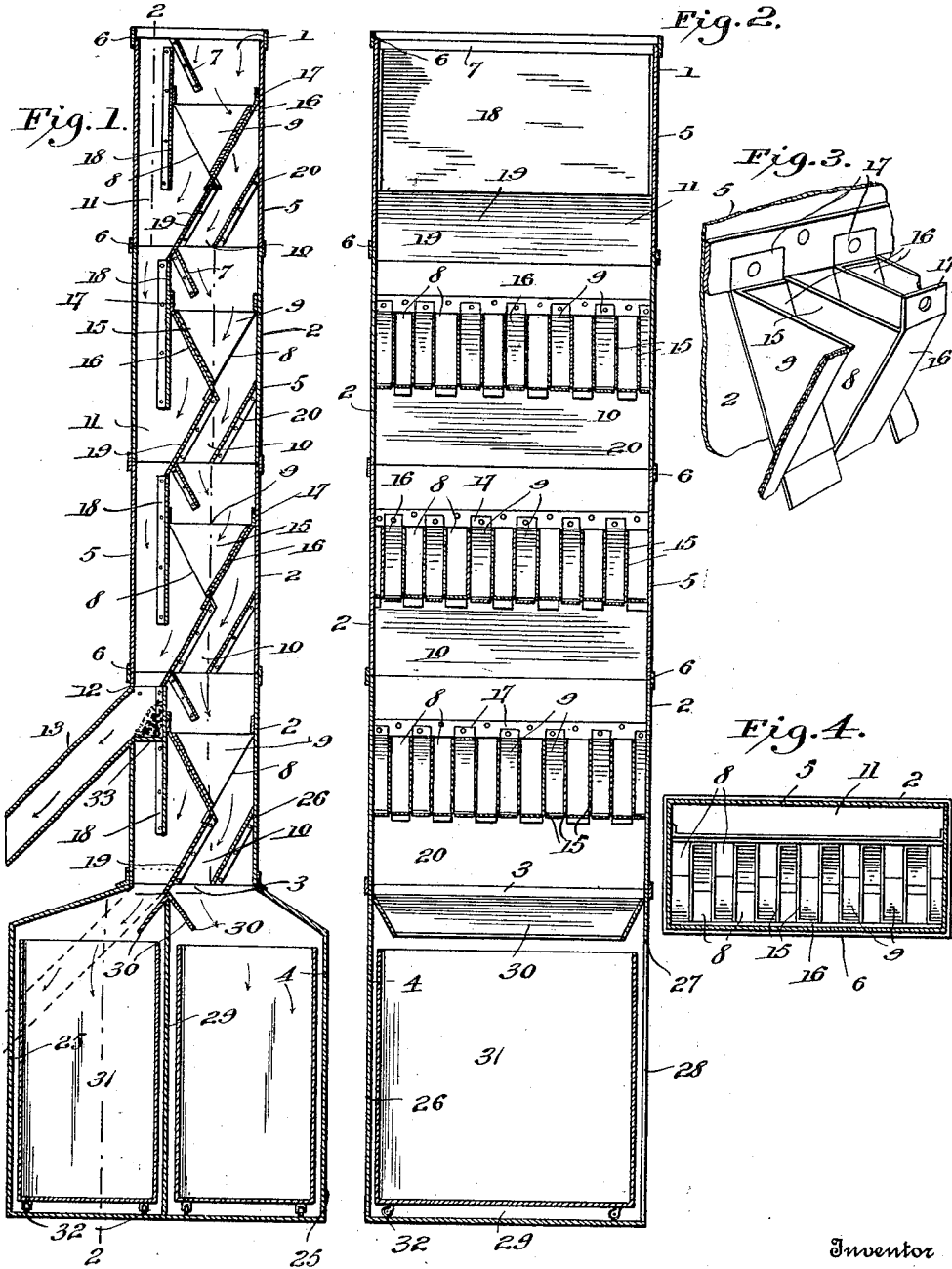


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SAMPLER.

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1,133,933.

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SAMPLER.

1,133,933.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, FRANK J. COLBY, a citizen of the United States of America, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented new and useful Improvements in Samplers, of which the following is a specification.

This invention relates to samplers and particularly to that class employed in metallurgy for extracting samples of an ore, as the same is passed therethrough.

The object of this invention is to provide an efficient and inexpensive device for continuously removing samples from a lot of ore, and of an amount proportional to the quantity of ore run through the same.

Another object is to provide a self-operating device having no moving parts, and one which can be regulated so as to extract a greater or less amount of ore as representative of the quality of the entire lot; also, one in which the continuously flowing sample changes immediately and exactly in accordance with any change in the material under test.

