

**CPC****COOPERATIVE PATENT CLASSIFICATION****A23B**

**PRESERVING, e.g. BY CANNING, MEAT, FISH, EGGS, FRUIT, VEGETABLES, EDIBLE SEEDS; CHEMICAL RIPENING OF FRUIT OR VEGETABLES; THE PRESERVED, RIPENED, OR CANNED PRODUCTS** ( preserving foodstuffs in general [A23L 3/00](#); preserving in general [A61L](#) ; applying food preservatives in packages [B65D 81/28](#) )

**A23B 4/00**

**General methods for preserving meat, sausages, fish or fish products**

## A23B 4/002

- . { Preservation in association with shaping ( [A23B 4/0053](#), [A23B 4/01](#), [A23B 4/062](#) and [A23B 4/066](#) take precedence ) }

## A23B 4/005

- . Preserving by heating

## A23B 4/0053

- .. { with gas or liquids, with or without shaping, e.g. in form of powder, granules or flakes }

**NOTE**

The heating means for the gas or liquid are not classified

## A23B 4/0056

- ... { with packages, or with shaping in the form of blocks or portions }

## A23B 4/01

- .. by irradiation or electric treatment { with or without shaping, e.g. in form of powder, granules or flakes }

## A23B 4/012

- ... { with packages, or with shaping in the form of blocks or portions }

## A23B 4/015

- . Preserving by irradiation or electric treatment without heating effect

## A23B 4/02

- . Preserving by means of inorganic salts ( apparatus therefor [A23B 4/26](#), [A23B 4/32](#) )

## A23B 4/021

- .. { with apparatus adapted for gaseous preserving agents }

## A23B 4/023

- .. by kitchen salt or mixtures thereof with inorganic or organic compounds

## A23B 4/0235

- ... { with organic compounds or biochemical products }

## A23B 4/027

- .. by inorganic salts other than kitchen salt, or mixtures thereof with organic compounds, e.g. biochemical compounds

## A23B 4/03

- . Drying; Subsequent reconstitution { ( drying apparatus in general [F26B](#) ) }

## A23B 4/031

- .. { Apparatus for drying ( [A23B 4/037](#) takes precedence ) }

## A23B 4/033

- .. with addition of chemicals ( [A23B 4/037](#) takes precedence )

## A23B 4/037

- .. Freeze-drying, { i.e. cryodesiccation, lyophilisation; Apparatus therefor }

## A23B 4/044

- . Smoking; Smoking devices

## A23B 4/048

- .. with addition of chemicals other than natural smoke

## A23B 4/052

- .. Smoke generators; { Smoking apparatus ( [A23B 4/056](#) takes precedence ) }

## A23B 4/0523

- ... { Smoke generators using wood-pyrolysis or wood-friction }

## A23B 4/0526

- ... { Smoke generators or smoking apparatus using liquid smoke in gaseous or liquid form }

## A23B 4/056

- .. Smoking combined with irradiation or electric treatment, e.g. electrostatic smoking;

## { Apparatus therefor }

- A23B 4/06 . Freezing; Subsequent thawing; Cooling
- A23B 4/062 . . { the materials being transported through or in the apparatus with or without shaping, e.g. in the form of powder, granules or flakes ( moving on the spot only [A23B 4/066](#) ) }
- A23B 4/064 . . . { with packages or with shaping in the form of blocks or portions }
- A23B 4/066 . . { the materials not being transported through or in the apparatus with or without shaping, e.g. in the form of powder, granules or flakes }
- A23B 4/068 . . . { with packages or with shaping in the form of blocks or portions }
- A23B 4/07 . . Thawing subsequent to freezing
- A23B 4/08 . . with addition of chemicals { or treatment with chemicals } before or during cooling, { e.g. in the form of an ice coating or frozen block }
- A23B 4/09 . . . with direct contact between the food and the chemical, e.g. liquid N<sub>2</sub>, at cryogenic temperature
- A23B 4/10 . Coating with a protective layer; Compositions or apparatus therefor { ( [A23B 4/08](#) takes precedence ) }
- A23B 4/12 . Preserving with acids; Acid fermentation
- A23B 4/14 . Preserving with chemicals not covered by groups [A23B 4/02](#) or [A23B 4/12](#)
- A23B 4/16 . . in the form of gases, e.g. fumigation; Compositions or apparatus therefor
- A23B 4/18 . . in the form of liquids or solids ( apparatus therefor [A23B 4/26](#), [A23B 4/32](#) )
- A23B 4/20 . . . Organic compounds; Micro-organisms; Enzymes ( acid fermentation [A23B 4/12](#) )
- A23B 4/22 . . . . Micro-organisms; Enzymes; { Antibiotics }
- A23B 4/24 . . . Inorganic compounds
- A23B 4/26 . Apparatus for preserving using liquids; { Methods therefor }
- A23B 4/28 . . by injection of liquids
- A23B 4/285 . . . { with inorganic salts }
- A23B 4/30 . . by spraying of liquids
- A23B 4/305 . . . { with inorganic salts }
- A23B 4/32 . Apparatus for preserving using solids
- A23B 4/325 . . { with inorganic salts }
- A23B 5/00** **Preservation of eggs or egg products ( preserving dough or bakery products [A21D](#) )**
- A23B 5/005 . Preserving by heating
- A23B 5/0052 . . { in the shell }
- A23B 5/0055 . . { without the shell }
- A23B 5/0057 . . . { with packages }
- A23B 5/01 . . by irradiation or electric treatment
- A23B 5/015 . Preserving by irradiation or electric treatment without heating effect

