar subject matter to claim 6, and also adds certain limitations of claim 1, and the same evidence supports the unpatentability of each. Claim 14 adds a second component, second plunger, second seals, and second packing nut, like the first, but at the second horizontal bore. Petitioner asserts that Apex teaches

these elements as it teaches identical adjacent bores and features therein.
Pet. 101 (citing, *inter alia*, Ex. 1003 ¶¶ 258–265).

In summary, as was the case with independent claim 1, Petitioner has shown that the combination of Apex and Stanton teaches or suggests each and every element, as recited, of claims 2–14 by a preponderance of the evidence. This is uncontested by Patent Owner.

We find that Petitioner has shown by a preponderance of the evidence that claims 1–14 are unpatentable as obvious over the combination of Apex and Stanton.

G. GROUND 3—OBVIOUSNESS OVER BLUME, STANTON,
AND WILKINSON

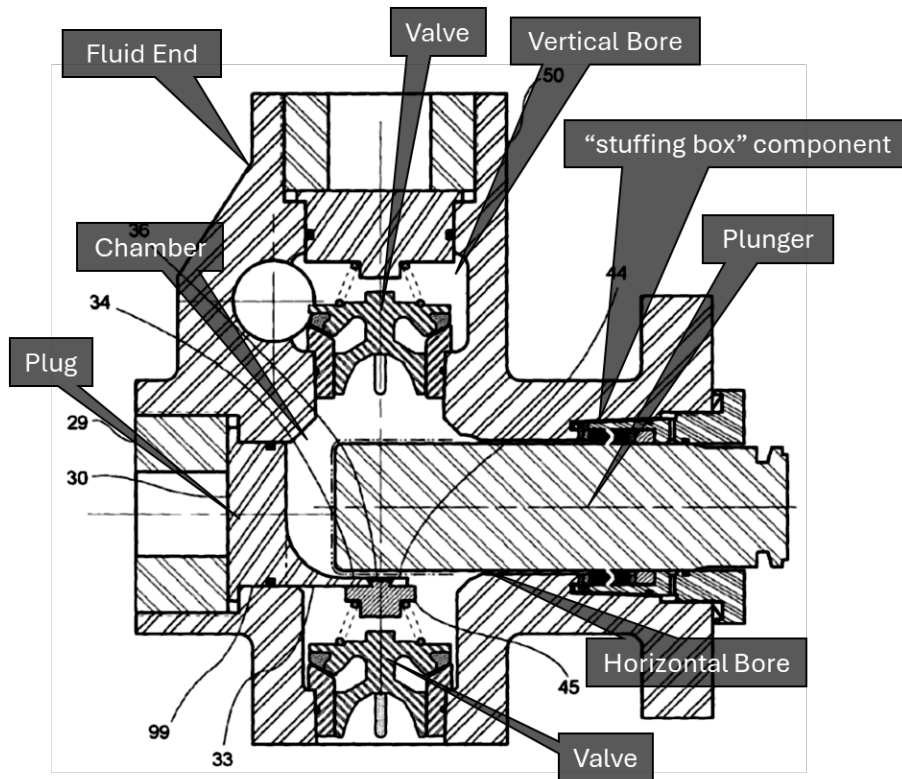
Under Ground 3 Petitioner alleges that claims 1–14 would have been obvious over Blume, Stanton, and Wilkinson. Pet. 102–43. Petitioner asserts that Blume teaches most elements of the claimed fluid end assembly, which is supplemented by Stanton’s teachings of a stuffing/packing arrangement (as in Ground 2) and Wilkinson’s teaching of bore cover plates (Wilkinson teaches its several plates cover and provide access to three discharge valves and suction valve assemblies—Ex. 1008, 3:25–29, 4:41–44). None of Petitioner’s assertions is contested by Patent Owner.

