

(No Model.)

2 Sheets—Sheet 1.

S. HEIM.
COUNTING MACHINE.

No. 530,224.

Patented Dec. 4, 1894.

Fig. 1

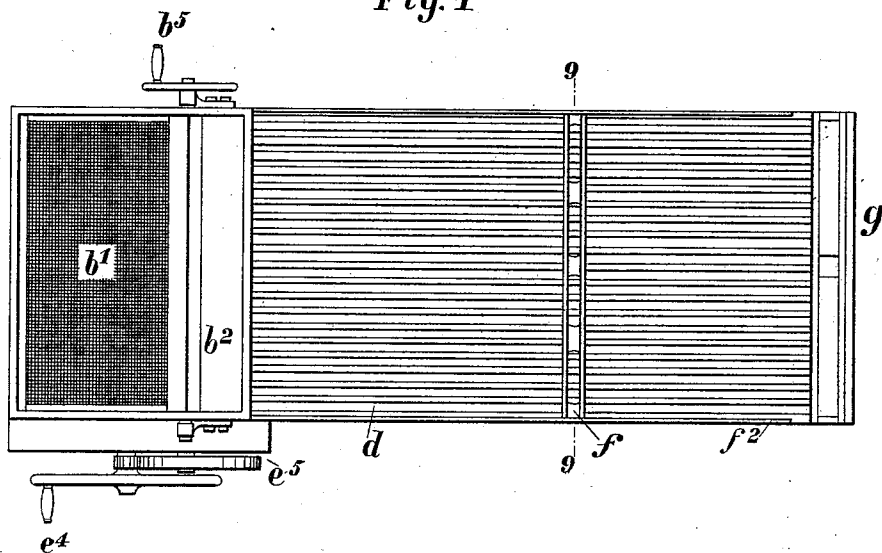
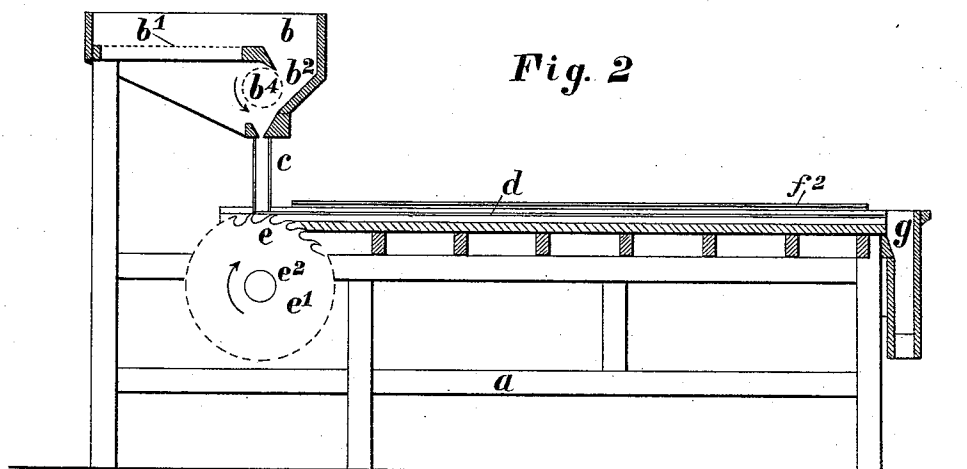


Fig. 2



WITNESSES:

