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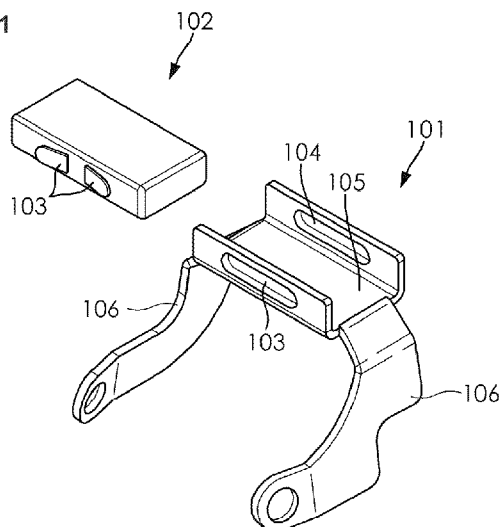
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(54) Title: MAGNETIC CASSETTE FOR POWER TOOL MOUNTS

Figure 1



(57) Abstract: The present invention provides for a novel magnetic cassette system for reversible fixation to a mount for a power tool, allowing for the removal, replacement, or variation of the magnetic force provided by mount when the magnetic cassette is fixed to it.



## MAGNETIC CASSETTE FOR POWER TOOL MOUNTS

### CROSS-REFERENCE TO RELATED APPLICATIONS

The present application claims priority from U.S. Provisional Patent Application No. 63/030,600 filed May 27, 2020, such application is expressly incorporated by  
5 reference herein for all purposes.

### FIELD OF THE INVENTION

The present invention pertains to the field of mounts for reversible securing of power tools to ferromagnetic materials such as metals containing iron.

### BACKGROUND OF THE INVENTION

10 All of the publications, patents and patent applications cited within this application are herein incorporated by reference in their entirety to the same extent as if the disclosure of each individual publication, patent application or patent was specifically and individually indicated to be incorporated by reference in its entirety.

The use of mounting brackets attached to power tools to assist in their storage by  
15 removable fixation to a bracket or ferromagnetic material is known in the art. For example, U.S. Pat No. 10,654,163 issued to Hurst as of May 19, 2020, describes a magnetic mount, which may be attached to a power hand tool, so as to allow it to temporarily attach to a magnetic surface when in a non-operating state. Further, U.S. Pat. No. 4,639,170, issued to Palm, describes the use of magnets, to reversibly  
20 attach the lower assembly of a power tool, providing additional stability during use of the power tool, rather than reversible attachment of the power tool in a non-operating state. U.S. Pat. No. 10,625,411 issued to Tesoroni; describes a mount for a tool which comprises a clip, for friction attachment to a tool, which also provides a magnet for attachment of the mount, and tool when using the friction based attachment, to a  
25 ferrous, or ferromagnetic, surface. Of note, is that Tesoroni teaches a mount capable of removal from the tool, when non-operational.

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The prior art has provided for power tool mounts where the tool may be attached by way of a magnet to ferromagnetic surfaces, for reversible attachment and storage when the tool is in the non-operational state. Yet the art has suffered from the magnet, present on the mounting bracket on the tool, being present during the operation of the power tool. When operating the power tool in open spaces, this is of limited consequence; but when in tight or crowded environments where the presence of the magnet can cause interactions with electrical, electronic or ferromagnetic surfaces; where the utility of the reversible magnetic mount is overcome by the negative interactions of the magnet during its operations. Further, the powerful magnets providing the force necessary to reversibly adhere the mount and power tool assembly to a ferromagnetic surface, such as a ferrous metal, are often brittle and susceptible to shattering when subject to impact; with the replacement of the magnet can require replacement of the entire mounting element. Finally, the prior art has failed to provide for a magnetic mount for the easy removal or replacement of the magnet within the mounting bracket; whether to provide for a magnet with differential magnetic power, replacement of the magnet following its shattering or breakage, or temporary removal of the magnet when the power tool is in operation in close quarters or where the presence of the magnet would otherwise be unwanted.

#### SUMMARY OF THE INVENTION

In one aspect, the present invention provides for a magnetic mount comprising a substantially u-shaped bracket including a spaced apart pair of mounting arms each having a base end and an opposite distal end, with a rigid cross-member containing at least one aperture joining said pair of mounting arms at said base ends, a mounting head on each said distal end of said pair of mounting arms, a magnetic cassette reversibly fixed within said cross member, wherein said pair of mounting arms are disposed in a first direction from said rigid cross member and said at least

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one magnet is disposed in a second direction substantially opposite to said first direction, from said rigid cross member, and wherein said mounting heads are capable of being rigidly and releasably mounted to the sides of a power tool, with each mounting head defining an opening that at least partially encircles a  
5 corresponding aperture in a respective one of the sides of the power tool, in which each mounting head is mounted to the respective one of the sides by a respective fastener or a respective handle for said power tool; and wherein said magnetic cassette comprises a housing surrounding a magnet, the housing comprising a material that does not substantially decrease the magnetic field experienced in a  
10 second direction substantially opposite to said first direction, from said cross member said magnetic cassette reversibly fixed within said cross member by way of a dowel extending from said housing through said aperture in said cross member, said dowel having at least one annular groove described around the circumference of the dowel, at the portion of the dowel distal to the housing, the dowel and magnetic cassette  
15 reversibly fixed to the cross member by application of a circlip retainer to said at least one annular groove.

In one embodiment said mounting head is shaped to at least partially encircle a corresponding said rigid mounting member. In a further embodiment the at least one rigid mounting member further includes a mounting bolt adapted to releasably mount  
20 into a respective side of the power tool. In a still further embodiment, each said mounting head fully encircles the respective aperture.

In another embodiment said pair of mounting arms are substantially parallel at said distal ends of said pair of mounting arms.

In another embodiment said magnetic cassette has at least one substantially planar  
25 face, and wherein said magnetic cassette is mounted onto said magnet holder so as to maintain said planar face of said magnetic cassette in an orthogonal plane

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substantially orthogonal to a first plane substantially containing at least said cross-member and said pair of mounting arms. In a further embodiment said mounting arms are both correspondingly arched in a parallel pair of second planes orthogonal to said orthogonal plane and said first plane.

