PATENT COOPERATION TREATY

From the INTERNATIONAL SEARCHING AUTHORITY

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43*bis*.1)

To:
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Date of mailing *(day/month/year)* 24 January 2019 (24.01.2019)	
Applicant's or agent's file reference 3631-2-1PCT	**FOR FURTHER ACTION** See paragraph 2 below

International application No.	International filing date *(day/month/year)*	Priority date *(day/month/year)*
PCT/US 2018/053596	28 September 2018 (28.09.2018)	28 September 2017 (28.09.2017)

International Patent Classification (IPC) or both national classification and IPC
E02D 29/02 *(2006.01)*
E02B 3/06 *(2006.01)*

Applicant
INSIDE BET LLC

1. This opinion contains indications relating to the following items:

- [X] Box No. I Basis of the opinion
- [ ] Box No. II Priority
- [ ] Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- [ ] Box No. IV Lack of unity of invention
- [X] Box No. V Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step and industrial applicability; citations and explanations supporting such statement
- [ ] Box No. VI Certain documents cited
- [ ] Box No. VII Certain defects in the international application
- [ ] Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1*bis*(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

Name and mailing address of the ISA/RU:	Date of completion of this opinion	Authorized officer
Federal Institute of Industrial Property, Berezhkovskaya nab., 30-1, Moscow, G-59, GSP-3, Russia, 125993 Facsimile No: (8-495) 531-63-18, (8-499) 243-33-37	11 January 2019 (11.01.2019)	A. Inin Telephone No. 8 499 240 25 91

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/US 2018/053596

Box No. I Basis of this opinion

1. With regard to the **language**, this opinion has been established on the basis of:

   [X] the international application in the language in which it was filed.

   [ ] a translation of the international application into _____ which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).

2. [ ] This opinion has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43*bis*.1(a))

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, this opinion has been established on the basis of a sequence listing filed or furnished:

   a. [ ] forming part of the international application as filed:

      [ ] in the form of an Annex C/ST.25 text file.

      [ ] on paper or in the form of an image file.

   b. [ ] furnished together with the international application under PCT Rule 13*ter*.1(a) for the purposes of international search only in the form of an Annex C/ST.25 text file.

   c. [ ] furnished subsequent to the international filing date for the purposes of international search only:

      [ ] in the form of an Annex C/ST.25 text file (Rule 13*ter*.1(a)).

      [ ] on paper or in the form of an image file (Rule 13*ter*.1(b) and Administrative Instructions, Section 713).

4. [ ] In addition, in the case that more than one version or copy of a sequence listing has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

5. Additional comments:

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/US 2018/053596

Box No. V Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step and industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	3-5, 8-91	YES
	Claims	1-2, 6-7	NO
Inventive step (IS)	Claims	3-5, 8-91	YES
	Claims	1-2, 6-7	NO
Industrial applicability (IA)	Claims	1-91	YES
	Claims		NO

2. Citations and explanations:

D1 RU 2119993 C1

D1 can be regarded as the closest prior art to the claimed group of inventions in the independent claims 1, 15, 19, 21, 37, 40, 41, 57, 62, 63, 71, 86, 91.

In D1 (claims, fig. 3), a retaining wall system is described, comprising a facade connecting element comprising a substantially flat surface and at least two edges running perpendicularly to a flat surface on the opposite side and a supporting beam connected to the facade connecting element, and retaining the beam includes at least two retaining ribs (pos. 14, 16) extending from the retaining flange (pos. 18), which extends between at least two retaining ribs, the retaining beam being connected to the facade m connecting element by connecting at least two retaining ribs with at least two edges of the facade connecting element.

Also it is known from D1 that there are the features of the dependent claims 2 and 6-7, regarding the fact that the retaining beam is formed at the same time as the facade connecting element, and the system additionally includes a plurality of front connecting elements adjacent to each other and the supporting beams connected to each other.

Consequently, the invention according to independent claim 1 and dependent claims 2 and 6-7 does not meet the criterion of novelty.

The invention of independent claim 15 differs from D1 in that the retaining wall system includes an intermediate plate that extends from the first edge of the first retaining beam from the plurality of retaining beams to the second edge of the second retaining beam from the many retaining beams.

The invention of independent claim 19 differs from D1 in that the retaining wall system, in which the corresponding retaining beam includes an inclined rear panel, an upper support plate connected to at least two retaining edges of the corresponding retaining beam, and an intermediate plate that extends from the first edge the first retaining beam of the plurality of retaining beams to the second edge of the second retaining beam of the plurality of retaining beams, with the intermediate plate located directly below the upper support plate. The invention according to the independent claim 21 is different from D1 in that a retaining wall system including a retaining beam is connected to a facade connecting element by a threaded stud that passes through the

Supplemental Box

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Continuation of V:

retaining beam and enters the facade connecting element, the connecting threaded pin includes an internal metal threaded pin and an outer a protective sleeve, and moreover, the internal metal threaded stud is made with the possibility of rotation relative to the external protective sleeve.

The invention according to the independent claim 37 differs from D1 in that a retaining wall system comprising a facade connecting element including a threaded stud of the edge of a facade connecting element, the retaining beam connecting to the facade connecting element a connecting threaded stud that passes through the retaining beam and enters front connecting element, with the threaded stud of the edge and the connecting threaded rod intersect and pass close to each other in the edge of the front Interconnect member.

