

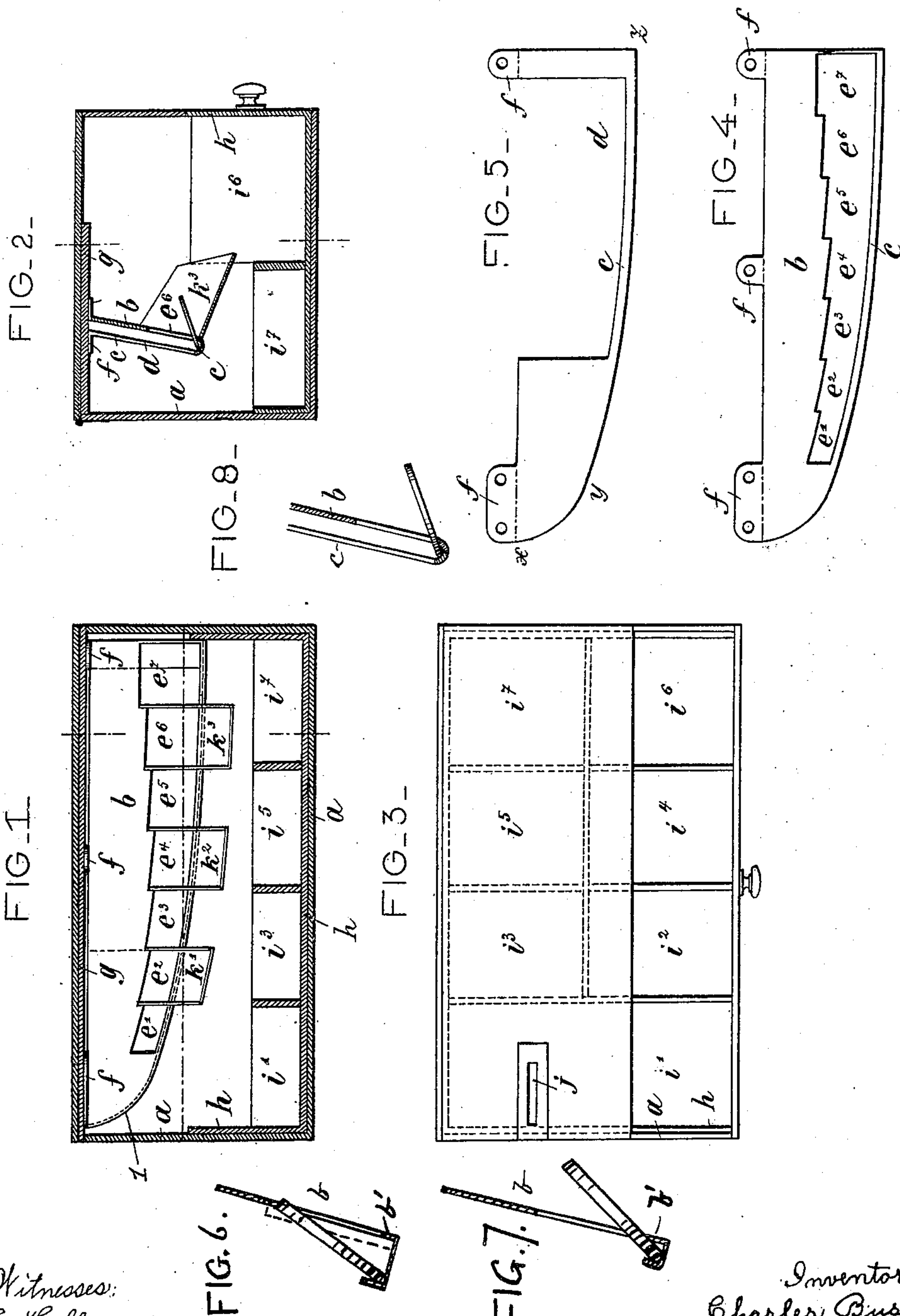
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Patented Jan. 16, 1900.

C. BUSCH.  
SORTING APPARATUS FOR COINS.

(Application filed Mar. 10, 1899.)

(No Model.)



Witnesses:  
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# UNITED STATES PATENT OFFICE.

CHARLES BUSCH, OF PARIS, FRANCE.

## SORTING APPARATUS FOR COINS.

SPECIFICATION forming part of Letters Patent No. 641,496, dated January 16, 1900.

Application filed March 10, 1899. Serial No. 708,587. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES BUSCH, technologist, of 30 Rue Bergerè, Paris, in the Republic of France, have invented certain new and useful Improvements in Sorting Apparatus, of which the following is a specification.

My invention relates to an improved apparatus by which I am able, without any mechanism, to sort round or nearly-round objects—such, for example, as pieces of money.

My apparatus is illustrated in the accompanying drawings, in which—

Figure 1 is a section on the section-line shown in Fig. 2. Fig. 2 is a section on the section-line shown in Fig. 1. Fig. 3 is a plan view, the top cover being omitted. Fig. 4 is a side view of the front wall of the sorter-passage. Fig. 5 is a like view of the rear wall of said passage. Figs. 6 and 7 are vertical transverse sections of two front walls of an old form of passage. Fig. 8 is a like view of my improved passage with front and rear walls and transversely-curved bottom.

