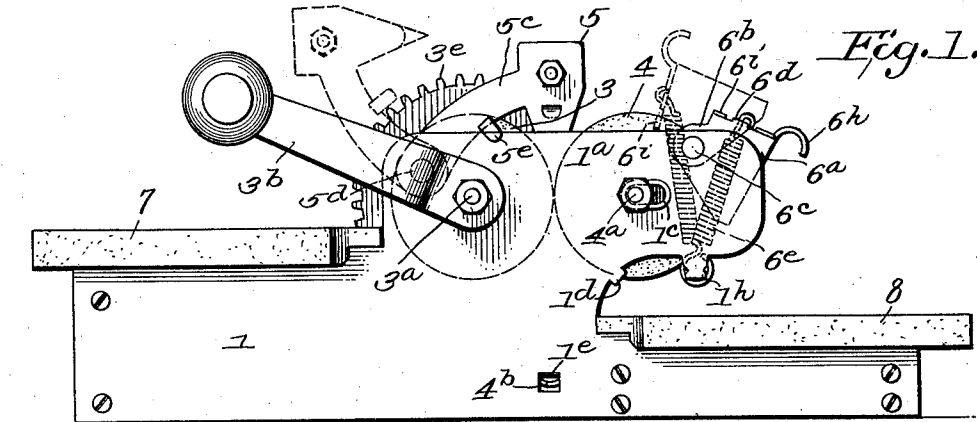


W. O. KAISER.
OINTMENT MACHINE.
APPLICATION FILED MAY 16, 1912.

1,042,923.

Patented Oct. 29, 1912.

2 SHEETS-SHEET 1.



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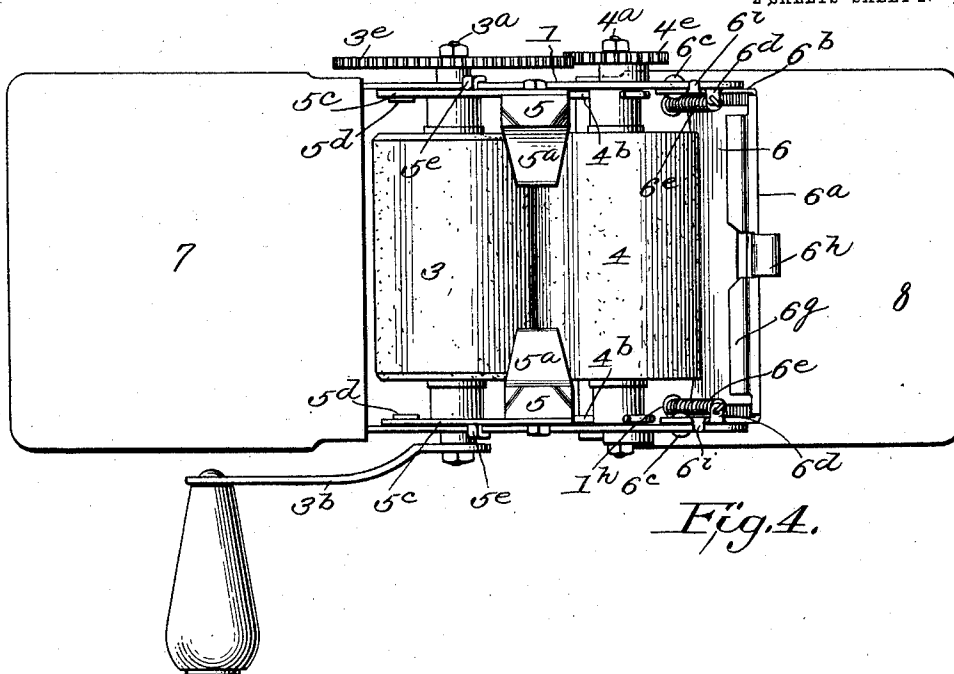


Fig. 4.

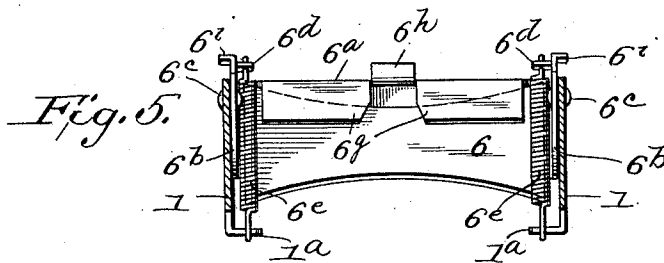


Fig. 5.

