(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) EP 2 550 416 B1

(12) **EUROPEAN PATENT SPECIFICATION**

(45) Date of publication and mention of the grant of the patent:
24.09.2014 Bulletin 2014/39

(21) Application number: **11712110.3**

(22) Date of filing: **22.03.2011**

(51) Int Cl.:
E04F 21/06 *(2006.01)* ***E04F 21/165*** *(2006.01)*

(86) International application number:
PCT/US2011/029313

(87) International publication number:
WO 2011/119530 (29.09.2011 Gazette 2011/39)

(54) **RF CONTROL MODULE FOR CONTINUOUS FEED DRYWALL TOOLS**

HF-STEUERMODUL FÜR TROCKENMAUERWERKZEUGE MIT KONTINUIERLICHER ZUFÜHRUNG

MODULE DE COMMANDE RF POUR OUTILS DE CLOISON SECHE A ALIMENTATION CONTINUE

(84) Designated Contracting States:
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

(30) Priority: **22.03.2010 US 316010 P**

(43) Date of publication of application:
30.01.2013 Bulletin 2013/05

(73) Proprietor: **Graco Minnesota Inc.**
Minneapolis, MN 55413 (US)

(72) Inventors:
- **HORNING, Jeromy DeLayne**
  Albertville, Minnesota 55301 (US)
- **WROBEL, Steve J.**
  Rogers, Minnesota 55374 (US)

(74) Representative: **Miller Sturt Kenyon**
9 John Street
London WC1N 2ES (GB)

(56) References cited:
DE-U1- 20 000 793
US-A- 3 457 017
US-A1- 2008 011 877

Note: Within nine months of the publication of the mention of the grant of the European patent in the European Patent Bulletin, any person may give notice to the European Patent Office of opposition to that patent, in accordance with the Implementing Regulations. Notice of opposition shall not be deemed to have been filed until the opposition fee has been paid. (Art. 99(1) European Patent Convention).

EP 2 550 416 B1

Printed by Jouve, 75001 PARIS (FR)

Description

BACKGROUND ART

[0001] Manual drywall application tools are well known for the supply and application of drywall mud.

[0002] US 2008/0011877 discloses a drywall spraying assembly in which a mud pump is provided on a trailer and mud is dispersed via a host through a spray gun. The spray gun has a trigger and a separate remote control is provided for controlling the speed of the pump.

[0003] US 3 457 017 A discloses a removable control module according to the preamble of claim 1.

DISCLOSURE OF THE INVENTION

[0004] It is an object of this invention to allow the user to control the flow of drywall mud to the continuous feed drywall box tool.

[0005] According to a first aspect of the invention, there is provided a removable control module for use on a drywall application tool and a feed pump, said tool having a handle, said control module comprising:

an enclosure removably mountable on a handle;
an RF control in said enclosure;
first and second triggers, each to start and stop a feed pump by means of the RF control; and
a releasable clamp to allow positioning said enclosure on a handle.

[0006] According to a second aspect of the invention, there is provided the control module wherein said control module has first and second ends, one of said triggers being located at each said end.

[0007] The RF control module controls the drywall feed pump remotely at the box tool, giving the user ultimate control of the mud flow while applying mud to the wall, filling the box, or both. The RF control module can be easily transferred to any continuous feed box tool with no tools being required.

[0008] A continuous feed drywall tool system utilizes a pump system to feed drywall mud to drywall tools via a hose connecting the pump and the tools. The system includes pump, hose and tools such as a corner tool, a taper tool and a box finish tool.

[0009] A removable waterproof enclosure houses an RF control and two triggers (or buttons) to start and stop the dry wall feed pump. The enclosure attaches to the power-fed drywall box tool handle(s). It has an integral self-locking clamp to keep it in a desired position on the handle when desired. The clamp also has a neutral position to allow it to slide freely with the user's hand for more versatility. Two triggers or buttons on opposite ends of the RF enclosure are used to control the pump on/off from multiple hand grip positions.

