

**CPC****COOPERATIVE PATENT CLASSIFICATION****C12C**

**BREWING OF BEER** (cleaning of raw materials [A23N](#); pitching and depitching machines, cellar tools [C12L](#); propagating yeasts [C12N 1/14](#) ; non-beverage ethanolic fermentation [C12P 7/06](#))

**C12C 1/00****Preparation of malt**

C12C 1/02

- . Pretreatment of grains, e.g. washing, steeping

C12C 1/027

- . Germinating

C12C 1/0275

- .. {on single or multi-stage floors}

C12C 1/033

- .. in boxes or drums

C12C 1/047

- .. Influencing the germination by chemical or physical means

C12C 1/053

- ... by irradiation or electric {or wave energy} treatment

C12C 1/067

- . Drying

C12C 1/073

- .. Processes or apparatus specially adapted to save or recover energy

C12C 1/10

- .. Drying on fixed supports

C12C 1/12

- .. Drying on moving supports

C12C 1/125

- . Continuous or semi-continuous processes for steeping, germinating or drying

C12C 1/13

- .. with vertical transport of the grains

C12C 1/135

- .. with horizontal transport of the grains

C12C 1/15

- . Grain or malt turning, charging or discharging apparatus

C12C 1/16

- . After-treatment of malt, e.g. malt cleaning, detachment of the germ

C12C 1/18

- . Preparation of malt extract or of special kinds of malt, e.g. caramel, black malt ([malt products for use as foodstuffs A23L](#))

**C12C 3/00****Treatment of hops**

C12C 3/02

- . Drying

C12C 3/04

- . Conserving; Storing; Packing

C12C 3/06

- .. Powder or pellets from hops

C12C 3/08

- .. Solvent extracts from hops

C12C 3/085

- ... {Extraction of hops with beerwort}

C12C 3/10

- ... using carbon dioxide

C12C 3/12

- . Isomerised products from hops

**C12C 5/00****Other raw materials for the preparation of beer**

C12C 5/002

- . {Brewing water}

C12C 5/004

- . {Enzymes}

C12C 5/006

- .. {Beta-glucanase or functionally equivalent enzymes}

C12C 5/008

- . {Hop surrogates}

C12C 5/02

- . Additives for beer

C12C 5/023

- .. {enhancing the vitamin content}

C12C 5/026 . . {Beer flavouring preparations}

C12C 5/04 . . Colouring additives

## C12C 7/00

### Preparation of wort (malt extract [C12C 1/18](#))

- C12C 7/01 . Pretreatment of malt, e.g. malt grinding
- C12C 7/04 . Preparation or treatment of the mash
- C12C 7/042 . . {Mixing malt with water}
- C12C 7/044 . . {Cooling the mash ([C12C 7/067](#) takes precedence)}
- C12C 7/047 . . part of the mash being unmalted cereal mash
- C12C 7/053 . . part of the mash being non-cereal material
- C12C 7/06 . . Mashing apparatus
  - C12C 7/062 . . . {with a horizontal stirrer shaft}
  - C12C 7/065 . . . {with a vertical stirrer shaft}
  - C12C 7/067 . . . {with cooling means}
- C12C 7/14 . Clarifying wort (Läuterung)
- C12C 7/16 . . by straining
  - C12C 7/161 . . . {in a tub with a perforated false bottom}
  - C12C 7/163 . . . {with transport of the mash by or relative to a filtering surface}
  - C12C 7/165 . . . in mash filters
  - C12C 7/17 . . . in lautertuns, {e.g. in a tub with perforated false bottom}
- C12C 7/175 . . by centrifuging
- C12C 7/20 . Boiling the beerwort ([brew kettles C12C 13/02](#))
- C12C 7/205 . . {Boiling with hops}
- C12C 7/22 . . . Processes or apparatus specially adapted to save or recover energy
- C12C 7/24 . Clarifying beerwort between hop boiling and cooling
- C12C 7/26 . Cooling beerwort; Clarifying beerwort during or after the cooling
- C12C 7/28 . After-treatment, {e.g. sterilisation ([C12C 11/00](#) takes precedence)}
- C12C 7/282 . . {Concentration or beerwort}
- C12C 7/285 . . {Drying beerwort}
- C12C 7/287 . . {Treating beerwort with hopextract ([C12C 7/205](#) takes precedence)}

## C12C 9/00

### Methods specially adapted for the making of beerwort

- C12C 9/02 . Beerwort treatment; Boiling with hops; Hop extraction
- C12C 9/025 . . {Preparation of hop extracts ([extraction with beerwort C12C 9/02](#)); Isomerisation of these extracts; Treatment of beerwort with these extracts; Surrogates of the hop}

## C12C 11/00

### Fermentation processes for beer ([preparation of wine C12G 1/00](#))

- C12C 11/003 . . {Fermentation of beerwort}
- C12C 11/006 . . {Fermentation tanks therefor}
- C12C 11/02 . Pitching yeast
- C12C 11/06 . Acidifying the wort

- C12C 11/07 . Continuous fermentation
- C12C 11/075 . . {Bioreactors for continuous fermentation}
- C12C 11/09 . Fermentation with immobilised yeast
- C12C 11/11 . Post fermentation treatments, e.g. carbonation, concentration ([C12H](#) takes precedence; containers with means specially adapted for effervescing potable liquids [B65D 85/73](#))
  
- C12C 12/00 Processes specially adapted for making special kinds of beer**
- C12C 12/002 . {using special micro-organisms}
- C12C 12/004 . . {Genetically modified micro-organisms}
- C12C 12/006 . . {Yeasts (processes for seeding [C12C 11/02](#))}
- C12C 12/008 . . {Lactic acid bacteria}
- C12C 12/02 . Beer with low calorie content ([C12C 12/04](#) takes precedence)
- C12C 12/04 . Beer with low alcohol content {(removal of alcohol after fermentation [C12G 3/08](#))}
  
- C12C 13/00 Brewing devices, not covered by a single group of [C12C 1/00](#) to [C12C 12/04](#)**
- C12C 13/02 . Brew kettles {([C12C 11/075](#) takes precedence)}
- C12C 13/025 . . {heated with steam}
- C12C 13/06 . . heated with fire
- C12C 13/08 . . with internal heating elements
- C12C 13/10 . Home brew equipment
  
- C12C 2200/00 Special features**
- C12C 2200/01 . Use of specific genetic variants of barley or other sources of fermentable carbohydrates for beer brewing
- C12C 2200/05 . Use of genetically modified microorganisms in the preparation of beer
- C12C 2200/31 . Clarifying wort before or during or after cooling;
- C12C 2200/35 . Dissolving, reconstituting or diluting concentrated or dried wort