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Carroll

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(54) **METHOD AND APPARATUS FOR ILLUMINATION OF DRILLING RIGS AND SURROUNDING LOCATIONS**

(58) **Field of Classification Search**
None
See application file for complete search history.

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(56) **References Cited**

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U.S. PATENT DOCUMENTS

(73) Assignee: **Location Illuminator Technologies, LLC, Maurice, LA (US)**

7,988,343	B2 *	8/2011	Palmisano, Jr.	F21V 17/007
				362/424
8,172,438	B2 *	5/2012	Konop	B60P 3/18
				362/192
8,734,163	B1 *	5/2014	Gordin	G09B 25/04
				434/367
8,931,932	B2 *	1/2015	Lipscomb	F21V 31/03
				362/362
2003/0137840	A1 *	7/2003	Citron	F21V 21/30
				362/249.07
2005/0129464	A1 *	6/2005	Moncus	E21B 19/006
				405/203
2008/0129543	A1 *	6/2008	Lee	G08G 1/0955
				340/908
2008/0212329	A1 *	9/2008	Duguay	F21S 8/086
				362/310

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

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(65) **Prior Publication Data**

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Related U.S. Application Data

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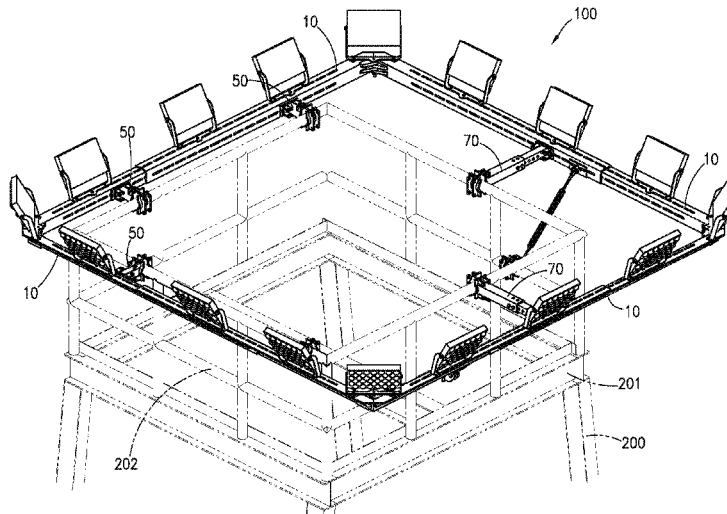
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(51) **Int. Cl.**
F21V 21/28 (2006.01)
F21S 8/04 (2006.01)
E21B 41/00 (2006.01)
E21B 15/00 (2006.01)
F21V 19/00 (2006.01)
F21V 21/22 (2006.01)

(57) **ABSTRACT**
A lighting assembly can be quickly and efficiently mounted to a crown of a drilling rig derrick in order to provide wide-area illumination of the derrick and surrounding work location. An adjustable support frame member can be operationally attached to a hand rail of a derrick crown using fixed-length bracket members, adjustable-length bracket members and/or a combination(s) thereof. Lighting-emitting light source elements are adjustably attached to the support frame, and can be selectively aimed to direct light as desired.

(52) **U.S. Cl.**
CPC **F21V 21/28** (2013.01); **E21B 15/00** (2013.01); **E21B 41/00** (2013.01); **F21S 8/046** (2013.01); **F21V 19/001** (2013.01); **F21V 21/22** (2013.01)

8 Claims, 11 Drawing Sheets



(56)

References Cited

U.S. PATENT DOCUMENTS

2010/0264390	A1*	10/2010	Cerda	E02D 17/08 256/24
2010/0276558	A1*	11/2010	Faust	F24J 2/5205 248/222.14
2014/0117190	A1*	5/2014	Werner	E04C 3/09 248/346.03
2015/0153036	A1*	6/2015	Gowanlock	F21V 33/00 362/249.01
2015/0184840	A1*	7/2015	Gowanlock	F21V 33/00 362/249.1
2016/0059774	A1*	3/2016	Crandall	B60Q 1/323 280/164.1
2016/0109079	A1*	4/2016	McKinley	F02B 63/047 362/89