W. Hermann & Co.
K. M. Gilligan.

INVENTOR

Sebastian Heim

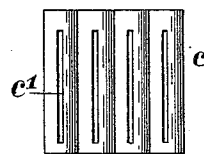
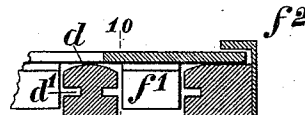
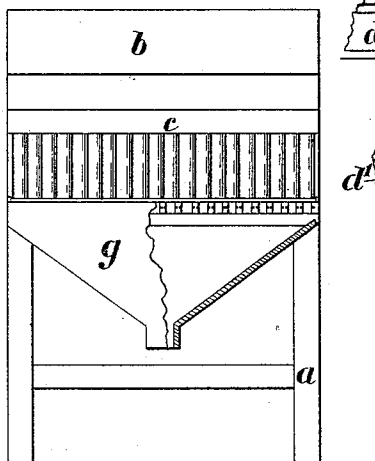
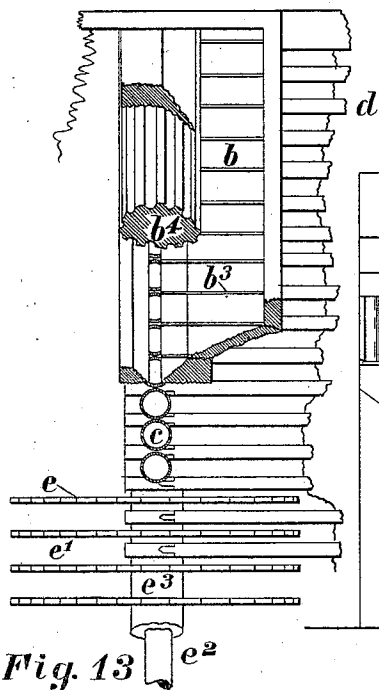
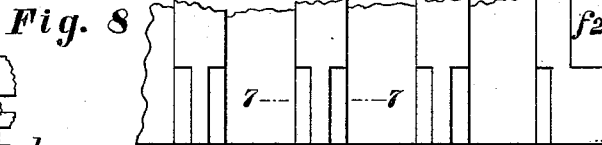
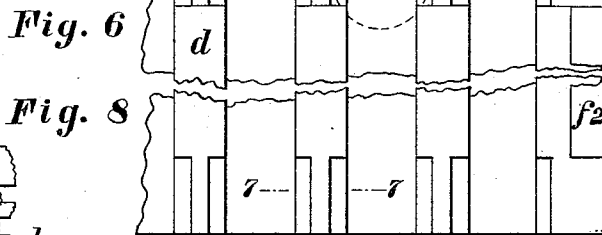
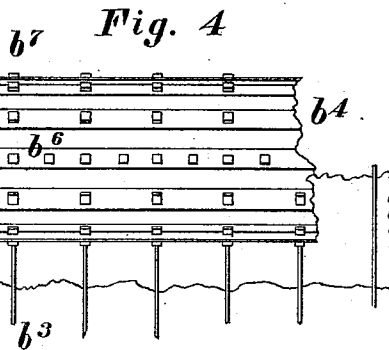
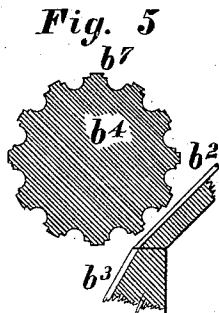
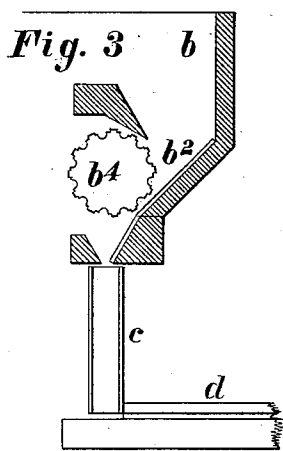
BY

Augustus B. Stoughton
ATTORNEY

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ATTORNEY

UNITED STATES PATENT OFFICE.

SEBASTIAN HEIM, OF PHILADELPHIA, PENNSYLVANIA.

COUNTING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 530,224, dated December 4, 1894.

Application filed July 9, 1894. Serial No. 516,888. (No model.)

To all whom it may concern:

Be it known that I, SEBASTIAN HEIM, a citizen of the United States, residing at the city of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Counting-Machines, of which the following is a specification.

The principal objects of my present invention are, first, to provide an efficient, reliable, simple and comparatively inexpensive machine for rapidly and accurately counting coins and the like; second, to feed coins and the like uniformly and without jamming or sticking, and, third, to provide for the accurate distribution of a definite number of coins or the like.

My invention consists of the counting machine hereinafter described and claimed, and its nature, characteristic features and scope will be more fully understood from the following description taken in connection with the accompanying drawings forming part hereof, and in which—

Figure 1, is a top or plan view of the machine. Fig. 2, is a view illustrating a central section of the same. Fig. 3, is a sectional view drawn to an enlarged scale and illustrating portions of the hopper and its accessories shown in Fig. 1. Fig. 4, is a detached view illustrating devices for feeding the coins. Fig. 5, is a sectional view of Fig. 4. Fig. 6, is a top or plan view illustrating the entrances of the runs into which the coins are delivered. Fig. 7, is a sectional view taken on the line 7—7, of Fig. 8. Fig. 8, is a top or plan view illustrating the exits of the runs. Fig. 9, is a sectional view taken on the line 9—9, of Fig. 1, and drawn to an enlarged scale. Fig. 10, is a sectional view taken on the line 10—10, of Fig. 9. Fig. 11, is an end view of the machine taken from the right-hand side of Sheet 1. Fig. 12, is a view of the tubes taken from the back of the machine, and Fig. 13, is a sectional view taken upon different horizontal planes in order to illustrate the various parts of the machine.

