

1,060,493.

J. N. REED.
SUGAR SAMPLER.
APPLICATION FILED JULY 13, 1912.

Patented Apr. 29, 1913.
2 SHEETS—SHEET 1.

Fig. 1.

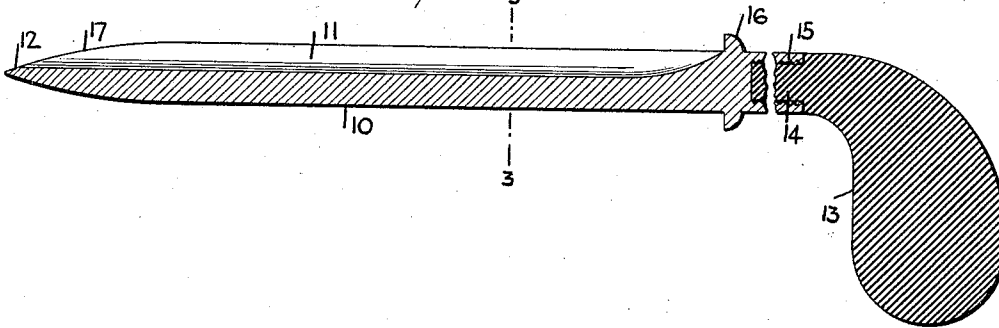


Fig. 2.

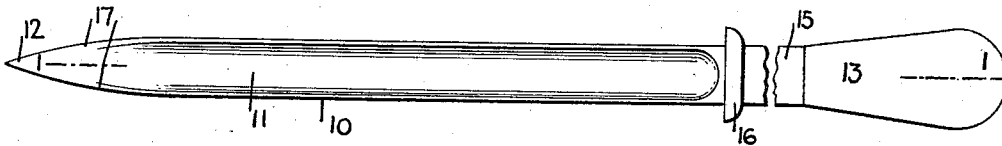
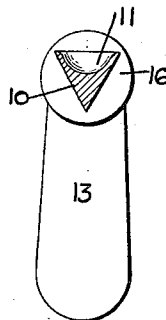


Fig. 3.



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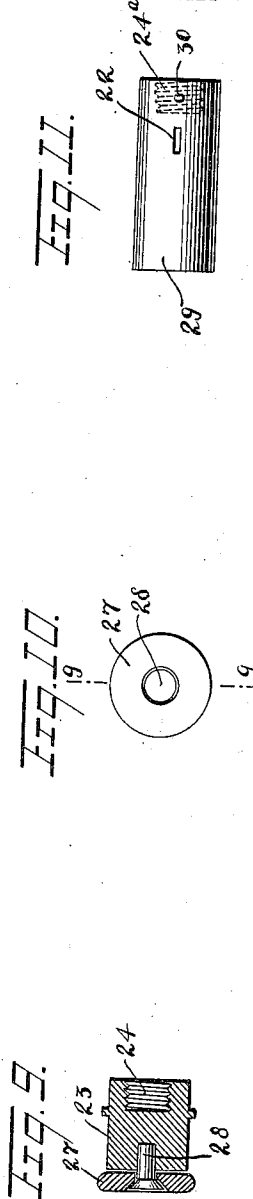
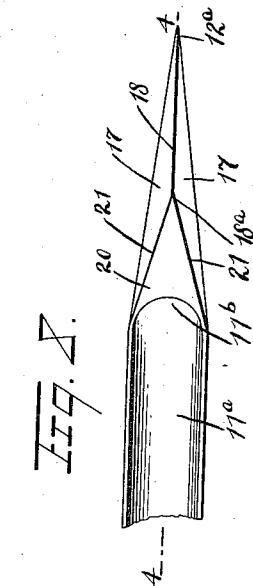
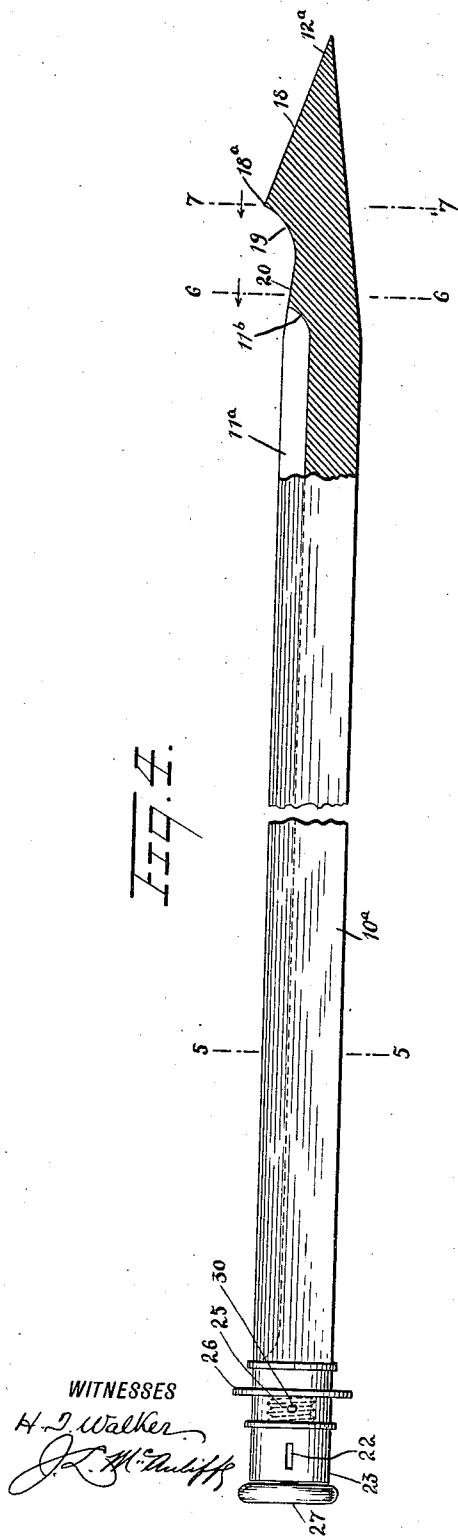
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2 SHEETS—SHEET 2.



