



# UNITED STATES PATENT OFFICE.

EVANS W. BUSKETT, OF COFFEYVILLE, KANSAS.

## MULTIPLE RIFFLE-SAMPLER.

No. 841,928.

Specification of Letters Patent.

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*To all whom it may concern:*

Be it known that I, EVANS W. BUSKETT, a citizen of the United States, residing at Coffeyville, in the county of Montgomery and State of Kansas, have invented certain new and useful Improvements in Multiple Riffle-Samplers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to certain new and useful improvements in riffle-samplers; and the object of the invention is to produce an apparatus of this character for securing samples of ore for assaying or other purposes; and it comprises, essentially, an inclined rack having three or more series of riffles so arranged that a quantity of ore may be subdivided into equal parts of various predetermined quantities. For instance, a quantity of ore being deposited in one series of riffles would be subdivided so as to secure one-eighth of the quantity in a sampling-pan. In another series of riffles one-fourth of the sample may be saved. In a third series one-half of the sample may be conducted into the sample-receptacle, &c.

The invention comprises various details of construction, combinations, and arrangement of parts, all as will be more fully herein-after described, shown in the accompanying drawings, and then specifically defined in the appended claims.

The invention is clearly illustrated in the accompanying drawings, which, with the letters of reference marked thereon, form a part of this specification, and in which—

Figure 1 is a perspective view of my improved riffle-sampler. Fig. 2 is a section taken upon the line 2 2 of Fig. 1.

Reference now being had to the details of the drawings by letter, A designates the legs of the apparatus supporting the frame  $A^2$ , to which the riffle-frame  $A^3$  is hinged, as at  $A^4$ , to hold the same securely in place. The forward legs are shorter than the rear, in order that the sampler may have an inclination of substantially forty-five degrees, whereby the ore which is deposited in the same may be readily gravitated down the inclinations and into the sample-receiving receptacle.

B designates a hopper which is mounted

underneath the rack which forms the top of the apparatus and into which the discarded ore is adapted to fall through the openings in the bottom of the riffles.

In the drawings I have illustrated three series of riffles, (designated, respectively, by the letters C, D, and F.) The three series of riffles are surrounded on their sides and top by a flange, and C' designates the vertical partition forming the series of riffles adapted to receive the ore which is to be subdivided, so that one-eighth of the quantity may be deposited in the sample-containing receptacle or pan  $A^2$ .

D' designates vertically-disposed partitions alternately arranged in the inclined partitions  $D^2$ , the lower ends of the said partitions  $D^2$  being continuous with the partitions C', which partitions D' are in alignment with the longitudinal middle portion of one of the troughs or riffles of the series C. The space at the right of each partition D' has an opening  $D^2$  adjacent thereto, whereby as the ore which is deposited in the various riffles C is divided into equal parts by the partitions D' one-half of the ore falls through the opening  $D^2$ , while the other half passes over the bottoms  $D^3$  intermediate the vertical partitions D' and the inclined partitions  $D^2$ . The ore which passes down upon the bottom of the spaces intermediate the partitions D' and  $D^2$  is further subdivided into equal quantities by the vertical partitions  $D^4$  in the lower row of riffles.

It will be noted that the vertical partitions  $D^4$  are disposed in such manner that they will divide the ore equally, one-half of the ore which is divided by the partitions  $D^4$  passing down the bottoms  $D^3$  into the sampling-pan beneath, while the other halves of the quantities divided by the partitions  $D^4$  pass through the openings  $D^5$ , which openings alternate with the bottoms  $D^3$ , and the ore passing through the same is directed by the hopper into the receptacle B'. In a similar manner when the ore is poured into the series of riffles D one-half passes through the openings intermediate the inclined or vertical partitions, being subdivided by the partitions  $D^4$ . The one-half quantities which fall down the inclined bottoms  $D^3$  are subdivided into equal parts by the vertical partition  $D^4$ , thereby saving one-fourth of the sample, while three-fourths escape through the openings intermediate the inclined and vertical partitions and the openings  $D^5$ . By

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pouring the ore upon the lower series F of the riffles it will be noted that one-half of the sample is saved, while the other half is discarded and falling through the openings  
 5 D' is directed by the hopper into the receptacle.

It will be observed that the alternate partitions D<sup>2</sup> in the series of riffles D are inclined in order to divide the space equally,  
 10 and that in the third series of riffles F it is necessary to have one-fourth of the riffles upon the left and three-fourths upon the right end of the series in order to divide the space equally. Said small riffle of one-third  
 15 the size of the others is used only when cutting the samples upon the third series F and does not effect the operation of the upper series of riffles. It will be noted also that there are partitions h positioned between alternate troughs or riffles in the series F,  
 20 which are provided for the purpose of dividing the discarded ore from the riffle before falling into the sample pan or receptacle A<sup>2</sup>. Suitable wires N extend across the front of  
 25 the riffle-sampler and are fastened to the upper edges of the vertical and inclined walls of the riffles, thus securely bracing the same.

By the provision of the apparatus shown and described a multiple riffle-sampler is afforded whereby one-half, one-fourth, one-  
 30 eighth, or any other multiple of the quantity of ore may be separated into sample-pans for assaying or other purposes.

What I claim is—

35 1. A multiple riffle-sampler, comprising a frame set at an inclination, a series of riffles

at the upper part of the frame alternating with openings, whereby the ore may be divided into equal parts, a second series of riffles beneath the first-mentioned series and  
 40 adapted to equally subdivide the samples from the first series and a third series of riffles beneath the second series designated to further subdivide the samples from the second series into equal parts, the alternate partitions in said second series being at inclina-  
 45 tions and overhanging spaces intermediate the second series of riffles, as set forth.

2. A multiple riffle-sampler, comprising a frame set at an inclination, a series of riffles  
 50 at the upper part of the frame alternating with openings, whereby the ore may be divided into equal parts, a second series of riffles beneath the first-mentioned series and adapted to equally subdivide the samples  
 55 from the first series and a third series of riffles beneath the second series designated to further subdivide the samples from the second series into equal parts, the alternate partitions in said second series being at inclina-  
 60 tions and overhanging spaces intermediate the second series of riffles, partitions across the spaces between the partitions in the third series of riffles and dividing the openings between the same, as set forth. 65

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

EVANS W. BUSKETT.

Witnesses:

E. S. GREGG,  
 WM. F. GORDON.