In the drawings *a*, is a frame-work of any suitable construction that serves to support the various parts of the apparatus.

b, is a hopper adapted for the reception of coins or the like, which are to be counted and

for delivering them, in the machine illustrated, to a series of tubes or conveyers *c*; for purposes to be hereinafter explained. As shown in the drawings, this hopper is provided with a sieve or the like *b'*, upon which the coins to be counted are shoveled or otherwise deposited and through which dirt, dust or extraneous matter may fall. The coins or the like are pushed or permitted to fall into the throat *b²*, of the hopper. Near the throat *b²*, is provided a series of baffling pins, studs or projections that travel in a direction opposed to the travel of the coins, and thus prevent them from jamming or piling upon each other and also insure their proper delivery from the hopper.

Referring now to the drawings and more particularly to Figs. 3, 4 and 5, thereof, *b³*, are rails or ribs formed on or applied to the throat *b²*, of the hopper and disposed intermediate of the tubes *c*, in order to guide coins or the like into the latter.

The above mentioned baffling pins, studs or projections are mounted upon the corrugated periphery of a roller *b⁴*, ranging transversely of the hopper *b*, and disposed in proximity with its throat. *b⁵*, Fig. 1, is an operating handle by means of which the roller *b⁴*, may be turned, for example, in the direction indicated by the arrow in Fig. 2, in order to cause the pins, studs or projections to travel in a direction opposed to the direction of the travel of the coins or the like.

As shown in the drawings, one series *b⁷*, of pins, studs or projections are disposed in alignment with each of the rails *b³*, and serve to direct the coins or the like between the rails, so that they are guided thereby into the respective tubes *c*. The other series *b⁶*, of pins, studs or projections are or may be less numerous and are disposed opposite the interval between the rails *b³*, and serve to separate coins and the like and thus prevent them from jamming or piling upon each other at and near the entrance of the tubes *c*. The coins or the like after leaving the hopper are guided into the runs, in the present instance by traversing the tubes *c*, which are provided at their rear portions with slots *c'*, Fig. 12, through which a pointed instrument may be inserted in order to release the coins or the like if they should happen to become jammed

or otherwise misplaced therein. From the tubes *c*, or their equivalent, the coins fall in a horizontal position at the entrance of the runs *d*, as is indicated by dotted lines in Fig. 1.

6. As shown in the drawings, these runs *d*, comprise strips or bars grooved, slotted or rabbeted as at *d'*, Fig. 9, in order to receive coins and the like and prevent their upward displacement. At the entrance to the runs, the upper portions of the strips or bars are cut away and their shanks are or may be pointed as shown in Fig. 6, in order to facilitate the entrance of coins and the like. At their other ends or exits, the tops or heads of the strips or bars are cut away for a short distance as shown in Figs. 7 and 8, for purposes to be hereinafter described. As the coins and the like rest at the entrance of the runs, as shown by dotted lines in Fig. 6, they are impelled forward and caused to traverse the grooved, slotted or rabbeted portions *d'*, by means of fingers *e*, that work between the strips or bars. As shown in the drawings, these fingers *e*, are applied to the peripheries of disks *e'*, mounted upon a shaft *e²*, and properly spaced from each other by means of washers *e³*.

e⁴, is an operating handle by means of which the shaft *e²*, may be rotated in the direction indicated by the arrow in Fig. 2, through the intervention of suitable gearing *e⁵*, Fig. 1. In this connection it may be remarked that the handles *e⁴* and *b⁵* may be dispensed with and the machine driven through the intervention of belts or other power transmitting devices. Obviously, as the coins and the like are pushed forward by the fingers through the runs, other coins descend and are similarly pushed forward, so that by properly proportioning the length of the table of runs, it is possible to cause it, when full, to contain any required number of coins and the like. For example, where use is made of twenty runs, as shown in the drawings, and each run is adapted to contain fifty silver dollars, the whole table when full contains one thousand dollars; although it must be borne in mind that my invention is not limited to a machine for counting any number of articles or of counting dollars, because it may obviously be adapted to count other articles and coins of other denominations.

In order to facilitate the counting operation, use may be made of a slider or traveler *f*, provided with depending wings *f'*, Figs. 9 and 10, adapted to slide between the runs and pass between succeeding coins and the like. These sliders or travelers are adapted to ways *f²*, which prevent their upward displacement and which are cut away at the ends of the machine, as shown in Figs. 6 and 8, in order to permit the slider to be inserted and removed at these points. If the table of runs has been filled with coins or the like, the subsequent operation of the machine causes such coins and the like to be fed or forced forward toward the right in

Fig. 1, and they may be collected, for example, by means of a spout *g*, into a bag or other suitable receptacle, not shown.

