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C. A. LEUENBERGER.

APPARATUS FOR FILLING PACKING DRAWERS WITH PINS, NAILS,  
AND THE LIKE.

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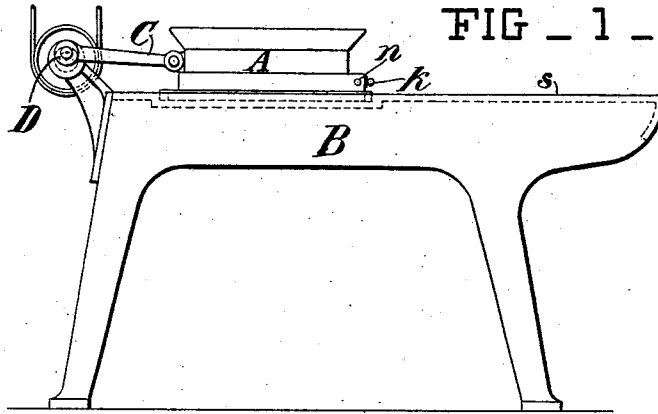
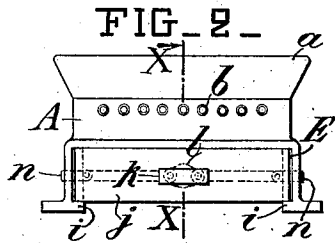
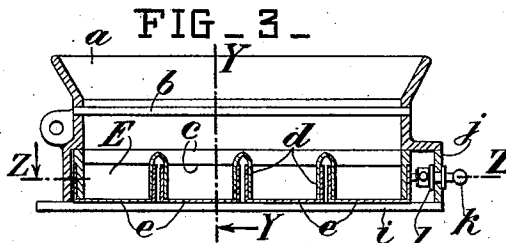
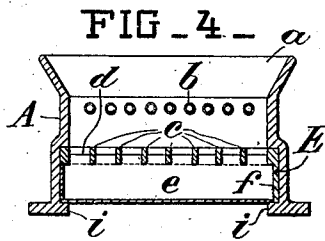
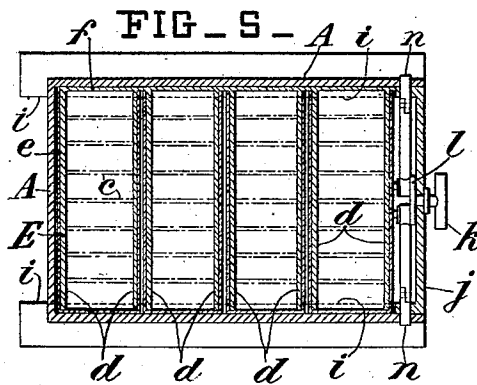
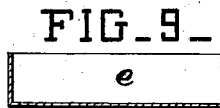
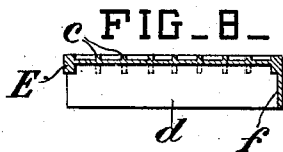
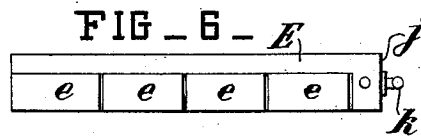
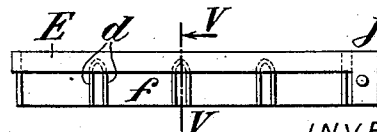


FIG - 7 -

WITNESSES:

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# UNITED STATES PATENT OFFICE.

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## APPARATUS FOR FILLING PACKING-DRAWERS WITH PINS, NAILS, AND THE LIKE.

No. 884,743.

Specification of Letters Patent.

Patented April 14, 1908.

Application filed March 9, 1907. Serial No. 361,564.

*To all whom it may concern:*

Be it known that I, CARL ALBERT LEUENBERGER, a citizen of the Swiss Republic, and resident of Bözingen, near Bienne, Switzerland, have invented a new and useful Apparatus for Filling Packing-Drawers with Pins, Nails, and the Like, of which the following is a full, clear, and exact specification.

This invention relates to an apparatus for laying parallel pins, nails and the like in drawers in order to facilitate the packing thereof. Nails or brads and the like have hitherto been packed in paper parcels either by weighing them and wrapping them mixed together in the package or especially in the case of articles of middle and large size they have been arranged in parallel layers in these packages. This latter plan of packing of the nails or brads or the like has the drawback on the one hand to require a great deal of time, and on the other the packing of middle sized and small nails in the like manner in little packages of size corresponding to the size of the brads or nails was impossible because the work-woman could not put her hand into the paper package in order to deposit the nails or brads in parallel layers in the same.