Petitioner asserts that the ordinarily skilled artisan would have combined Blume, Stanton, and Wilkinson because Stanton’s packing/stuffing arrangement could simply replace Blume’s with predictable results and would allow for easier repairs and setting of packing pressure. *Id.* at 102 (citing Ex. 1003 ¶¶ 306–307). And, Petitioner asserts it would have been obvious to add Wilkinson’s bore cover techniques to Blume’s device because it would amount to merely replacing one known method with another, predictably. *Id.* at 102–03 (citing Ex. 1003 ¶¶ 294–295). We find

these to be reasons, with rationale underpinning, why the person of ordinary skill in the art would have combined these references with a reasonable expectation of success.

Regarding claim 1, Petitioner asserts that Blume (as well as Stanton and Wilkinson) discloses a single integrally formed fluid end assembly having a (actually, three identically, in a triplex) horizontal bore and vertical bore intersecting to provide a chamber, where valves are provided in the vertical bore on either side of the chamber, where a plug and a plunger are provided in the horizontal bore on opposite sides of the chamber, that Wilkinson's plate would be included over the plug(s) as was conventional for covering horizontal and vertical bore plugs, and that Stanton's packing/stuffing component would be used in place of Blume's to provide a sleeve around the plunger with seals and a packing nut. Pet. 103–22 (citing, *inter alia*, Ex. 1001 ¶¶ 267–310; Ex. 1004; Ex. 1005; Ex. 1006, Figs. 2, 13; Ex. 1007, Fig. 2; Ex. 1008, 3:24, 4:55–60, Figs. 1–2; Ex. 1009, 23–24).

As we did above in relation to Grounds 1 and 2, for convenience, we provide below an annotated version of a figure from Blume to identify how Petitioner asserts it teaches essentially all (except the “component” *in* the horizontal bore, which is taught by Stanton, and the plate taught by Wilkinson) elements of claim 1:



The image above shows a cross-section view of a fluid end, labeled to show it includes a vertical bore, a horizontal bore, a chamber, two valves, a component, and a plunger.

The stuffing box above would be replaced by Stanton's to meet the specific requirements of the claim and the cover plate of Wilkinson would be provided over the plug(s) to meet that claim element. Again, none of Petitioner's assertions is contested. On this record, we agree with Petitioner that the combination of Blume, Stanton, and Wilkinson teaches or suggests each and every element of claim 1.

Independent claim 7 is similar to independent claim 1, discussed above, and as with Grounds 1 and 2, here Petitioner asserts the same

evidence rendering claim 1 obvious (i.e., Blume, Stanton, and Wilkinson) also covers claim 7. Pet. 135–37 (citing, *inter alia*, Ex. 1003 ¶¶ 326–368).

Turning to dependent claims 2 and 11, which depend from claims 1 and 7, respectively, and add that the recited plate is held on by fasteners in threaded openings in the housing, Petitioner asserts that Wilkinson discloses cover plates for bore openings that are held onto the fluid end housing by threaded hex-headed fasteners, fastened through openings in the plates and into threaded openings in the housing (of Blume’s fluid end). Pet. 122–26, 141–42 (citing Ex. 1003 ¶¶ 311–314, 378–381; Ex. 1008, Figs. 1, 4).

Claims 3 and 12 are similar and respectively depend from claims 1 and 7; they add that fasteners hold the plate on the housing. Again, as with claim 2, Petitioner asserts that Wilkinson discloses such fasteners (would hold a plate onto Blume’s housing). Pet. 126–28, 142 (citing, *inter alia*, Ex. 1003 ¶¶ 313–314, 382–383; Ex. 1008, Figs. 1, 4).

Claim 4 depends from claim 3, and similar claim 13 depends from claim 7; they add that the fasteners are threaded. Again, Petitioner asserts that Wilkinson teaches threaded fasteners, as they have hex heads for screwing them into the housing. Pet. 128–130, 142 (citing Ex. 1003 ¶¶ 315–316, 384–385; Ex. 1008, Figs. 1, 4).