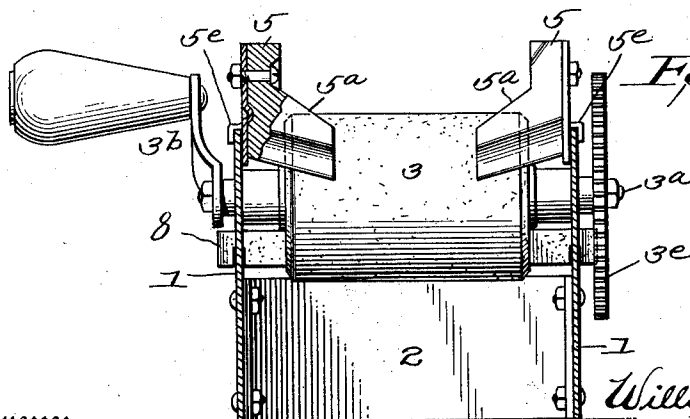


Fig. 6.

Witnesses

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OINTMENT-MACHINE.

1,042,923.

Specification of Letters Patent.

Patented Oct. 29, 1912.

Application filed May 16, 1912. Serial No. 697,728.

To all whom it may concern:

Be it known that I, WILLIAM O. KAISER, of Burlington, in the county of Des Moines and State of Iowa, have invented certain new and useful Improvements in Ointment-Machines; and I hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, which form part of this specification.

This invention is a machine for grinding and preparing ointments and the like, in which gritty or insoluble matter or chemicals are to be combined with oily or fatty matters or bases to form a smooth ointment free from lumps of any of the incorporated materials.

In particular the invention is an improvement upon the machine shown in my Patent No. 915,864 dated March 23, 1909 and, like such patented machine, may be put to general use in ointment making, but is especially designed for use in the prescription departments of drug stores.

The machine is adapted to receive the roughly mixed materials and crush and grind them into a perfectly smooth ointment, which is delivered in a finished uniform condition.

I will now describe the invention in detail with reference to the accompanying drawings, in which—

Figure 1 is a side elevation of the complete machine, showing the guard pieces and the scraper in inoperative, or cleaning, positions in dotted lines. Fig. 2 is a longitudinal vertical section through the machine. Fig. 3 is a right-hand end view thereof. Fig. 4 is a top plan view thereof. Fig. 5 is a detail vertical transverse section on line 5—5, Fig. 2, showing the scraper and its holding devices. Fig. 6 is a central vertical transverse section through the machine.

The frame of the machine is preferably formed of two metallic side members 1 connected by transverse metal pieces 2. The side members of the frame are provided with upstanding central portions 1^a in which are journaled the shafts of two grinding rolls 3 and 4. The rolls 3 and 4 may be of any suitable material, and are preferably made of ground glass, porcelain or marble.

The shaft 3^a of roll 3 may be mounted in fixed bearings; but the shaft 4^a on roll 4 is preferably mounted in slots 1^c in the side

members of the frame and roll 4 may be pressed toward roll 3 by means of suitable springs; as shown spring rods 4^b are employed, the upper end of said rods pressing against the outer side of the shaft of roll 4^a, the rods pressing centrally against lugs 1^d on the side members 1, and the lower end of the rods being hooked under lugs 1^e on said members, so that the rods will naturally tend to hold the roll 4 in yielding contact with the roll 3.

Roll 3 may be rotated by a crank 3^b attached to one end of its shaft, or by any other suitable means; and motion may be transmitted from roll 3 to roll 4 by intermeshing gears 3^c, 4^c, on the shafts of the rolls. Said gears being preferably of such size that roll 4 is driven more rapidly than roll 3; and approximately about three times as fast as roll 3. The periphery of roll 4 is held in yielding contact with the periphery of roll 3 by the springs 4^b, which will compensate for any wear of the roll surfaces, and insure close contact therebetween.

In order to direct the material being treated between the rolls, I employ adjustable guard pieces or blocks 5, which are preferably made of glass, marble or pottery like the rolls. Each block is preferably beveled on its lower edge so as to approximately fit closely between the upper surfaces of the rolls 3 and 4 when adjusted into working position, (see Figs. 1, 2, 5,) and each block is also tapered inwardly on its upper side as at 5^a, so that when the lugs are in position over the rolls they form therewith a kind of hopper into which the material to be treated is placed, and by which it is directed to and between the rolls and prevented from escaping over the end of the rolls. The guard pieces or blocks 5 are preferably attached by screws or otherwise to metal arms 5^c which are pivoted to the side members of the frame as indicated at 5^d; and said arms are provided with lugs 5^e which are adapted to engage the side members 1 and support the blocks in proper working position, as shown in Figs. 1, 2 and 4. This arrangement of the guard pieces or blocks 5 is one important feature of the present invention as such blocks can be quickly adjusted to working position as shown in Figs. 1, 4, or may be thrown to the position indicated in dotted lines in Fig. 1, in which position they can be quickly and readily cleaned.