I provide a passage or channel *l*, curved or inclined longitudinally, as shown in Fig. 1, and also inclined transversely, as shown in Figs. 2 and 8. The channel has an inlet *j* large enough to admit the largest objects to be sorted. Preferably the channel is made of a front or under inclined wall *b* and a rear or upper wall *c*, having lugs *f*, by means of which the sides are secured to the top *g* of box *a* just below the cover. In Figs. 4 and 5 lugs *f* are shown before being bent at right angles to the channel sides. Walls *b c* are parallel with each other, and wall *b* has an opening increasing in width, preferably by distinct steps differing in height in accordance with the different sizes or diameter of the objects to be sorted, as indicated at *e' e<sup>2</sup> e<sup>3</sup> e<sup>4</sup> e<sup>5</sup> e<sup>6</sup> e<sup>7</sup>*. This opening does not extend quite to the bottom of side *b*, but leaves a narrow flange *b'*, which forms one side of the transversely-curved bottom or gutter in which the objects to be sorted roll. Longitudinally the gutter curves or inclines downward from inlet *j*. Preferably the pitch is greatest near the inlet end, as between *x* and *y*, and diminishes between *y* and *z*, so that the larger objects will not descend too rapidly, but the objects will issue at about the same speed from all of the parts of the openings *e' e<sup>2</sup>*, &c.

Wall *c* has a opening *d* extending nearly the length of the opening in wall *b*.

By cutting away the rear wall forming opening *d*, extending downward to the center of the gutter, the coins will be free to fall through openings *e'*, &c., without danger of being caught in a manner similar to that shown in Fig. 7, as they might be were opening *d* not provided. In Figs. 6 and 7 wall *b* is shown extended and bent to form a rectangular inclined bottom or gutter of the channel as heretofore used.

It will be seen that with gutters having the form of bottom shown in Figs. 6 and 7 there is danger, if the gutter be too wide, of the coins or objects rolling down taking too great an inclination, as in Fig. 6, and dropping out through the side opening where it is of less width than that intended for the coins to issue from. On the other hand, if the gutter be a trifle too narrow in said old form, as indicated in Fig. 7, the coin may be caught and held, as shown. My transversely-curved gutter compels the coin to take a slightly-inclined position in relation to wall *b* by carrying the bottom of the coin to the center of the gutter and steadies the coin. In rolling down the coin will maintain the same inclination and the top of the coin only will be in contact with wall *b*, and the coin will issue from the opening where it is of proper height. The gutter in a coin-sorter may be about one-fifth of an inch wide and about one-tenth of an inch deep. The channel therefore is somewhat wider than the thickness of the coins or objects sorted. The distance between the center of the tread or bottom of the gutter and the upper stepped edge of the opening in wall *b* at any point should equal the diameter of the coin intended to issue at that point plus a trifle sufficient to allow the coins to tip. I have shown the opening in wall *b* as continuous, the upper edge being stepped; but it is not essential that the open parts of different heights communicate with each other.

In box *a* is a drawer *h*, divided into two rows of compartments *i' i<sup>2</sup> i<sup>4</sup> i<sup>6</sup>* and *i<sup>3</sup> i<sup>5</sup> i<sup>7</sup>*. In order to be able to use larger compartments than would otherwise be practicable, alternate openings *e' e<sup>3</sup> e<sup>5</sup> e<sup>7</sup>* communicate with the compartments of one row, and openings *e<sup>2</sup> e<sup>4</sup>*



$e^6$  communicate by chutes  $k'$   $k^2$   $k^3$  with the compartments of the other row.

I claim—

1. In a sorting apparatus, a longitudinally  
5 and transversely inclined channel having a  
transversely-curved bottom along which ob-  
jects to be sorted roll and an under wall  $b$   
having an opening increasing in width from  
the inlet end, through which objects fall at  
10 points of corresponding width.

2. In a sorting apparatus, a longitudinally  
and transversely inclined channel having a  
transversely-curved bottom along which ob-  
jects to be sorted roll and an under wall  $b$   
15 having an opening increasing in width by  
steps from the inlet end, through which ob-  
jects fall at points of corresponding width,  
in combination with several separate compart-  
ments in two rows, the sections or steps of  
20 the opening in wall  $b$  communicating alter-  
nately with compartments of said rows.

3. A longitudinally and transversely in-  
clined chute or channel for sorting apparatus  
having a quick descent near the inlet end and  
a decreasing descent or inclination toward the 25  
lower end, having a transversely-curved bot-  
tom, the under wall  $b$  of the channel having  
an opening of comparatively small width  
near the inlet end and increasing in width  
toward the other end. 30

4. A chute or channel for sorting appara-  
tus having in combination a wall  $b$  with open-  
ing of increasing width and a wall  $c$  with  
opening  $d$  opposite the opening in wall  $b$ , said  
walls together forming a transversely-curved 35  
bottom or gutter.

Signed at Paris, France, this 28th day of  
February, 1899.

CHARLES BUSCH.

Witnesses:

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