The invention according to independent claim 40 differs from D1 in that the retaining wall system includes a facade connecting element including a threaded stud hairpin in the edge of the facade connecting element, and the supporting stick is connected to the facade connecting element by a connecting threaded stud that passes through the supporting beam and enters front connecting element, the connecting threaded stud includes an internal metal threaded stud and an external protective sleeve, and a connector Single screw rod comprises a layer of grease between the inner metal threaded stud and an outer protective sleeve, the threaded stud and the connecting edge threaded stud intersect and pass close to each other in the edge of the facade of the connecting element.

The invention of claim 41 differs from D1 in that the retaining wall system includes wall panels, an armored soil wall (MSE), an MSE wall is located above the retaining containing wall, the lower layer of the MSE wall is located above the retaining beams, and many onboard panels are spaced apart horizontals from the front of the MSE wall and retaining containing wall panels.

The invention of claim 57 differs from D1 in that the retaining wall system includes a combination of retaining containing wall and MSE wall, the lower part of the retaining wall includes a retaining containing wall and the upper part of the retaining wall includes the MSE wall, the retaining containing wall includes retaining beams and wall panels, with the lower layer of the MSE wall located above the retaining beams, and a plurality of side panels spaced horizontally from the front of the MSE wall and wall panels second retaining wall.

The invention according to independent claim 62 differs from D1 in that the retaining wall system includes a retaining wall forming at least one row of the wall system, the retaining containing system includes retaining beams and wall panels, an MSE wall, an MSE wall located above the retaining containing wall the lower layer of the MSE wall is located above the retaining beams, the set of side panels located at a distance horizontally from the front side of the MSE wall and the wall panels of the retaining containing wall, leveling pad, on which the lower edge of the side panels rests, hollow replacement material between the side panels and wall panels of the retaining containing wall and a shock barrier located over the top edge of the side panels.

The invention of independent claim 63 differs from D1 in that the retaining wall system includes multiple wall panels in an array forming a plurality of rows, with the first row of wall panels aligned with the second row of wall panels, a plurality of facade connecting elements located between the wall panels, each facade connecting element is partially located on the first side of the wall panels and extends between the wall panels to the second side of the wall panels; each beam is connected by a first end with a corresponding front connecting element and includes a retaining edge and a retaining flange that the lower surface of the retaining flange is located above the lower edge of the facade connecting element, and the retaining beam additionally includes an inclined rear tire spruce and an upper support plate connected to the retaining edge.

The invention according to independent claim 71 differs from D1 in that the retaining wall

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system includes a plurality of wall panels in the array forming a plurality of rows, the wall panels of the first row being arranged in the same plane with the wall panels of the second row, a plurality of facade connecting elements interposed, each facade connecting element is partially located on the first side of the wall panels and extends between the wall panels to the second side of the wall panels, and a plurality of subs each of the first beams is connected to the corresponding front connecting element and includes a retaining edge and a retaining flange, the retaining beam of a plurality of retaining beams extending from the wall panels and entering the backfill behind the set of wall panels, and that the bottom surface of the retaining flange is above the bottom edge of the facade connecting element, the retaining beam additionally includes an inclined rear panel.

The invention of independent claim 86 differs from D1 in that the retaining wall system includes a plurality of wall panels in an array forming a plurality of rows, the wall panels of the first row being located in the same plane with the wall panels of the second row, a front connecting element located between the first wall panel and the second wall panel, the facade connecting element is located on the first side of the wall panels and extends between the wall panels to the second side of the wall panels, a retaining beam, connected by a first end with a facade connecting element and comprising a retaining edge and a retaining flange, the retaining beam extending from the wall panels and entering the backfill behind a plurality of wall panels, the retaining beam further comprising an inclined rear panel at the second end of the retaining beam.

The invention according to the independent claim 91 differs from D1 in that the retaining wall system includes a plurality of wall panels in an array forming a plurality of rows, the wall panels of the first row being located in the same plane with the wall panels of the second row, a front connecting element located between the first wall panel and the second wall panel, the facade connecting part is partially located on the first side of the wall panel and extends between the wall panels to the second side of the wall panels, the supporting plate the first beam connected by the first end with the facade connecting element and including the supporting edge and the supporting flange, the supporting beam moving away from the wall panels and entering the backfill behind the set of wall panels, the supporting beam connecting to the facade connecting element so that the bottom surface of the flange is above the lower edge of the facade connecting element, the retaining beam further comprising an inclined rear panel at the second end of the retaining beam.

Consequently, the invention according to independent claims 15, 19, 21, 37, 40, 41, 57, 62, 63, 71, 86, 91 and dependent claims 3-5, 8-14, 16-18, 20, 22-16 , 42-56, 58-61, 64-70, 72-85 and 87-90 meets the criterion of novelty.

The invention in claims 3-5 and 8-91 meets the criteria of inventive level, since the above distinguishing features are not known from the technical level and the invention is generally not obvious to the person skilled in the art to increase the security of the protected object, ensure the reliability of the structure, reduce the material intensity and labor intensity of the construction of the protective structure.

Claims 1-91 meet the criteria of industrial applicability.