[0010] There are a number of advantages to the instant invention in that it remotely controls the drywall feed pump and gives the user ultimate control of mud flow to the box. Further, the quick release housing allows use on multiple box tool handle lengths by enabling the switching of box tools in seconds. It is also shaped to fit the contour of the box handle for optimal comfort and control. The integral clamp allows the user to lock the RF enclosure in the desired position. The clamp design allows for quick release when pulled in opposite direction and includes a neutral position detent to allow user to freely slide the enclosure and control the position with hand grip if desired. This allows for ease of positioning to suit individual user grip preferences. Two triggers/buttons allows for multiple grips and versatility. This control operates independent of the box tool brake handle.

[0011] These and other objects and advantages of the invention will appear more fully from the following description made in conjunction with the accompanying drawings wherein like reference characters refer to the same or similar parts throughout the several views.

BRIEF DESCRIPTION OF DRAWINGS

[0012]

Figure 1 shows the control module of the instant invention.

Figure 2 shows a side view of the control module of the instant invention.

Figure 3 shows an end view of the control module of the instant invention.

Figure 4 shows a view of the other side of the control module of the instant invention.

Figure 5 shows a view of the other end of the control module of the instant invention.

Figure 6 shows a top view of the control module of the instant invention.

Figure 7 shows a bottom view of the control module of the instant invention.

Figure 8 shows a view of the system of the instant invention.

BEST MODE FOR CARRYING OUT THE INVENTION

[0013] It is an object of this invention, generally 10, to allow the user to control the flow of drywall mud to the continuous feed drywall box tool 14. The RF control module 12 controls the drywall feed pump 16 remotely at the box tool 14, giving the user ultimate control of the mud flow while applying mud to the wall, filling the box 14, or both. The RF control module 12 can be easily transferred to any continuous feed box tool 14 with no tools being

required.

[0014] A continuous feed drywall tool system 10 utilizes a pump system 16 to feed drywall mud to drywall tools 14 via a hose connecting the pump 16 and the tools 14. The system includes pump 16, hose 18 and tools 14 such as a corner tool, a taper tool and a box finish tool.

[0015] A removable waterproof enclosure 20 houses an RF control 22 and two triggers/buttons 24 and 26 to start and stop the drywall feed pump 16. The enclosure attaches to the power-fed drywall box tool handle(s) 28. Enclosure 20 has a hinge 32 allowing clamshell portions 34 and 36 to open and allow movement between handles 28 of different tools. A latch 38 releasably secures clamshell portions 34 and 36 in position. It has a manual clamp 30 (or alternatively an integral self-locking clamp) to keep it in a desired position on the handle 28 when desired. The clamp 30 also has a neutral or released position to allow it to slide freely with the user's hand for more versatility. Two triggers or buttons 24 and 26 on opposite ends of the RF enclosure 20 are used to control the pump 16 on/off from multiple hand grip positions.

[0016] There are a number of advantages to the instant invention in that it remotely controls the drywall feed pump and gives the user ultimate control of mud flow to the box. Further, the quick release housing allows use on multiple box tool handle lengths by enabling the switching of box tools in seconds. It is also shaped to fit the contour of the box handle for optimal comfort and control. The integral clamp allows the user to lock the RF enclosure in the desired position. The clamp design allows for quick release when pulled in opposite direction and includes a neutral position detent to allow user to freely slide the enclosure and control the position with hand grip if desired. This allows for ease of positioning to suit individual user grip preferences. Two triggers/buttons allows for multiple grips and versatility. This control operates independent of the box tool brake handle.

[0017] It is contemplated that various changes and modifications may be made to the control module without departing from the scope of the invention as defined by the following claims.

Claims

1. A removable control module (12) for use on a drywall application tool and a feed pump, said tool having a handle, said control module comprising:

   an enclosure (20) removably mountable on a handle (28);
   a releasable clamp (30) to allow positioning said enclosure on a handle, **characterised in that**, said control module further comprises:

   an RF control (22) in said enclosure; and
   first and second triggers (24, 26) each to start and stop a feed pump by means of the RF control.

2. The control module of claim 1, wherein said control module has first and second ends, one of said triggers being located at each said end.

