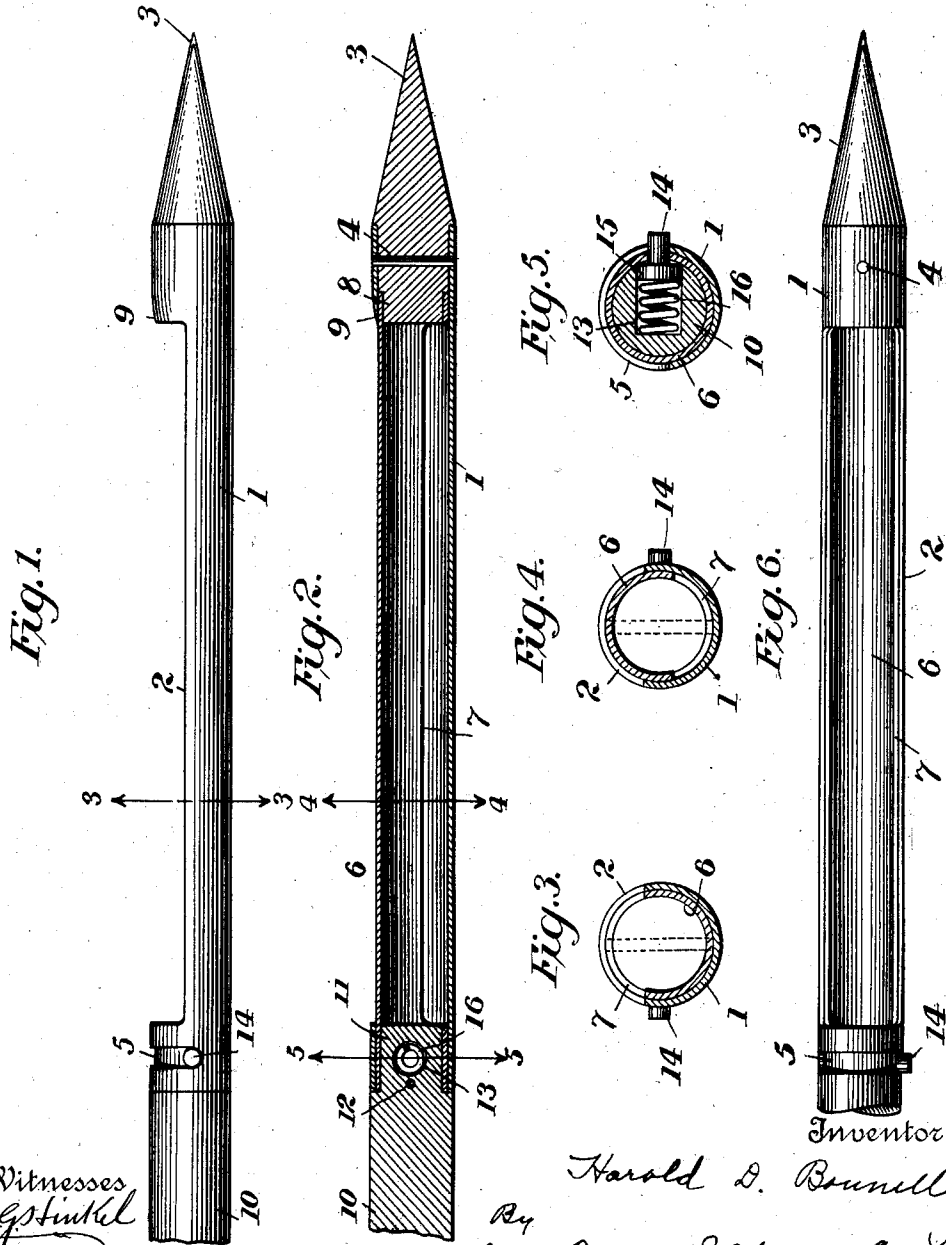


H. D. BONNELL.
 SAMPLER FOR GRANULAR MATERIAL.
 APPLICATION FILED NOV. 6, 1907.

902,049.

Patented Oct. 27, 1908.



Witnesses
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UNITED STATES PATENT OFFICE.

HAROLD D. BONNELL, OF NORFOLK, VIRGINIA.

SAMPLER FOR GRANULAR MATERIAL.

No. 902,049.

Specification of Letters Patent.

Patented Oct. 27, 1908.

Application filed November 6, 1907. Serial No. 401,020.

To all whom it may concern:

Be it known that I, HAROLD D. BONNELL, a citizen of the United States, residing at Norfolk, Norfolk county, State of Virginia, have invented certain new and useful Improvements in Samplers for Granular Material, of which the following is a specification.

My invention relates to a device for obtaining a sample from the interior of a large body of granular material without moving or materially disturbing the main body. Its objects are to simplify the construction of such devices and produce one which will be easily operated, easily taken apart for purposes of cleaning, and one which can be filled and emptied without shaking the device or removing its parts.

In the accompanying drawings: Figure 1 is a side view of the device with the receptacle for the material open; Fig. 2 is a longitudinal section with the receptacle closed; Fig. 3 is a cross section on the line 3—3 of Fig. 1; Fig. 4 is a cross section on the line 4—4 of Fig. 2; Fig. 5 is a cross section on the line 5—5 of Fig. 2; and Fig. 6 is a plan view of the device partly broken away.

My device embodies an outer tube 1, one side of which is cutaway throughout most of its length, constituting a longitudinal slot 2. A piercing point 3 is attached to one end of this tube by means of a cross pin 4, one end of which point is fitted into an inner tube at 8, Fig. 2, but not fastened, so constituting a closure for the end of the inner tube flush with the end of slot 2. The other end of the tube is provided with the circumferential slot 5 which extends about half way around the tube. A tube 6 closely fits the interior of the tube 1 and is rotatably mounted therein. This tube is provided with a longitudinal slot 7 which corresponds in length and shape to the slot 2. A suitable handle 10 has a cylindrical projection 11 fitting within the other end of tube 6 and constituting a closure for that end flush with the end of the slot 7. This handle may be of any suitable length or design to enable the device to be inserted to the proper depth in the material, and it is rigidly fastened to the tube 6 by the pin 12. This handle portion is provided within the end of the tube 6 with a recess 13 in which is placed a pin 14 having a head 15 against which the spring 16

bears. The shank of this pin 14 passes through a hole in the tube 6 and projects into the slot 5 in the tube 1. It therefore normally locks the two tubes together and constitutes with the slot a stop for the relative rotation of the two tubes. By reason of its spring support however it may be depressed below the surface of tube 1 so that tube 6 may be drawn lengthwise from tube 1 for the purpose of cleaning the parts. The outer tube is beveled at 9 to make a smooth joint when the tubes are closed.

In operation the device with the parts in the position shown in Figs. 2 and 4 is inserted in a body of grain or other granular material, by simply pushing the point 3 into it to the proper depth, and then the handle 10 is given a turn of about 180° which brings the slots in the two tubes in register and permits the material to enter the tube. The handle is then rotated to its original position and the device is withdrawn from the material, bringing a sample inside of the two tubes. By making the registering slots in the two tubes correspond and by providing the closures for the inner tube flush with the ends of the slots the material can be easily and quickly discharged by simply inverting the device, since there are no corners or pockets in which the parts of the material can be held.

Having thus described my invention, what I claim and desire to secure by Letters Patent is:

1. In a sampler for granular material, the combination with a tube provided with a longitudinal slot and with a circumferential slot extending part way around it, of a second tube rotatively mounted in the first tube provided with a longitudinal slot, a spring pressed pin mounted in said second tube and adapted to project into the circumferential slot of the first tube, and an extension of the second tube constituting an operating handle.

2. In a sampler for granular material, the combination with a tube provided with a longitudinal slot extending almost its full length and with a circumferential slot extending part way around it near one end, of a second tube rotatively mounted in the first tube provided with a longitudinal slot corresponding to that in the first tube, closures for the

ends of the said second tube flush with the
ends of the slot, and a spring pressed pin be-
yond the end closure of the second tube
adapted to normally enter the circumferen-
5 tial slot of the first tube and adapted to be
depressed below the surface to permit sepa-
ration of the tubes.

In testimony whereof I affix my signature
in presence of two witnesses.

HAROLD D. BONNELL.

Witnesses:

W. H. AYRES,
W. H. GARY.