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Inventor(s)

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Portable pipe assembly

Abstract

The present invention relates to a portable water pipe assembly for use in the vaporization of substances. Methods of using such an assembly are also provided.

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References Cited

LIC DATENT DOCUMENTS

U.S. PATENT DOCUMENTS					
Patent No.	Issued Date	Patentee Name	U.S. Cl.	CPC	
D232355	12/1973	Wiedmann	N/A	N/A	
3902506	12/1974	Hawie	N/A	N/A	
D244555	12/1976	Wiedmann	N/A	N/A	
D246600	12/1976	Kurata	N/A	N/A	
D306478	12/1989	von Philipp	N/A	N/A	
4960206	12/1989	Johannes	N/A	N/A	
D413172	12/1998	Belschner	N/A	N/A	
D427691	12/1999	Asselta	N/A	N/A	
D445493	12/2000	Nystrom	N/A	N/A	
D458639	12/2001	Anderson	N/A	N/A	
D460545	12/2001	Hautmann	N/A	N/A	
D465031	12/2001	Lodge	N/A	N/A	
D470235	12/2002	Kumar	N/A	N/A	
D508458	12/2004	Solland et al.	N/A	N/A	
D536434	12/2006	DongSheng	N/A	N/A	
D543312	12/2006	Guan	N/A	N/A	
D553122	12/2006	Solland	N/A	N/A	
D558193	12/2006	Ju	N/A	N/A	
D581035	12/2007	Conway	N/A	N/A	
D581905	12/2007	Solland	N/A	N/A	
D588687	12/2008	Drucker	N/A	N/A	
D597191	12/2008	Colombo	N/A	N/A	
D605303	12/2008	Monks	N/A	N/A	
D608879	12/2009	Colombo	N/A	N/A	
D613389	12/2009	Jorgensen	N/A	N/A	
D613390	12/2009	Jorgensen	N/A	N/A	
D613624	12/2009	Bodum	N/A	N/A	
D634832	12/2010	Abbondanzio	N/A	N/A	
D652571	12/2011	Shenassa et al.	N/A	N/A	
8179245	12/2011	Chander et al.	N/A	N/A	
D661827	12/2011	Moetteli	N/A	N/A	
8294300	12/2011	Cook et al.	N/A	N/A	
D670578	12/2011	Perry	N/A	N/A	
D674892	12/2012	Denton	N/A	N/A	
D675308	12/2012	Freeborn	N/A	N/A	
D702090	12/2013	Hogg	N/A	N/A	
D706212	12/2013	Zwierstra et al.	N/A	N/A	
D709624	12/2013	Baum	N/A	N/A	

D713100 12/2013 Salgueiro N/A	N/A
D720064 12/2013 Li N/A	
D724264 12/2014 Chambers N/A	N/A
D724779 12/2014 Liu N/A	N/A
D728155 12/2014 Liu N/A	N/A
D728382 12/2014 Goswell N/A	N/A
D752278 12/2015 Verleur N/A	N/A
D752279 12/2015 Liu N/A	N/A
D752280 12/2015 Verleur N/A	N/A
D757647 12/2015 Engel N/A	N/A
D757996 12/2015 Hua N/A	N/A
D769519 12/2015 Chen N/A	N/A
D772478 12/2015 Liu N/A	N/A
D774247 12/2015 Chen N/A	N/A
D778460 12/2016 Marechal N/A	N/A
D789374 12/2016 King N/A	N/A
D790122 12/2016 Hawes N/A	N/A
9675118 12/2016 Chen N/A	N/A
D792645 12/2016 Fornarelli N/A	N/A
D796433 12/2016 Langhammer et al. N/A	N/A
D800383 12/2016 Verleur N/A	N/A
D801545 12/2016 Wiesli N/A	N/A
D802839 12/2016 Scott N/A	N/A
D806941 12/2017 Hawes N/A	N/A
D809190 12/2017 Schuler N/A	N/A
D810015 12/2017 Carreon et al. N/A	
D810680 12/2017 Carreon et al. N/A	N/A
D811931 12/2017 Yu N/A	N/A
D812736 12/2017 Parker N/A	N/A
D813448 12/2017 Servutas N/A	
D814103 12/2017 Levinson N/A	•
D818638 12/2017 Wright N/A	
D821641 12/2017 Watson N/A	
D823534 12/2017 Chen N/A	
D824586 12/2017 Fornarelli N/A	
D825844 12/2017 Verleur et al. N/A	
D827149 12/2017 Self N/A	
D827152 12/2017 Ou N/A	
D828623 12/2017 Fornarelli N/A	
D830536 12/2017 White N/A	
D833030 12/2017 Sasano N/A	
D837999 12/2018 Sasano N/A	
D839446 12/2018 Sasano N/A	
10211658 12/2018 Bonwit et al. N/A	
D844441 12/2018 DeMarco N/A	
D847419 12/2018 Hawes N/A	
D848673 12/2018 Xu N/A	
D849318 12/2018 Deng et al. N/A	
10321714 12/2018 Kane N/A	
D867657 12/2018 Fornarelli N/A	A N/A