In order to overcome this drawback the apparatus which forms the object of the present invention has been constructed, for the purpose of laying parallel in drawers by mechanical means a weighed quantity of nails, pins, brads or other like small articles, from which drawers the articles can then be conveniently discharged into packages, the width of which corresponds to the length of the nails or the like, or slightly exceeds it.

This apparatus possesses an oscillating or shaking box having a grid with two sets of bars the one lying in a plane perpendicular to the direction of motion of the shaking box and the other parallel to the same, whereby the bars of the latter set stand at distances apart from one another less wide than the bars of the former set. The said apparatus comprises also separate drawers open at one end, capable of being fitted underneath the said grid, and each of which is designed to close the space between two neighboring grid bars standing vertically to the direction of motion of the shaking box, all for the purpose that the nails or the like falling through the said grid will be able to lie parallel in the drawers,

so that they can be simply poured out in parallel position into the packages.

The improved apparatus is illustrated in the accompanying drawing as follows:

Figure 1 shows the same in side elevation. Fig. 2 shows a front elevation of the shaking box with its grid and the drawers. Fig. 3 is a section on the line X—X of Fig. 2. Fig. 4 is a section on the line Y—Y of Fig. 3. Fig. 5 is a section on the line Z—Z of Fig. 3. Fig. 6 shows separately the oscillating grid with the drawers in side elevation. Fig. 7 shows the same in side elevation but without the drawers. Fig. 8 shows a section on the line V—V of Fig. 7. Fig. 9 shows separately a drawer.

A indicates a shaking box horizontally supported in a frame B, which box can be moved horizontally to and fro by means of a crank shaft D provided with a belt pulley, said shaft being also supported on the frame B. This shaking box A has at the top a filling hopper *a*, and is provided beneath this latter with the rods *b* upon which the nails or pins or the like to be packed can be shaken down in weighed quantity. At its lower part the shaking box is provided with a removable sorting grid E, which possesses a set of bars *c* placed parallel to the to- and fro-motion of the box A and a set of bars *d* in a plane perpendicular to this direction, the relative distance apart of the bars *c* being smaller than that of the bars *d*. The two end bars *d* are somewhat cut away at their outer sides underneath the bars *c*, and the intermediate bars *d* are hollow and open underneath, so that a drawer *e* open at one end can be so inserted longitudinally in two adjacent bars *d*, that its side walls engage in the bars *d* and its bottom closes underneath the space between these two adjacent bars. The shaking grid E is held together with the drawers *e* in the box A by the arrangement that on the one hand both ends of the drawers *e* and a side rib *f* of the grid E rest upon the inner supports *i* of the box A, and on the other hand the grid E is provided in front with a U-shaped piece *j*, the middle part whereof serves as the support of a revoluble handle *k*, which bears a crank disk *l*, connected by means of two bars with two locking bolts *n*. These locking bolts pass through openings of the two side parts of the

piece *j* and of the shaking box A. By turning the handle *k* the locking bolts *n* can be drawn out of the openings of the shaking box A during the motion of the latter, so that the grid E together with the drawers *e* can be removed from the shaking box A.

The operation of the above described apparatus is as follows. When nails, brads, pins or other little rods of a length corresponding to about the distance apart of two of the bars *d* are scattered in weighed quantity upon the rods *b*, after the grid E together with the drawers *e* inserted in it has been placed in the box A and fixed there by turning the handle *k*, then the agitation of the shaking box A causes these nails or rods to fall down between the rods *b* upon the shaking grid E, where they, in consequence of the oscillating of the box A in which the grid E takes part, and in consequence of the distance between the bars *c* is smaller than the length of the nails or the like, are obliged to fall in the parallel position through the grid E into the separate or individual drawers *e*. When all the nails, pins or rods have reached the drawers *e*, the connection of the grid E with the box A is released by turning the handle *k*, and the grid E together with the drawers *e* is drawn out of the box upon the front table *s* of the frame B. The grid E can then be lifted off from the drawers *e* and be set upon another ready prepared set of empty drawers and be again returned to the box A with them. The nails, pins or rods lying parallel in the drawers just removed from the grid can then be placed simply out of the drawers *e* into the packages and will lie parallel to one another in these packages, and the shaking apparatus is free to proceed with further work. It is to be observed that the great advantage of the improved apparatus lies in the use of relatively small separate or individual drawers to receive the parallelized pins, nails or the like, instead of a single great receiving box from which the pins, nails or the like have to be taken out with the hands in order to be packed into the packages, while here this packing is effected by simply emptying the drawers into the respective packages.

