ley as shown in figure 10. Other devices for redirecting a flexible line are also within the scope of the invention, such as skid plates, tubes, rollers, etc.

The boom assembly **120** of figure 10 is shown in a storage position suitable for transportation of the portable winch **100**. Figure 11 shows the portable winch **100** of figure 10 with the boom assembly **120** in an operation position. The boom section **122** is oriented substantially vertically with respect to a ground surface with the boom section **122** extended and the boom end unit **124** located at an operational distance below ground level. In one embodiment, at least one support strut **132** is included adjacent to the boom end unit **124** as shown in figure 11. One or more support struts **132** are used to hold the pulley of the boom end unit **124** away from a wall of a pit during a winching operation.

In one embodiment, the boom assembly **120** is flexibly connected to the frame **110** within a given range of motion. In a winching operation, it is possible to encounter shifts in the boom. Such shifts may be caused by partial collapse of a wall that a support strut **132** is placed against. Having the boom assembly **120** flexibly connected to the frame **110** provides a safety margin in the event that a boom shift occurs caused by a wall collapse or other reason. If the boom assembly **120** were solidly fixed to the frame **110**, the boom may become bent or damaged due to such a shift. Figure 12 show one embodiment of a flexible connection between the boom assembly **120** and the frame **110**. The flexible connection is accomplished using one or more elastomeric inserts **127**. The elastomeric inserts are bolted or otherwise fastened between a component of the winch assembly **120** and the frame **110**.

An advantage of elastomeric inserts includes inexpensive manufacture, and a limited range of motion, making the boom assembly **120** somewhat rigid with respect to the frame **110**, yet still remaining flexible enough to prevent damage to the boom, etc. in the event of a boom shift. Other flexible connections include, but are not limited to steel spring connections, compressed gas cylinder connections, etc. In one embodiment, the elastomeric inserts **127** are located between the movable connection system **126** and the frame. Other locations are also acceptable, provided the boom **122** is allowed a range of motion with respect to the frame **110**.

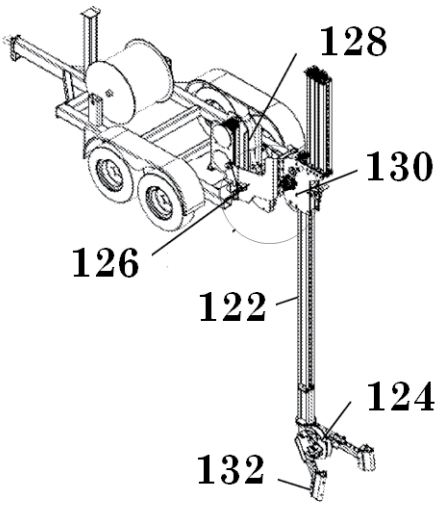

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Figure 11: Isometric view of a portable winch in an operational position.

Figure 13 shows an embodiment of a portable winch **200** similar to embodiments described above in one possible application, specifically a trenchless pipe bursting operation. The portable winch includes a frame **210** with a boom assembly **220** attached to the frame **210**. A first hole **250** and a second hole **252** are illustrated. In one embodiment, the first and second holes **250**, **252** include manholes. A first pipe **254** is shown that is to be replaced in the pipe bursting operation. In one method of operation, a flexible line **240** such as a wire rope begins at a winch **212**, and travels across a first pulley **213**, then back over a second pulley **214**, then down along a boom **221**. By pulling over multiple pulleys in the configuration shown in figure 13 a tension generated in the flexible line **240** tends to pull the boom assembly **220** down against the frame **210** where the first pulley **213** is attached. In such a configuration, the frame **210** takes the force of a pulling operation, in contrast to the connection system such as connection system **126** shown in embodiments described above. As a result the connection system does not need to withstand the full pulling force of the flexible line **240**, and can be designed more economically. Although the configuration described above includes such advantages, the invention is not so limited. Other pulley systems and connection systems can be used within the scope of the invention.

In one embodiment, the boom **221** includes multiple sections. As shown in figure 13, for example, an end unit **224** is coupled to a boom section **222** to form the boom **221**. A coupling **226** is located between the end unit **224** and the boom

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