10517334 12/2018 Volodarsky et al. N/A	D870375	12/2018	Patil	N/A	N/A
D873831 12/2019 DePaolo et al. N/A N/A N/A D875676 12/2019 Segev N/A N/A N/A N/A D897282 12/2019 Ye et al. N/A N/A					
D892043 12/2019 Raghunathan N/A N/A N/A D892043 12/2019 Raghunathan N/A N/A N/A N/A 10813386 12/2019 Bajpai et al. N/A N/A N/A 11000067 12/2008 Bajpai et al. N/A N/A N/A 12009/00/13994 12/2008 Jones et al. N/A N/A N/A 2009/00/1481 12/2008 Fishman N/A N/A N/A 2019/00/1481 12/2009 Ryser N/A N/A N/A N/A 2013/008442 12/2012 Jones et al. N/A N			_		
D897282			Segev	N/A	
D897282 12/2019 Ye et al. N/A N/A 10813386 12/2019 Bajpai et al. N/A N/A 11000067 12/2020 Bajpai et al. N/A N/A 2009/0071481 12/2008 Fishman N/A N/A 2010/0104993 12/2009 Ryser N/A N/A 2013/008442 12/2012 Jones et al. N/A N/A 2014/0083441 12/2013 Kaplani N/A N/A 2014/0102463 12/2013 Jones 131/329 A61M 15/06 2014/0290677 12/2013 Liu N/A N/A 2015/0152275 12/2014 Brandtman et al. N/A N/A 2015/0165137 12/2014 Mullinger et al. N/A N/A 2015/018339 12/2014 Green et al. N/A N/A 2015/023141 12/2014 Chung N/A N/A 2015/0257444 12/2014 Chung N/A N/A 2016/0015082			_		
10813386 12/2019			_		
11000067					
2009/0013994 12/2008 Jones et al. N/A N/A 2009/0071481 12/2008 Fishman N/A N/A 2010/0104993 12/2009 Ryser N/A N/A 2013/0008442 12/2012 Jones et al. N/A N/A 2014/0102463 12/2013 Kaplami N/A N/A 2014/0290677 12/2013 Liu N/A N/A 2015/015182 12/2014 Brandtman et al. N/A N/A 2015/015182 12/2014 Wu N/A N/A 2015/015183 12/2014 Brandtman et al. N/A N/A 2015/015275 12/2014 Wu N/A N/A 2015/0188339 12/2014 Green et al. N/A N/A 2015/0257444 12/2014 Chung N/A N/A 2015/0257444 12/2014 Bleloch N/A N/A 2016/021937 12/2015 Sutton et al. N/A N/A 2016/021937 12/2		12/2020			
2010/0104993 12/2009 Ryser N/A N/A 2013/0008442 12/2012 Jones et al. N/A N/A 2013/0319437 12/2012 Liu N/A N/A 2014/0083441 12/2013 Kaplani N/A N/A 2014/0290677 12/2013 Liu N/A N/A 2015/015182 12/2014 Brandtman et al. N/A N/A 2015/01522275 12/2014 Wu N/A N/A 2015/0168337 12/2014 Mullinger et al. N/A N/A 2015/0231341 12/2014 Green et al. N/A N/A 2015/0231341 12/2014 Chung N/A N/A 2016/02331341 12/2014 Chung N/A N/A 2016/0230116 12/2014 Bleloch N/A N/A 2016/0302486 12/2015 Sutton et al. N/A N/A 2016/0295911 12/2015 Rado N/A N/A 2016/0366936 12/201	2009/0013994	12/2008		N/A	N/A
2010/0104993 12/2009 Ryser N/A N/A 2013/0008442 12/2012 Jones et al. N/A N/A 2013/0319437 12/2012 Liu N/A N/A 2014/0083441 12/2013 Kaplani N/A N/A 2014/0290677 12/2013 Liu N/A N/A 2015/015182 12/2014 Brandtman et al. N/A N/A 2015/01522275 12/2014 Wu N/A N/A 2015/0168337 12/2014 Mullinger et al. N/A N/A 2015/0231341 12/2014 Green et al. N/A N/A 2015/0231341 12/2014 Chung N/A N/A 2016/02331341 12/2014 Chung N/A N/A 2016/0230116 12/2014 Bleloch N/A N/A 2016/0302486 12/2015 Sutton et al. N/A N/A 2016/0295911 12/2015 Rado N/A N/A 2016/0366936 12/201	2009/0071481	12/2008	Fishman	N/A	N/A
2013/0008442 12/2012 Jones et al. N/A N/A 2013/0319437 12/2012 Liu N/A N/A 2014/0083441 12/2013 Kaplani N/A N/A 2014/0102463 12/2013 Liu N/A N/A 2015/0015182 12/2014 Brandtman et al. N/A N/A 2015/0122275 12/2014 Wu N/A N/A 2015/018339 12/2014 Mullinger et al. N/A N/A 2015/0231341 12/2014 Korneff N/A N/A 2015/0320116 12/2014 Chung N/A N/A 2016/0007648 12/2015 Sutton et al. N/A N/A 2016/0015082 12/2015 Sutton et al. N/A N/A 2016/0302486 12/2015 Rado N/A N/A 2016/0302486 12/2015 Rado N/A N/A 2017/0027224 12/2016 Volodarsky et al. N/A N/A 2017/0027230	2010/0104993	12/2009		N/A	N/A
2014/0083441 12/2013	2013/0008442	12/2012	5	N/A	N/A
2014/0102463 12/2013 Jones 131/329 A61M 15/06 2014/0290677 12/2013 Liu N/A N/A N/A 2015/0015182 12/2014 Brandtman et al. N/A N/A 2015/0152275 12/2014 Wu N/A N/A N/A 2015/0165137 12/2014 Mullinger et al. N/A N/A N/A 2015/0188339 12/2014 Green et al. N/A N/A N/A 2015/0231341 12/2014 Korneff N/A N/A N/A 2015/0237444 12/2014 Bleloch N/A N/A N/A 2015/0320116 12/2014 Bleloch N/A N/A N/A 2016/0007648 12/2015 Sutton et al. N/A N/A N/A 2016/0015082 12/2015 Liu N/A N/A N/A 2016/0219937 12/2015 Rado N/A N/A N/A 2016/0302486 12/2015 Eroch N/A N/A N/A 2016/0366936 12/2015 Liu N/A N/A N/A 2017/0027224 12/2016 Volodarsky et al. N/A N/A 2017/0027230 12/2016 Fornarelli N/A N/A 2017/0055579 12/2016 Kuna N/A N/A 2017/0055588 12/2016 Cameron N/A N/A 2017/0079324 12/2016 Kuna N/A N/A 2017/0079324 12/2016 Eksouzian N/A N/A 2017/00295845 12/2016 Eksouzian N/A N/A 2017/025518 12/2016 Hawes et al. N/A N/A 2017/025545 12/2016 Bajpai et al. N/A N/A 2018/01941 12/2017 Martin N/A N/A 2018/019151 12/2016 Bajpai et al. N/A N/A 2018/015115 12/2017 Martin N/A N/A 2018/025115 12/2017 Martin N/A N/A 2018/025115 12/2017 Martin N/A N/A 2018/025115 12/2017 Martin N/A N/A 2019/000138 12/2018 Bless et al. N/A N/A 2019/000138 12/2018 Bless et al. N/A N/A 2019/001482 12/2018 Mininger et al. N/A N/A 2019/0014844 12/2018 Mininger et al. N/A N/A 2019/0014844 12/2018 Mininger et al. N/A N/A 2019/014684 12/2018 Mininger et al. N/A N/A 2019/0116884 12/2018 Mininger et a	2013/0319437	12/2012	Liu	N/A	N/A
2014/0102463 12/2013 Jones 131/329 A61M 15/06 2014/0290677 12/2013 Liu N/A N/A N/A 2015/0015182 12/2014 Brandtman et al. N/A N/A 2015/0152275 12/2014 Wu N/A N/A N/A 2015/0165137 12/2014 Mullinger et al. N/A N/A N/A 2015/018339 12/2014 Green et al. N/A N/A N/A 2015/0231341 12/2014 Chung N/A N/A 2015/03251444 12/2014 Bleloch N/A N/A N/A 2015/0320116 12/2014 Bleloch N/A N/A N/A 2016/0007648 12/2015 Sutton et al. N/A N/A N/A 2016/0015082 12/2015 Liu N/A N/A N/A 2016/0219937 12/2015 Rado N/A N/A N/A 2016/0302486 12/2015 Eroch N/A N/A N/A 2016/0302486 12/2015 Eroch N/A N/A N/A 2016/0302486 12/2015 Liu N/A N/A N/A 2017/0027224 12/2016 Volodarsky et al. N/A N/A 2017/0027230 12/2016 Fornarelli N/A N/A 2017/0055579 12/2016 Kuna N/A N/A 2017/0055588 12/2016 Cameron N/A N/A 2017/0079324 12/2016 Eksouzian N/A N/A 2017/0079324 12/2016 Eksouzian N/A N/A 2017/0295845 12/2016 Hawes et al. N/A N/A 2017/025511 12/2016 Bajpai et al. N/A N/A 2018/091511 12/2016 Bajpai et al. N/A N/A 2018/001381 12/2016 Bajpai et al. N/A N/A 2018/001381 12/2016 Bajpai et al. N/A N/A 2018/001381 12/2017 Martin N/A N/A 2018/001381 12/2017 Sparklin N/A N/A 2019/000138 12/2018 Bless et al. N/A N/A 2019/000138 12/2018 Bless et al. N/A N/A 2019/000138 12/2018 Bless et al. N/A N/A 2019/001482 12/2018 Mininger et al. N/A N/A 2019/001482 12/2018 Mininger et al. N/A N/A 2019/0014844 12/2018 Mininger et al. N/A N/A 2019/0014844 12/2018 Mininger et al. N/A N/A 2019/0116884 12/2018 Mininger et al. N/A N/A 2019/0116884 12/2018 Mininger et al. N/A N/A 2019/0116884 12/2018 Conley et al. N/A N/A 2019/0116884 12/2018 Conley et al. N/A N/A 2019/0116884 12/20	2014/0083441	12/2013	Kaplani	N/A	N/A
2015/0015182 12/2014 Brandtman et al. N/A N/A 2015/012275 12/2014 Wu N/A N/A N/A 2015/0165137 12/2014 Green et al. N/A N/A 2015/018339 12/2014 Green et al. N/A N/A 2015/0231341 12/2014 Green et al. N/A N/A 2015/0231341 12/2014 Green et al. N/A N/A N/A 2015/0257444 12/2014 Ghung N/A N/A N/A 2015/0320116 12/2014 Bleloch N/A N/A N/A 2016/0007648 12/2015 Sutton et al. N/A N/A N/A 2016/0015082 12/2015 Liu N/A N/A N/A 2016/0219937 12/2015 Rado N/A N/A N/A 2016/03295911 12/2015 Kalousek et al. N/A N/A 2016/0302486 12/2015 Eroch N/A N/A N/A 2016/0366936 12/2015 Liu N/A N/A N/A 2017/0027224 12/2016 Volodarsky et al. N/A N/A 2017/0027230 12/2016 Fornarelli N/A N/A 2017/0055588 12/2016 Cameron N/A N/A 2017/0055588 12/2016 Cameron N/A N/A 2017/0079324 12/2016 Eksouzian N/A N/A 2017/0202265 12/2016 Eksouzian N/A N/A 2017/0202265 12/2016 Bajpai et al. N/A N/A 2017/0251718 12/2016 Bajpai et al. N/A N/A 2018/0125115 12/2017 Martin N/A N/A 2018/0125115 12/2017 Smith et al. N/A N/A 2018/0125115 12/2017 Smith et al. N/A N/A 2018/0125115 12/2017 Sparklin N/A N/A 2019/0000138 12/2018 Bless et al. N/A N/A 2019/000138 12/2018 Bless et al. N/A N/A 2019/0089184 12/2018 Mininger et al. N/A N/A 2019/0089184 12/2018 Mininger et al. N/A N/A 2019/0109497 12/2018 Mininger et al. N/A N/A	2014/0102463	12/2013	<u> </u>	131/329	A61M 15/06