As for claim 5 and claim 10, which are similar and depend from claims 1 and 7 and add that a third plug is in the first vertical bore between an external surface of the housing and the valves, Petitioner asserts that Blume teaches a head plug in the vertical bore between the valves and the external surface of the housing. Pet. 130–31, 141 (citing Ex. 1003 ¶¶ 319, 377; Ex. 1006, Fig. 13).

Claim 6 depends from claim 1 and adds a second component, second plunger, second seals, and second packing nut, like the first, but at the second horizontal bore. Petitioner asserts that Blume discloses a triplex pump that has a second set of intersecting bores and all of their internal components, exactly like the first set discussed above regarding claim 1, and that Stanton discloses a component having a packing sleeve with all the same parts (seals, nut, etc.), which would also be in the second horizontal bore. Pet. 131– (citing, *inter alia*, Ex. 1003 ¶¶ 320–325; Ex. 1006, Fig. 2; Ex. 1007, Fig. 2).

Claim 8 depends from claim 7 and recites similar elements to those of claim 1, i.e., the plug and plunger of the first and second set of bores and their relationship to the plate. Petitioner points to the same disclosure of Blume, Stanton, and Wilkinson discussed above regarding claim 1 as teaching such elements, and notes that Wilkinson’s plate is adjacent and abuts and secures plugs. Pet. 137–40 (citing, *inter alia*, Ex. 1003 ¶¶ 368–375; Ex. 1005, 8, 38; Ex. 1008, 3:25–29, 4:59–60, Fig. 2).

Claim 9 depends from claim 7 and adds that the plate abuts the first and second plugs. Petitioner asserts that Blume and Wilkinson teach this as Wilkinson’s plate spans the several horizontal bores and their associated plugs and would do so in Blume’s apparatus. Pet. 140–41 (citing Ex. 1003 ¶¶ 376; Ex. 1006, Fig. 1; Ex. 1008, Fig. 2).

Claim 14, which depends from claim 7, recites similar subject matter to claim 6, and also adds certain limitations of claim 1, and the same evidence supports the unpatentability of each. Claim 14 adds a second component, second plunger, second seals, and second packing nut, like the first, but at the second horizontal bore. Petitioner asserts that Blume,

Stanton, and Wilkinson teach these elements as they teach identical adjacent bores and features therein. Pet. 142–43 (citing, *inter alia*, Ex. 1003 ¶¶ 386–389).

In summary, as was the case with independent claim 1, Petitioner has shown that Blume, Stanton, and Wilkinson teach or suggest each and every element, as claimed, of claims 2–14, by a preponderance of the evidence. This is uncontested by Patent Owner.

We find that Petitioner has shown by a preponderance of the evidence that claims 1–14 are unpatentable as obvious over the combination of Blume, Stanton, and Wilkinson.

H. GROUND 4—OBVIOUSNESS OVER THE SALE OF THE KERR PUMP

Under Ground 4, Petitioner asserts that claims 1–14 would have been obvious over the Kerr Pump’s offer for sale before the priority date. Pet. 31, 143–45 (citing, *inter alia*, Ex. 1003 ¶¶ 393; Ex. 1004; Ex. 1009; Ex. 1011). As with all other grounds, Patent Owner does not contest Petitioner’s assertions.

Petitioner’s position is that the Kerr Pump was offered for sale and is “essentially identical” to the pump device disclosed in Kerr, Exhibit 1004, discussed above in relation to Ground 1. *Id.* We discuss and conclude above that Kerr discloses a pump that teaches and suggests all elements of claims 1–14, therefore, if such a pump was commercially on sale more than a year prior to the ’582 patent’s earliest possible effective filing date of July 14, 2017, such an offer for sale would render the claims unpatentable under 35 U.S.C. § 102(a)(1) or 35 U.S.C. § 103. *See Pfaff v. Wells Electronics, Inc.*, 525 U.S. 55, 65 (1998); *LaBounty Mfg., v. U.S. Int’l Trade Comm’n*, 958 F.2d 1066, 1071 (Fed. Cir. 1992) (“If a device was in public use or on

sale before the critical date, then that device becomes a reference under section 103 against the claimed invention.”) (quoting *Baker Oil Tools v. Geo Vann, Inc.*, 828 F.2d 1558, 1563 (Fed. Cir. 1987)).

