F. O. WEIS.

CELL CASE FILLER.

APPLICATION FILED DEC. 7, 1910.

1,140,643. Patented May 25, 1915.

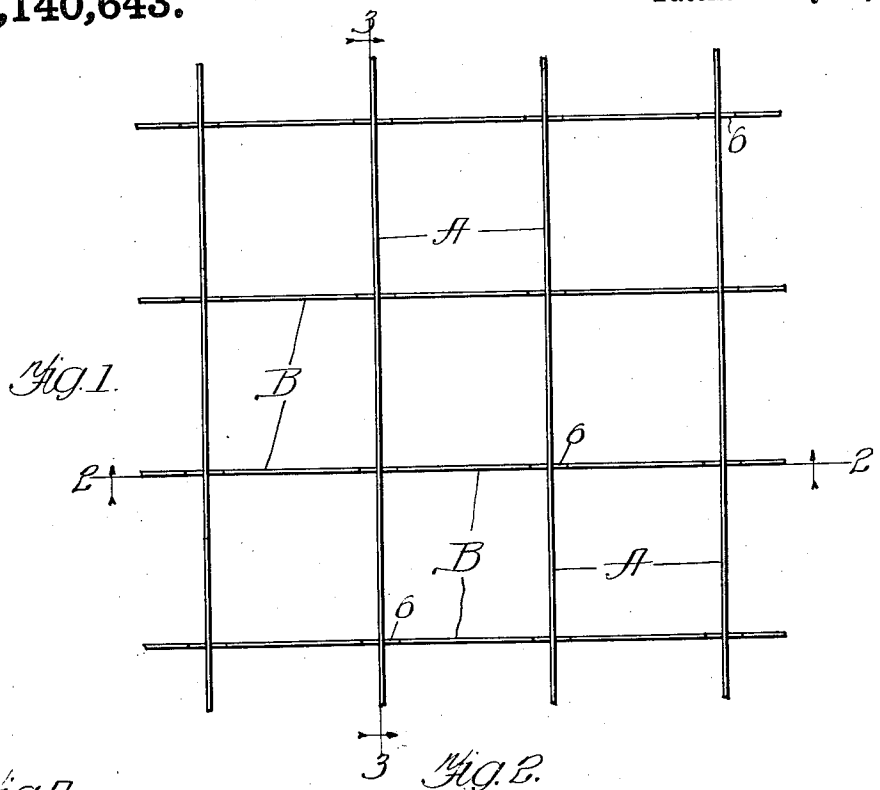
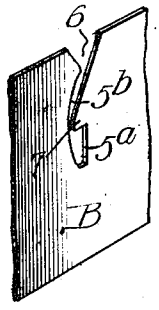


Fig. 1.

Fig. 2.

Fig. 4.



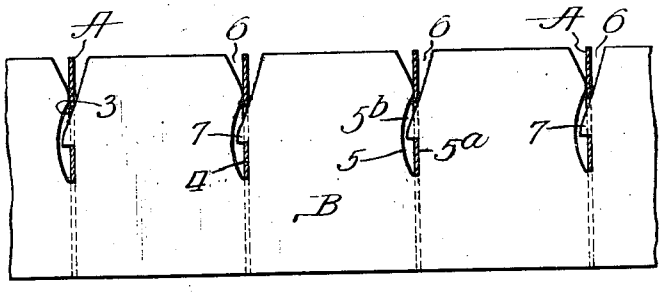
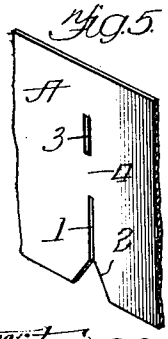
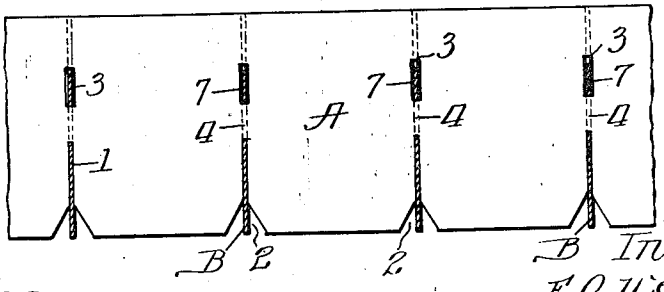


Fig. 3.

Fig. 5.





Witnesses:
Robert N. Weir
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Inventor:
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By Luther L. Miller Atty.

UNITED STATES PATENT OFFICE.

FRANK O. WEIS, OF COFFEYVILLE, KANSAS, ASSIGNOR TO NORTH STAR MANUFACTURING COMPANY, OF COFFEYVILLE, KANSAS, A CORPORATION OF ILLINOIS.

CELL-CASE FILLER.

1,140,643. Specification of Letters Patent. Patented May 25, 1915.

Application filed December 7, 1910. Serial No. 595,991.

To all whom it may concern:

Be it known that I, FRANK O. WEIS, a citizen of the United States, residing at Coffeyville, in the county of Montgomery and State of Kansas, have invented certain new and useful Improvements in Cell-Case Fillers, of which the following is a specification.

This invention relates to the art of cell case fillers such as are commonly used for shipping eggs and other goods.

One of the objects of the invention is to produce a filler having locking slots of improved shape so as to afford a maximum degree of strength and to insure that the strips will not accidentally become disassociated after they have been assembled.

To this end I provide narrow rectangular locking slots in one set of strips, in which slots the locking tongues of the other strips fit snugly.

Another object is to provide a filler having locking slots of such shape that the two sets of strips can be intermeshed rapidly and accurately, and the tongues can be inserted in the narrow rectangular locking slots without danger of damage to any of the parts in the assembling operation.

In the accompanying drawings, Figure 1 is a fragmental plan view of an egg case filler embodying my invention. Figs. 2 and 3 are sections on lines 2 2 and 3 3, respectively, of Fig. 1. Figs. 4 and 5 are fragmental perspective views of the two forms of strips.

The egg case fillers at present in common use are composed of fourteen strips of strawboard, or like material, the strips being about 2¼ inches wide and about 11½ inches long. One series of seven strips extends at substantially a right angle with the seven strips of the other series, the strips being slotted so as to intermesh. In use these fillers receive considerable rough handling, and individual strips sometimes become separated.

In a filler embodying my invention each of the strips of one series A has a plurality of equidistant slots 1 formed therein, said slots opening at their ends upon the edge of the strip, or, in other words, the slots extending inwardly from the edge of the strip. The slots 1 preferably have deep and wide flaring throat-ways 2. At a short distance from the inner end of each of the slots 1 is formed a slot 3, the slots 3 being in line with the slots 1 and forming portions 4 between the respective slots. The slots 3 are rectangular in shape, being narrow in comparison with their length, the width of said slots being only slightly greater than the thickness of the strips.

The other series of strips B has a plurality of open-end slots 5 therein which may be positioned at distances apart corresponding to the distances between the slots 1 in the strips A. Preferably the slots 5 have wide flaring throat-ways 6 of a depth equal to about one-third the total depth of a slot. As will be seen from an inspection of Figs. 2 and 4 the slots 5 are irregular in form, each comprising an inner portion having a straight wall 5^a, a curved wall 5^b, and the outer ends or throat-ways 6. The wall 5^b extends in a single unbroken curve from the inner end of the throat-way to the inner end of the slot. The wall opposite to the wall 5^b is shaped so as to provide a locking tongue 7 at one edge of each of the slots, said tongues lying between the straight portions 5^a and the throat-ways 6. The inner ends of the tongues 7 form square locking shoulders adapted to engage the ends of the slots 3 when the two sets of strips are intermeshed. The wall at the edge of the locking tongue 7 extends in an unbroken line from the tip of the tongue outwardly in alinement with the adjacent side of the throat-way. A retaining shoulder 8 formed at the edge of the slot 5 opposite the locking tongue 7 and at the outer end of the curved wall 5^b engages the strip A and prevents accidental withdrawal of said tongue from its slot.

When the two series of strips A and B are assembled to form a complete filler, the locking tongues 7 lie in the slots 3, and the portions 4 of the strips A lie against the straight walls 5^a of the slots 5 of the strips B and in engagement with the square shoulder on the locking tongue 7. The length of the slots 3 and portions 4 is equal to the length of the tongues 7 and walls 5^a respectively. The width of the slots 3 is only slightly greater than the thickness of the tongues 7 so as to prevent lateral movement of the tongues. The two series of strips are thus locked securely together and form a filler which is very strong and from which

individual strips will not be accidentally separated by the rough handling to which the fillers are subjected in use.

In manufacturing cell case fillers having narrow slots such as those just described it has been found possible to use a machine having a continuous rotary feed, the strips of the series A being intermeshed with the strips B by an arcuate movement.

I am aware that cell case fillers having interlocking tongues and slots have been heretofore produced, but the interlocking parts are of such form that a strong and rigid connection such as that herein shown is not formed. In some of the previous fillers the locking slots have been in the form of a "T", "TT", or "H". The objection to these forms is that the side walls of the slots are made yieldable by the angular portions at the end of the main slot so that the locking tongues are not firmly held in place by said walls when any strain is placed upon the parts. In other prior fillers the tongue-receiving openings have been of such shape and size that the locking tongues had a large amount of play therein, with the result that the firm connection between the strips which is so desirable is not obtained. In the filler herein disclosed the locking slots have rigid walls and the tongues fit snugly in said slots to form a secure connection.

The single unbroken lines of the opposite walls of the slots in the strip B act to smoothly guide the entering strips A past the locking tongues 7, which at the proper time slip into the rectangular slots 3. There are no shoulders or projections to obstruct the continuous movement of the strips. When entering, the strips first strike one wall of the throat-ways 6 and the continuing wall at the edge of the tongues 7, and later the strips engage the opposite curved wall 5^b. The strips can thus be given a quick continuous movement in the intermeshing operation, which is necessary in a machine having continuously moving strip holders.

I claim as my invention:

A cell-case filler comprising two series of crossing strips, the strips of the first series having straight slots extending inwardly from one edge thereof and having deep and wide flaring throat-ways, said strips of the first series further having narrow rectangular locking slots therein spaced from the inner ends of the first mentioned slots, the strips of the second series having irregular slots extending inwardly from one edge thereof and having wide flaring throat-ways, the depth of said throat-ways being substantially one-third the total depth of the slots, one wall of each of said slots in the second series of strips extending in a single unbroken curve from the inner end of the throat-way to the inner end of the slot, the opposite wall of each slot providing a locking tongue 7 with a square inner shoulder, and the latter wall extending in an unbroken line from the tip of said tongue outwardly in alinement with the adjacent side of the throat-way, an offset straight portion 5^a being provided at the inner end of the locking tongue 7, whereby said strips may be intermeshed while the two separate series are traveling along in the continuously traveling strip holders of an assembling machine.

In testimony whereof I affix my signature in presence of two witnesses.

FRANK O. WEIS.

Witnesses:
CHAS. WOMACH,
OLA KENNEDY.