The service of the apparatus is preferably effected by two work-women, one of whom weighs out the nails, rods or pins and throws them into the box A, while the other exchanges the drawers on the grid E and empties them when more or less filled with the nails, pins or rods into the corresponding packages.

What I claim is:

1. In an apparatus for laying parallel pins, nails and the like in drawers for the purpose of facilitating the packing thereof, the combination with a shaking box, means for imparting to such box a to-and-fro motion, a shaking grid within said box, having a set of

bars in a plane perpendicular to the direction of motion of the shaking box, and a second set of bars parallel to the said direction and spaced apart a less distance than the first set, of separate or individual drawers open at one end and arranged with their bottoms beneath the bars of the said first set so as to close each the under side of the space between two adjacent bars of the first said set, the entire arrangement for the purpose that the nails, pins or the like falling through the shaking grid may be arranged parallel in the different drawers, in order that the same may be able to be simply emptied in the parallel position into the corresponding packages, substantially as hereinbefore described.

2. In an apparatus for laying parallel pins, nails and the like in drawers for the purpose of facilitating the packing thereof, the combination with a shaking box, means for imparting to such box a to-and-fro motion, a removable shaking grid within said box, having a set of bars in a plane perpendicular to the direction of motion of the shaking box, and a second set of bars parallel to the said direction and spaced apart a less distance than the first set, separate or individual drawers open at one end and arranged with their bottoms beneath the bars of the said first set so as to close each the under side of the space between two adjacent bars of the said first set, said drawers being simultaneously held in such positions, the entire arrangement for the purpose that the nails, pins or the like falling through the shaking grid may be arranged parallel in the different drawers, in order that the same may be able to be simply emptied in the parallel position into the corresponding packages, substantially as hereinbefore described.

3. An apparatus for laying parallel pins, nails and the like in drawers for the purpose of facilitating the packing thereof, comprising a shaking box with an opening at one of its ends, means for imparting to this box a to- and fro-motion, a removable shaking grid within said box, having on the one hand a set of bars in a plane perpendicular to the direction of motion of the shaking box and the inner ones of which are hollow and open underneath, and on the other hand a second set of bars parallel to said direction, which latter bars are less far apart than the former bars, and separate or individual drawers open at one end and placed underneath the shaking grid so as to fit into the hollow bars of the first set of grid bars, this arrangement of the shaking grid allowing the latter together with the drawers to be removed from the shaking box through the end opening thereof and to be lifted off from the drawers, whereupon the shaking grid can be pushed over another set of empty drawers in order to be introduced together with the latter into the shaking box, substantially as hereinbefore described.

4. An apparatus for laying parallel pins,  
nails and the like in drawers for the purpose  
of facilitating the packing thereof, compris-  
ing a shaking box, means for imparting to this  
5 box a to- and fro-motion, a removable shak-  
ing grid within said box, having a set of bars  
in a plane perpendicular to the direction of  
motion of the shaking box, and a second set  
of bars parallel to said direction, which latter  
10 bars are less far apart than the former, a  
locking device for connecting the shaking  
grid to the shaking box and for disconnect-  
ing it during the to- and fro-motion of the  
shaking box, and separate or individual  
15 drawers open at one end and engaged under-  
neath with the bars of the said first set of  
the shaking grid so as to close each the

under side of the space between two adja-  
cent bars of this set of grid bars, the entire  
arrangement for the purpose that the nails, 20  
pins or the like falling through the shaking  
grid may be arranged parallel in the differ-  
ent drawers, in order that the same may be  
able to be simply emptied in the parallel  
position into the corresponding packages, 25  
substantially as hereinbefore described.

In witness whereof, I have hereunto  
signed my name in the presence of two sub-  
scribing witnesses.

CARL ALBERT LEUENBERGER.

Witnesses:

GEO. GIFFORD,  
AMAND BRAUN.