Mar. 3, 1925. 1,528,341

P. NAVARRO

CELL CASE PARTITION

Filed June 1, 1923

Fig. 1.

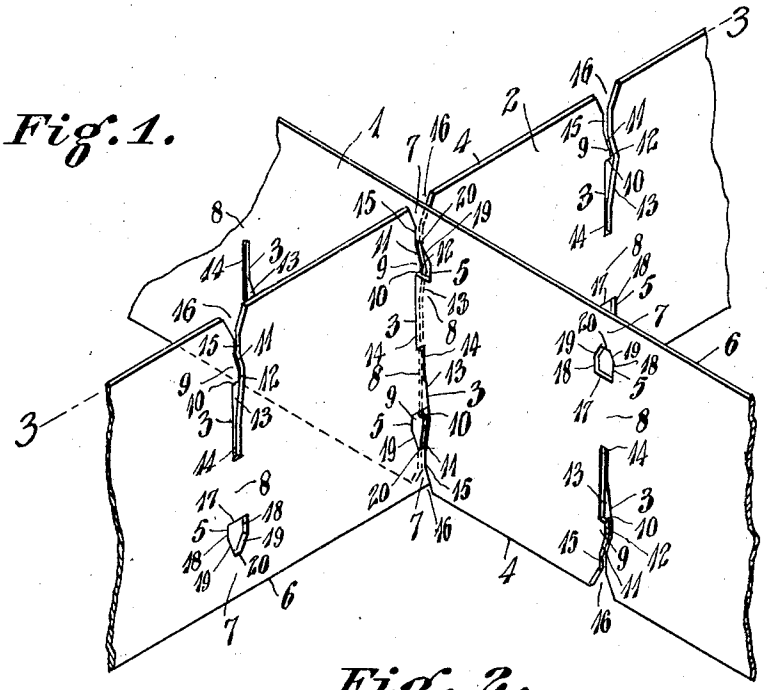


Fig. 2.

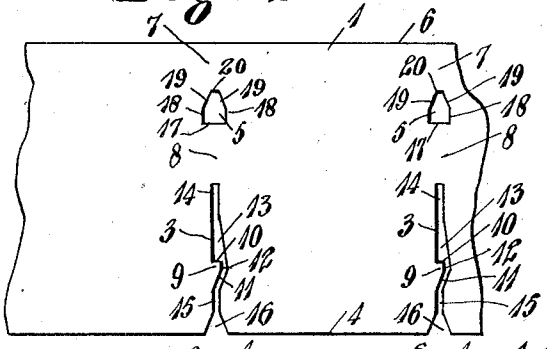
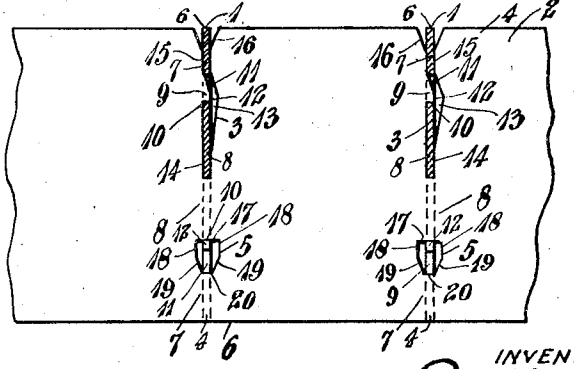


Fig. 3.



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UNITED STATES PATENT OFFICE.

PEDRO NAVARRO, OF NEW IBERIA, LOUISIANA, ASSIGNOR OF ONE-HALF TO SOUTHERN EGG CASE FILLER COMPANY, INC., OF NEW IBERIA, LOUISIANA, A CORPORATION OF LOUISIANA.

CELL-CASE PARTITION.

Application filed June 1, 1923. Serial No. 642,802.

To all whom it may concern:

Be it known that I, PEDRO NAVARRO, a citizen of Argentine Republic, residing at New Iberia, in the parish of Iberia and State of Louisiana, have invented certain new and useful Improvements in Cell-Case Partitions, of which the following is a specification.

My invention relates to cell cases, such as are used, for example, for packing eggs. An object of my invention is to provide for rapid and accurate formation of the separate partitions and their rapid assembly, by aid of suitable machinery, while insuring that the partitions will be securely locked upon assembly. Other objects will appear in the course of the ensuing description.

I attain these objects by the device illustrated, for example, in the accompanying drawing, in which—

Figure 1 is a perspective view of parts of two partitions made according to my invention and assembled;

Fig. 2 is a partial side elevation of one of the partitions; and

Fig. 3 is a partial longitudinal vertical section on the plane of the line 3—3 of Fig. 1, with an additional partition.