- 5 In another aspect, pre present invention provides for a magnetic mount comprising a substantially u-shaped bracket including a spaced apart pair of mounting arms each having a base end and an opposite distal end, with a rigid u-shaped cross-member joining said pair of mounting arms at said base ends with at least two lateral apertures on the vertical faces of said u-shaped cross-member, a mounting head on
- 10 each said distal end of said pair of mounting arms, a magnetic cassette reversibly fixed within said cross member, wherein said pair of mounting arms are disposed in a first direction from said rigid cross member and said at least one magnet is disposed in a second direction substantially opposite to said first direction, from said rigid cross member, and wherein said mounting heads are capable of being rigidly and
- 15 releasably mounted to the sides of a power tool, with each mounting head defining an opening that at least partially encircles a corresponding aperture in a respective one of the sides of the power tool, in which each mounting head is mounted to the respective one of the sides by a respective fastener or a respective handle for said power tool; and wherein said magnetic cassette comprises a housing surrounding a
- 20 magnet, the housing comprising a material that does not substantially decrease the magnetic field experienced in a second direction substantially opposite to said first direction, from said u-shaped cross member, at least two lateral clips extending from said housing, one end of said lateral clips attached to said housing, the distal end of said lateral clip presenting a biased offset from said housing; and wherein said at
- 25 least two lateral clips may reversibly insert into said at least two lateral apertures on the vertical faces of said u-shaped cross-member.

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In one embodiment each said mounting head is shaped to at least partially encircle a corresponding said rigid mounting member. In a further embodiment the at least one rigid mounting member further includes a mounting bolt adapted to releasably mount into a respective side of the power tool in use. In a still further embodiment each said  
5 mounting head fully encircles the respective aperture.

In another embodiment said pair of mounting arms are substantially parallel at said distal ends of said pair of mounting arms.

In another embodiment said magnetic cassette has at least one substantially planar face, and wherein said magnetic cassette is mounted onto said magnet holder so as  
10 to maintain said planar face of said magnetic cassette in an orthogonal plane substantially orthogonal to a first plane substantially containing at least said cross-member and said pair of mounting arms. In a further embodiment said mounting arms are both correspondingly arched in a parallel pair of second planes orthogonal to said orthogonal plane and said first plane.

15 In another aspect the present invention provides for a combination comprising a power tool having a body with sides, the body mounting a motor and a component that is driven by the motor when the power tool is being operated by a user, the component comprising a head, a disc, a wheel, or a bit; and a magnetic mount, which has a substantially u-shaped bracket including a spaced apart pair of mounting arms  
20 each having a base end and an opposite distal end, with a rigid cross-member containing at least one aperture joining said pair of mounting arms at said base ends, a mounting head on each said distal end of said pair of mounting arms, a magnetic cassette reversibly fixed within said cross member, wherein said pair of mounting arms are disposed in a first direction from said rigid cross member and said at least  
25 one magnet is disposed in a second direction substantially opposite to said first direction, from said rigid cross member, and wherein said mounting heads are rigidly

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and releasably mounted to the sides of the power tool, with each mounting head defining an opening that at least partially encircles a corresponding aperture in a respective one of the sides of the power tool, in which each mounting head is mounted to the respective one of the sides by a respective fastener or a respective  
5 handle; wherein the substantially u-shaped bracket extends along the body of the power tool from a respective one of the sides, around the power tool, and to the other respective one of the sides of the power tool; wherein the magnetic mount is structured to permit the power tool to be secured to a ferrous surface to free up a work space while the power tool is not in use so as to temporarily store the power  
10 tool; and remain mounted on the power tool, with the at least one magnet disconnected from the ferrous surface, while the power tool is operated, by the user to drive the component via the motor; and wherein said magnetic cassette comprises a housing surrounding a magnet, the housing comprising a material that does not substantially decrease the magnetic field experienced in a second direction  
15 substantially opposite to said first direction, from said cross member said magnetic cassette reversibly fixed within said cross member by way of a dowel extending from said housing through said aperture in said cross member, said dowel having at least one annular groove described around the circumference of the dowel, at the portion of the dowel distal to the housing, the dowel and magnetic cassette reversibly fixed to  
20 the cross member by application of a circlip retainer to said at least one annular groove.

In one embodiment each said mounting head is shaped to at least partially encircle a corresponding said rigid mounting member. In a further embodiment the at least one rigid mounting member further includes a mounting bolt adapted to releasably mount  
25 into a respective side of the power tool. In a still further embodiment each said mounting head fully encircles the respective aperture.

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In another embodiment said pair of mounting arms are substantially parallel at said distal ends of said pair of mounting arms.

In another embodiment said magnetic cassette has at least one substantially planar face, and wherein said magnetic cassette is mounted onto said magnet holder so as to maintain said planar face of said magnetic cassette in an orthogonal plane substantially orthogonal to a first plane substantially containing at least said cross-member and said pair of mounting arms. In a further embodiment said mounting arms are both correspondingly arched in a parallel pair of second planes orthogonal to said orthogonal plane and said first plane.

10 In another aspect, the present invention provides for a combination comprising a power tool having a body with sides, the body mounting a motor and a component that is driven by the motor when the power tool is being operated by a user, the component comprising a head, a disc, a wheel, or a bit; and a magnetic mount, which has a substantially u-shaped bracket including a spaced apart pair of mounting arms  
15 each having a base end and an opposite distal end, with a rigid u-shaped cross-member joining said pair of mounting arms at said base ends with at least two lateral apertures on the vertical faces of said u-shaped cross-member, a mounting head on each said distal end of said pair of mounting arms, a magnetic cassette reversibly fixed within said cross member, wherein said pair of mounting arms are disposed in a  
20 first direction from said rigid cross member and said at least one magnet is disposed in a second direction substantially opposite to said first direction, from said rigid cross member, and wherein said mounting heads are rigidly and releasably mounted to the sides of the power tool, with each mounting head defining an opening that at least partially encircles a corresponding aperture in a respective one of the sides of the  
25 power tool, in which each mounting head is mounted to the respective one of the sides by a respective fastener or a respective handle; wherein the substantially u-