* cited by examiner

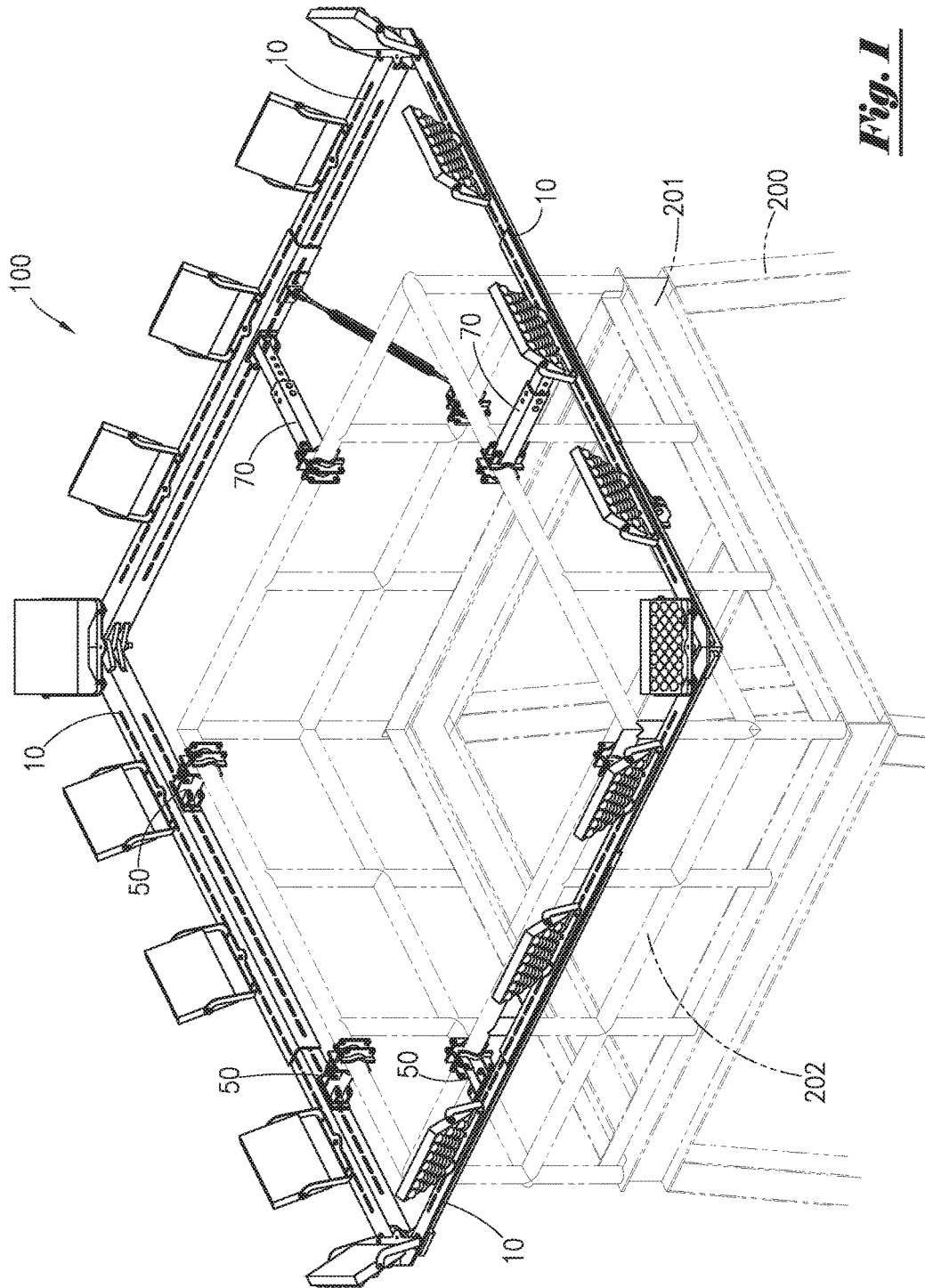


Fig. 1

