Jan. 28, 1958 C. A. BAKER ET AL 2,821,086

CORING DEVICES

Filed Oct. 4, 1956

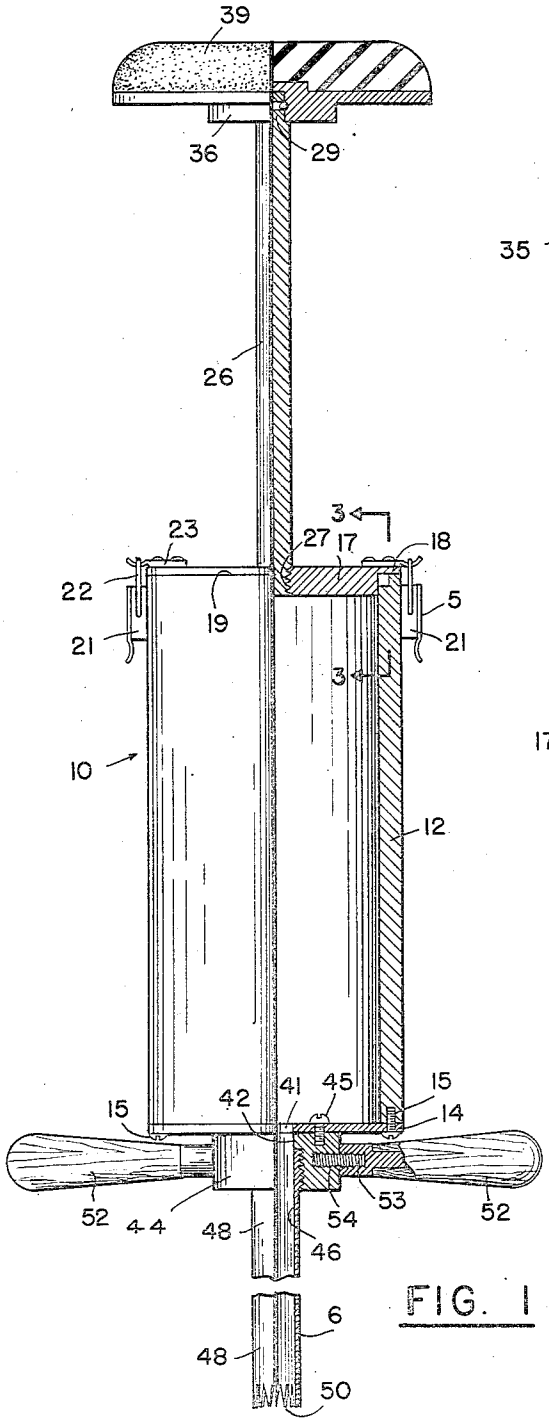


FIG. 1

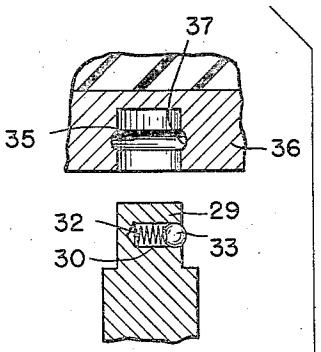


FIG. 2

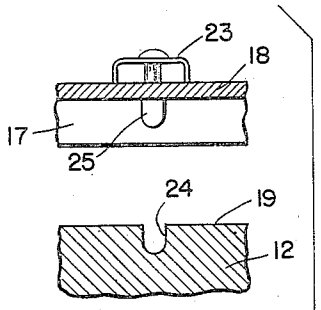


FIG. 3

INVENTORS
CAMERON A. BAKER
RICHARD T. McANDREW
BY Hane & Nydick
ATTORNEY

United States Patent Office 2,821,086 Patented Jan. 28, 1958

2,821,086

CORING DEVICES

Cameron A. Baker, Ridgewood, N. J., and Richard T. McAndrew, Braintree, Mass., assignors to United States Testing Company, Incorporated, Hoboken, N. J., a corporation of New York

Application October 4, 1956, Serial No. 613,901

6 Claims. (Cl. 73—425.2)

This invention relates to coring devices and, more particularly, to coring devices that may be used to remove samples from baled goods and the like.