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shaped bracket extends along the body of the power tool from a respective one of the sides, around the power tool, and to the other respective one of the sides of the power tool; wherein the magnetic mount is structured to permit the power tool to be secured to a ferrous surface to free up a work space while the power tool is not in use so as to temporarily store the power tool; and remain mounted on the power tool, with the at least one magnet disconnected from the ferrous surface, while the power tool is operated, by the user to drive the component via the motor; and wherein said magnetic cassette comprises a housing surrounding a magnet, the housing comprising a material that does not substantially decrease the magnetic field experienced in a second direction substantially opposite to said first direction, from said u-shaped cross member, at least two lateral clips extending from said housing, one end of said lateral clips attached to said housing, the distal end of said lateral clip presenting a biased offset from said housing; and wherein said at least two lateral clips may reversibly insert into said at least two lateral apertures on the vertical faces of said u-shaped cross-member.\

In one embodiment each said mounting head is shaped to at least partially encircle a corresponding said rigid mounting member. In a further embodiment the at least one rigid mounting member further includes a mounting bolt adapted to releasably mount into a respective side of the power tool in use. In a still further embodiment each said mounting head fully encircles the respective aperture.

In another embodiment said pair of mounting arms are substantially parallel at said distal ends of said pair of mounting arms.

In another embodiment said magnetic cassette has at least one substantially planar face, and wherein said magnetic cassette is mounted onto said magnet holder so as to maintain said planar face of said magnetic cassette in an orthogonal plane substantially orthogonal to a first plane substantially containing at least said cross-

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member and said pair of mounting arms. In a further embodiment said mounting arms are both correspondingly arched in a parallel pair of second planes orthogonal to said orthogonal plane and said first plane.

#### BRIEF DESCRIPTION OF THE FIGURES

5 **FIG. 1** shows a top-down perspective of one embodiment of the magnetic mount of the present invention, with the magnetic cassette separated from the mount;

**FIG. 2** shows a top-down perspective of one embodiment of the magnetic cassette of the present invention;

10 **FIG. 3** shows a lateral perspective of one embodiment of the magnetic mount of the present invention, with the magnetic cassette reversibly fixed to the mount;

**FIG. 4** shows a bottom-up perspective of one embodiment of the magnetic mount of the present invention, with the magnetic cassette separated from the mount and the magnet separated from the magnetic cassette;

15 **FIG. 5** shows a lateral perspective of one embodiment of the magnetic cassette of the present invention; and

**FIG. 6** shows a lateral perspective of one embodiment of the magnetic mount of the present invention.

#### DETAILED DESCRIPTION OF THE PRESENT INVENTION

20 The present invention contemplates the use of a magnetic cassette capable of being reversibly fixed within a mounting element, the mounting element further fixed to power hand tool. The present invention is intended to be used with and incorporate a mount attached to a power tool, wherein the magnetic element incorporated into the

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mount may secure the power tool to a ferromagnetic material, such as a ferrous metal, while the power tool is not in use. The mount contemplated by the present invention includes:

- 5 a) a substantially u-shaped bracket including a spaced apart pair of mounting arms each having a base end and an opposite distal end, a rigid cross-member joining the pair of mounting arms at the base ends;
  - b) a mounting head on each distal end of the pair of mounting arms;
  - c) at least one magnetic cassette capable of being reversibly attached to the cross-member;
  - 10 d) wherein the pair of mounting arms are disposed in a first direction from the cross member and the at least one magnet is disposed in a second direction substantially opposite to the first direction, from the cross-member; and
  - e) wherein the mounting heads are adapted for mounting to at least one side of the power tool.
- 15 As used herein, the term "magnetic material" means a material having ferromagnetic or strong paramagnetic properties. Suitable magnetic materials include magnetite, ferrites, hematite, maghemite, neodymium, pyrrhotite and metals, alloys and compounds containing iron, nickel, or cobalt.

20 The present invention contemplates use of a magnetic cassette with a power tool mount, comprised of a material that does not interfere with the magnetic field generated by the magnet contained within. Optionally, the present invention contemplates utilization of a housing material designed to focus or orient the magnetic field generated by the internal ferromagnetic material; for example focusing of the magnetic field to increase the magnetic force experienced by a ferromagnetic

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material to the housing such as a ferrous surface to which the mount, with the magnetic cassette fixed within it, would reversibly attach to.

**FIG. 1** shows one embodiment of the present invention, comprising a mounting element **101**, with a magnetic cassette **102**; wherein the magnetic cassette is designed to be reversibly fixed within the mounting bracket which comprises mounting arms **106** and a rigid cross member defining an inner cavity **105**. In this embodiment, the magnetic cassette is reversibly fixed to the mounting element **101** via lateral clips, **103**, with a biased offset from the lateral planar surface of the magnetic cassette **102**, and located on both sides of magnetic cassette **102** (only one set of lateral clips is shown). Lateral clips **103** are designed to pass through lateral apertures **104**, with the biased offset of lateral clips **103** established such that lateral clips **103** pass through lateral apertures **104** and prevent complete dislocation of cassette **102** when seated in the inner cavity **105** of mounting element **101**, with lateral clips **103** seated within lateral apertures **104**. It is contemplated that there will be some movement of the magnetic cassette **102** within the mounting element, even with seating of lateral clips **103** within lateral apertures **104**, the extent of which determined by the choice of thickness of lateral clips **103**, the extent of the offset bias on lateral clips **103**, the size of lateral apertures **104**; all of which are within the knowledge of one skilled in the art, to modify to provide the desired movement, or limitation of movement, of the magnetic cassette **102** once seated within mount **101**.

Removal of the magnetic cassette **102** from the seated position in mount **101** (not shown) occurs through application of pressure on the offset biased ends of lateral clips **103** towards the lateral plane of magnetic cassette **102**, allowing the passage of the lateral clip through the lateral aperture. The total width of magnetic cassette **102**, with the offset biased ends of lateral clips **103** compressed onto the surface of the lateral plane, must be less than width of the inner cavity, **105** of the mount **101**.