2015/0122275 12/2014 Wu N/A N/A 2015/0165137 12/2014 Mullinger et al. N/A N/A 2015/028339 12/2014 Green et al. N/A N/A 2015/0257444 12/2014 Korneff N/A N/A 2015/0320116 12/2014 Bleloch N/A N/A 2016/0007648 12/2015 Sutton et al. N/A N/A 2016/0015082 12/2015 Liu N/A N/A 2016/0219937 12/2015 Rado N/A N/A 2016/0295911 12/2015 Kalousek et al. N/A N/A 2016/0302486 12/2015 Eroch N/A N/A 2017/0027224 12/2016 Volodarsky et al. N/A N/A 2017/0027224 12/2016 Kuna N/A N/A 2017/0055588 12/2016 Kuna N/A N/A 2017/0079324 12/2016 Xu N/A N/A 2017/00202265 12/201	2014/0290677	12/2013	Liu	N/A	N/A
2015/0165137 12/2014 Mullinger et al. N/A N/A 2015/028339 12/2014 Green et al. N/A N/A 2015/0257444 12/2014 Korneff N/A N/A 2015/0320116 12/2014 Bleloch N/A N/A 2016/0007648 12/2015 Sutton et al. N/A N/A 2016/0015082 12/2015 Liu N/A N/A 2016/0219937 12/2015 Rado N/A N/A 2016/0302486 12/2015 Eroch N/A N/A 2016/0306936 12/2015 Eroch N/A N/A 2017/0027224 12/2016 Volodarsky et al. N/A N/A 2017/0027230 12/2016 Fornarelli N/A N/A 2017/0055579 12/2016 Kuna N/A N/A 2017/0079324 12/2016 Xu N/A N/A 2017/0079324 12/2016 Exsouzian N/A N/A 2017/020265 12/20	2015/0015182	12/2014	Brandtman et al.	N/A	N/A
2015/0188339 12/2014 Green et al. N/A N/A 2015/0231341 12/2014 Korneff N/A N/A 2015/0320116 12/2014 Chung N/A N/A 2015/0320116 12/2014 Bleloch N/A N/A 2016/0007648 12/2015 Sutton et al. N/A N/A 2016/0219937 12/2015 Liu N/A N/A 2016/0295911 12/2015 Kalousek et al. N/A N/A 2016/0302486 12/2015 Eroch N/A N/A 2016/036936 12/2015 Liu N/A N/A 2017/0027224 12/2016 Volodarsky et al. N/A N/A 2017/0027230 12/2016 Fornarelli N/A N/A 2017/0055579 12/2016 Kuna N/A N/A 2017/0079324 12/2016 Xu N/A N/A 2017/0079324 12/2016 Eksouzian N/A N/A 2017/0202265 12/201	2015/0122275	12/2014	Wu	N/A	N/A
2015/0188339 12/2014 Green et al. N/A N/A 2015/0231341 12/2014 Korneff N/A N/A 2015/0320116 12/2014 Chung N/A N/A 2015/0320116 12/2014 Bleloch N/A N/A 2016/0007648 12/2015 Sutton et al. N/A N/A 2016/0219937 12/2015 Liu N/A N/A 2016/0295911 12/2015 Kalousek et al. N/A N/A 2016/0302486 12/2015 Eroch N/A N/A 2016/036936 12/2015 Liu N/A N/A 2017/0027224 12/2016 Volodarsky et al. N/A N/A 2017/0027230 12/2016 Fornarelli N/A N/A 2017/0055579 12/2016 Kuna N/A N/A 2017/0079324 12/2016 Xu N/A N/A 2017/0079324 12/2016 Eksouzian N/A N/A 2017/0202265 12/201	2015/0165137	12/2014	Mullinger et al.	N/A	N/A
2015/0257444 12/2014 Chung N/A N/A 2015/0320116 12/2014 Bleloch N/A N/A 2016/0007648 12/2015 Sutton et al. N/A N/A 2016/0015082 12/2015 Liu N/A N/A 2016/0219937 12/2015 Rado N/A N/A 2016/0295911 12/2015 Kalousek et al. N/A N/A 2016/0302486 12/2015 Eroch N/A N/A 2016/0366936 12/2015 Liu N/A N/A 2017/0027224 12/2016 Volodarsky et al. N/A N/A 2017/0027230 12/2016 Fornarelli N/A N/A 2017/0055579 12/2016 Kuna N/A N/A 2017/005588 12/2016 Xu N/A N/A 2017/0079324 12/2016 Eksouzian N/A N/A 2017/0202265 12/2016 Hawes et al. N/A N/A 2017/0251718 12/2016 </td <td>2015/0188339</td> <td>12/2014</td> <td>_</td> <td>N/A</td> <td>N/A</td>	2015/0188339	12/2014	_	N/A	N/A
2015/0320116 12/2014 Bleloch N/A N/A 2016/0007648 12/2015 Sutton et al. N/A N/A 2016/0015082 12/2015 Liu N/A N/A 2016/0219937 12/2015 Rado N/A N/A 2016/0295911 12/2015 Kalousek et al. N/A N/A 2016/0302486 12/2015 Eroch N/A N/A 2016/0366936 12/2015 Liu N/A N/A 2017/0027224 12/2016 Volodarsky et al. N/A N/A 2017/0027230 12/2016 Fornarelli N/A N/A 2017/0055579 12/2016 Kuna N/A N/A 2017/0064994 12/2016 Xu N/A N/A 2017/0079324 12/2016 Eksouzian N/A N/A 2017/0251718 12/2016 Fornarelli N/A N/A 2017/0259845 12/2016 Armoush N/A N/A 2018/0098569 12/2017<	2015/0231341	12/2014	Korneff	N/A	N/A
2015/0320116 12/2014 Bleloch N/A N/A 2016/0007648 12/2015 Sutton et al. N/A N/A 2016/0015082 12/2015 Liu N/A N/A 2016/0219937 12/2015 Rado N/A N/A 2016/0295911 12/2015 Kalousek et al. N/A N/A 2016/0302486 12/2015 Eroch N/A N/A 2016/0366936 12/2015 Liu N/A N/A 2017/0027224 12/2016 Volodarsky et al. N/A N/A 2017/0027230 12/2016 Fornarelli N/A N/A 2017/0055579 12/2016 Kuna N/A N/A 2017/005588 12/2016 Xu N/A N/A 2017/0079324 12/2016 Eksouzian N/A N/A 2017/0205551 12/2016 Fornarelli N/A N/A 2017/02079324 12/2016 Fornarelli N/A N/A 2017/02079324 12/2	2015/0257444	12/2014	Chung	N/A	N/A
2016/0015082 12/2015 Liu N/A N/A 2016/0219937 12/2015 Rado N/A N/A 2016/0295911 12/2015 Kalousek et al. N/A N/A 2016/0302486 12/2015 Eroch N/A N/A 2016/0366936 12/2015 Liu N/A N/A 2017/0027224 12/2016 Volodarsky et al. N/A N/A 2017/0027230 12/2016 Fornarelli N/A N/A 2017/0055579 12/2016 Kuna N/A N/A 2017/0055588 12/2016 Cameron N/A N/A 2017/0064994 12/2016 Eksouzian N/A N/A 2017/0079324 12/2016 Eksouzian N/A N/A 2017/0202265 12/2016 Hawes et al. N/A N/A 2017/0251718 12/2016 Armoush N/A N/A 2018/0098569 12/2017 Martin N/A N/A 2018/019041 12/2017	2015/0320116	12/2014	9	N/A	N/A
2016/0219937 12/2015 Rado N/A N/A 2016/0295911 12/2015 Kalousek et al. N/A N/A 2016/0302486 12/2015 Eroch N/A N/A 2016/0366936 12/2015 Liu N/A N/A 2017/0027224 12/2016 Volodarsky et al. N/A N/A 2017/0027230 12/2016 Fornarelli N/A N/A 2017/0055579 12/2016 Kuna N/A N/A 2017/0055588 12/2016 Xu N/A N/A 2017/0064994 12/2016 Eksouzian N/A N/A 2017/0079324 12/2016 Eksouzian N/A N/A 2017/0020265 12/2016 Hawes et al. N/A N/A 2017/0225451 12/2016 Armoush N/A N/A 2018/0398569 12/2016 Bajpai et al. N/A N/A 2018/010941 12/2017 Smith et al. N/A N/A 2018/0271150	2016/0007648	12/2015	Sutton et al.	N/A	N/A
2016/0295911 12/2015 Kalousek et al. N/A N/A 2016/0302486 12/2015 Eroch N/A N/A 2016/0366936 12/2015 Liu N/A N/A 2017/0027224 12/2016 Volodarsky et al. N/A N/A 2017/0027230 12/2016 Fornarelli N/A N/A 2017/0055579 12/2016 Kuna N/A N/A 2017/0055588 12/2016 Cameron N/A N/A 2017/0079324 12/2016 Eksouzian N/A N/A 2017/0105451 12/2016 Fornarelli N/A N/A 2017/0202265 12/2016 Hawes et al. N/A N/A 2017/0295845 12/2016 Armoush N/A N/A 2018/01998569 12/2017 Martin N/A N/A 2018/012915 12/2017 Smith et al. N/A N/A 2018/012915 12/2017 Sparklin N/A N/A 2019/000138 12/2018 Han N/A N/A 2019/0004921 1	2016/0015082	12/2015	Liu	N/A	N/A
2016/0302486 12/2015 Eroch N/A N/A 2016/0366936 12/2015 Liu N/A N/A 2017/0027224 12/2016 Volodarsky et al. N/A N/A 2017/0027230 12/2016 Fornarelli N/A N/A 2017/0055579 12/2016 Kuna N/A N/A 2017/0064994 12/2016 Xu N/A N/A 2017/0079324 12/2016 Eksouzian N/A N/A 2017/0105451 12/2016 Fornarelli N/A N/A 2017/0202265 12/2016 Hawes et al. N/A N/A 2017/0295845 12/2016 Bajpai et al. N/A N/A 2018/0998569 12/2017 Martin N/A N/A 2018/0110941 12/2017 Smith et al. N/A N/A 2018/0271150 12/2017 Sparklin N/A N/A 2019/0000138 12/2018 Han N/A N/A 2019/0037921 12/	2016/0219937	12/2015	Rado	N/A	N/A
2016/0366936 12/2015 Liu N/A N/A 2017/0027224 12/2016 Volodarsky et al. N/A N/A 2017/0027230 12/2016 Fornarelli N/A N/A 2017/0055579 12/2016 Kuna N/A N/A 2017/0064994 12/2016 Xu N/A N/A 2017/0079324 12/2016 Eksouzian N/A N/A 2017/0105451 12/2016 Fornarelli N/A N/A 2017/0202265 12/2016 Hawes et al. N/A N/A 2017/0251718 12/2016 Armoush N/A N/A 2018/0098569 12/2016 Bajpai et al. N/A N/A 2018/0110941 12/2017 Martin N/A N/A 2018/0271150 12/2017 Smith et al. N/A N/A 2018/0271150 12/2017 Sparklin N/A N/A 2019/000138 12/2018 Han N/A N/A 2019/0037921 12	2016/0295911	12/2015	Kalousek et al.	N/A	N/A
2017/0027224 12/2016 Volodarsky et al. N/A N/A 2017/0027230 12/2016 Fornarelli N/A N/A 2017/0055579 12/2016 Kuna N/A N/A 2017/0055588 12/2016 Cameron N/A N/A 2017/0064994 12/2016 Xu N/A N/A 2017/0079324 12/2016 Eksouzian N/A N/A 2017/0105451 12/2016 Fornarelli N/A N/A 2017/020265 12/2016 Hawes et al. N/A N/A 2017/0251718 12/2016 Armoush N/A N/A 2018/0295845 12/2016 Bajpai et al. N/A N/A 2018/0098569 12/2017 Martin N/A N/A 2018/0110941 12/2017 Smith et al. N/A N/A 2018/0271150 12/2017 Sparklin N/A N/A 2019/0000138 12/2018 Han N/A N/A 2019/0037921 <t< td=""><td>2016/0302486</td><td>12/2015</td><td>Eroch</td><td>N/A</td><td>N/A</td></t<>	2016/0302486	12/2015	Eroch	N/A	N/A