Various types of sampling and coring devices have, heretofore, been used for removing samples from baled goods such as wool, and the like. However, many of these devices require the use of an external source of power for their operation. This requirement not only reduces the portability of the unit, but also increases the cost thereof.

An object of this invention, therefore, is to provide coring apparatus that is simple in construction, efficient in operation, and which will obviate the need for motor driven operation.

Another object of this invention, is to provide manually-operated coring apparatus that may be easily controlled in use so as to obtain samples of desired quantity with a minimum of effort.

A further object of this invention, is to provide simplified coring apparatus that may be efficiently used in obtaining samples of baled material, in which the device is manually operated by an operator, requires no outside source of power, and which may be readily disassembled to remove the core sample.

Still another object of this invention is to provide a coring device having no movable parts that may be effectively used by an operator to obtain samples of baled goods, and which may be manufactured at a reasonable cost.

All of the foregoing and still further objects and advantages of this invention will become apparent from a study of the following specification, taken in connection with the accompanying drawing, wherein:

Fig. 1 is a front elevational view, partly in section, with parts broken away, showing a coring device made in accordance with this invention;

Fig. 2 is an exploded and enlarged cross-sectional view of certain portions of the device shown in Figure 1, showing the manner of engagement thereof; and

Fig. 3 is a view similar to Fig. 2, taken along line 3—3 of Fig. 1.

Referring now to Figure 1 of the drawing, a device made in accordance with this invention is shown to include a canister **10** that includes a circular cylindrical side wall **12** which defines a main body portion at the interior thereof. The lower end of the canister is closed by an end wall **14** that is secured thereto, such as by bolts **15**. The upper or opposite end of the canister has a removable closure member **17** associated therewith which includes a thin peripheral flange **18** that is adapted to overlie the exposed upper end **19** of the cylindrical side wall **12**.

A pair of toggle-type blocks **21** are carried at diametrically opposite sides of the main body portion and include pivotally mounted hasps **22** that may be placed in releasable engagement with associated keepers **23** carried by the top surface of the closure **17**, so as to removably maintain the closure in locked engagement with the upper end of the canister. As more clearly shown in Figure 3, the under surface of the peripheral flange **18** is provided with at least one positioning pin **25** that is adapted to be removably received within a similarly shaped recess **24** in the upper edge **19** of the cylindrical side wall **12** so as to properly position the closure **17** relative thereto. A vertically disposed extension rod **26** is removably received at one end within a threaded opening **27** disposed at the center of the closure member **17**. The upper end of the extension rod **26** is provided with a terminal portion **29** of reduced diameter that is adapted to be removably received within a centrally disposed opening **35** in the shoulder or breast plate **36**. This opening **35** is provided with a recess or groove **37** that is adapted to receive a ball detent **33** that is biased into engagement therewith by a small compression spring **32** disposed within a transverse bore **30** in the upper end of the extension rod. This ball detent and recess **37** provide satisfactory means for removably maintaining the breast plate and extension rod in an assembled position while providing for relative rotation therebetween. A resilient pad **39** is secured to the upper end of the breast plate **36** so as to provide a cushion for the operator of the device.

Referring again to Figure 1, it will be seen that the lower integral end wall **14** is provided with a centrally disposed opening **41** that is in communication with the bore **42** in a circular bearing block **44** that is rigidly secured to the end wall, such as by screws **45**. These bores **41**, **42**, are also in communication with the longitudinally extending bore **46** of a tapered coring tube **48** that is threadingly secured at its upper end to the outer end of the circular block **44**. The coring tube, at its lower end, is provided with a series of cutting teeth **50** that are adapted to be thrust into cutting engagement with the material that is to be sampled. A pair of operating handles **52** are rigidly secured to the periphery of the circular block **44** such as by attachment screws **53** that are in threaded engagement with threaded openings **54** disposed at diametrically opposite sides of the bearing block.

In actual use, the resilient pad **39** of the shoulder or breast plate **36** is placed into engagement with the shoulder crotch or breast of the operator who grasps both handles **52** with both hands. The cutting teeth **50** of the coring tube **48** are thrust into engagement with the material, such as baled wool, whereupon the handles are used to rotate the canister **10** about its longitudinal axis in a reciprocating manner. By continuously moving the handles **52** back and forth about the longitudinal axis of the canister, while exerting a constant pressure on the breast plate **36**, the coring tube is adapted to be moved towards the center of the material being sampled. During this movement, a limited quantity of material is received within and carried upwardly through the bore **46** of the coring tube and into the compartment of the canister. After a sample of the material has been gathered, the device is withdrawn from the mass and the removable closure member **17** released from its securing engagement with the upper end of the cylindrical side wall **12**. This provides access to the interior of the canister, whereby the sample of material may be removed. By replacing the the closure **17** and again fastening the toggle lock **21**, the device is ready for the next sampling operation.

It should be understood that the coring tube shown is merely illustrative. Accordingly, the coring tube may be of any suitable or convenient size, either tapered or non-tapered; and the cutting edge thereof may be integral therewith or of replaceable type.

While this invention has been described with particular reference to the specific form shown in the drawing, it is to be understood that such is not to be construed as imparting limitations upon the invention, which is best defined by the claims appended hereto.

We claim:

1. A coring device for obtaining samples from the center of a mass of material including a cylindrical canister closed at one end by an integral end wall and at the other end by a removable closure member, a coring tube associated with said integral end wall having a bore in communication with the interior of said canister, manual pressure transmitting means secured to said removable closure member, and manually operable rotating means connected to said coring tube adapted to reciprocatingly rotate said coring tube.

2. A coring device for obtaining samples from the interior of a mass of material including a cylindrical canister closed at one end by an integral end wall and closed at the other end by a removable closure member, a coring tube associated with said integral end wall having a bore in communication with the interior of said canister, manual pressure transmitting means having a longitudinal extension rod secured at one end to said removable closure member and having an enlarged resilient body engaging member at the opposite end thereof, and manually operable rotating means connected to said coring tube adapted to reciprocatingly rotate said coring tube.

3. A coring device for obtaining samples from the interior of a mass of material including a hollow cylindrical canister closed at one end by an integral end wall and releasably closed at the other end by a removable closure member, a coring tube associated with said integral end wall having a bore in communication with the interior of said canister, manual pressure transmitting means having a longitudinal extension rod concentric with the longitudinal axis of said canister secured

at one end to said removable closure member and having an enlarged resilient body engaging member at the opposite end thereof, and manually operable rotating means secured to said coring tube adapted to reciprocatingly rotate said coring tube, said rotating means comprising a block integrally secured to said end wall having a pair of outwardly extending diametrically opposed handle portions adapted to effect rotation of said block and coring tube together with said canister relative to said body engaging member.

4. A coring device as set forth in claim 3, wherein said removable closure member comprises a centrally disposed portion adapted to be received within said other end of said canister and a peripheral flange adapted to overlie the adjacent portion of said canister, and mutually engageable releasable securing means carried at diametrically opposite sides of said canister and said removable closure member.

5. A coring device as set forth in claim 3, wherein said opposite end of said extension rod comprises a terminal portion of reduced diameter adapted to be rotatably and releasably engaged by said body engaging member.

6. A coring device as set forth in claim 5, wherein said body engaging member includes a circular bore for receiving said terminal portion of said extension rod and having a circular groove disposed therein, and said terminal portion of said extension rod comprising spring biased detent means adapted to be releasably received within said groove.

References Cited in the file of this patent

UNITED STATES PATENTS

632,830	Betzonick	Sept. 12, 1899
2,378,484	Johnston et al.	June 19, 1945
2,492,158	Compte et al.	Dec. 27, 1949
2,666,330	McAndrew	Jan. 19, 1954