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**FIG. 2** shows magnetic cassette **102**, comprised of a housing **201** surrounding a ferromagnetic material (not shown), with lateral clips **103** attached to the outside of the housing **201**, the figure more fully demonstrating the offset bias of the lateral clips, the bias increasing from the attachment point of the lateral clip onto the magnetic housing **201**. It is contemplated that housing **201** surrounds at least a magnet, providing the desired magnetic force when in close proximity of a ferromagnetic material. For applications where a varied attractive force between the magnet and a ferromagnetic material is desired, it is contemplated that either a magnet providing a lower magnetic force may be included in the housing, or alternatively a magnetic material with set magnetic strength per unit volume is utilized, but the volume of magnet incorporated within the housing either increased or decreased so as to vary the magnetic force experienced by an adjacent ferromagnet; with the housing either remaining empty, or in a preferred embodiment a non-magnetic filler chosen such that it has a similar density to the magnetic material but without substantially interfering with the magnetic field experienced by the adjacent ferromagnetic material, so as to maintain the expected balance of the mount while modifying the magnetic force experienced when the mount, with the cassette in a seated position, is brought near to the ferromagnetic material.

**FIG. 3** shows a side profile of mount **101** with the magnetic cassette (not shown) within the mount, with the lateral clips **103** seated within the lateral aperture **104**.

**FIG. 4** shows an alternative embodiment of the present invention, with magnetic cassette **401** designed to insert in the mount **402** by use of dowel, **403**, which passes through circular aperture **404**; and which is held in place, once passed through circular aperture **404**, by use of a "circlip" or "c-clip" style retainer **405**, made of a semi-flexible material, which may be inserted into annular grooves (not shown) machined in dowel **403** to receive retainer **405**. The elements are designed such that

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when cassette **401** is seated within the mount **402**, with dowel **403** passing through circular aperture **404**, and retainer **405** itself seated into the annular grooves in dowel **403**; that lateral movement of the dowel, and therefore the cassette within the mount, is not permitted. In one embodiment, cassette **401** does not fully enclose magnet **406**; which may slide laterally into cassette **401**, and is constrained within the cassette by sidewalls **407** forming part of mount **402**, which form a partial or complete (not shown) cup, with the sidewalls preventing movement of magnet **406** within cassette **401**, when the cassette is seated within mount **402**.

**FIG. 5** provides further details of the alternative embodiment presented in **FIG. 4**, including a top-down and side view of circlip style retainer **405**, dowel **403** containing annular grooves **501** to receive circlip style retainer **405**. Dowel **403** can be of a length sufficient to pass through the aperture and bottom plate of the mount, such that the circlip can be inserted into annular grooves **501**. **FIG. 6** shows one embodiment of the present invention, with magnetic cassette (not shown) seated within mount **401**; with dowel **403** and annular grooves (not shown) to receive circlip **405**, designed to allow circlip **405** to provide a substantially flush mount against bottom plate, **601**, of the mount **401**.

While particular embodiments of the present invention have been described in the foregoing, it is to be understood that other embodiments are possible within the scope of the invention and are intended to be included herein. It will be clear to any person skilled in the art that modifications of and adjustments to this invention, not shown, are possible without departing from the spirit of the invention as demonstrated through the exemplary embodiments. The invention is therefore to be considered limited solely by the scope of the appended claims.

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What is claimed is:

1. A magnetic mount comprising:

5 a substantially u-shaped bracket including a spaced apart pair of mounting arms each having a base end and an opposite distal end, with a rigid cross-member containing at least one aperture joining said pair of mounting arms at said base ends,

a mounting head on each said distal end of said pair of mounting arms,

a magnetic cassette reversibly fixed within said cross member,

10 wherein said pair of mounting arms are disposed in a first direction from said rigid cross member and said at least one magnet is disposed in a second direction substantially opposite to said first direction, from said rigid cross member, and

15 wherein said mounting heads are capable of being rigidly and releasably mounted to the sides of a power tool, with each mounting head defining an opening that at least partially encircles a corresponding aperture in a respective one of the sides of the power tool, in which each mounting head is mounted to the respective one of the sides by a respective fastener or a respective handle for said power tool; and

wherein said magnetic cassette comprises a housing surrounding a magnet,

20 the housing comprising a material that does not substantially decrease the magnetic field experienced in a second direction substantially opposite to said first direction, from said cross member

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said magnetic cassette reversibly fixed within said cross member by way of a dowel extending from said housing through said aperture in said cross member,

said dowel having at least one annular groove described around the circumference of the dowel, at the portion of the dowel distal to the housing, the dowel and magnetic cassette reversibly fixed to the cross member by application of a circlip retainer to said at least one annular groove.

2. The magnetic mount of claim 1 wherein each said mounting head is shaped to at least partially encircle a corresponding said rigid mounting member.

3. The magnetic mount of claim 2 wherein the at least one rigid mounting member further includes a mounting bolt adapted to releasably mount into a respective side of the power tool.

4. The magnetic mount of claim 1 wherein said pair of mounting arms are substantially parallel at said distal ends of said pair of mounting arms.

5. The magnetic mount of claim 2 wherein each said mounting head fully encircles the respective aperture.

6. The magnetic mount of claim 1 wherein said magnetic cassette has at least one substantially planar face, and wherein said magnetic cassette is mounted onto said magnet holder so as to maintain said planar face of said magnetic cassette in an orthogonal plane substantially orthogonal to a first plane substantially containing at least said cross-member and said pair of mounting arms.

7. The magnetic mount of claim 6 wherein said mounting arms are both correspondingly arched in a parallel pair of second planes orthogonal to said orthogonal plane and said first plane.