2017/0027230 12/2016 Fornarelli N/A N/A 2017/0055579 12/2016 Kuna N/A N/A 2017/0055588 12/2016 Cameron N/A N/A 2017/0064994 12/2016 Xu N/A N/A 2017/0079324 12/2016 Eksouzian N/A N/A 2017/0105451 12/2016 Fornarelli N/A N/A 2017/020265 12/2016 Hawes et al. N/A N/A 2017/0295845 12/2016 Armoush N/A N/A 2018/0098569 12/2017 Martin N/A N/A 2018/0110941 12/2017 Smith et al. N/A N/A 2018/0271150 12/2017 Mueller N/A N/A 2019/0000138 12/2018 Han N/A N/A 2019/0037921 12/2018 Kennedy et al. N/A N/A 2019/0109497 12/2018 Mininger et al. N/A N/A 2019/0116884	2016/0366936	12/2015	Liu	N/A	N/A
2017/0055579 12/2016 Kuna N/A N/A 2017/0055588 12/2016 Cameron N/A N/A 2017/0064994 12/2016 Xu N/A N/A 2017/0079324 12/2016 Eksouzian N/A N/A 2017/0105451 12/2016 Fornarelli N/A N/A 2017/0202265 12/2016 Hawes et al. N/A N/A 2017/0295845 12/2016 Bajpai et al. N/A N/A 2018/0098569 12/2017 Martin N/A N/A 2018/0110941 12/2017 Smith et al. N/A N/A 2018/0271150 12/2017 Mueller N/A N/A 2019/0000138 12/2017 Sparklin N/A N/A 2019/00037921 12/2018 Han N/A N/A 2019/0089184 12/2018 Kennedy et al. N/A N/A 2019/0109497 12/2018 Yang et al. N/A N/A 2019/0116884 <t< td=""><td>2017/0027224</td><td>12/2016</td><td>Volodarsky et al.</td><td>N/A</td><td>N/A</td></t<>	2017/0027224	12/2016	Volodarsky et al.	N/A	N/A
2017/0055588 12/2016 Cameron N/A N/A 2017/0064994 12/2016 Xu N/A N/A 2017/0079324 12/2016 Eksouzian N/A N/A 2017/0105451 12/2016 Fornarelli N/A N/A 2017/0202265 12/2016 Hawes et al. N/A N/A 2017/0295845 12/2016 Bajpai et al. N/A N/A 2018/0098569 12/2017 Martin N/A N/A 2018/0110941 12/2017 Smith et al. N/A N/A 2018/0271150 12/2017 Sparklin N/A N/A 2019/00014822 12/2017 Sparklin N/A N/A 2019/0037921 12/2018 Han N/A N/A 2019/00089184 12/2018 Kennedy et al. N/A N/A 2019/0116884 12/2018 Yang et al. N/A N/A 2019/0116884 12/2018 Conley et al. N/A N/A	2017/0027230	12/2016	Fornarelli	N/A	N/A
2017/0064994 12/2016 Xu N/A N/A 2017/0079324 12/2016 Eksouzian N/A N/A 2017/0105451 12/2016 Fornarelli N/A N/A 2017/0202265 12/2016 Hawes et al. N/A N/A 2017/02951718 12/2016 Armoush N/A N/A 2017/0295845 12/2016 Bajpai et al. N/A N/A 2018/0098569 12/2017 Martin N/A N/A 2018/0110941 12/2017 Smith et al. N/A N/A 2018/0125115 12/2017 Mueller N/A N/A 2019/000138 12/2017 Sparklin N/A N/A 2019/00014822 12/2018 Han N/A N/A 2019/0037921 12/2018 Kennedy et al. N/A N/A 2019/00497 12/2018 Mininger et al. N/A N/A 2019/0116884 12/2018 Conley et al. N/A N/A	2017/0055579	12/2016	Kuna	N/A	N/A
2017/0079324 12/2016 Eksouzian N/A N/A 2017/0105451 12/2016 Fornarelli N/A N/A 2017/0202265 12/2016 Hawes et al. N/A N/A 2017/0251718 12/2016 Armoush N/A N/A 2017/0295845 12/2016 Bajpai et al. N/A N/A 2018/0098569 12/2017 Martin N/A N/A 2018/0110941 12/2017 Smith et al. N/A N/A 2018/0125115 12/2017 Mueller N/A N/A 2018/0271150 12/2017 Sparklin N/A N/A 2019/000138 12/2018 Han N/A N/A 2019/0014822 12/2018 Bless et al. N/A N/A 2019/0089184 12/2018 Kennedy et al. N/A N/A 2019/0109497 12/2018 Yang et al. N/A N/A 2019/0116884 12/2018 Conley et al. N/A N/A	2017/0055588	12/2016	Cameron	N/A	N/A
2017/0105451 12/2016 Fornarelli N/A N/A 2017/0202265 12/2016 Hawes et al. N/A N/A 2017/0251718 12/2016 Armoush N/A N/A 2017/0295845 12/2016 Bajpai et al. N/A N/A 2018/0098569 12/2017 Martin N/A N/A 2018/0110941 12/2017 Smith et al. N/A N/A 2018/0125115 12/2017 Mueller N/A N/A 2018/0271150 12/2017 Sparklin N/A N/A 2019/000138 12/2018 Han N/A N/A 2019/0014822 12/2018 Bless et al. N/A N/A 2019/0037921 12/2018 Kennedy et al. N/A N/A 2019/0109497 12/2018 Yang et al. N/A N/A 2019/0116884 12/2018 Conley et al. N/A N/A	2017/0064994	12/2016	Xu	N/A	N/A
2017/0202265 12/2016 Hawes et al. N/A N/A 2017/0251718 12/2016 Armoush N/A N/A 2017/0295845 12/2016 Bajpai et al. N/A N/A 2018/0098569 12/2017 Martin N/A N/A 2018/0110941 12/2017 Smith et al. N/A N/A 2018/0125115 12/2017 Mueller N/A N/A 2018/0271150 12/2017 Sparklin N/A N/A 2019/000138 12/2018 Han N/A N/A 2019/0014822 12/2018 Bless et al. N/A N/A 2019/0037921 12/2018 Kennedy et al. N/A N/A 2019/0109497 12/2018 Yang et al. N/A N/A 2019/0116884 12/2018 Conley et al. N/A N/A	2017/0079324	12/2016	Eksouzian	N/A	N/A
2017/0251718 12/2016 Armoush N/A N/A 2017/0295845 12/2016 Bajpai et al. N/A N/A 2018/0098569 12/2017 Martin N/A N/A 2018/0110941 12/2017 Smith et al. N/A N/A 2018/0125115 12/2017 Mueller N/A N/A 2018/0271150 12/2017 Sparklin N/A N/A 2019/000138 12/2018 Han N/A N/A 2019/0014822 12/2018 Bless et al. N/A N/A 2019/0037921 12/2018 Kennedy et al. N/A N/A 2019/0089184 12/2018 Mininger et al. N/A N/A 2019/0109497 12/2018 Yang et al. N/A N/A 2019/0116884 12/2018 Conley et al. N/A N/A	2017/0105451	12/2016	Fornarelli	N/A	N/A
2017/029584512/2016Bajpai et al.N/AN/A2018/009856912/2017MartinN/AN/A2018/011094112/2017Smith et al.N/AN/A2018/012511512/2017MuellerN/AN/A2018/027115012/2017SparklinN/AN/A2019/00013812/2018HanN/AN/A2019/001482212/2018Bless et al.N/AN/A2019/003792112/2018Kennedy et al.N/AN/A2019/008918412/2018Mininger et al.N/AN/A2019/010949712/2018Yang et al.N/AN/A2019/011688412/2018Conley et al.N/AN/A	2017/0202265	12/2016	Hawes et al.	N/A	N/A
2018/0098569 12/2017 Martin N/A N/A 2018/0110941 12/2017 Smith et al. N/A N/A 2018/0125115 12/2017 Mueller N/A N/A 2018/0271150 12/2017 Sparklin N/A N/A 2019/000138 12/2018 Han N/A N/A 2019/0014822 12/2018 Bless et al. N/A N/A 2019/0037921 12/2018 Kennedy et al. N/A N/A 2019/0089184 12/2018 Mininger et al. N/A N/A 2019/0109497 12/2018 Yang et al. N/A N/A 2019/0116884 12/2018 Conley et al. N/A N/A	2017/0251718	12/2016	Armoush	N/A	N/A
2018/011094112/2017Smith et al.N/AN/A2018/012511512/2017MuellerN/AN/A2018/027115012/2017SparklinN/AN/A2019/000013812/2018HanN/AN/A2019/001482212/2018Bless et al.N/AN/A2019/003792112/2018Kennedy et al.N/AN/A2019/008918412/2018Mininger et al.N/AN/A2019/010949712/2018Yang et al.N/AN/A2019/011688412/2018Conley et al.N/AN/A	2017/0295845	12/2016	Bajpai et al.	N/A	N/A
2018/012511512/2017MuellerN/AN/A2018/027115012/2017SparklinN/AN/A2019/000013812/2018HanN/AN/A2019/001482212/2018Bless et al.N/AN/A2019/003792112/2018Kennedy et al.N/AN/A2019/008918412/2018Mininger et al.N/AN/A2019/010949712/2018Yang et al.N/AN/A2019/011688412/2018Conley et al.N/AN/A	2018/0098569	12/2017	Martin	N/A	N/A
2018/0271150 12/2017 Sparklin N/A N/A 2019/0000138 12/2018 Han N/A N/A 2019/0014822 12/2018 Bless et al. N/A N/A 2019/0037921 12/2018 Kennedy et al. N/A N/A 2019/0089184 12/2018 Mininger et al. N/A N/A 2019/0109497 12/2018 Yang et al. N/A N/A 2019/0116884 12/2018 Conley et al. N/A N/A	2018/0110941	12/2017	Smith et al.	N/A	N/A
2019/0000138 12/2018 Han N/A N/A 2019/0014822 12/2018 Bless et al. N/A N/A 2019/0037921 12/2018 Kennedy et al. N/A N/A 2019/0089184 12/2018 Mininger et al. N/A N/A 2019/0109497 12/2018 Yang et al. N/A N/A 2019/0116884 12/2018 Conley et al. N/A N/A	2018/0125115	12/2017	Mueller	N/A	N/A
2019/0014822 12/2018 Bless et al. N/A N/A 2019/0037921 12/2018 Kennedy et al. N/A N/A 2019/0089184 12/2018 Mininger et al. N/A N/A 2019/0109497 12/2018 Yang et al. N/A N/A 2019/0116884 12/2018 Conley et al. N/A N/A	2018/0271150	12/2017	Sparklin	N/A	N/A
2019/0037921 12/2018 Kennedy et al. N/A N/A 2019/0089184 12/2018 Mininger et al. N/A N/A 2019/0109497 12/2018 Yang et al. N/A N/A 2019/0116884 12/2018 Conley et al. N/A N/A	2019/0000138	12/2018	Han	N/A	N/A
2019/0089184 12/2018 Mininger et al. N/A N/A 2019/0109497 12/2018 Yang et al. N/A N/A 2019/0116884 12/2018 Conley et al. N/A N/A	2019/0014822	12/2018	Bless et al.	N/A	N/A
2019/0109497 12/2018 Yang et al. N/A N/A 2019/0116884 12/2018 Conley et al. N/A N/A	2019/0037921	12/2018	Kennedy et al.	N/A	N/A
2019/0116884 12/2018 Conley et al. N/A N/A	2019/0089184	12/2018	Mininger et al.	N/A	N/A
•	2019/0109497	12/2018	Yang et al.	N/A	N/A
2019/0159519 12/2018 Bowen et al. N/A N/A		12/2018	Conley et al.	N/A	N/A
	2019/0159519	12/2018	Bowen et al.	N/A	N/A

2019/0174825	12/2018	Neuhaus	N/A	N/A
2019/0307171	12/2018	Kane	N/A	N/A
2019/0313692	12/2018	Jones et al.	N/A	N/A
2020/0031237	12/2019	Colafrancesco et al.	N/A	N/A
2020/0128882	12/2019	Davis et al.	N/A	N/A
2020/0183335	12/2019	Mininger et al.	N/A	N/A
2020/0221768	12/2019	Volodarsky et al.	N/A	N/A
2020/0236992	12/2019	Ruiz	N/A	A24F 7/04
2020/0237004	12/2019	Larsen	N/A	N/A
2020/0352222	12/2019	Larsen et al.	N/A	N/A
2021/0045440	12/2020	Volodarsky et al.	N/A	N/A

FOREIGN PATENT DOCUMENTS

Patent No.	Application Date	Country	CPC
DI6002906	12/2001	BR	N/A
303259701	12/2014	CN	N/A
205285006	12/2015	CN	N/A
304205433	12/2016	CN	N/A
107529827	12/2017	CN	N/A
109275961	12/2018	CN	N/A
208798698	12/2018	CN	N/A
40010509	12/2000	DE	N/A
202014000343	12/2012	DE	N/A
102016012830	12/2016	DE	N/A
D0518135	12/2012	ES	N/A
960094	12/1995	FR	N/A
22818	12/2006	MX	N/A
2020161570	12/2019	WO	N/A
2021041098	12/2020	WO	N/A
2022076230	12/2021	WO	N/A
2023055428	12/2022	WO	N/A

OTHER PUBLICATIONS

"Budsy," Apr. 1, 2021, Wayback Machine,

https://web.archive.org/Aweb/20210401210427/https://Avww.puffco.com/products/budsy (Year: 2021). cited by examiner

Puffco Peak web page located at planetvape.ca 2019. cited by applicant

Puff Co., Peak Atomizer Assembly posted on Instagram retrieved from

www.instagram.com/p/BfMk5MKIBp1/ Feb. 14, 2018. cited by applicant

Puff Co., Peak Video posted on Instagram retrieved from www.instagram.com/p/Bd-oaEkFrXC/Jan. 15, 2018. cited by applicant

Puff Co. Glass Attachment Video posted on Instagram retreived from

www.instagram.com/p/Bd3DfMRIWLo/ Jan. 12, 2018. cited by applicant

Puff Co., Puffco Peak Case posted on Instagram retrieved from

www.instagram.com/p/Bd027vflYzM/ Jan. 11, 2018. cited by applicant

Puff Co., Puffco Peak Video posted on Instagram retrieved from

www.instagram.com/p/BdtMs4qIHnH/ Jan. 8, 2018. cited by applicant

Puff Co., Puffco Peak Hero Shot posted on Instagram retrieved from

www.instagram.com/p/BdybEMAI_zX/ Jan. 10, 2018. cited by applicant

Pax Labs, Inc., web page of vaporizers, retrieved from www.paxvapor.com Feb. 25, 2015. cited by

applicant

Puffco Peak by Sneaky Pete Vaporizers, found online May 31, 2019, located at www.youtube.com/watch?v=7W7zX9LCxoQ Apr. 23, 2018. cited by applicant

Koerber, B., This weed company just made a smart bong and it's awesome, Mashable, located at mashable.com/2018/01/08/puffco-peak-smart-bong-dab-rig-concentrates/ Jan. 8, 2018. cited by applicant

Tarantola, A., The Puffco Peak vaporizer is a quick hit of concentrated genius, Engadget, located at www.engadget.com/2018/03/16/puffco-peak-vaporizer-hands-on/?guccounter=1 Mar. 18, 2018. cited by applicant

Puff Co., Reservations are now open for Peak Atomizer Assembly, retrieved from

web.archive.org/web/20180224162936/https://www.puffco.com/ Feb. 24, 2018. cited by applicant Engadget, Hands on Peak, retrieved from

web.archive.org/web/20180330221034/https://www.engadget.com/2018/03/16/puffco-peak-vaporizer-hands-on/ Mar. 31, 2018. cited by applicant

Puff Co., Introducing the Peak, retrieved from vimeo.com/257080728 Feb. 28, 2018. cited by applicant

Dr. Dabbler, Vaporizers for sale, retrieved from

https://web.archive.org/web/20170222202821/https://drdabbervaporizersforsale.weebly.com/ Feb. 22, 2017. cited by applicant

Dr. Dabbler, Boost: Black Edition retrieved from www.drdabber.com/products/boost-black-edition 2019. cited by applicant

Source Vapes, web page for Atomizers, retrieved from

www.sourcevapes.com/collections/atomizers Feb. 16, 2016. cited by applicant

Vapexhale, Give the gift of relaxation, retrieved from www.xhl3.com Nov. 27, 2017. cited by applicant

Vapexhale, web page for starter kits, retrieved from www.xhl3.com 2019. cited by applicant Cloud V Enterprises, Cloud V Bubbler Options, retrieved from

cloudvapes.com/vaporizers/portable-enail/cloudv-electro-portable-dab-rig 2019. cited by applicant Cloud V Enterprises, Ultra Slim Design Vaporizers, retrieved from cloudvapes.com/store/ Jan. 21, 2013. cited by applicant

Cloud V Enterprises, Cloud V, retrieved from cloudvapes.com/store/ Feb. 22, 2016. cited by applicant

Dabado Vaporizers, web page for Dabado Bolt, retrieved from

dabadovaporizers.com/collections/bolts 2019. cited by applicant

Kevin H., Focusvape Tourist Review—The Accidental Tourist, retrieved from

vapesterdam.com/review/focusvape-tourist-review/ 2019. cited by applicant

Focus Vape, web page of vaporizers, retrieved from focusvape.eu/shop/ Jul. 17, 2017. cited by applicant

Pax Labs, Inc., Pax 3, retrieved from paxvapor.com 2019. cited by applicant

Waxxim, Vape Pen Bubblers shopping page, retrieved from www.waxxim.com 2019. cited by applicant

Patent Cooperation Treaty, International Search Report for PCT/US2019/013501, 6 pages, Oct. 10, 2019. cited by applicant

Polar Bottle, Sport Cap, retrieved from polarbottle.com/product/bottles/free-replacement-cap/sport/ on Nov. 1, 2019 2019. cited by applicant

Lock & Lock, Lock & Lock, No BPA, Water Tight, Food Container, 2.5-cup, 20-oz, HPL933, retrieved from www.amazon.com/Water-Tight-Container-2-5-cup-HPL933/dp/B005BRGWZE on Nov. 1, 2019 Oct. 2014. cited by applicant

Smokea, Piecemaker Kahuna 2 in. Silicone Bong, retrieved from

https://smokea.com/products/piecemaker-kahuna-2-silicone-bong?variant=37965420929 on Nov. 1,

2019 Jun. 2018. cited by applicant

Osprey, Hydraulics Bite Valve, retrieved from https://www.osprey.com/US/en/product/hydraulics-bite-valve-NONMAGVALV.html on Nov. 1, 2019 Apr. 2013. cited by applicant

Bray, Flowtek Triad Series, retrieved from www.bray.com/ball-valves/3-piece-valves/triad-series on Nov. 1, 2019 Mar. 2017. cited by applicant

SourceVape.ca, PuffcoPeak, retrieved from planetvape.ca/puffco-peak.html Nov. 21, 2019. cited by applicant

DHgate.com, SOC Enail Kit 2600mAh Capacity For Very Long Lasting And 4 Led Heat Settings VS Puffco The Lucid Lighting Peak, retrieved from dhgate.com/product/soc-enail-kit-2600mah-capacity-for-very-long/479400626.html Nov. 21, 2019. cited by applicant

Shenzhen Slinya Electronic Co Ltd., Crystal Qi Wireless Charging Pad For Iphone 6 6s Plus Samsung Galaxy S7 S6 / Nexus 6/ HTC 8X Smart Phone Wireless Charger, retrieved Nov. 30, 2020. cited by applicant

Kwmobile Store, Kwmobile Charging Station—5V 1.3A Charger With Micro USB Cable—Docking Station Compatible With IQOS 2.4/2.4 Plus Holder E-Cigarette, retrieved Nov. 30, 2020. cited by applicant

Otter Products, LLC OtterSpot Wireless Charging System, retrieved from bit.ly/3r1rvLf 2020. cited by applicant

Mophie Powerstation Wireless—External Battery Charger for Qi Enabled Devices (10,000mAh)—Black, retrieved from www.amazon.com/dp/B01JCIJ2PO?tag=androidcentralb-

20&ascsubtag=UUacUdUnU73790YYwYg 2020. cited by applicant

MOMA Design Store, Lexon Oblio Wireless Charging Station & UV Sanitizer, retrieved from store.moma.org/tech/featured/lexon-pop-up/lexon-oblio-wireless-charging-station-uv-sanitizer/11451.html 2020. cited by applicant

Phonesoap, PhoneSoap Go, retrieved from www.phonesoap.com/products/phonesoap-go 2020. cited by applicant

Nomad Goods, Inc., Nomad Charging Hub 5 Port Edition, retrieved from

www.amazon.com/Nomad-charging-Powers-devices-indicators/dp/B075747DM4 2020. cited by applicant

Spansive, Spansive Source Multi Device Wireless Charging Station—Compatible with iPhone 11 Pro Max 11 Pro 11 Xs Max XR Xs X 8 8 Plus (White), retrieved from

www.amazon.com/Spansive-Source-Device-Wireless-Charger/dp/B07YXCVRJ9 2020. cited by applicant

Patent Cooperation Treaty, International Search Report for PCT/US2020/046904, 3 pages Jan. 15, 2021. cited by applicant

Grenco Science, Gpen Connect Collection, retrieved from

web.archive.org/web/20191001142752/https://www.gpen.com/collections/g-pen-connect Oct. 1, 2019. cited by applicant

EPuffer, Inc., ePuffer ePipe, retrieved from epuffer.com/news-and-press/epuffer-epipe-629x-flat-led-cap/ Apr. 4, 2020. cited by applicant

Dr. Dabbler, Boost: Black Edition Support retrieved from

web.archive.org/web/20210127091740/https://www.drdabber.com/pages/boost-black-support Jan. 27, 2021. cited by applicant

