To whom it may concern:

It is known that I, FRANK A. T W I C H E L L, citizen of the United States, residing at
Seattle, in the county of King and State of
Washington, have invented certain new and
useful Improvements in Cannery Exhaust-Boxes; and I hereby declare the following
to be a full, clear, and exact description of
the invention, such as will enable others
skilled in the art to which it appertains to
make and use the same.

This invention relates to devices for ster-
ilizing cans or cooking the contents thereof
in the exhaust box of the canning machine,
and the object of the same is to provide
means for adjusting the width of the channels
or tracks in such an exhaust box so that
various sizes of cans may be handled suc-
cessfully. This object is carried out by
means of a removable filler or a series of
such fillers adapted to be passed over the
partitions between the channels or tracks,
and the invention lies in the construction
and use of such fillers, all as hereinafter
more fully described and claimed, and as
shown in the drawings wherein—

Figure 1 is a plan view of part of an ex-
haust box of a canning machine with its
cover or closure removed, showing large-
sized cans in certain of the channels or
tracks, medium-sized cans in other channels
which latter are reduced by means of my im-
proved filler, and small-sized cans in yet
other channels; and Fig. 2 is a cross section
through Fig. 1 on the line 2—2. Fig. 3 is a
diagram of one of the fillers. Fig. 4 is an
end elevation of a special form of
filler as described hereinafter.

The exhaust box B illustrated in Fig. 1 of
the drawings may be of any suitable type,
but of necessity it has longitudinal parti-
tions P, forming from its bottom, the lat-
ter being closed except for grooves G along
the length of the channels between said parti-
tions which constitute tracks T wherein
move the cases C which are to be treated, and
in said grooves G are mounted the devices
for moving the cans, herein shown as endless
belts E preferably of wire or other con-
stuction which run in the grooves and rise
above the surface of the bottom of the box
so that the cans rest thereon. I may say
that in general practice the cans are fed into
one end or rather one corner of the box B
(not shown in the drawings), travel down
the track T on one side of the same, are car-
rried around the end of the adjacent parti-
tions P, and the next partition wherein they
travel in the opposite direction or toward the
inlet end of the box, and then they move around
the end of the second partition into the
third track, and this action is continued so
that the cans travel a zigzag course through-
out the length of the box B and are finally
delivered at the corner diagonally opposite
from which they are fed, near the letter
G in Fig. 1. Meanwhile they are subjected
to heat by any suitable means forming no
part of the present invention, so that the
cans if empty may be sterilized or if filled
their contents may be cooked or otherwise
treated. This is the usual function of the
exhaust box in a canning machine, and it is
the object of the present invention to pro-
vide means whereby the channels or tracks
T may be altered in width so that cans of
various sizes may be treated in such a box.

Hereofore these tracks have been of a
standard width adapting them to cans of
an ordinary size, say those containing one
pint. It was manifestly impossible to use
such a box with larger cans because they
would not pass into the tracks. When
smaller cans were to be used, it was found
that they jammed within the tracks T and
prevented the successful action of the device,
or if they did travel along against one par-
tition or side wall of any track, the use of
the endless carrier E caused them to rotate
partly as they moved along, with the result
that eventually they did become jammed and
the machine had to be stopped to correct the
difficulty.

Coming now more particularly to the de-
tails of the present invention, I propose to
build my exhaust box with the partitions P
spaced such a distance apart that the tracks
T are adapted to the largest size of cans—
say those containing one quart—and these
cans are usually cylindrical although it is
not beyond possibilities that this machine
might handle cans of other contour. When
now it is desired that the exhaust box shall
handle cans of a smaller circumference than
those just mentioned, it is obviously nec-
essary to reduce the width of the tracks T to
avoid the difficulty above mentioned. Such
reduction I accomplish by means of the improved filler illustrated in the drawings. This filler has a U-shaped body whose channel is of a size to closely fit upon the partition when the filler is inverted as best seen in Fig. 2. In this view the body is shown as solid, whereas in Fig. 3 the body is shown as made of sheet metal and bent into U-form as above described, but in order to make its channel fit more closely upon the partition, lugs or projections are formed upon the inner faces of the side walls of the body at intervals so that the spaces between the inner faces of the pairs of lugs are of the same width as the channel in the solid members, and can easily pass over the partitions. In depth the side walls of each filler are such that they pass down to nearly to the bottom of the exhaust box, although it is quite possible that the bottom of each channel rests upon the upper edge of the partitions. All corners are by preference slightly rounded off so that the workman may not injure himself on them and nothing can catch thereon. The material of which the filler is composed is not essential, but it should be something that will withstand the temperature to which it is subjected in the exhaust box. I would not have the bend of the filler very thick, or otherwise it would rise to a considerable distance above the upper edge of the partition and might interfere with the manual handling of the cans which is sometimes necessary; but this detail is unimportant. At each end each filler is preferably rounded off on one side as shown at 6 in Fig. 3, the rounded ends permitting the movement of the cans from one track to around the end of this partition and its filler and to the adjacent track wherein they move in the opposite direction in some types of these exhaust boxes, as is well known. If the lugs are employed, I would by preference have a pair of them adjacent each end so that the filler will be reliably held upon the partitions. I do not find it ordinarily necessary to provide any means for holding the filler in place on the partitions, as if made of cast iron its weight is sufficient, especially if the lugs or the inner faces of the side walls of the channel fit the partitions rather closely. In fact, if the device be made of sheet metal as shown in Fig. 3 and its side walls be provided with internal lugs or projections at certain points, it may be that the spaces between their inner faces can be a little less than the width of the partition so that in putting the fillers into places they will have to be opened slightly to be passed down over the partitions. In that event the spring action of the sheet metal filler will hold it in place against all ordinary contingencies tending to displace it.