INVENTOR
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UNITED STATES PATENT OFFICE.

JOHN NICHOLAS REED, OF CIENFUEGOS, CUBA.

SUGAR-SAMPLER.

1,060,493.

Specification of Letters Patent.

Patented Apr. 29, 1913.

Application filed July 13, 1912. Serial No. 709,206.

To all whom it may concern:

Be it known that I, JOHN NICHOLAS REED, a subject of His Majesty the King of Great Britain and Ireland, and a resident of Cienfuegos, in the Province of Santa Clara and Island of Cuba, have invented a new and Improved Sugar-Sampler, of which the following is a full, clear, and exact description.

My invention relates particularly to samplers or triers to be employed for taking samples of sugar from bags, and it is a design of the invention to provide a sampler of such a form that the device may be entered into sugar bags when the latter are piled up, under which conditions it is exceedingly difficult to cause triers of ordinary form to penetrate the bags of sugar, the pressure resulting from the piling of the bags offering a great resistance to the entrance of the trier.

With my improved device, which is of novel form, the piled bags may readily be penetrated in succession, and successive samples withdrawn.

The invention will be particularly explained in the specific description herein after to be given.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a longitudinal section of a sampler or trier formed in accordance with my invention, the section being taken on about the line 1—1 of Fig. 2; Fig. 2 is a face view of the improved device; Fig. 3 is a cross section on the line 3—3 of Fig. 1; Fig. 4 is a side elevation, partly in section on the line 4—4 of Fig. 8, of a trier illustrating another form of the invention; Figs. 5, 6 and 7 are cross sections on the lines 5—5, 6—6 and 7—7 respectively of Fig. 4; Fig. 8 is a fragmentary plan view of the front end of the trier as shown in Fig. 4; Fig. 9 is a detail sectional view of the detachable rear end of the trier as shown in Fig. 4, the section being taken on about the line 9—9 of Fig. 10; Fig. 10 is a rear end view of the device shown in Fig. 9; and Fig. 11 is a detail view of another form of attachment for the trier to be used in place of that illustrated in Figs. 4, 9 and 10.

In producing a sampler or trier in accordance with my invention, the blade 10, in the

form shown in Figs. 1 to 3, is formed substantially triangular in cross section, and in the upper face thereof, a depression 11 is produced which is desirably concaved transversely, and ranges from a point adjacent to the hilt to a point close to the front end. The said front end of the blade is tapered on the bottom and sides, and the upper side of the tapered front end 12 is approximately on a level with the bottom of the longitudinal depression or groove 11. The hilt of the device comprises a handle 13, which is projected in a downward direction from the blade, and desirably the handle has a forwardly extending tenon 14 of reduced diameter, which fits tightly in a socket 15 of the blade, there being a flange 16 forming a stop at the rear of the groove 11 to limit the forward movement of the blade into the bag of sugar.

The triangular blade, with its tapered and pointed front end 12, may readily be caused to penetrate and enter the bag, notwithstanding the pressure produced by the piled bags, and the gradually widening side edges 17 press apart the threads of the bag without cutting a large hole therein; the sugar packs in the concave depression or groove 11, and upon the withdrawal of the blade from the bag the packed sugar is carried out with the blade.

Referring particularly to Figs. 4 to 10, the blade 10^a is triangular in cross section, for the main part, and formed at its upper side with a concave groove 11^a, similar to the corresponding features in the form first described. At the extreme front end the blade is tapered at the sides and bottom, producing a penetrating point 12^a, the sides 17 of the front end meeting at the center, as at 18, the blade at the center 18 rising from the point 12^a to the apex 18^a. Rearward of the apex 18^a the upper surface of the blade curves downwardly from the said apex, as at 19, the downwardly curved portion merging into a substantially flat surface 20, and which is in front of the forward terminal of the concave groove 11^a, the forward end of which groove curves upward and is rounded transversely as at 11^b.