The mode of operation of the hereinabove described apparatus is as follows: Coins and the like are placed in the hopper *b*. The pins, studs or projections are caused to travel in a direction opposed to the direction of travel of the coins, for example, by the rotation of the operating handle *b⁵*, as indicated by the arrow in Fig. 2, with the result that dirt and extraneous matter falls through the sieve *b'*, and is removed and with the result that coins are delivered at the entrance of each of the runs *d*, as indicated by dotted lines in Fig. 6, it being understood that, if necessary, the coins are prevented from jamming in the tubes or deliverers *c*, by means of any suitable instrument that may be inserted through the apertures or slots *c'*. The fingers *e*, are then caused to push the coins or the like forward into the runs, for example, by the rotation of the operating handle *e⁴*, and this operation is continued until the table of runs is full of coins and the like of which fact a memorandum or record is kept. If for any reason it should happen that one or more of the runs is not entirely full of coins, this fact will be obvious to the inspector or the operator-in-charge, who may then fill up the empty runs by inserting additional coins at the right hand end of the machine, Fig. 8. As soon as the table of runs is full of coins, the slider or traveler *f*, is or may be placed at the left hand end of the table of runs with its wings *f'*, depending in the rear of the coins last counted. The subsequent operation of the machine causes the counted coins to be delivered from the exits or right-hand ends of the runs where they may be collected in any suitable manner, for example, by means of the spout *g*, and delivered into a bag or other receptacle. As additional coins are supplied to the runs, the traveler or slider *f*, is pushed toward the right-hand end of the machine and when it reaches the extreme right-hand end thereof, it serves to indicate that an additional or second count has been completed and it may be readily removed, as shown in Fig. 8, for subsequent use.

It will be obvious to those skilled in the art to which my invention appertains, that modifications may be made in detail without departing from the spirit thereof. Hence I do not limit myself to the precise construction and arrangement of parts hereinabove set forth and illustrated in the accompanying drawings, but

Having thus described the nature and objects of my present invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A counting machine comprising, a table consisting of parallel rails or bars horizontally grooved, slotted or rabbeted for supporting coins and the like, and rotating feed-fingers extending and working intermediate

of said rails or bars for pushing the coins forward, substantially as described.

2. A counting machine comprising, a table consisting of a series of parallel rails or bars horizontally grooved, slotted or rabbeted at their edges and adapted to support the coins, devices fixed in respect to the table for delivering coins and the like to said grooves and between said rails or bars, and fingers working and extending in the spaces between the rails or bars for feeding the coins and the like, substantially as described.

3. A counting machine comprising, a series of parallel grooved bars having spaces between them and adapted to support coins and the like, a hopper and tubes for delivering coins and the like in such manner that they extend across the spaces between said rails and are supported horizontally by said grooves, and fingers extending through the spaces between said rails for feeding the coins and the like, substantially as described.

4. The combination in a counting machine of, a series of parallel horizontally grooved bars having spaces between them, and a revoluble shaft provided with fingers working in the spaces intermediate of said bars, substantially as described.

5. In a counting machine, a hopper provided with a series of tubes, rails applied to the throat of the hopper and disposed intermediate of the tubes, and a roller provided with pins, studs or projections disposed in alignment with the rails, substantially as described.

6. In a counting machine, a hopper provided with a series of tubes, rails applied to the throat of the hopper and disposed intermediate of the tubes, and a roller provided with two series of pins whereof the pins of one series are disposed in alignment with the respective rails and serve to direct coins between them and to the tubes and whereof the pins of the other series are less in number and are disposed opposite the interval between the rails, substantially as described.

7. In combination, a series of parallel strips or bars having spaces or intervals between them and having their respective edges rab-

beted, grooved or slotted and cut away at their upper flanges to permit coins to be dropped onto their lower flanges, and fingers extending through and working in the intervals between said bars, substantially as described.

8. In a counting machine, a table of runs comprising, bars rabbeted, grooved or slotted at their respective edges and having the upper portions thereof cut away and having the remaining portions pointed to guide the coins, substantially as described.

9. The combination in a counting machine of, a table of runs, means for feeding coins and the like in and through each of said runs, and a slider or traveler extending across said table and adapted to engage the coins and the like of each run and to be fed forward thereby, substantially as described.

10. The combination in a counting machine of, a table of runs, means for feeding coins in respect to said runs, a slider or traveler having depending wings engaged by the coins of each run, and ways adapted to said slider or traveler and having portions thereof cut away, substantially as described.

11. The combination in a counting machine of, a table of runs having portions thereof cut away to constitute entrances, a series of fixed tubes for delivering coins and the like to said entrances, and fingers carried by a revoluble shaft for feeding said coins in respect to the runs, substantially as described.

12. A counting machine comprising the combination of, a series of strips or bars rabbeted, grooved or slotted for the reception of coins or the like and cut away for the passage of the same; a hopper provided with co-operating baffling pins, studs or projections, rails or ribs, and tubes or deliverers; and fingers for feeding the coins or the like, substantially as described.

In testimony whereof I have hereunto signed my name.

SEBASTIAN HEIM.

In presence of—

A. B. STOUGHTON,
K. M. GILLIGAN.