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8. A magnetic mount comprising:

a substantially u-shaped bracket including a spaced apart pair of mounting arms each having a base end and an opposite distal end, with a rigid u-shaped cross-member joining said pair of mounting arms at said base ends with at least two lateral apertures on the vertical faces of said u-shaped cross-member,

a mounting head on each said distal end of said pair of mounting arms,

a magnetic cassette reversibly fixed within said cross member,

wherein said pair of mounting arms are disposed in a first direction from said rigid cross member and said at least one magnet is disposed in a second direction substantially opposite to said first direction, from said rigid cross member, and

wherein said mounting heads are capable of being rigidly and releasably mounted to the sides of a power tool, with each mounting head defining an opening that at least partially encircles a corresponding aperture in a respective one of the sides of the power tool, in which each mounting head is mounted to the respective one of the sides by a respective fastener or a respective handle for said power tool; and

wherein said magnetic cassette comprises

a housing surrounding a magnet,

the housing comprising a material that does not substantially decrease the magnetic field experienced in a second direction substantially opposite to said first direction, from said u-shaped cross member,

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at least two lateral clips extending from said housing, one end of said lateral clips attached to said housing, the distal end of said lateral clip presenting a biased offset from said housing; and

wherein said at least two lateral clips may reversibly insert into said at least two lateral apertures on the vertical faces of said u-shaped cross-member.

9. The magnetic mount of claim 8 wherein each said mounting head is shaped to at least partially encircle a corresponding said rigid mounting member.

10. The magnetic mount of claim 9 wherein the at least one rigid mounting member further includes a mounting bolt adapted to releasably mount into a respective side of the power tool in use.

11. The magnetic mount of claim 8 wherein said pair of mounting arms are substantially parallel at said distal ends of said pair of mounting arms.

12. The magnetic mount of claim 9 wherein each said mounting head fully encircles the respective aperture.

13. The magnetic mount of claim 8 wherein said magnetic cassette has at least one substantially planar face, and wherein said magnetic cassette is mounted onto said magnet holder so as to maintain said planar face of said magnetic cassette in an orthogonal plane substantially orthogonal to a first plane substantially containing at least said cross-member and said pair of mounting arms.

14. The magnetic mount of claim 13 wherein said mounting arms are both correspondingly arched in a parallel pair of second planes orthogonal to said orthogonal plane and said first plane.

15. A combination comprising:

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a power tool having a body with sides, the body mounting a motor and a component that is driven by the motor when the power tool is being operated by a user, the component comprising a head, a disc, a wheel, or a bit; and

a magnetic mount, which has:

- 5                   a substantially u-shaped bracket including a spaced apart pair of mounting arms each having a base end and an opposite distal end, with a rigid cross-member containing at least one aperture joining said pair of mounting arms at said base ends,
- a mounting head on each said distal end of said pair of mounting arms,
- 10                  a magnetic cassette reversibly fixed within said cross member,
- wherein said pair of mounting arms are disposed in a first direction from said rigid cross member and said at least one magnet is disposed in a second direction substantially opposite to said first direction, from said rigid cross member, and
- 15    wherein said mounting heads are rigidly and releasably mounted to the sides of the power tool, with each mounting head defining an opening that at least partially encircles a corresponding aperture in a respective one of the sides of the power tool, in which each mounting head is mounted to the respective one of the sides by a respective fastener or a respective handle;
- 20    wherein the substantially u-shaped bracket extends along the body of the power tool from a respective one of the sides, around the power tool, and to the other respective one of the sides of the power tool;

wherein the magnetic mount is structured to:

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permit the power tool to be secured to a ferrous surface to free up a work space while the power tool is not in use so as to temporarily store the power tool; and

5 remain mounted on the power tool, with the at least one magnet disconnected from the ferrous surface, while the power tool is operated, by the user to drive the component via the motor; and

wherein said magnetic cassette comprises a housing surrounding a magnet,

10 the housing comprising a material that does not substantially decrease the magnetic field experienced in a second direction substantially opposite to said first direction, from said cross member

said magnetic cassette reversibly fixed within said cross member by way of a dowel extending from said housing through said aperture in said cross member,

15 said dowel having at least one annular groove described around the circumference of the dowel, at the portion of the dowel distal to the housing, the dowel and magnetic cassette reversibly fixed to the cross member by application of a circlip retainer to said at least one annular groove.

16. The combination of claim 15 wherein each said mounting head is shaped to at least partially encircle a corresponding said rigid mounting member.

20 17. The magnetic mount of claim 16 wherein the at least one rigid mounting member further includes a mounting bolt adapted to releasably mount into a respective side of the power tool.

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18. The magnetic mount of claim 15 wherein said pair of mounting arms are substantially parallel at said distal ends of said pair of mounting arms.

19. The magnetic mount of claim 16 wherein each said mounting head fully encircles the respective aperture.

5 20. The magnetic mount of claim 15 wherein said magnetic cassette has at least one substantially planar face, and wherein said magnetic cassette is mounted onto said magnet holder so as to maintain said planar face of said magnetic cassette in an orthogonal plane substantially orthogonal to a first plane substantially containing at least said cross-member and said pair of mounting arms.

10 21. The magnetic mount of claim 20 wherein said mounting arms are both correspondingly arched in a parallel pair of second planes orthogonal to said orthogonal plane and said first plane.

22. A combination comprising:

15 a power tool having a body with sides, the body mounting a motor and a component that is driven by the motor when the power tool is being operated by a user, the component comprising a head, a disc, a wheel, or a bit; and

a magnetic mount, which has:

20 a substantially u-shaped bracket including a spaced apart pair of mounting arms each having a base end and an opposite distal end, with a rigid u-shaped cross-member joining said pair of mounting arms at said base ends with at least two lateral apertures on the vertical faces of said u-shaped cross-member,

a mounting head on each said distal end of said pair of mounting arms,

- 21 -

a magnetic cassette reversibly fixed within said cross member,

wherein said pair of mounting arms are disposed in a first direction from said rigid cross member and said at least one magnet is disposed in a second direction substantially opposite to said first direction, from said rigid cross member, and

5

wherein said mounting heads are rigidly and releasably mounted to the sides of the power tool, with each mounting head defining an opening that at least partially encircles a corresponding aperture in a respective one of the sides of the power tool, in which each mounting head is mounted to the respective one of the sides by a respective fastener or a respective handle;

10

wherein the substantially u-shaped bracket extends along the body of the power tool from a respective one of the sides, around the power tool, and to the other respective one of the sides of the power tool;

wherein the magnetic mount is structured to:

15

permit the power tool to be secured to a ferrous surface to free up a work space while the power tool is not in use so as to temporarily store the power tool; and

remain mounted on the power tool, with the at least one magnet disconnected from the ferrous surface, while the power tool is operated, by the user to drive the component via the motor; and

20

wherein said magnetic cassette comprises

a housing surrounding a magnet,

- 22 -

the housing comprising a material that does not substantially decrease the magnetic field experienced in a second direction substantially opposite to said first direction, from said u-shaped cross member,

at least two lateral clips extending from said housing, one end of said lateral clips attached to said housing, the distal end of said lateral clip presenting a biased offset from said housing; and

wherein said at least two lateral clips may reversibly insert into said at least two lateral apertures on the vertical faces of said u-shaped cross-member.