Vapeyaya, e-pipe, retrieved from

web.archive.org/web/20210509224114/https://www.vapeyaya.com/index.php?_route _=Premium-E-cig-E-Pipe May 9, 2021. cited by applicant

Pulsar Vaporizers, Pulsar Petite Pocket Carting Rig Bubbler, retrieved

web.archive.org/web/20210331144200/https://www.pulsarvaporizers.com/products/pulsar-petite-pocket-cart-rig-bubbler-5 from Mar. 31, 2021. cited by applicant

Lookah, Lookah Q7 Mini Enail Banger Fits onto Water Pipes and Dab Rigs, retrieved from

web.archive.org/web/20210124114528/https://www.lookah.com/vaporizers/dab-vaporizer/lookah-q7-water-pipe-compatible-concentrate-vaporizer.html Jan. 24, 2021. cited by applicant

Smokeheir, Waterpipe, retrieved from smokeheir.com/product/waterpipe-13-silver-edition-2/ 2021. cited by applicant

Waxmaid, Waxmaid 8" Universal Traveler Water Bottle Pipe, retrieved from

https://www.waxmaidstore.com/products/waxmaid-8-universal-traveler-water-bottle-pipe/ 2021. cited by applicant

Hydro Flask, Wide Mouth Straw Lid, retrieved from www.hydroflask.com/wide-mouth-straw-lid? color=black 2021. cited by applicant

Puff Corporation, Puffco Travel Glass, retrieved from www.puffco.com/products/puffco-travel-glass 2021. cited by applicant

Headway, Headway Replacement Metal Pull Slide, retrieved from smokea.com/products/headway-replacement-metal-pull-slide 2021. cited by applicant

Bong Outlet, Glass bowl with round handle, retrieved from www.bongoutlet.com/products/glass-bowl-with-round-handle 2021. cited by applicant

Dhgate, Two layers Siliclab design silicone water bong collapsible water cup drinking smoking together glass bubbler pipes heady dab rig, retrieved from www.dhgate.com/product/two-layers-siliclab-design-silicone-water/476693529.html 2021. cited by applicant

VOLCANEE002 Instragram handle; Glass supplier, Instagram demo, retrieved from www.instagram.com/p/CUGyByBgFjp/?utm_medium=copy_link 2021. cited by applicant Patent Cooperation Treaty, International Search Report for PCT/US2021/052758, 5 pages Feb. 9, 2022. cited by applicant

Waxmaid Bong Bottle Traveler Mouthpiece Reviewing Video posted on YouTube by Waxmaid on Sep. 29, 2019 Sep. 29, 2019. cited by applicant

Puffco Budsy Review: Meet the Smokeable Water Bottle retrieved from

https://herb.co/guides/puffco-budsy-review/ on Dec. 1, 2021 (review article published online on Oct. 26, 2021) Oct. 26, 2021. cited by applicant

Amazon.com: Hydro Flask Wide Mouth Insulated Sports Water Bottle Straw Lid retrieved from https://www.amazon.com/Hydro-Flask-Insulated-Sports-Bottle/dp/B01GW2HF98 on Nov. 10, 2021 Nov. 10, 2021. cited by applicant

Malachosky, "Heir's Understated, Ultra-Premium Waterpipe" retrieved from

https://coolhunting.com/buy/matcha-green-tea-movement-bundle/ on Nov. 30, 2021 (review article published online on Mar. 2, 2021) Mar. 2, 2021. cited by applicant

Puffco—Budsy retrieved from https://www.puffco.com/products/budsy?variant=39699376799803 on Nov. 10, 2021 Nov. 10, 2021. cited by applicant

Grasscity Solid Colored Glass Bowl with Handle, retreived from https://www.grasscity.com/solid-colored-glass-bowl-with-handle-male-joint.html?ref=weedrepublic on Nov. 30, 2021 (product review posted as early as Jan. 6, 2021) Nov. 30, 2021. cited by applicant

Budsy Demo photo posted by Puffco (posted on Apr. 1, 2021) Apr. 1, 2021. cited by applicant Cheech & Chong Ceramic 2 in 1 Combo Pipe Mug Coffee Mug Coffee Cup, retrieved from www.ebay.com. Last updated on Sep. 9, 2021 Sep. 9, 2021. cited by applicant

Custom Accessories 93365D Black Smokeless Ashtray,0.3, retrieved from www.amazon.com. Date First Available Aug. 17, 2005 Aug. 17, 2005. cited by applicant

There's Now a Telescoping Coffee Mug That Extends Out To Become a Bong, retrieved from https://odditymall.com/telescoping-coffee-mug-bong. Dated Apr. 20, 2020 Apr. 20, 2020. cited by applicant

Patent Cooperation Treaty, International Search Report for PCT/US2022/022129, 3 pages Jul. 21, 2022. cited by applicant

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Background/Summary

CROSS-REFERENCE TO RELATED APPLICATIONS (1) This application is a continuation of U.S. application Ser. No. 17/491,815, filed Oct. 1, 2021, which claims priority to U.S. provisional application No. 63/249,283 filed on Sep. 28, 2021, the entire content of which is hereby incorporated by reference herein in its entirety.

FIELD OF THE INVENTION

(1) Aspects of the present invention relate to portable water pipe assemblies for inhalation of a gas entrained with product and methods of using.

BACKGROUND

- (2) A water pipe is an inhalation device generally used for smoking herbal substances such as tobacco or cannabis. The use of water pipes can date back to over 2,000 years ago, and it has various designs around the world. A water pipe can be made of various materials such as, e.g., glass, plastic, metal, bamboo, etc., which can withstand repeated use and heat exposure without breaking. When smoking through a water pipe, the gas entrained with product of the burned herbal substance passes through the water before being inhaled by the smoker. It is believed that the water can trap some heavier particles and water-soluble molecules, preventing them from entering the smoker's airways, and may also provide a cooling effect.
- (3) Studies have shown that water-filtered smoke is less harmful than non-filtered smoke. For example, it was found that when alveolar macrophages (mononuclear phagocytes found in the alveoli of the lungs, which ingest small inhaled particles resulting in the degradation, clearance and presentation of the antigen to adaptive immune cells) were exposed to unfiltered smoke, their ability to fight bacteria was reduced, unlike exposure to water-filtered smoke. There is also substantial epidemiological evidence of a lower incidence of carcinoma among tobacco smokers who used water pipes, as opposed to cigarettes, cigars and other unfiltered devices. In the case of cannabis smoking, it is believed that water filtration can be effective in removing components from cannabis smoke that are known as toxic, and the effectiveness of toxic substance removal may be related to the smoke's water contact area. One way to increase the smoke's water contact areas is to break up the smoke into very fine bubbles. This can be achieved by, e.g., incorporating particulate filters and gas dispersion frits into the water pipes.
- (4) Accordingly, there is a need for a portable water pipe that provide an enhanced smoking experience, including improved quality of inhalation and improved ease of use, in a discrete. Aspects of the present disclosure are intended to address such issues.

SUMMARY

(5) Aspects of the invention are directed to a water pipe assembly for inhalation of a gas entrained with product. The water pipe assembly comprises: a container for receiving water therein, a removable bowl for receiving the product, an upper cap piece adapted to fit over the upper opening of the container housing, and a gas flow tube configured to extend from the upper cap piece into the interior region of the container. The container has a housing about an interior region and comprises an upper opening. The removable bowl comprises a bowl body comprising a top opening and having one or more apertures in a bottom portion thereof to allow the gas entrained with the product to pass therethrough, and the removable bowl comprises a handle extending

body to the outlet during operation of the water pipe assembly; and a mouthpiece attached to the cap body, and having an inhalation outlet for inhaling the gas entrained with product, the mouthpiece being configured to transition between a closed position covering the compartment, to an open position that allows access to the compartment. The gas flow tube is configured to receive the flow of gas entrained with the product from the removable bowl via the outlet to introduce the flow of gas entrained with the product into the interior region of the container. The removable bowl is configured such that (i) the bowl body is received in the second bowl receiving region so as to provide the flow of gas entrained with the product to the gas flow tube during operation of the water pipe assembly, when the mouthpiece is in the open state, and (ii) the bowl body is received in the first recess of the first bowl receiving region and is covered by the mouthpiece when the mouthpiece is in the closed state, and the removable bowl is also configured such that the sealing portion of the handle extends over and seals off the outlet in the second bowl receiving region, when the bowl body is received in the first recess of the first bowl receiving region. (6) According to another aspect of the invention, a method of using the water pipe assembly disclosed herein is also provided. This method comprises: removing the upper cap piece from the container housing and filling the interior region of the container with water to a predetermined level; re-attaching the upper cap piece to the container housing, such that a lower end of the gas flow tube is submerged in the water in the interior region of the container; transitioning the mouthpiece to the open position to reveal the compartment having the first and second bowl receiving regions; inserting the removable bowl into the second bowl receiving region of the upper cap piece; filling the bowl body of the removable bowl with product; igniting the product in the bowl body, thereby forming the flow of gas entrained with the product that passes into the water in the interior region of the compartment and on to the mouthpiece; and inhaling the flow of gas entrained with the product received from the interior region of the compartment via the inhalation outlet of the mouthpiece.

laterally from the bowl body and has a sealing portion. The upper cap piece comprises: a cap body comprising a compartment having first and second bowl receiving regions, the first bowl receiving region comprising a first recess configured to receive the bowl body, and the second bowl receiving region comprising an outlet that passes through the cap body, and over which the removable bowl can be positioned to provide a flow of the gas entrained with product from the apertures in the bowl

Description

BRIEF DESCRIPTION OF THE DRAWINGS

- (1) The following drawings form part of the present specification and are included to further demonstrate certain aspects of the present invention. The invention may be better understood by reference to one or more of these drawings in combination with the detailed description of specific embodiments presented herein.
- (2) FIG. 1 shows an exploded view of an embodiment of a portable water pipe assembly;
- (3) FIG. **2** is a perspective view of a representative assembled structure of the upper cap piece, the gas flow tube and the bubbler assembly, in the closed state;
- (4) FIGS. **3-6** are side views of the structure of FIG. **2**;
- (5) FIG. **7** is a top view of the structure of FIG. **2**;
- (6) FIG. **8** is a bottom view of the structure of FIG. **2**;
- (7) FIG. **9** is a perspective view of the structure of FIG. **2** from a different angle;
- (8) FIG. **10** is a perspective view of the portable water pipe assembly in its closed state excluding the cap;
- (9) FIG. **11** is another perspective view of the assembly of FIG. **10** not showing the interior structure;