The described formation increases the penetrability of the blade as the raised apex 18^a acts as a plow and lessens the friction of the remainder of the top surface of the blade against the sugar, and furthermore acts to

prevent the sample from being swept out of the groove upon withdrawing the blade from the bag of sugar. As the blade is advanced into the bag the sugar may find its way into the groove 11^a at the diagonal side edges 21 of the surface 20. I make provision, however, for rocking the blade slightly from side to side after it has penetrated the bag, so as to detach particles of the sugar, should it have become hardened and packed firmly; thus the rear end of the trier is provided with a transverse opening or slot 22, for receiving any convenient tool to act as a lever in rocking the blade. The slot 22 in the form shown in Fig. 4, is formed in a head 23, which is detachable from the said blade, the said head having an internally threaded socket 24 at its forward end, which receives a corresponding threaded projection 25 on the end of the blade in the rear of the guard or collar 26. The rear end of the head 23 carries a revoluble disk 27 secured to the head by a stud 28. With the described device a blow may be given against the disk 27, or any mechanical device having a spindle or the like such as that employed to punch boiler iron may be advanced against the said disk 27, the turning of which disk prevents the blade of the trier from being turned.

In lieu of the detachable head 23, a head 29 may be employed, having an internally threaded socket 24^a, as indicated in dotted lines in Fig. 11, said head 29 being formed with a slot 22 as previously described. The head 29 is elongated and in the form of a solid cylinder, except for the socket and slot, and the trier having this form of head may receive a blow for driving the blade into the bag, or a trier having said head may be shot into the bag from a suitable gun. With either of the heads 23 and 29, I prefer, in addition to the threaded engagement with the end of the blade, to also form the blade with a hole 30, which may receive a pin, it being understood that the projection 25 on the rear end of the blade is also provided with a hole to receive the pin.

It will be noted that the groove for containing the sampler does not extend to the horizontal center but is of a depth less than half the thickness or height of the blade, there being thus a sufficient amount of material below the groove to give the triangular blade the necessary strength, while, at the same time, the advantages of the triangular formation are availed of. It will be seen, also, that the opposite side surfaces diverge in an upward direction and to a line with the top of the groove, thus the groove and diverging side walls provide longitudinal edges at each side of the groove that add to the penetrating powers of the blade. The converging of the side surfaces at the bottom below the median line of the groove

provides the third penetrating edge; the formation, as viewed in cross-section, resulting in the massing of material in the blade between the lower cutting edge and the bottom of the groove where the greatest strength is required. The described formation is with the object of making a blade of sufficient strength to withstand the strains of usage while effective in withdrawing a sample of the necessary size and, at the same time, having increased power of penetration. The triangular cross-section of the sampler greatly increases the efficiency of my device over the ordinary sampler of established contour in that the triangular form presents less frictional surface and presents an additional edge to facilitate the entrance of the blade and disrupt solidified or tightly packed sugar in the bag as the sampler advances. It will be apparent that if the radius of a semicircle be taken to form a triangle of equal size, the former representing the half of the cylindrical member and the latter the triangular one, the triangular formation will present less surface, in addition to providing the third cutting edge, which, with the other edges, merge into the penetrating point.

Having thus described my invention, I claim as new, and desire to secure by Letters Patent:—

1. A sampler or trier for taking samples of sugar or the like, comprising a solid blade approximately triangular in cross section and having a longitudinal depression in the upper side thereof.

2. A trier for taking samples of sugar and the like, comprising a blade approximately triangular in cross section and having a longitudinal groove therein at its upper side, less than half the depth of the blade, the blade beyond the front terminal of the groove being in the form of a pointed head.

3. The herein described sampler or trier for taking samples of sugar from bags in piles, comprising a blade, triangular in cross section, means at the rear of the blade against which force may be exerted to advance the blade, the said blade having a concave groove in the upper side thereof, and a flange at the rear of the groove to constitute a stop, the front end of the blade being tapered to a point.

4. A trier for taking samples of sugar or the like, comprising a blade having a longitudinal groove for holding the sample, a penetrating forward end, and a raised portion between the extreme forward end and the front end of the groove.

5. A trier for taking samples of sugar or the like, comprising a sampling blade, and a rear end portion having a slot to receive a tool whereby to rock the trier with its blade and rear portion bodily from side to side.

6. A trier for taking samples of sugar or

the like, comprising a grooved blade, and a detachable end member having a disk mounted to turn on said member:

5 7. A trier for taking samples of sugar or the like, having a blade presenting a longitudinally grooved upper surface and two side surfaces converging toward a common median edge line at the under side of the blade the blade being solid between the said
10 median edge line and the groove and having side edges rising at the sides of the groove.

8. A trier for taking samples of sugar or the like, comprising a blade approximately triangular in cross-section, having a longi-

tudinal groove in the upper side, the two re- 15
maining sides presenting upwardly diverging exterior surfaces extending to the top of the grooved upper side and the blade below the groove consisting of a solid body converging to an edge below the center line 20
of the groove.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOHN NICHOLAS REED.

Witnesses:

J. L. McAULIFF,

PHILIP D. ROLLHAUS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."