Petitioner asserts the Kerr Pump (the “KP-330HP” according to Exs. 1004 and 1011) was offered for sale on December 28, 2014, on Kerr’s website (provided via wayback machine—<https://web.archive.org/web/20141228144522/http://kerrpumps.com/Pumps/Classic/Intermittent/KP-3300HP>). Pet. 143–44. Petitioner identifies (by highlighting) the date this website was active as “20141228,” which it asserts means December 28, 2014. Petitioner provides an image of the “Wayback machine” version of this website, which graphically includes the date “DEC 28 2014” in its upper right corner. *Id.* at 144 (showing Ex. 1009, 25–26); *see also id.* at 24–29 (asserting a records expert, Tanya Zeif, testifies as to the authenticity of this and other recovered websites based on the functioning of the Wayback Machine—Ex. 1009—without objection or dispute); and Ex. 1012 (Kerr website 2012).

Petitioner asserts that a Spec. Sheet was provided as a part of that offer for sale (Ex. 1011), which shows a pump “essentially identical” to that disclosed in Kerr (Ex. 1004). Pet. 144–145. Petitioner asserts that, because a Kerr Pump product essentially identical to that disclosed in Kerr (Ex. 1004) was commercially offered for sale before the ’582 patent’s effective filing date, claims 1–14 are unpatentable for the same reasons as set forth under Ground 1. Pet. 144.

Again, none of these assertions are contested by Patent Owner.

The product offered for sale does, as asserted by Petitioner, appear to be identical to that disclosed by Kerr. Thus, we conclude that Petitioner has

established that a product disclosed by Kerr (Ex. 1004), which renders obvious the challenged claims, was commercially offered for sale over a year before the effective filing date of the '582 patent. Therefore, we conclude that claims 1–14 are unpatentable in view of the Kerr Pump's offer for sale.

III. CONCLUSION¹⁰

On the record before us, Petitioner has demonstrated by a preponderance of the evidence that claims 1–14 of the '582 patent would have been obvious over the asserted prior art, under each asserted ground. Accordingly, all challenged claims of the '582 patent are unpatentable under 35 U.S.C. § 103.

¹⁰ If Patent Owner wishes to pursue amendment of the challenged claims in a reissue or reexamination proceeding subsequent to this Decision, see the April 2019 *Notice Regarding Options for Amendments by Patent Owner Through Reissue or Reexamination During a Pending AIA Trial Proceeding*. See 84 Fed. Reg. 16,654 (Apr. 22, 2019). Patent Owner has a continuing obligation to notify the Board of any such related matters in updated mandatory notices. See 37 C.F.R. § 42.8(a)(3), (b)(2).

Our final decision is summarized as follows:

Claim(s)	35 U.S.C. §	Reference(s)/ Basis	Claim(s) Shown Unpatentable	Claim(s) Not Shown Unpatentable
1–14	103	Kerr	1–14	
1–14	103	Aplex, Stanton	1–14	
1–14	103	Blume, Stanton, Wilkinson	1–14	
1–14	103	sale of “Kerr Pump”	1–14	
Overall Outcome			1–14	

ORDER

Accordingly, it is hereby:

ORDERED that, pursuant to 35 U.S.C. § 324, per post-grant review of claims 1–14 of U.S. Patent 12,152,582 B2, the challenged claims are unpatentable; and

FURTHER ORDERED that, as this is a Final Written Decision, parties to the proceeding seeking judicial review of the decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

PGR2025-00031
Patent 12,152,582 B2

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