- A23B 5/02 . Drying; Subsequent reconstitution
- A23B 5/022 .. { Drying with use of gas or vacuum }
- A23B 5/025 .. { Drying } with addition of chemicals ( [A23B 5/03](#), [A23B 5/035](#) take precedence )
- A23B 5/0255 ... { Drying with use of liquids, e.g. by extraction }
- A23B 5/03 .. Freeze-drying, { i.e. cryodessication, lyophilisation; Apparatus therefor }
- A23B 5/035 .. Spray-drying
  
- A23B 5/04 . Freezing; Subsequent thawing; Cooling
- A23B 5/041 .. { Freezing or cooling without shell ( [A23B 5/05](#) takes precedence ) }
- A23B 5/043 ... { with packages }
- A23B 5/045 .. Thawing subsequent to freezing
- A23B 5/05 .. { Freezing or cooling } with addition of chemicals
- A23B 5/055 ... with direct contact between the food and the chemical, e.g. liquid nitrogen, at cryogenic temperature
  
- A23B 5/06 . Coating eggs with a protective layer; Compositions or apparatus therefor
- A23B 5/065 .. { Apparatus for coating }
  
- A23B 5/08 . Preserving with chemicals
- A23B 5/10 .. in the form of gases, e.g. fumigation; Compositions or apparatus therefor
- A23B 5/12 .. in the form of liquids or solids
- A23B 5/14 ... Organic compounds; Micro-organisms; Enzymes
- A23B 5/16 .... Micro-organisms; Enzymes
- A23B 5/18 ... Inorganic compounds
- A23B 5/20 ... Apparatus for preserving using liquids
- A23B 5/22 ... Apparatus for preserving using solids

**A23B 7/00****Preservation or chemical ripening of fruit or vegetables**

- A23B 7/005 . Preserving by heating
- A23B 7/0053 .. { by direct or indirect contact with heating gases or liquids }
- A23B 7/0056 ... { with packages }
- A23B 7/01 .. by irradiation or electric treatment
- A23B 7/012 ... { with packages }
  
- A23B 7/015 . Preserving by irradiation or electric treatment without heating effect
  
- A23B 7/02 . Dehydrating; Subsequent reconstitution ( [dried cooked potatoes A23L 1/216](#) )
- A23B 7/0205 .. { by contact of the material with fluids, e.g. drying gas or extracting liquids }
- A23B 7/021 .. { Foam drying }
- A23B 7/0215 .. { Post-treatment of dried fruits or vegetables }
- A23B 7/022 .. with addition of chemicals { before or during drying, e.g. semi-moist products }  
( [A23B 7/024](#) to [A23B 7/028](#) take precedence )
- A23B 7/024 .. Freeze-drying, { i.e. cryodessication or lyophilisation }

- A23B 7/026      ..      Spray-drying
- A23B 7/028      ..      Thin layer-, drum- or roller-drying { or by contact with a hot surface }
- A23B 7/03        ..      Drying raw potatoes
  