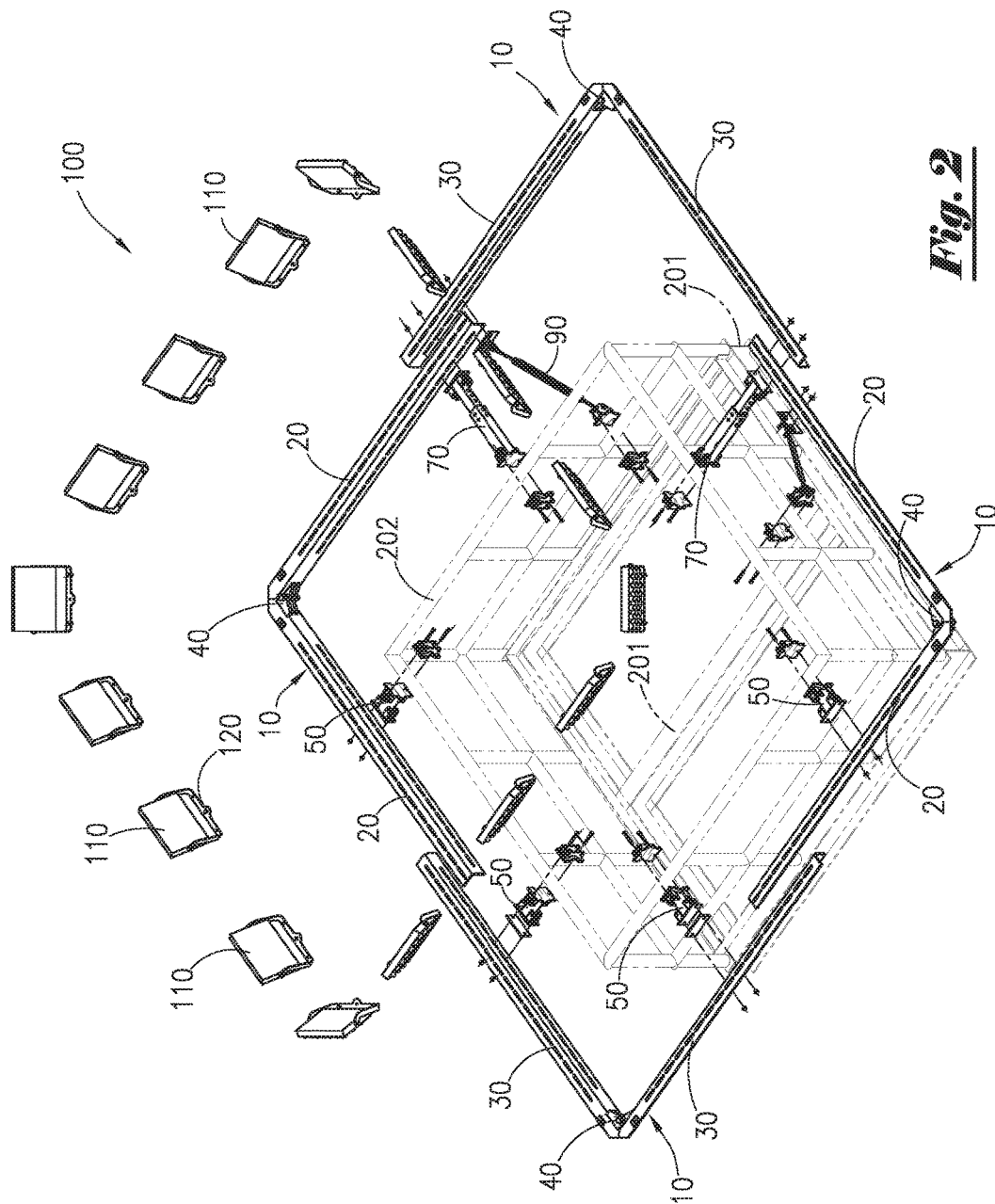
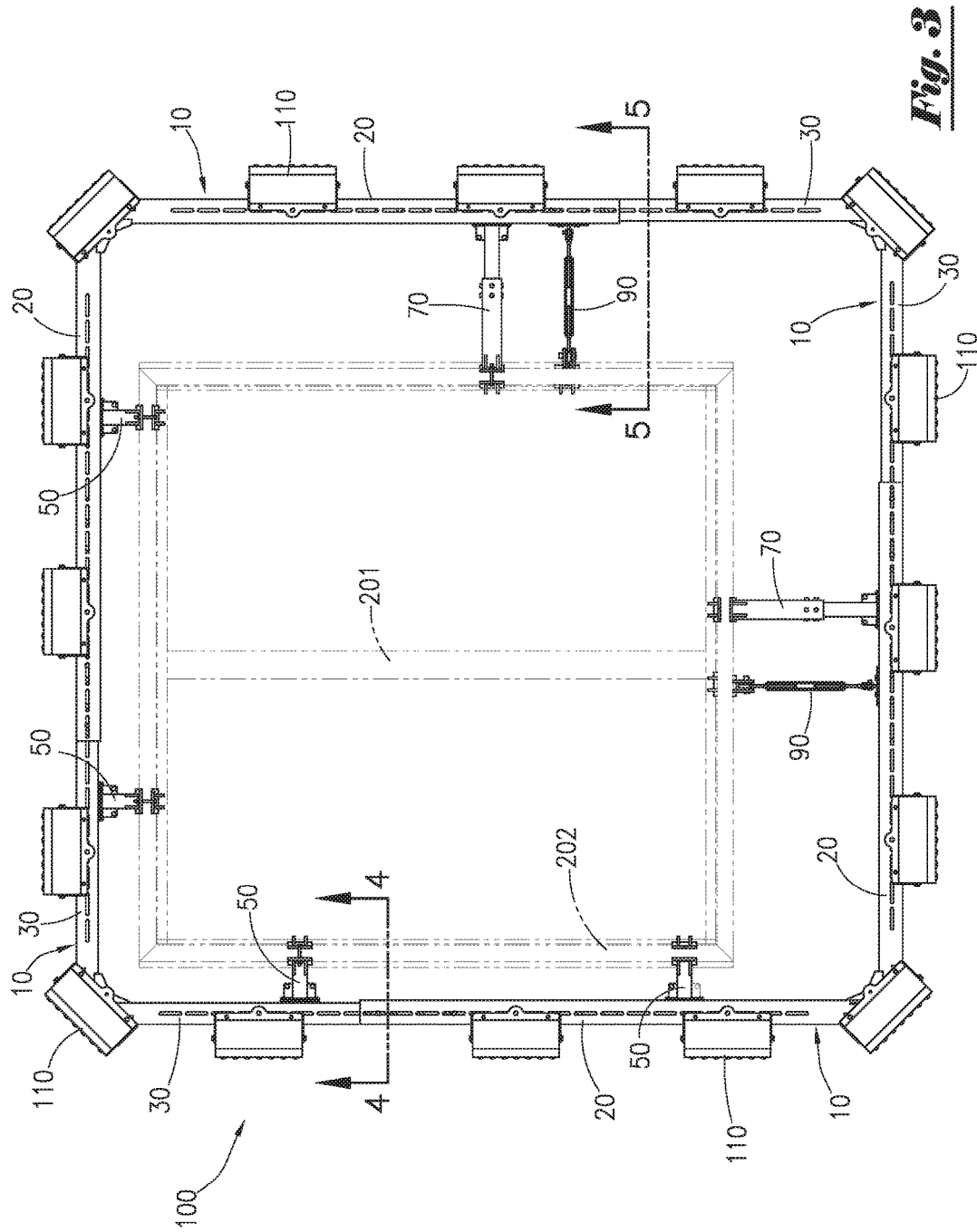


Fig. 2



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