Patentansprüche

1. Abnehmbares Steuermodul (12) zur Verwendung in einem Trockenmauerwerkzeug und einer Förderpumpe, wobei das Werkzeug einen Handgriff aufweist, wobei das Steuermodul Folgendes umfasst:

   ein Gehäuse (20), das abnehmbar an einem Handgriff (28) montiert werden kann;
   eine lösbare Klemme (30), um eine Positionierung des Gehäuses an einem Handgriff zu ermöglichen,
   dadurch gekennzeichnet, dass das Steuermodul des Weiteren Folgendes umfasst:

   eine HF-Steuerung (22) in dem Gehäuse; und
   einen ersten und einen zweiten Auslöser (24, 26), die jeweils dazu dienen, eine Förderpumpe mittels der HF-Steuerung zu starten und zu stoppen.

2. Steuermodul nach Anspruch 1, wobei das Steuermodul ein erstes und ein zweites Ende aufweist, wobei einer der Auslöser an jedem der Enden angeordnet ist.

Revendications

1. Module de commande amovible (12) à utiliser sur un outil d'application de cloison sèche et une pompe d'alimentation, ledit outil ayant une poignée, ledit module de commande comprenant :

   une enceinte (20) montable de manière amovible sur une poignée (28) ;
   une pince déblocable (30) pour permettre un positionnement de ladite enceinte sur une poignée,
   caractérisé en ce que ledit module de commande comprend en outre :

   une commande RF (22) dans ladite enceinte ; et
   un premier et un second déclencheur (24,26) démarrant at arrêtant chacun une pompe d'alimentation au moyen de la commande RF.

2. Module de commande selon la revendication 1, dans

lequel ledit module de commande possède une première et une seconde extrémité, un desdits déclencheurs étant situé à chaque dit extrémité.

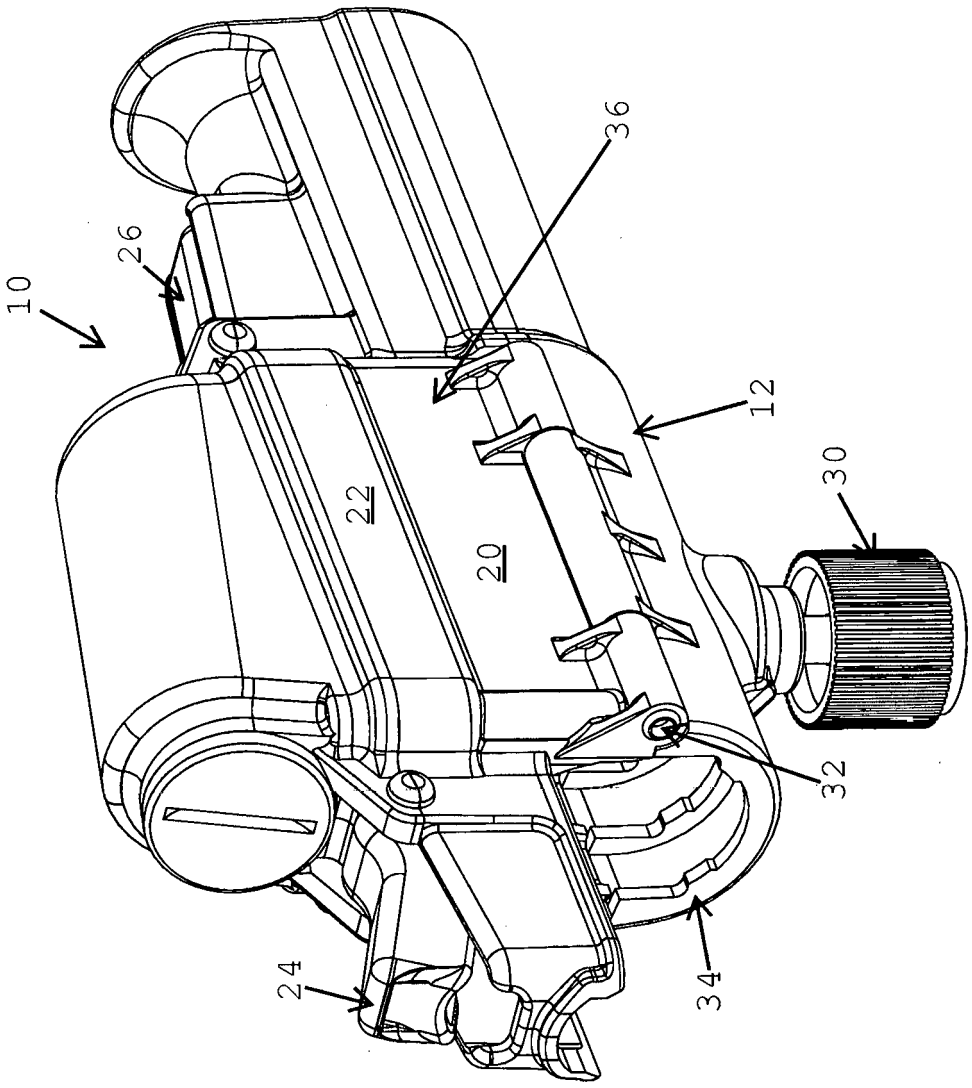


FIG. 1

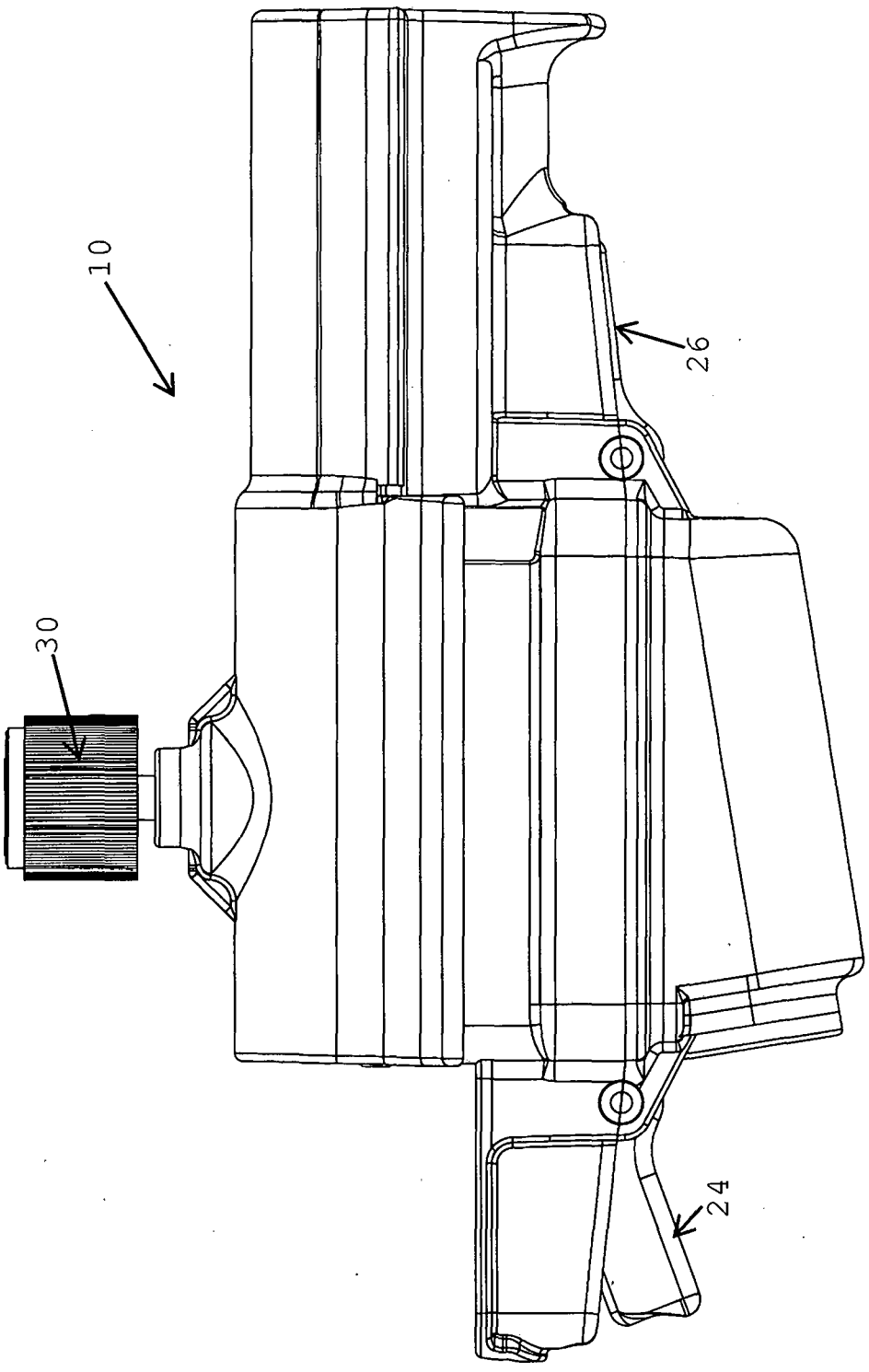


FIG. 2

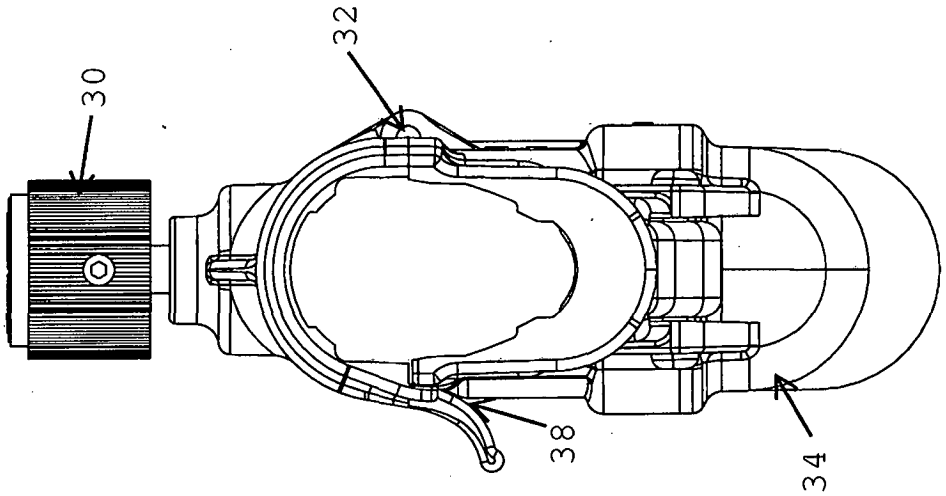


FIG. 3

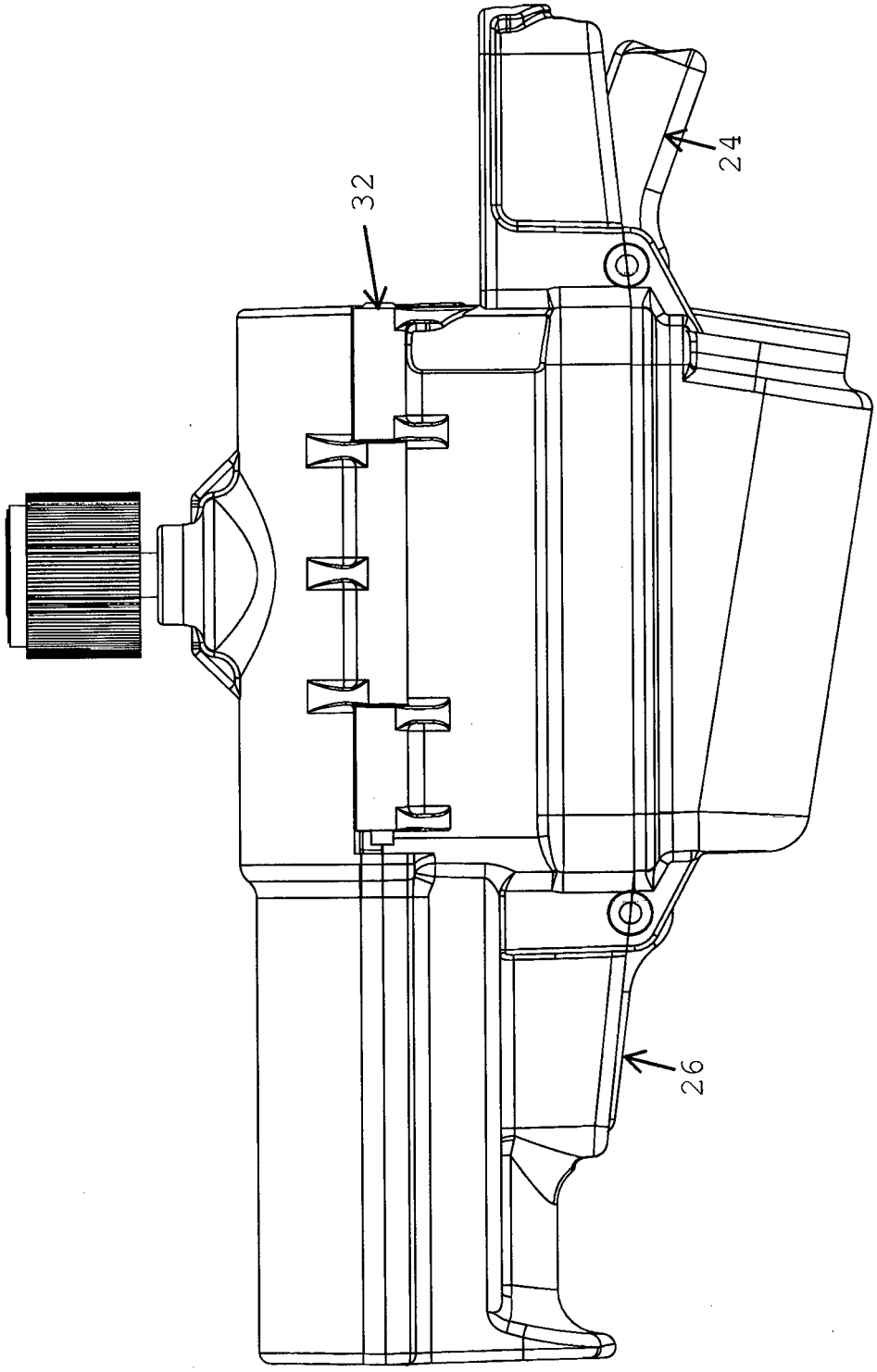


FIG. 4

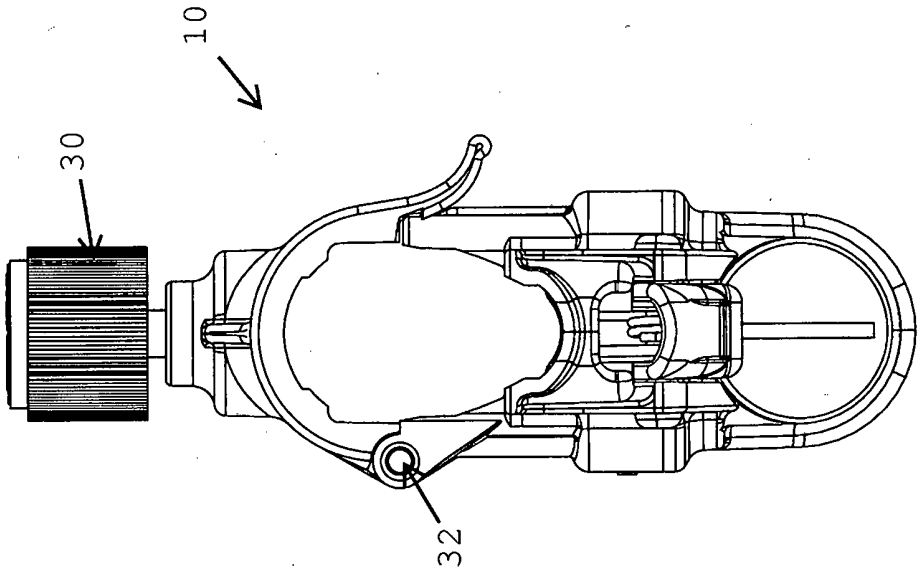


FIG. 5

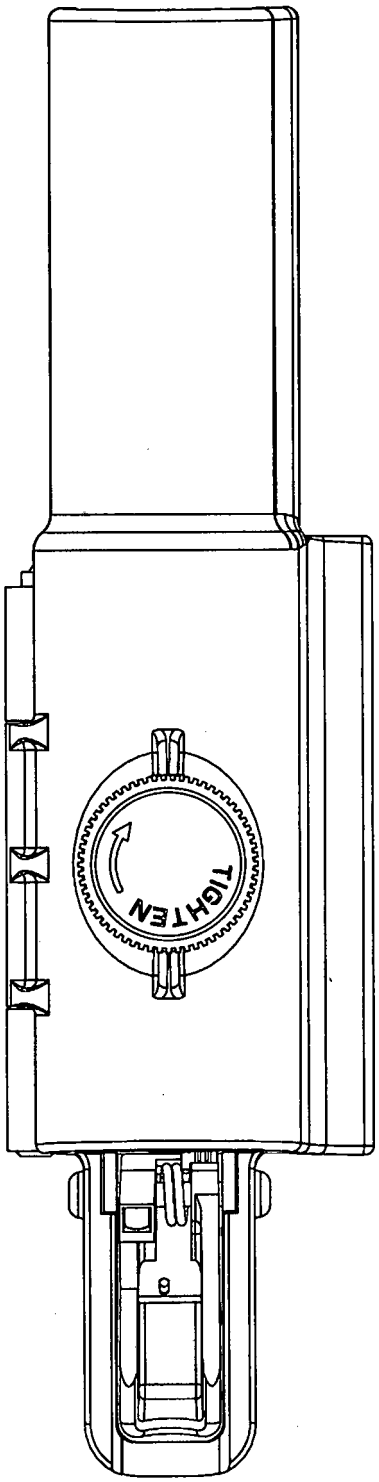


FIG. 6

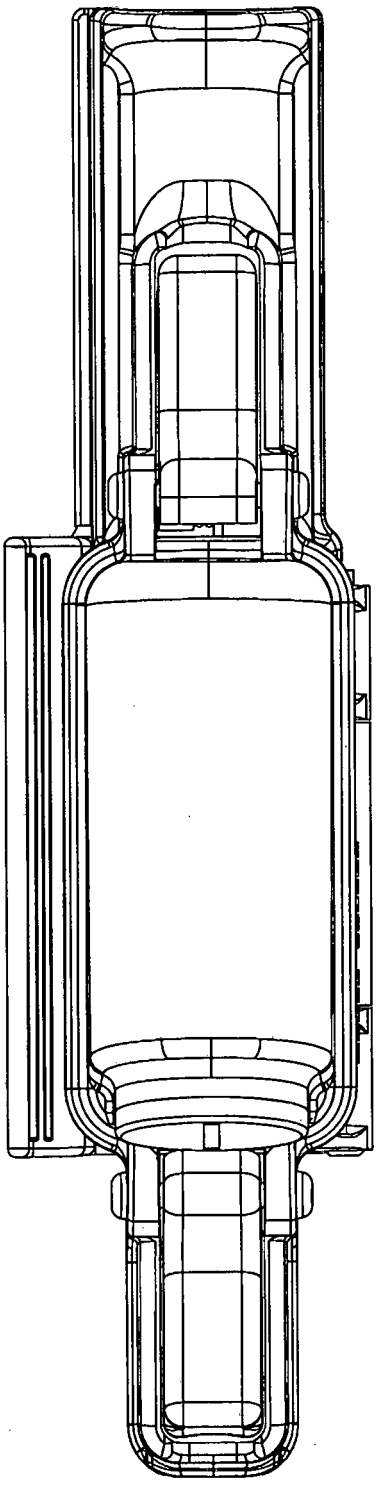


FIG. 7

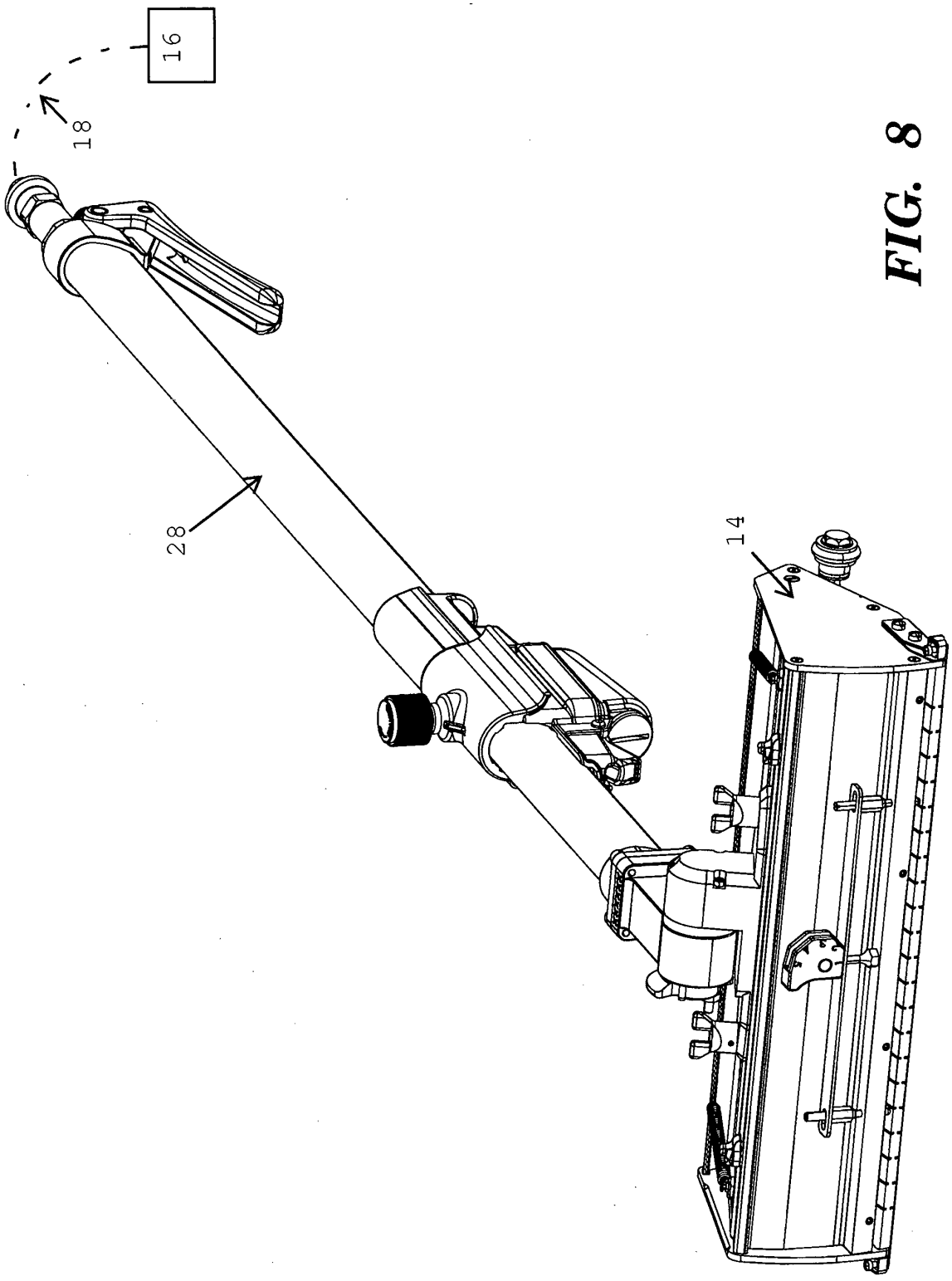


FIG. 8

REFERENCES CITED IN THE DESCRIPTION

This list of references cited by the applicant is for the reader's convenience only. It does not form part of the European patent document. Even though great care has been taken in compiling the references, errors or omissions cannot be excluded and the EPO disclaims all liability in this regard.

Patent documents cited in the description

- US 20080011877 A **[0002]**
- US 3457017 A **[0003]**