- (10) FIG. **12** shows the open state of the structure of FIG. **2**;
- (11) FIGS. **13-16** are side views of the structure of FIG. **12**;
- (12) FIG. **17** is a top view of the structure of FIG. **12**;
- (13) FIG. **18** is a bottom view of the structure of FIG. **12**;
- (14) FIGS. **19** and **20** are perspective views of the structure of FIG. **12** from different angles;
- (15) FIG. **21** shows the open state of the portable water pipe assembly of FIG. **10**;
- (16) FIG. **22** shows the open state of the portable water pipe assembly of FIG. **11**;
- (17) FIG. **23** is a cross-sectional view of the structure of FIG. **3**;
- (18) FIG. **24** is a cross-sectional view of the upper portion of the structure of FIG. **3**;
- (19) FIG. **25**A is a cross-sectional view of an embodiment of the portable water pipe assembly in its closed state, and FIG. **25**B is a cross-sectional view of an embodiment of the portable water pipe assembly in its open state, showing a representative gas flow path;
- (20) FIG. **26** is a cross-sectional view of the structure of FIG. **13**;
- (21) FIG. **27** is a cross-sectional view of the upper portion of the structure of FIG. **13**;
- (22) FIG. **28** is the perspective view of FIG. **12** showing part of the interior structure including the inlet;
- (23) FIG. **29** is a perspective view of an embodiment of an alternative design;
- (24) FIG. **30** is a perspective view of the embodiment of FIG. **29**, in its open state;
- (25) FIG. **31** is perspective view of the embodiment of FIG. **29**, in its closed state;
- (26) FIGS. **32-35** show various view of the embodiment of FIG. **29**, in its open state;
- (27) FIGS. 36-39 show various views of the embodiment of FIG. 29, in its closed state;
- (28) FIGS. **40-42** show different states of a representative "slidable" mouthpiece that can be used on a portable water pipe assembly of this disclosure.

DETAILED DESCRIPTION OF THE INVENTION

- (29) Aspects of the invention as described herein are directed to an improved, low profile, portable water pipe assembly for the inhalation of substances, such as aromatic substances, therapeutic substances and/or substances with physiological effects. Examples of such substances can include herbs, such as tobacco, cannabis, lavender, chamomile, and other types of plant material. In an embodiment, the water pipe assembly disclosed herein uses a product selected from tobacco leaves, cannabis flowers, or other herbal substances.
- (30) Referring to FIG. **1**, an embodiment of a portable water pipe assembly **100** is shown in exploded view, according to aspects of the disclosure herein. The portable water pipe assembly **100** comprises a container **101** for receiving water therein, a removable bowl **102** for receiving the product, an upper cap piece **103** adapted to fit over the upper opening **1011** of the container housing, and a gas flow tube **104** configured to extend from the upper cap piece into the interior region of the container **101**. In an embodiment, the container **101** is transparent or translucent and made of food-grade material. In some embodiments, the food-grade material is BPA free such as, e.g., TritanTM.
- (31) In an embodiment, the upper cap piece **103** comprises a threaded portion **1037** to attach to a complementary threaded portion **1012** at a top region **1010** of the container **101**. In another embodiment, the portable water pipe assembly **100** may further comprise a removable cap top **105** that is configured to be fitted over the cap body when the water pipe assembly **100** is in the closed state. The removable cap top **105** may fit over the cap body via various means, such as, e.g., a threaded design or a clip.
- (32) In an embodiment, the portable water pipe assembly can further comprise a bubbler assembly **106** attached to the end of the gas flow tube **104** extending into the interior region of the container. In some embodiments, the bubbler assembly **106** may comprise a plurality of bubbler apertures configured to introduce the flow of gas entrained with the product received from the gas flow tube **104** into the interior region of the container **101**. In some embodiments, the bubbler assembly **106** comprises a disc **1060** attached at a lower end of the gas flow tube **104**, the disc comprising a

plurality of bubble apertures formed on an underside thereof and at a plurality of regions about the circumference of the disc. In some other embodiments, the bubbler assembly **106** that is configured to diverge the flow of gas entrained with the product that is received from the removable bowl **102** into a plurality of airflows, to increase the contact area of the flow of gas entrained with the product with a liquid filled in the interior region of the container **101**. A higher effectiveness of toxic substance removal is expected using the above designs.

- (33) Referring to FIG. 23, an embodiment of the portable water pipe assembly 100 in closed state is shown. Further referring to FIG. 24, in which the removable bowl 102 and the upper cap piece 103 are shown in detail. The upper cap piece 103 comprises a cap body 1030 comprising a compartment 10301 having first and second bowl receiving regions 1031 and 1032, the first bowl receiving region 1031 comprising a first recess 1038 configured to receive the bowl body 102, and the second bowl receiving region 1032 comprising an outlet 1033 that passes through the cap body 1030. A mouthpiece 1034 is attached to the cap body 1030, and has an inhalation outlet 1035 for inhaling the gas entrained with product. The removable bowl 102 comprises a bowl body 1020 comprising a top opening 1021 and having one or more apertures 1022 in a bottom portion 1025 thereof to allow the gas entrained with the product to pass therethrough, and the removable bowl 102 comprises a handle 1023 extending laterally from the bowl body 1020 and has a sealing portion 1024. In an embodiment, the bowl body 1020 of the removable bowl 102 is made of heat resistant materials like, e.g., ceramic, and the handle 1023 (including the sealing portion 1024) comprises a silicone sealing material.
- (34) In another embodiment, the one or more apertures **1022** in the bottom portion of the bowl body **1020** are sized to allow air flow thereinthrough while also substantially maintaining the product contained in the bowl body **1020**. In the closed state as shown in FIGS. **23** and **24**, the bowl body **1020** is received in the first recess of the first bowl receiving region **1031** and is covered by the mouthpiece **1035**, and the sealing portion **1024** of the handle **1023** extends over and seals off the outlet **1033** in the second bowl receiving region **1032**.
- (35) In an embodiment, the sealing portion **1024** of the handle **1023** comprises a sealing projection that extends from an underside of the handle **1023** and is configured to be fitted over the outlet **1033** of the second bowl receiving region **1032** when the mouthpiece **1034** is in the closed state. (36) In another embodiment, the first and second bowl receiving regions **1031**, **1032** are located adjacent to one another in the compartment, such that the sealing portion **1024** of the handle **1023** is capable of extending over and sealing off the outlet **1033** in the second bowl receiving region **1032** when the bowl body **1020** is received in the first receiving region **1031**. In further embodiment, the first recess of the first bowl receiving region **1031** is configured to accommodate a major portion of the bowl body **1020** within the first recess when the bowl body **1020** is received in the first bowl receiving region **1031**, and the first recess is configured to allow the handle **1023** of the removable bowl **102** to extend laterally from a top of the recess and over the outlet **1033** of the second receiving region **1032** to seal the outlet **1033**.
- (37) In an embodiment, the second bowl receiving region **1032** comprises a second recess **1039** that is adjacent to the first recess of the first bowl receiving region **1031**, the second recess being separated from the first recess by a distance substantially equivalent to a reach of the handle **1023** from the first receiving region to the outlet **1033** of the second receiving region **1032**, when the bowl body **1020** is received in the first receiving region **1031**. In another embodiment, the second bowl receiving region **1032** comprises a second recess having the outlet **1033** therein and configured to receive the bowl body **1020**, and wherein the sealing portion **1024** of the handle **1023** of the removable bowl **102** extends into the second recess to plug the second recess and outlet **1033**.
- (38) In yet another embodiment, the mouthpiece **1034** substantially conceals the compartment having the first and second bowl receiving regions **1031**, **1032**, when the mouthpiece **1034** is in the closed state.

- (39) Referring to FIGS. **26** and **27**, an embodiment of the portable water pipe assembly **100** in open state is shown. The removable bowl **102** is positioned over the second bowl receiving region **1032** to provide a flow of the gas entrained with product from the apertures **1022** in the bowl body **1020** to the outlet **1033** during operation of the water pipe assembly; and the mouthpiece **1034** is in the open position that allows access to the compartment through an inlet **1036**.
- (40) In an embodiment, the second bowl receiving region 1032 comprises a second recess configured to receive the bowl body 1020 when the mouthpiece 1034 is in the open state, the second recess comprising the outlet 1033 formed in a bottom region thereof. In some embodiments, the second bowl receiving region 1032 comprises a mount 10321 to receive and retain the bowl body 1020, the mount comprising the outlet 1033 formed therein. In another embodiment, the second bowl receiving region 1032 comprises a second recess configured to receive the bowl body 1020, the second recess being shallower than the first recess of the first receiving region 1031, so as to provide access to the removable bowl 102 when the bowl body 1020 is received in the second bowl receiving region 1032.
- (41) In an embodiment, the mouthpiece **1034** comprises an inhalation inlet **1036** configured to receive the flow of gas entrained with the product from the interior region of the container **101**. In an embodiment, the mouthpiece **1034** is rotatably attached to the cap body **1030**, and is configured to be rotated to transition between the closed position covering the compartment, and the open position that allows access to the compartment. In some embodiments, the mouthpiece **1034** is attached to the cap body **1030** via a hinge, and wherein rotating the mouthpiece at the hinge causes to mouthpiece to transition between the open and closed states. Alternatively, as shown in FIGS. **40-42**, in an embodiment, the mouthpiece is slideably attached to the cap body, and is configured to be slid to transition between the closed position covering the compartment, and the open position that allows access to the compartment. In some embodiments, the upper cap piece **103** comprises tracks that engage the mouthpiece to allow the mouthpiece to slide between open and closed positions.
- (42) In an embodiment, the mouthpiece **1034** comprises the inhalation outlet **1035** and an inhalation inlet **1036** at either ends of a conduit formed in a straw portion, and wherein at least one of the inhalation inlet and inhalation outlet are sealed when the mouthpiece is in the closed position, so as to prevent passage of air and/or liquid therethrough. In another embodiment, the mouthpiece **1034** comprises the inhalation outlet **1035** and an inhalation inlet **1036** at either ends of a conduit formed in a rotatable or slidable straw portion, and wherein rotation or sliding of the straw portion of the mouthpiece to the closed position disengages the inhalation inlet from communication with the interior region of the container **101**, so as to prevent passage of air and/or liquid into the mouthpiece conduit from the interior region of the container.
- (43) Although the water pipe assembly as shown in FIG. **1** has the appearance of a water bottle, other equivalent designs are also encompassed in the present disclosure. For example, in FIG. **29**, a cup-like assembly **200** is shown in its open state. It comprises a cup body **201**, an upper cap piece **203**, and a removable bowl **202**. The interior structure is shown in FIG. **30** (open state) and FIG. **31** (closed state), which is essentially the same as the water bottle version **100**.
- (44) Referring to FIG. **25**B, a representative gas flow path within the water pipe assembly during operation is illustrated in a cross-sectional view. The removable bowl **102** is filled with a product and sits in the recess of the second bowl receiving rejoin **1032**. After the product is lit, the smoke produced therefrom passes through the one or more apertures **1022** in the bottom portion of the bowl body **1020** and the outlet **1033**, and enters the gas flow tube **104**. The gas entrained with the product travels down the tube **104** and diverges into a plurality of smaller airflows after passing through a bubbler assembly **106** attached to the end of the gas flow tube **104** and submerged in the water. Those small airflows generate bubbles, rise up to the water surface, and enter the upper portion of the container **101**. The filtered gas enters the opened mouthpiece **1034** through an inlet **1036** that communicates between the interior of the container **101** and the mouthpiece **1034**, and

eventually inhaled by a user through an inhalation outlet **1035**.