23. The magnetic mount of claim 22 wherein each said mounting head is shaped to at least partially encircle a corresponding said rigid mounting member.

24. The magnetic mount of claim 23 wherein the at least one rigid mounting member further includes a mounting bolt adapted to releasably mount into a respective side of the power tool in use.

25. The magnetic mount of claim 22 wherein said pair of mounting arms are substantially parallel at said distal ends of said pair of mounting arms.

26. The magnetic mount of claim 23 wherein each said mounting head fully encircles the respective aperture.

27. The magnetic mount of claim 22 wherein said magnetic cassette has at least one substantially planar face, and wherein said magnetic cassette is mounted onto said magnet holder so as to maintain said planar face of said magnetic cassette in an orthogonal plane substantially orthogonal to a first plane substantially containing at least said cross-member and said pair of mounting arms.

- 23 -

28. The magnetic mount of claim 27 wherein said mounting arms are both correspondingly arched in a parallel pair of second planes orthogonal to said orthogonal plane and said first plane.

Figure 1

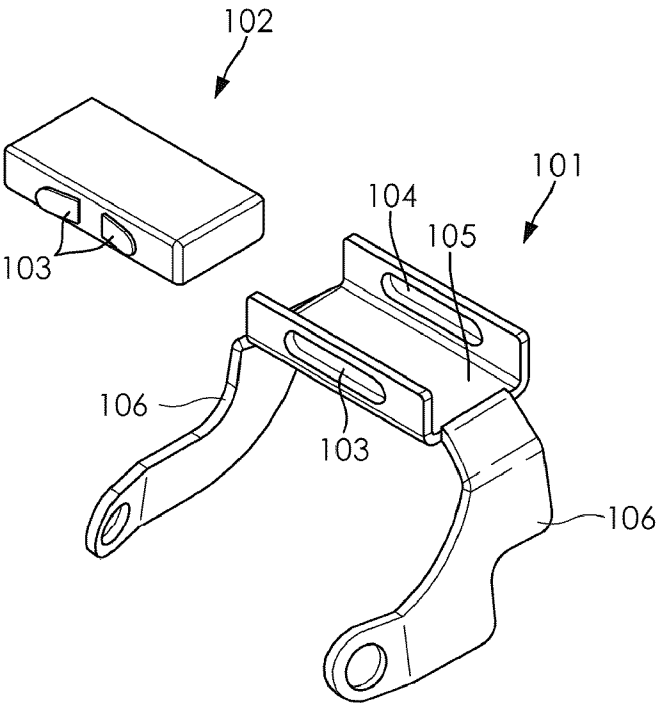


Figure 2

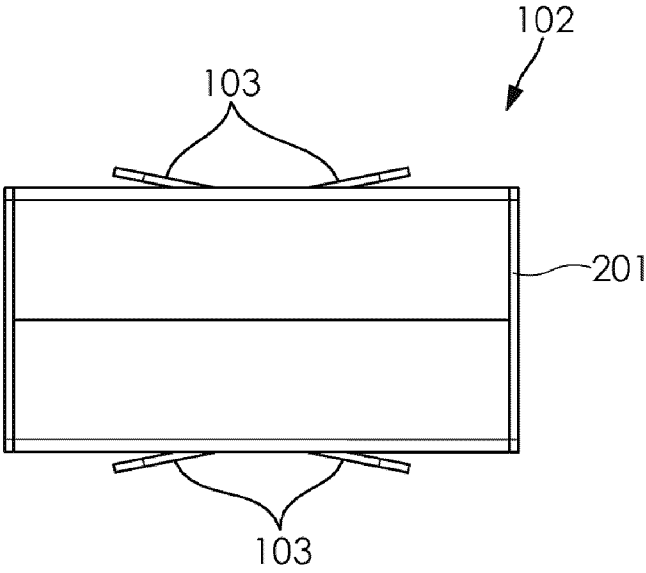


Figure 3

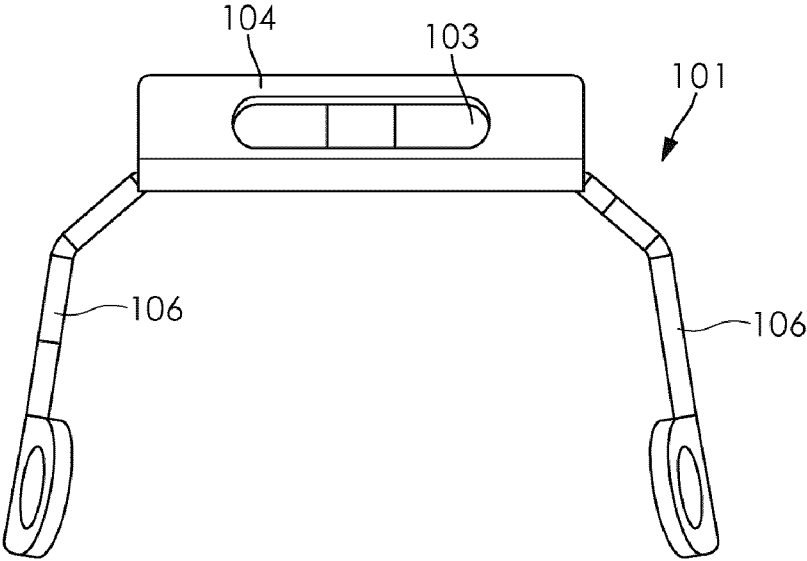


Figure 4

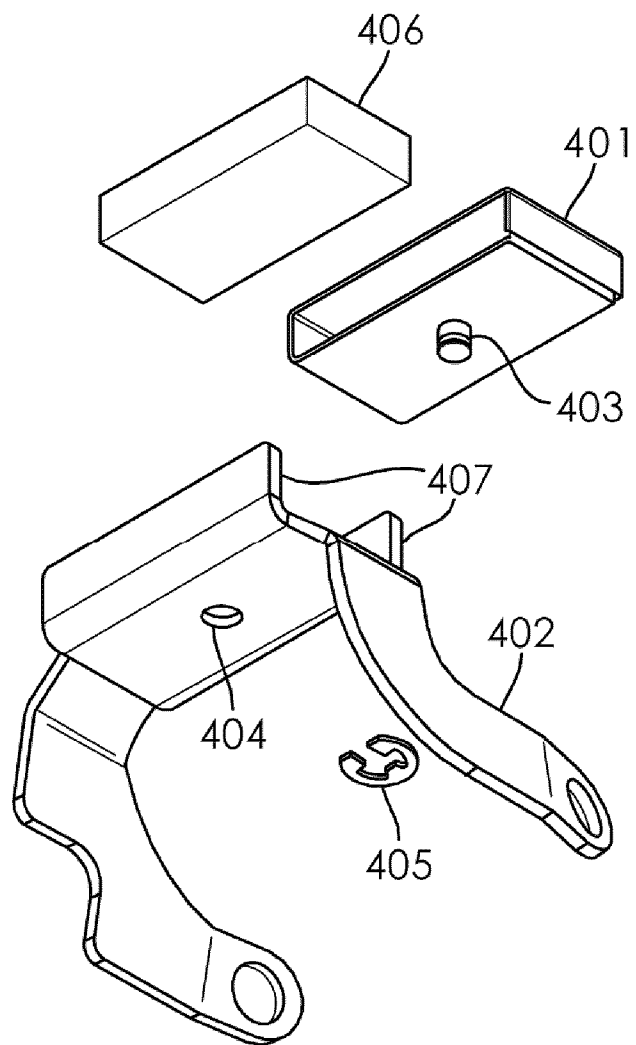


Figure 5

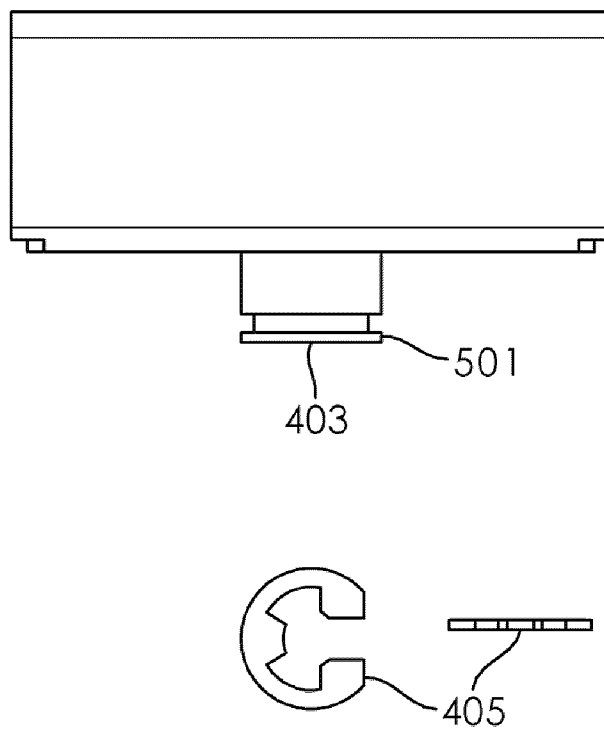
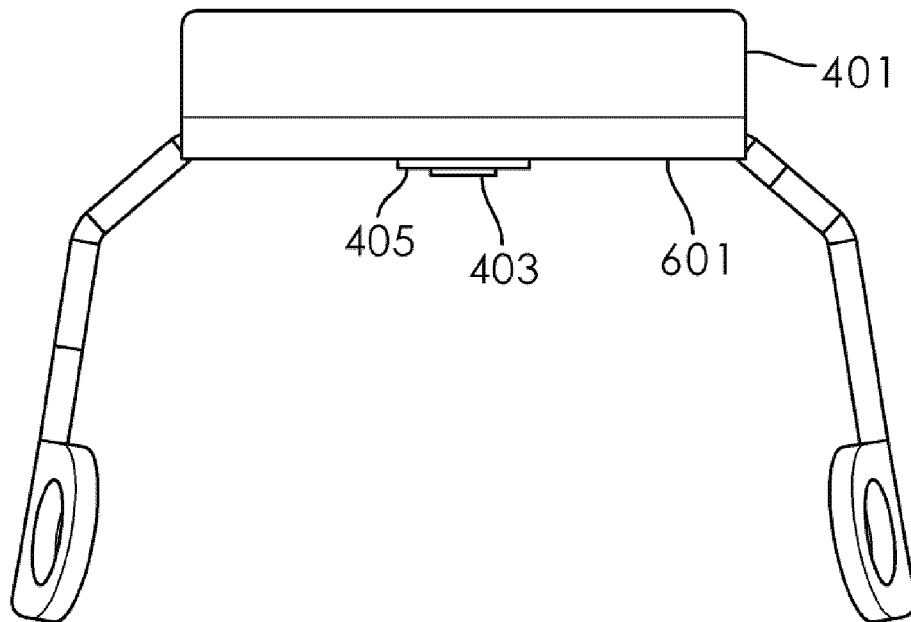


Figure 6



## INTERNATIONAL SEARCH REPORT

International application No.