It will be understood that the cell case made of my improved partitions is similar to many others well known in the art, in that it consists of a number of flat strips of pasteboard or the like, forming the partitions, crossing each other at intervals so that between each four adjacent strips a rectangular cell is formed to receive an egg or other object to be held and protected by the structure. Therefore, only parts of two such partitions are illustrated, in Fig. 1, and only three ir Fig. 3.

The two partitions 1 and 2 are identical, each being cut away to receive an uncut part of the other when the two are inversely assembled as shown in Figs. 1 and 3. One of these partitions is shown partly in Fig. 2; the complete partition having any suitable length and being provided with cuttings to receive any desired number of similar partitions inversely thereto thereacross, which in turn similarly receive any desired number of similar partitions parallel with the one first mentioned. A usual design, for egg cases, has seven of the partitions each way, forming thirty-six cells. For machine assemblage of these partitions, as is known in the art, it is desirable to bring them together at right angles as shown in Fig. 1 and as they are in use; although one of the requirements is that an assemblage of the partitions, making a complete case or filler, can be folded until all the partitions are substantially parallel, forming a flat compact unit readily stored and shipped, to be unfolded for use in packing the articles.

The form of the cuttings best can be seen in Fig. 2; these being a slot 3 extending in general direction at right angles to the longitudinal edges of the partition 1, from one edge 4 substantially halfway across the partition, and an eye 5 near the opposite edge 6, leaving uncut portions 7 and 8 respectively next to the edge 6 and in between the eye 5 and the inner end of the slot 3, which portions are adapted to be received in the slot 3 of an inversely assembled partition 2 as shown in Figs. 1 and 3.

Slightly less than half-way inwardly of the length of the slot 3 a lug 9 extends from one side of the slot, having a detention end 10 inward toward the middle of the partition, a deflecting end 11 in the opposite direction, inclining toward the side of the slot outward, and a bearing edge 12 between these two ends 10 and 11 parallel with the general direction of the slot 3 and facing over toward the opposite side of the slot, which is widened around this lug 9 to the extent that this opposite side runs substantially parallel with the inclined end 11 and edge 12 opposite these respective parts of the lug 9. Inwardly past the lug, this side inclines over toward the other or first mentioned side, on which the lug 9 is, and which other side is parallel to the general direction of the slot 3 from the detention end 10 to the inner end of the slot; the inclination of the opposite side ending at about half this distance along the slot and merging into parallelism with general direction of the slot. Thus there are formed the part 13 of the slot, just inward from the lug 9, with gradually reducing width, and the terminal part 14 of uniform width; which uniform width is about equal to the thickness of the partitions.

Outwardly past the lug 9 there is a short portion 15 of the slot with its sides parallel to the general direction and spaced like the inner terminal walls of the part 14, about equal to the thickness of the partitions; and

outward from this part 15 the walls diverge, forming an entrance 16 adapted readily to admit the partition in course of assembly with this partition.

The eye 5 is six-sided; its greatest width being at its end 17 toward the slot 3, which end is parallel with the length of the partition. From this end short sides 18 at right angles to the end 17 extend to converging sides 19 which meet the remote end 20 out toward the edge 6, leaving this remote end 20 of a length about equal to the thickness of the partitions. This eye 5 is alined, across the partition, with the slot 3 and so located that it will receive the lug 9 of the inversely assembled partition with the outer part of the inclined deflecting end 11 of this lug confined against the remote end 20 of the eye between the converged sides 19, and the detention end 10 of the lug, which is substantially parallel with the length of the partition, against the similarly disposed wide end 17 of the eye, locking the partitions against transverse separation while at right angles to each other by the engagement of the lug end 10 and eye end 17, while the close confinement of the opposite end 11 of the lug between the converged sides 19 of the eye, against the eye end 20 secures the partition having the lug in this eye against sidewise displacement in this region.

In the opposite region, this inversely assembled partition is secured against sidewise displacement by its portion 7 between the parallel sides of the outer portion 15 of the slot 3; and the inner portion 8 is similarly secured between the parallel sides of the slot portion 14. Being identical in shape, the two partitions thus hold each other, so that their connection is relatively rigid throughout their widths. That part of each partition opposite its lug 9 is not held against sidewise movement at this connection, but depends for such support upon the lug 9 between the sides 19 of the eye 5 at the next connection, as the one at the right in Fig. 3; although the snug fitting between the side of its slot portion 15 and the portion 7 of the crossing partition frictionally contributes to this holding. The parts are so proportioned that such snug fitting is attained throughout the bearing parts just described, having the slot portions of accurate width to receive the thickness of the crossing partitions snugly, and having the eyes 5 and lugs 9 accurately located to engage closely at their ends as before mentioned.

Such accurate fitting of a connection, of course, with extreme care in assembling, is not difficult even without any special provision for facilitating it. But for rapid automatic assemblage by means of a machine forcing the crossed partitions together, I have provided, by the means just described, for securing such accuracy and security of connection with a minimum of distortion of the slot sides and lug 9, and for insuring the correct entrance of the lug 9 to the eye 5 and the snug seating thereof in the eye. Thus, when two partitions 1 and 2 come together, mutually guided by their entrance parts 16, their lugs 9 are deflected around each other by engagement of their inclined deflecting ends 11, each lug 9 passing around the other in the widened part of the opposite slot 3; then, by engagement of its inclined end 11 with the inner end of this slot 3, again being deflected to one side or the other along the intervening uncut part 8, until reaching the wide adjacent end 17 of the eye 5, which readily admits the lug 9 though deflected to one side or the other, for the lug 9 to advance against one or the other of the converging sides 19 of the eye 5 and be guided to its secure seating against the remote end 20 of the eye.

By providing the short parallel bearing edge 12 on the lug 9, there is sufficient area of material where the lug becomes forced against the opposite portion 8, to avoid undue distortion of the lug in this passage, so that it practically is intact, with a full extent to its detention end 10 as designed, for effective coaction with the end 17 of the eye, and without any distorted end projections to interfere with the correct entrance to and seating in the eye 5. This formation of the lug 9 also permits the slot 3, around the lug, to have an easy change of direction, which in turn results in less distortion of the portion 8 of the opposite partition during the passage of the lug 9 thereacross. The eye 5, having the straight parallel sides 18 between its entrance end 17 and its converging sides 19, admits the lug 9 with such a parallel bearing edge 12 for immediate guiding engagement of the inclined end 10 of the lug with the one of the converging sides 19 of the eye 5 that the lug may have been deflected toward as before described, without preliminary engagement of the extreme outer portion of the lug 9, which would tend to distort the lug thereat and to interfere with its ready and correct entrance to the eye. The obtuseness of all of the angles minimizes the tendency for the partition material to tear with such angles as starting points, either in process of assemblage or under the strains imposed in use, supporting the articles in the packages. Not only are the various parts of the partitions subjected to less distortion; the force required to complete their assemblage is reduced by the described disposition of the slot and eye parts, so that the strains on the partitions as a whole, and upon the assembling machine, are minimized, and there is less power required for operation than with par-

titions having more extended projections and less moderate degrees of change in directions of the cuttings.

Modifications of dimensions, proportions, or of other details, according to varying conditions, as the kind of partition material used, or the kind of articles for which the cases are required, may occur; and therefore, while certain details are deemed preferable, and I have shown and described these rather specifically, I do not wish to be understood as being limited to such precise showing and description, but having fully described my invention, what I claim as new and desire to secure by Letters Patent is:

1. A cell-case partition having a slot from one edge inward, with a lug in the slot having an inner detention end and an outer deflecting end, said partition also having an eye near its opposite edge with a wide end toward the slot and a narrow end toward said opposite edge, to receive guidingly the lug of another similar partition in said wide end and lock said lug in said narrow end against sidewise movement.

2. A cell-case partition having a slot from one edge inward, with a lug in the slot having an inner detention end and an outer deflecting end and having a bearing edge substantially parallel with the general direction of the slot, said partition also having an eye near its opposite edge to receive the lug of another similar partition.

3. A cell-case partition having a slot from one edge inward, with a lug in the slot having an inner detention end and an outer deflecting end and having a bearing edge substantially parallel with the general direction of the slot, said partition also having an eye near its opposite edge with sides substantially parallel with the general direction of the slot and then converging toward the opposite edge of the partition.

4. A cell-case partition having a slot from one edge inward, with a lug in the slot having an inner detention end and an outer deflecting end, and having a bearing edge substantially parallel to the general direction of the slot, said slot being widened around said lug but having its sides substantially parallel to said general direction near its opposite ends, and said partition also having an eye near its opposite edge with a wide end toward the slot, parallel sides next to this end, converging sides leading from these sides, and a narrow end remote from the slot, to which the converging sides lead, the lug and eye being so located that two such partitions, inversely assembled, have the lug of each in the eye of the other.

PEDRO NAVARRO.