(45) According to another aspect of the present disclosure, a method of using the portable electronic vaporizing device disclosed herein is provided. For example, the method may comprise: removing the upper cap piece from the container housing and filling the interior region of the container with water to a predetermined level; re-attaching the upper cap piece to the container housing, such that a lower end of the gas flow tube is submerged in the water in the interior region of the container; transitioning the mouthpiece to the open position to reveal the compartment having the first and second bowl receiving regions; inserting the removable bowl into the second bowl receiving region of the upper cap piece; filling the bowl body of the removable bowl with product; igniting the product in the bowl body, thereby forming the flow of gas entrained with the product that passes into the water in the interior region of the compartment and on to the mouthpiece; and inhaling the flow of gas entrained with the product received from the interior region of the compartment via the inhalation outlet of the mouthpiece.

(46) In an embodiment, the method above further comprises: moving the removable bowl from the second bowl receiving region into the first recess of the first bowl receiving region, and positioning the handle of the removable bowl such that the sealing portion of the handle seals the outlet of the second receiving region; transitioning the mouthpiece to cover the first bowl receiving region having the bowl body therein; and optionally, covering the upper cap piece with the removable cap top. In another embodiment, the method disclosed herein further comprises removing the upper cap piece from the container housing, and removing the water contained in the interior region of the container.

EQUIVALENTS

(47) While specific embodiments have been discussed, the above specification is illustrative, and not restrictive. Many variations will become apparent to those skilled in the art upon review of this specification. The full scope of the embodiments should be determined by reference to the claims, along with their full scope of equivalents, and the specification, along with such variations.

Claims

1. A pipe assembly for inhalation of a gas entrained with a product, comprising: a container, the container having a housing about an interior region and comprising an upper opening; a removable bowl for receiving the product, the removable bowl comprising a bowl body comprising a top opening and having one or more apertures in a bottom portion thereof to allow the gas entrained with the product to pass therethrough, and the removable bowl comprising a handle extending laterally from the bowl body and having a sealing portion; an upper cap piece adapted to fit over the upper opening of the container housing, the upper cap piece comprising: a cap body comprising a compartment having first and second bowl receiving regions, the first bowl receiving region comprising a first recess configured to receive the bowl body, and the second bowl receiving region comprising a receiving region outlet that passes through the cap body, and over which the removable bowl can be positioned to provide a flow of the gas entrained with the product from the one or more apertures in the bowl body to the receiving region outlet during operation of the pipe assembly; and a mouthpiece attached to the cap body, and having an inhalation outlet for inhaling the gas entrained with the product, the mouthpiece being configured to transition between a closed position covering the compartment, to an open position that allows access to the compartment, wherein the removable bowl is configured such that (i) the bowl body is received in the second bowl receiving region so as to provide the flow of the gas entrained with the product to the interior region of the container during operation of the pipe assembly, when the mouthpiece is in the open position, and (ii) the bowl body is received in the first recess of the first bowl receiving region and is covered by the mouthpiece when the mouthpiece is in the closed position, and wherein the removable bowl is configured such that the sealing portion of the handle extends over and seals off

- the receiving region outlet in the second bowl receiving region, when the bowl body is received in the first recess of the first bowl receiving region.
- 2. The pipe assembly of claim 1, wherein the upper cap piece comprises a threaded portion to attach to a complementary threaded portion at a top region of the container.
- 3. The pipe assembly of claim 1, wherein the sealing portion of the handle comprises a sealing projection that extends from an underside of the handle and is configured to be fitted over the receiving region outlet of the second bowl receiving region when the mouthpiece is in the closed position.
- 4. The pipe assembly of claim 1, wherein the second bowl receiving region comprises a second recess configured to receive the bowl body when the mouthpiece is in the open position, the second recess comprising the receiving region outlet formed in a bottom region thereof.
- 5. The pipe assembly of claim 1, wherein the second bowl receiving region comprises a mount to receive and retain the bowl body, the mount comprising the receiving region outlet formed therein.
- 6. The pipe assembly of claim 1, further comprising a removable cap top that is configured to be fitted over the cap body when the mouthpiece is in the closed position.
- 7. The pipe assembly of claim 1, wherein the mouthpiece substantially conceals the compartment having the first and second bowl receiving regions, when the mouthpiece is in the closed position.
- 8. The pipe assembly of claim 1, wherein the mouthpiece comprises an inhalation inlet configured to receive the flow of the gas entrained with the product from the interior region of the container.
- 9. The pipe assembly of claim 1, wherein the mouthpiece is rotatably attached to the cap body, and is configured to be rotated to transition between the closed position covering the compartment, and the open position that allows access to the compartment.
- 10. The pipe assembly of claim 1, wherein the mouthpiece is attached to the cap body via a hinge, and wherein rotating the mouthpiece at the hinge causes to mouthpiece to transition between the open and closed positions.
- 11. The pipe assembly of claim 1, wherein the mouthpiece is slideably attached to the cap body, and is configured to be slid to transition between the closed position covering the compartment, and the open position that allows access to the compartment.
- 12. The pipe assembly of claim 11, wherein the upper cap piece comprises tracks that engage the mouthpiece to allow the mouthpiece to slide between open and closed positions.
- 13. The pipe assembly of claim 1, wherein the mouthpiece comprises the inhalation outlet and an inhalation inlet at either ends of a conduit formed in a straw portion, and wherein at least one of the inhalation inlet and inhalation outlet are sealed when the mouthpiece is in the closed position, so as to prevent passage of air and/or liquid therethrough.
- 14. The pipe assembly of claim 1, wherein the mouthpiece comprises the inhalation outlet and an inhalation inlet at either ends of a conduit formed in a rotatable or slidable straw portion, and wherein rotation or sliding of the straw portion of the mouthpiece to the closed position disengages the inhalation inlet from communication with the interior region of the container, so as to prevent passage of air and/or liquid into the mouthpiece conduit from the interior region of the container.
- 15. The pipe assembly of claim 1, wherein the first and second bowl receiving regions are located adjacent to one another in the compartment, such that the sealing portion of the handle is capable of extending over and sealing off the receiving region outlet in the second bowl receiving region when the bowl body is received in the first receiving region.
- 16. The pipe assembly of claim 1, wherein the first recess of the first bowl receiving region is configured to accommodate a major portion of the bowl body within the first recess when the bowl body is received in the first bowl receiving region, and the first recess is configured to allow the handle of the removable bowl to extend laterally from a top of the first recess and over the receiving region outlet of the second receiving region to seal the receiving region outlet.
- 17. The pipe assembly of claim 1, wherein the second bowl receiving region comprises a second recess that is adjacent to the first recess of the first bowl receiving region, the second recess being

separated from the first recess by a distance substantially equivalent to a reach of the handle from the first receiving region to the receiving region outlet of the second receiving region, when the bowl body is received in the first receiving region.

- 18. The pipe assembly of claim 1, wherein the second bowl receiving region comprises a second recess configured to receive the bowl body, the second recess being shallower than the first recess of the first receiving region, so as to provide access to the removable bowl when the bowl body is received in the second bowl receiving region.
- 19. The pipe assembly of claim 1, wherein the second bowl receiving region comprises a second recess having the receiving region outlet therein and configured to receive the bowl body, and wherein the sealing portion of the handle of the removable bowl extends into the second recess to plug the second recess and the receiving region outlet therein.
- 20. The pipe assembly of claim 1, wherein the container is transparent or translucent and made of food-grade material.
- 21. The pipe assembly of claim 20, wherein the food-grade material is BPA free.
- 22. The pipe assembly of claim 1, wherein the bowl body of the removable bowl is made of ceramic and the handle comprises a silicone sealing material.
- 23. The pipe assembly of claim 1, wherein the one or more apertures in the bottom portion of the bowl body are sized to allow air flow thereinthrough while also substantially maintaining the product contained in the bowl body.
- 24. The pipe assembly of claim 1, wherein the product is selected from tobacco leaves, *cannabis* flowers, or other herbal substances.
- 25. A method of using the pipe assembly according to claim 1, comprising: transitioning the mouthpiece to the open position to reveal the compartment having the first and second bowl receiving regions; inserting the removable bowl into the second bowl receiving region of the upper cap piece; filling the bowl body of the removable bowl with the product; igniting the product in the bowl body, thereby forming the flow of the gas entrained with the product that passes into the interior region of the compartment and on to the mouthpiece; and inhaling the flow of the gas entrained with the product received from the interior region of the compartment via the inhalation outlet of the mouthpiece.
- 26. The method according to claim 25, further comprising: moving the removable bowl from the second bowl receiving region into the first recess of the first bowl receiving region, and positioning the handle of the removable bowl such that the sealing portion of the handle seals the receiving region outlet of the second receiving region; transitioning the mouthpiece to cover the first bowl receiving region having the bowl body therein; and optionally, covering the upper cap piece with a removable cap top.