**PCT/CA2021/050717**

## A. CLASSIFICATION OF SUBJECT MATTER

IPC: **F16M 13/02** (2006.01), **B25H 3/00** (2006.01), **F16M 11/04** (2006.01)

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC (2006.01): F16M 13/02, B25H 3/00, F16M 11/04

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic database(s) consulted during the international search (name of database(s) and, where practicable, search terms used)

Questel (Orbit)

Keywords: magnet+, hous+, cassette, revers+, clip, retain+, retainer, holder, power tool, direction, release+, magnetic field

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages                                                                         | Relevant to claim No.           |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|
| X<br>A    | CA2882992A1 (HURST, K. J.) 24 August 2015 (24-08-2015)<br>*abstract; Figures 1, 1a, and 3; page 4, line 24 to page 5, line 9*                              | 8-14 and 22-28<br>1-7 and 15-21 |
| A         | US2014/0314507A1 (TIMMONS, T. L. et al.) 23 October 2014 (23-10-2014)<br>*abstract; Figure 1; paragraphs [0004], [0031], [0035]-[0038], [0044] and [0045]* | 1-28                            |
| A         | CN205447176U (MORTON, D. H.) 10 August 2016 (10-08-2016)<br>*abstract*                                                                                     | 1-28                            |
| A         | US5078281A (JOHNSON, J. E.) 07 January 1992 (07-01-1992)<br>*abstract; Figure 4*                                                                           | 1-28                            |
| A         | US8342705B2 (YAKSICH, T. G.) 01 January 2013 (01-01-2013)<br>*abstract; Figure 4*                                                                          | 1-28                            |

☐ Further documents are listed in the continuation of Box C.☒ See patent family annex.

|                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|---------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| *<br>"A"<br>"D"<br>"E"<br>"L"<br>"O"<br>"P" | Special categories of cited documents:<br>document defining the general state of the art which is not considered to be of particular relevance<br>document cited by the applicant in the international application<br>earlier application or patent but published on or after the international filing date<br>document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)<br>document referring to an oral disclosure, use, exhibition or other means<br>document published prior to the international filing date but later than the priority date claimed | "T"<br>"X"<br>"Y"<br>"&" | later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention<br>document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone<br>document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art<br>document member of the same patent family |
|---------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Date of the actual completion of the international search  
10 August 2021 (10-08-2021)Date of mailing of the international search report  
10 August 2021 (10-08-2021)Name and mailing address of the ISA/CA  
Canadian Intellectual Property Office  
Place du Portage I, C114 - 1st Floor, Box PCT  
50 Victoria Street  
Gatineau, Quebec K1A 0C9  
Facsimile No.: 819-953-2476

Authorized officer

Branka Ristovski (819) 934-2578

## INTERNATIONAL SEARCH REPORT

International application No.  
**PCT/CA2021/050717**

**Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of the first sheet)**

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claim Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
  
2. ☐ Claim Nos.:  
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
  
3. ☐ Claim Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

**Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)**

This International Searching Authority found multiple inventions in this international application, as follows:

**Group A:** Claims 1-7 and 15-21 are directed to a magnetic mount with a dowel and magnetic cassette reversibly fixed to the cross member by application of a circlip retainer to said at least one annular groove; and

**Group B:** Claims 8-14 and 22-28 are directed to a magnetic mount having at least two lateral clips extending from said housing, one end of said lateral clips attached to said housing, the distal end of said lateral clip presenting a biased offset from said housing; and wherein said at least two lateral clips may reversibly insert into said at least two lateral apertures on the vertical faces of said u-shaped cross-member.

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☒ As all searchable claims could be searched without effort justifying additional fees, this Authority did not invite payment of additional fees.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claim Nos.:
  
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claim Nos.:

**Remark on Protest**

- ☐ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- ☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- ☐ No protest accompanied the payment of additional search fees.

**INTERNATIONAL SEARCH REPORT**  
Information on patent family members

International application No.

**PCT/CA2021/050717**

| Patent Document<br>Cited in Search Report | Publication<br>Date          | Patent Family<br>Member(s)                                                                                                                                                                                                                                                                                                                                                             | Publication<br>Date                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-------------------------------------------|------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CA2882992A1                               | 24 August 2015 (24-08-2015)  | US2015239119A1<br>US10654163B2<br>US2020055175A1<br>US10898998B2                                                                                                                                                                                                                                                                                                                       | 27 August 2015 (27-08-2015)<br>19 May 2020 (19-05-2020)<br>20 February 2020 (20-02-2020)<br>26 January 2021 (26-01-2021)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| US2014314507A1                            | 23 October 2014 (23-10-2014) | US9242367B2<br>CN205218121U<br>CN205496630U<br>EP2986408A1<br>EP2986408A4<br>EP2986408B1<br>EP3613526A1<br>EP3632599A1<br>US2014227054A1<br>US9174283B2<br>US2016001439A1<br>US9452521B2<br>US2016001440A1<br>US9452522B2<br>US2014314506A1<br>US9849581B2<br>US2019176288A1<br>US10583539B2<br>US2013287508A1<br>WO2013163412A1<br>WO2014169297A1<br>WO2014172595A1<br>WO2014172620A1 | 26 January 2016 (26-01-2016)<br>11 May 2016 (11-05-2016)<br>24 August 2016 (24-08-2016)<br>24 February 2016 (24-02-2016)<br>15 March 2017 (15-03-2017)<br>09 October 2019 (09-10-2019)<br>26 February 2020 (26-02-2020)<br>08 April 2020 (08-04-2020)<br>14 August 2014 (14-08-2014)<br>03 November 2015 (03-11-2015)<br>07 January 2016 (07-01-2016)<br>27 September 2016 (27-09-2016)<br>07 January 2016 (07-01-2016)<br>27 September 2016 (27-09-2016)<br>23 October 2014 (23-10-2014)<br>26 December 2017 (26-12-2017)<br>13 June 2019 (13-06-2019)<br>10 March 2020 (10-03-2020)<br>31 October 2013 (31-10-2013)<br>31 October 2013 (31-10-2013)<br>16 October 2014 (16-10-2014)<br>23 October 2014 (23-10-2014)<br>23 October 2014 (23-10-2014) |
| CN205447176U                              | 10 August 2016 (10-08-2016)  | No results found                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| US5078281A                                | 07 January 1992 (07-01-1992) | None                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| US8342705B2                               | 01 January 2013 (01-01-2013) | US2010053940A1<br>WO2010027994A2<br>WO2010027994A3<br>WO2010027994A4                                                                                                                                                                                                                                                                                                                   | 04 March 2010 (04-03-2010)<br>11 March 2010 (11-03-2010)<br>29 April 2010 (29-04-2010)<br>08 July 2010 (08-07-2010)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |