

1) Family number: 34024036 (US2006283013A)

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Title: MODULAR INSERTS COMPRISING CHECK VALVES FOR FLOW METERS

Abstract: The present invention relates to an apparatus and method for upgrading fluid meters with improved modular check valve technology. The check valve module is secured within the meter using only external fasteners. The check valve module may also include a seal. The seal may be inspected by simply removing the external fasteners securing the check valve module within the enclosure and removing the check valve module from the enclosure. The check valve module may include a test port for testing the operation of the check valve. Additionally, a module insert is disclosed comprising a screen module, a metering module, a check valve module, and a bypass arm for dual metering solutions. The module insert may be installed in meter housing connected to a fluid delivery system or new meter housing. Additionally, the module insert may be constructed from materials substantially free of lead.

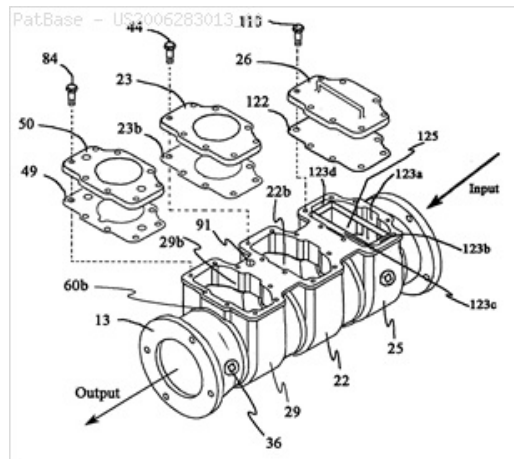
Classifications:

International (IPC 8-9): B21K3/00 F16K17/20 G01F15/00 G01F15/06 G01F7/00 (Advanced/Invention); B21K3/00 F16K17/20 G01F15/00 G01F15/06 G01F7/00 (Core/Invention)

CPC: F16K47/02 G01F1/10 G01F15/125 G07F15/10 Y02B90/241 Y04S20/32 G01D4/002 G01D11/245 G01F1/075 G01F15/063 G01F15/14 G01F15/18 Y10T29/49231 G01F15/005 G01F7/00 G01F15/185 Y10T137/86501 Y10T137/7771

European: F16K47/02 G01D11/24S G01D4/00R G01F1/075 G01F1/10 G01F15/00C G01F15/06B2 G01F15/12B G01F15/14 G01F15/18 G01F15/18B G01F7/00 Y04S20/30

US: 137/493 137/625.11 29/888.01 340/606 340/606S 340/870.02 340/870.020P 340/870.07 700/282 709/201 73/195 73/197 73/201 73/201S 73/203 73/272R 73/276 73/861

**Family:**

Publication number	Publication date	Application number	Application date
US2006283013 AA	20061221	US20050154485	20050616
US2008150750 AA	20080626	US20060614648	20061221
US2008184792 AA	20080807	US20080034481	20080220
US2009090418 AA	20090409	US20080332316	20081210
US7357023 BB	20080415	US20050154485	20050616
US7513150 BB	20090407	US20080034481	20080220
US7880641 BB	20110201	US20060614648	20061221

Priority:

US20050154485 20050616 US20060614648 20061221 US20080034481 20080220
US20080332316 20081210

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2) Family number: 57263337 (US2014238511A)

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Title: WATER DAMAGE PREVENTION SYSTEM

Abstract: The present invention is a water damage prevention system that has a residential or industrial/commercial facility water supply interruption system. The system is comprised of a remotely controllable base station with shut-off/on mechanism that is in wireless or wired communication with a convenient controller. The base station with shut-off/on mechanism is interposed within a water line from a water main to the living or operating quarters portion of a residential or a industrial/commercial facility or building, such that activation of the base station with shut-off/on valve operates to prevent flow of water from the water main to the living quarters when the residential home or industrial/commercial facility or building is vacated or unsupervised. In this manner, damage to the living quarters or the industrial/commercial facility or building from failure of water pipes running through the living or working quarters is prevented during times that the shut-off mechanism is activated.

Classifications:

International (IPC 8-9): E03B7/07 E03B7/09 E03B7/12 F16K31/02 F16K31/05 G01D4/00 G01F1/00 G01F15/06 G01F15/075 G01M3/00 G06Q50/06 G08B21/18 H04M1/725 H04W4/02

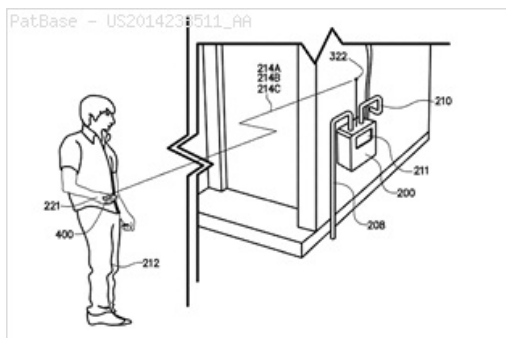
H04W76/02 (Advanced/Invention);

G01F1/10 G01F1/32 G01F1/58 G01F1/66 G01F1/68 G01F1/84

H04W84/18 (Advanced/Non-invention)

CPC: F16K31/02 F16K31/05 G01M3/00 G06Q50/06 H04M1/72533

G08B21/18 E03B7/12 E03B7/071 Y10T137/8158 Y10T137/86389
H04W4/021 G01F1/10 G01F1/3209 G01F1/58 G01F1/66 G01F1/68
G01F1/84 G01F15/066 G01F15/0755 H04W84/18 Y10T137/86397
Y02A20/15 Y02A20/218 Y02A20/16
US: 1/1 137/551 137/59 137/624.11 340/605 73/198 73/861



Family:

Publication number	Publication date	Application number	Application date
US2014238511 AA	20140828	US20130776963	20130226
US2015204701 AA	20150723	US20140561271	20141205
US2016076909 AA	20160317	US20150596460	20150114
US2016163177 AA	20160609	US20160016178	20160204
US9297150 BB	20160329	US20130776963	20130226
US9494480 BB	20161115	US20140561271	20141205
US9749792 BB	20170829	US20150596460	20150114

Priority:

US20070877860 20071004	US20070877860 20071024	US20090539150 20090811
US20100530150 20100615	US20100877094 20100907	US20110986341 20110108
US20110216497 20110824	US20110216521 20110824	US20120541819 20120705
US20120729653P 20121126	US20130776963 20130226	US20140561271 20141205
US20140095024P 20141221	US20150596460 20150114	US20160016178 20160204

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3) Family number: 41950374 (US2008149180A)

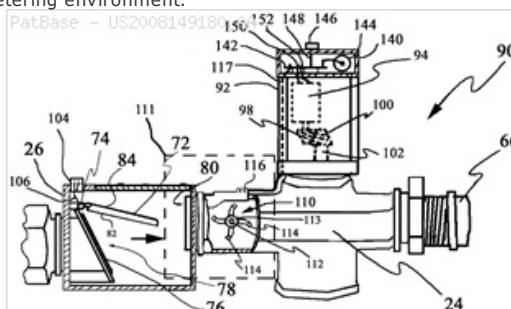
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Title: METHOD OF ASSOCIATING A WATER UTILITY SERVICE LINE TO A CUSTOMER SERVICE LINE

Abstract: The invention relates to a meter box for housing a utility meter and configured for associating a customer service line to a utility service line. The meter box may be configured to fit within an existing meter box and may be configured with side sections in a telescopic arrangement. Flow control components at an input of the meter box prevent backflow. The meter box comprises an electronic module that includes a variety of selectable features including data logging, AMR, environmental monitoring, and resource monitoring. A remote monitor is provided for allowing a customer to view selected data including consumption data, pressure, pH, temperature, warnings, remote turnoff, and provide secured bill paying services. Imaging/audio components provide visual and audio data which may include an image of an analog readout for a meter register, images of the metering environment, and sound data for metering environment.

Classifications:

International (IPC 8-9): F16K15/03 G05D7/00
G06F15/16 (Advanced/Invention);
F16K15/02 G05D7/00 G06F15/16 (Core/Invention)
CPC: F16K27/12 E03B7/072 E03B7/095 E03B9/08 E03C1/104
Y10T137/0318
European: E03B7/07C E03B7/09A E03B9/08 E03C1/10 E03C1/10B
F16K27/12
US: 137/1 137/1P 700/282 700/282S 709/201 709/201S



Family:

Publication number	Publication date	Application number	Application date
US2008149180 AA	20080626	US20060614684	20061221

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