A still further object is to provide such a device composed of a multiplicity of interchangeable, removable sections each adapted to extract one-half of the total amount of ore passed therethrough.

A still further object is to provide a sampler in which the ore is divided during the passage through the same.

Further objects and advantages of the device are fully brought out in the following specification, when read in conjunction with the accompanying drawings, in which:—

Figure 1 is a vertical transverse section of the preferred embodiment of the invention; Fig. 2 is a vertical sectional view on the line 2—2 of Fig. 1. Fig. 3 is a detail perspective view of the hopper device; and Fig. 4 is a horizontal sectional view.

Referring to the drawing, the preferred embodiment of the invention comprises a top or intake section 1, any desired number of intermediate sections 2, an outlet section 3, and a sample-receiving section 4.

The intake section 1 and intermediate sections 2 comprise walls 5, surmounted by a peripheral flange 6, adapted to receive a superimposed section thereupon. The ore to be sampled is poured into the top section 1 and particularly against the transversely extending member 7, which is adapted to

deflect a portion of said ore into the alternately positioned outlets 8 of the hopper like member 9, that some of the ore may pass into the channel 10, while the remainder passes through the sections 11 to the outlet 12 and delivery chute 13 connected therewith.

The member 9 comprises alternately folded elements, having triangular sides 15, bounded by coöperating portions 16 of said sides, said portions 16 having extensions 17 for the purpose of securing the separating hopper as a whole to one of the side walls 5 and to a vertical transversely extending partition 18. The channel 10 is bounded by two of the walls 5, a slanting wall 19 and a second slanting, deflecting wall 20, said wall 19 forming a continuation of the co-operating portions 16 of said hopper.

The sample-receiving section 4 comprises side walls 25, a rear wall 26, a front wall 27, having an opening 28, the interior of said section being divided by a partition 29, which is capped with a double deflecting member 30, which acts to direct ore coming through channels 10 and 11 into the respective cars 31, supported by anti-friction members 32. The outlet section 3 differs from the intermediate sections 2 only in having its passage-way or channel 11 closed by a partition 33, which extends outwardly through the adjacent side wall 5 and forms the under side of the delivery chute 13, registering with the opening 12 in said side wall.

In the operation of this device, the regular run of ore is fed into the hopper-like member 9, from which a portion passes through the open sides of the alternately folded elements thereof, channels 11 and thence through the chute 13 into a receiver. Approximately one-half of the original ore, however, passes through the openings in the hopper member intermediate these openings just mentioned, channel 10, and thence into the first intermediate section, whence approximately one-half passes into the next intermediate section, the edges 15 thereof being positioned directly under the openings 8 in the hopper 9 above so that the ore will thus pass through a dividing process, said edges 15 acting in the capacity of knives, while the remainder passes through the channel 11 and out through the chute 13, each section extracting about one-half of the ore fed into it, until all of that which

passes into the hopper of the outlet section 3 is divided between the two sample receiving cars, or other suitable members 31.

As before indicated, any desired number of intermediate sections may be employed, and in fact many modifications in the exact details of the device may be made without departing from the spirit of the invention or the scope of the appended claims.

10 I claim:—

1. A sampler comprising a superimposed series of removable sections, each comprising converging walls, having staggered apertures therein, a series of parallel transversely extending partitions between the oppositely situated edge portions of said apertures, and a passage-way past one of said walls.

2. A sampler comprising a superimposed series of removable sections, each comprising converging walls, having staggered apertures, therein, and a passage-way past one of said walls, one of said walls being extended to deflect material, having fallen through the apertures in the other wall, into the passage-way of the section immediately below.

3. A sampler comprising a superimposed series of removable sections, each comprising converging walls, having staggered

apertures therein, and a passage-way past one of said walls, one of said walls being extended to deflect material, having fallen through the apertures in the other wall, into the passage-way of the section immediately below, and a wall to deflect material, having fallen through the apertures in the first wall, against the opposed wall in the section immediately below.

4. A sampler comprising a superimposed series of removable sections, each comprising converging walls, having staggered apertures therein, and a passage-way past one of said walls, one of said walls being extended to deflect material, having fallen through the apertures in the other wall, into the passage-way of the section immediately below, and a wall to deflect material having fallen through the apertures in the first wall, against the opposed wall in the section immediately below, an outlet from said passage-way, and a section to receive the material passed through the last of said first-named sections.

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

FRANK J. COLBY.

Witnesses:

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J. STUART FREEMAN.

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