While it is obvious that the use of fillers of proper thickness may reduce a track from its maximum size wherein we will say quart cans travel nicely, to its next smaller size wherein we will say pint cans travel with equal ease and are always centered over the carrier whatever type of carrier is employed, it is obvious that along the side of the box a special form of filler might be employed, as shown in Fig. 4. In this case the inner wal (whether it be solid or provided with the lugs shown in Fig. 3) is of a thickness corresponding to the adjacent wall of the filler on the nearest partition, but the outer wall may be made quite thin as shown. Its only function is to hook over the upright side S of the box B which in this case constitutes one side of the outermost track T and serves in the nature of a partition although in reality it does not divide this track from any other track.

In use, the ordinary exhaust box serves its function and purpose as well known in this art, and when it is desired to reduce the width of the tracks T so that the box may handle cans of smaller size and keep them yet centered over the conveying mechanism E in each track, I make use of the improved fillers above described. One is brought into place and slipped over each partition and one over each side wall S unless there be no machinery or other reason why a special form of filler shall here be employed as shown in Fig. 4. Care must be taken to dispose the rounded ends of the fillers with reference to the direction in which the cans pass out of one track around the end of the partition adjacent and in the other direction in the next track. However, if the exhaust box be of such type that it is a single long channel or track, long fillers or a plurality of fillers either of the type shown in Fig. 3 or that shown in Fig. 4, may be employed, and the rounded ends may be omitted or if used will form no obstruction, the cans are now fed into the inlet end of the exhaust box and subjected to heat in a well-known manner, and it will be found that the use of these improved fillers keeps these cans in line, holds them constantly centered over the carrying mechanism E prevents jamming, and converts a box having wide tracks into one having narrow tracks, while yet leaving it possible to remove the tracks to their original width when larger cans are again to be handled.

What is claimed as new is:

1. An exhaust box for canning machines, having channels or tracks separated by upright partitions, filler strips of inserted U-shaped cross section adapted to be mounted on said partitions to reduce the width of the channels of tracks.

2. In an exhaust box for canning machines, having channels or tracks separated by upright partitions, removable filler strips.
for said partitions consisting of U-shaped sheet metal bodies whose side walls are spaced farther apart than the width of said partitions, and inwardly extending projections on said side walls at points opposite each other with their contiguous faces spaced a less distance apart than the thickness of said partitions, for the purpose set forth.

3. In an exhaust box for canning machines, having channels or tracks separated by upright partitions, removable filler strips for said partitions consisting of U-shaped sheet metal bodies whose side walls are spaced farther apart than the width of said partitions, and lugs at intervals carried by the inner faces of the side walls of said body portion and disposed in pairs at the ends thereof, the lugs being spaced to receive said partitions when the fillers are inverted thereover, for the purpose set forth.

4. In a canning machine, the combination with an exhaust box having a series of longitudinal partitions producing interposed tracks, and means for moving the cans along one track, around the end of a partition, and along the next track in the opposite direction; of a series of fillers of inverted U-shaped cross section adapted to be slipped over said partitions to reduce the width of the tracks, each end of each filler being rounded for the purpose set forth.

5. In a canning machine, the combination with an exhaust box having upright sides, a bottom, and a series of longitudinal partitions, and means for moving the cans within the tracks or channels between said partitions; of a series of inverted U-shaped filler bars adapted to be slipped over said partitions to reduce the width of said tracks, and special fillers of similar shape for the sides of the box, the outer walls being of less thickness than the inner walls, for the purpose set forth.

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

FRANK A. TWICHELL

Witnesses:
G. WARD KEMP,
C. C. PHILLIPS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."