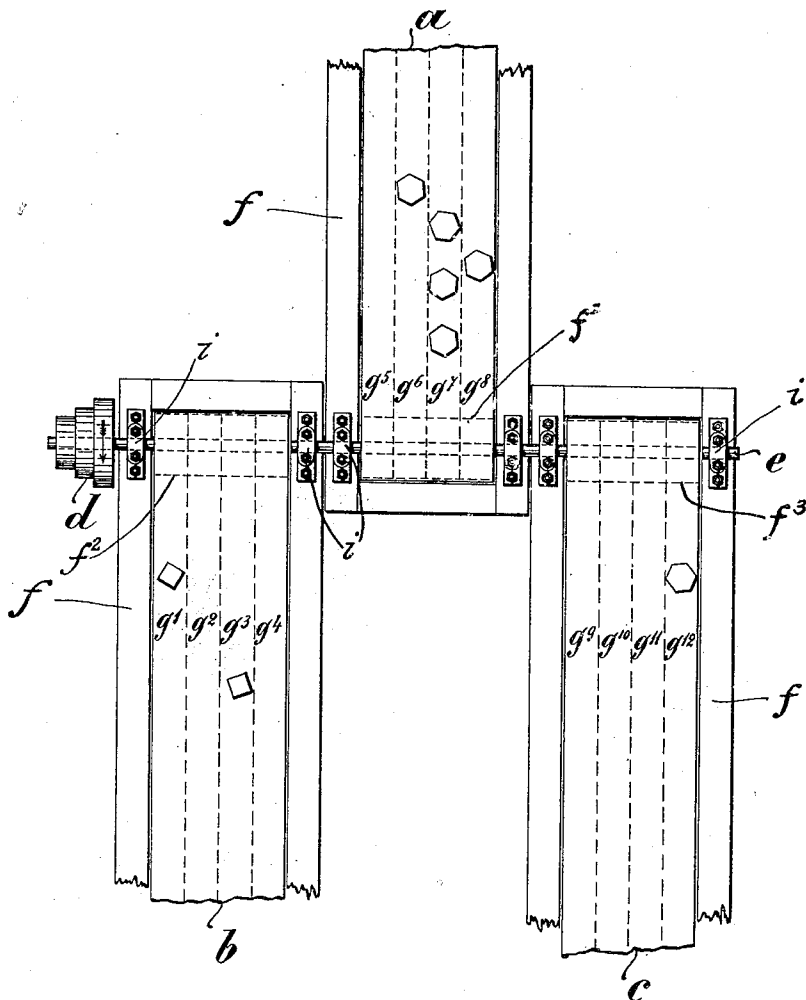


G. HARZER.
SORTING MACHINE.

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935,976.

Patented Oct. 5, 1909.



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UNITED STATES PATENT OFFICE.

CURT HARZER, OF GRUNEWALD, NEAR BERLIN, GERMANY.

SORTING-MACHINE.

935,976.

Specification of Letters Patent.

Patented Oct. 5, 1909.

Application filed July 22, 1907. Serial No. 335,075.

To all whom it may concern:

Be it known that I, CURT HARZER, of Grunewald, Germany, a subject of the King of England, and whose post-office address is No. 4 Dellbrückstrasse, Grunewald, near Berlin, Prussia, German Empire, have invented a new and useful Sorting-Machine, of which the following is a specification.

This invention relates to a contrivance for separating products into classes of distinctive nature and attains the desired object quicker than is possible with the means that are at present in use, under better control, in a more reliable way and without injury to the products.

It is particularly adapted for the sorting of ceramic products—tiles and the like—and may also be used for the sorting of metallic, textile, agricultural and any other products. The sorting in the case of tiles hitherto has been performed on a table or other support on which the articles are placed in order to be examined and to be separated into various piles which ultimately are conveyed to the different storing places. This manner of sorting requires a great amount of manual labor. It makes the sorting very unreliable, as it is entirely dependent upon the quality of work done by each laborer. There is difficulty in the control of the laborer and in the case of a good many articles, especially in the ceramic line, the goods are subjected to a considerable risk of damage on account of their being taken up and put down again in heaps or piles.

The present invention avoids most of the disadvantages in connection with the old methods. The superintendent in a large factory generally has no means of successfully controlling the result of the labor of a number of more or less skilled workmen and he has almost absolutely to depend upon the care and attention of every particular laborer of whom hardly two ever can be made to perform the same class of work so that the harmonious coöperation of a number of sorting laborers is almost an impossibility.

The present invention relates to a contrivance consisting in one or more endless bands of suitable width and length running over drums and driven by motive power or by hand. The tiles to be sorted are placed one by one on the traveling band and are thereon passed along to the men who pick them out according to the way they are to be sorted or classified. By this means the men who

have to do the sorting have every single tile fully exposed to their view and have not a whole pile to go through.

Instead of one band a number of traveling bands or groups of traveling bands may be used and the bands may by lines marked on the same be divided in a number of longitudinal parallel strips. In this case the operator who places the tiles on the band may perform a first sorting by placing them on either of the strips and the sorting laborers before whom the band passes finish the sorting by shifting them from one band to the other or from one strip to the other so that on reaching the end all the tiles are perfectly sorted and classified on the separate bands or strips. This method facilitates the control and the superintendent can, on the band having passed the operators, see at one glance whether the goods are properly classified and sorted on the separate bands or strips, especially so when the tiles are to be sorted according to colors or shades.

The annexed drawing shows how the invention can be carried out.

a, b, c are three endless bands traveling in the same direction over the drums f^1, f^2, f^3 , mounted on shaft e and driven at the desired speed by pulley d . The bands are in the usual manner tightened by means of expanding rollers, not shown, or the surface is kept straight, under the load of the tiles or other articles, by other well known means. The bands are by well marked lines divided into longitudinal strips g, g^1-g^{12} . The shaft e carrying the drums f^1, f^2 , and f^3 for the belts a, b and c is journaled by means of bearings i on the frames j . The latter are supported by means of posts, standards, uprights, supports or the like, not shown in the drawings but connected with the frames and fastened on the bottom in any usual manner.

The operation in this particular example is so carried out that the operator while placing the tiles one by one on the band a arranges them in four different classes according to quality, colors or shades by placing them either on the strip g^5 or g^6 or g^7 or g^8 . Other men standing at the end of band a and between bands b and c take them off the band a as they arrive and shift them according to their variety on the strips g^1-g^4 of band b or the strips g^9-g^{12} of band c . Other men standing along side of the bands b and c can control the sorting and can

shift the tiles if necessary from one strip to another, so that on reaching the opposite end of bands *b* and *c* they are properly sorted and classified.

5 What I claim, and desire to secure by Letters Patent of the United States, is:—

1. In a machine for classifying materials, a pair of endless conveyers disposed approximately in the same horizontal plane and arranged in longitudinal continuation one of the other, the adjacent ends of the conveyers being side by side and being exposed to permit an operator to transfer the articles carried by one belt to the other, and each conveyer being demarcated into longitudinal sorting spaces or strips, a driving shaft passing through the loops of the adjacent ends of the conveyers and being in driving engagement with the conveyers, and means for supporting the conveyers for travel.

2. In a machine for classifying materials, a pair of endless belt conveyers having their driven ends in alinement and extending in

the same general direction, the said conveyers being spaced apart, a third endless conveyer interposed between the driven ends of the pair of conveyers and being in horizontal alinement therewith, the third conveyer extending oppositely to the pair of conveyers, and the adjacent ends of the conveyers being exposed to permit an operator to transfer material from one conveyer to the others, a driving shaft extending through the loops of the adjacent ends of the three conveyers, a drum for driving each conveyer, the drums being mounted upon the driving shaft to rotate therewith, and means for supporting the conveyers and the driving shaft.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

CURT HARZER.

Witnesses:

HENRY HASPER,
WOLDEMAR HAUPT.