- A23B 7/04        .      Freezing; Subsequent thawing; Cooling
- A23B 7/0408     ..      { the material being transported through or in the apparatus with or without shaping, e.g. in the form of powder, granules or flakes ( [A23B 7/05](#) takes precedence; moving on the spot only [A23B 7/0425](#) ) }
- A23B 7/0416     ...      { with packages or with shaping in the form of blocks or portions }
- A23B 7/0425     ..      { the material not being transported through or in the apparatus, with or without shaping, e.g. in the form of powder, granules or flakes ( [A23B 7/05](#) takes precedence ) }
- A23B 7/0433     ...      { with packages or with shaping in the form of blocks or portions }
- A23B 7/0441     ..      { Treatment other than blanching preparatory to freezing }
- A23B 7/045        ..      Thawing subsequent to freezing
- A23B 7/05        ..      with addition of chemicals { or treatment with chemicals other than cryogenics, before or during cooling, e.g. in the form of an ice coating or frozen block }
- A23B 7/055      ...      with direct contact between the food and the chemical, e.g. liquid nitrogen, at cryogenic temperature
  
- A23B 7/06        .      Blanching ( machines therefor [A23N 12/00](#) )
  
- A23B 7/08        .      Preserving with sugars ( marmalade, jam, fruit jellies [A23L 1/06](#) )
- A23B 7/085      ..      { in a solution of sugar }
  
- A23B 7/10        .      Preserving with acids; Acid fermentation
- A23B 7/105      ..      { Leaf vegetables, e.g. sauerkraut }
- A23B 7/12        ..      Apparatus for compressing sauerkraut
  
- A23B 7/14        .      Preserving or ripening with chemicals not covered by groups [A23B 7/08](#) or [A23B 7/10](#)
- A23B 7/144      ..      in the form of gases, e.g. fumigation; Compositions or apparatus therefor { ( cooling without control of atmosphere composition [A23B 7/04](#) ) }
- A23B 7/148      ...      in a controlled atmosphere, e.g. partial vacuum, comprising only CO<sub>2</sub>, N<sub>2</sub>, O<sub>2</sub> or H<sub>2</sub>O
- A23B 7/152      ...      in a controlled atmosphere comprising other gases in addition to CO<sub>2</sub>, N<sub>2</sub>, O<sub>2</sub> or H<sub>2</sub>O; { Elimination of such other gases }
- A23B 7/153      ..      in the form of liquids or solids
- A23B 7/154      ...      Organic compounds; Micro-organisms; Enzymes ( acid fermentation [A23B 7/10](#) )
- A23B 7/155      ....      Micro-organisms; Enzymes; { Antibiotics }
- A23B 7/157      ...      Inorganic compounds
- A23B 7/158      ...      Apparatus for preserving using liquids
- A23B 7/159      ...      Apparatus for preserving using solids
  
- A23B 7/16        .      Coating with a protective layer; Compositions or apparatus therefor ( [A23B 7/08](#) takes precedence )
  
- A23B 9/00      Preservation of edible seeds, e.g. cereals**

- A23B 9/005 . { Processes or apparatus using pressure variation or mechanical force, e.g. shock, acceleration, shear stress, contortion }
- A23B 9/02 . Preserving by heating
- A23B 9/025 . . { with use of gases }
- A23B 9/04 . . by irradiation or electric treatment
- A23B 9/06 . Preserving by irradiation or electric treatment without heating effect
- A23B 9/08 . Drying; Subsequent reconstitution
- A23B 9/10 . Freezing; Subsequent thawing; Cooling
- A23B 9/12 . . Thawing subsequent to freezing
- A23B 9/14 . Coating with a protective layer; Compositions or apparatus therefor
- A23B 9/16 . Preserving with chemicals
- A23B 9/18 . . in the form of gases, e.g. fumigation; Compositions or apparatus therefor
- A23B 9/20 . . . in a controlled atmosphere, e.g. partial vacuum, comprising only CO<sub>2</sub>, N<sub>2</sub>, O<sub>2</sub> or H<sub>2</sub>O
- A23B 9/22 . . . in a controlled atmosphere comprising other gases in addition to CO<sub>2</sub>, N<sub>2</sub>, O<sub>2</sub> or H<sub>2</sub>O
- A23B 9/24 . . in the form of liquids or solids
- A23B 9/26 . . . Organic compounds; Micro-organisms; Enzymes
- A23B 9/28 . . . . Micro-organisms; Enzymes; { Antibiotics }
- A23B 9/30 . . . Inorganic compounds
- A23B 9/32 . . . Apparatus for preserving using liquids
- A23B 9/34 . . . Apparatus for preserving using solids