At the outer side of roll 4 is a scraper 6.

which is preferably formed of glass or marble or other suitable material; the lower edge of this scraper is preferably concaved for a purpose hereinafter explained and when in working position contacts with the periphery of roll 4. This scraper is preferably mounted in a holder consisting of a metallic plate 6^a having its ends 6^b bent at right angles so as to fit against the inner faces of the side members 1 of the frame, adjacent the roll 4; and the ends 6^b of the holder are pivoted to the members 1 as indicated at 6^c.

The scraper holder is provided on its upper edge intermediate the ends 6^b with inwardly and downwardly bent flanges 6^e under which the upper edge of the scraper 6 is inserted, and by which the scraper is removably secured in position in the holder. The plate 6^a may have a central lug or handle piece 6^d whereby it can be conveniently manipulated.

When the plate 6^a is in lowermost position, as indicated in Figs. 2—4, it is pulled downward by means of suitable springs so as to hold the scraper 6 yieldingly in contact with the periphery of roll 4. As shown helical springs 6^f are connected at their lower ends to lugs 1^h on the members 1, and at their upper ends to lugs 6^d on the end pieces 6^b of the scraper frame.

When it is desired to clean the scraper, or to remove and insert a new scraper, the scraper frame may be swung upward to the position indicated in dotted lines in Fig. 1, in which position it will also be held by springs 6^f. The upward swinging movement of the scraper frame is limited by lugs 6ⁱ on the end pieces 6^b which will engage the side members 1.

Mounted upon the side members adjacent the roll 3 is a flat plate 7, which may be made of glass, marble or other suitable material; a similar plate 8 is mounted on the side members adjacent and below roll 4.

The materials for the ointment, if desired, may be first placed upon plate 7 and roughly reduced or mixed by a spatula, and then placed in the hopper or between the guard pieces or blocks 5 and rolls 3 and 4, when the blocks are in working position (Fig. 4). The scraper being lowered to position (Fig. 2) the rolls 3 and 4 are rotated so as to turn toward each other, thereby causing the materials placed between them to take up a rolling motion. A thin film of such materials adheres to each roller, and because of the differences in peripheral speeds of the rollers any small hard insoluble particles in the mixture are crushed or ground and incorporated with the fatty base. The fineness of the grinding may be regulated by the pressure of the rolls toward each other and the finely ground material will be removed from roll 4 by the scraper 6 and deposited thereby on the table 8.

In order to insure the thorough reduction of the mass and the deposit of the ground ointment in the center or thereabouts of the plate 8 and to prevent the ointment as it is being ground from escaping over the ends of the roll 4, the edge of the scraper is concaved as shown; a straight edged scraper would remove the material from roll 4 but would not act so well, especially when the materials are soft or run easily; the concaved scraper directs the ointment toward the center of roll 4 and keeps the ends of the roll clean, and the rotation of the roll 4 causes the ointment to move toward the center of the concave edge of the scraper where it drops off onto table 8 when sufficient material accumulates to overcome its adhesion to the scraper and roll.

It will be seen that the roll 3 is chamfered on its edges so as to have a somewhat shorter grinding surface than roll 4. This is done so that the material will be all transferred from roll 3 to roll 4, otherwise some of the material before grinding would gradually squeeze out from the edge of the roll 3; but by making the grinding surface of roll 3 slightly shorter than that of roll 4 all the material will be taken by roll 4 and delivered by the scraper onto table 8.

What I claim is:

1. In an ointment grinding machine, the combination of a pair of grinding rolls and means for rotating said rolls; with a pair of guard pieces adapted to be entered between the upper sides of the rolls, and adjustable supports to which said guard pieces are attached, whereby said guard pieces may be supported in position between the rolls or moved away from such position.

2. In an ointment grinding machine, the combination with a pair of grinding rolls, of an adjustable scraper engaging one of the rolls, said scraper being concaved on its scraping edge, for the purpose described.

3. In an ointment grinding machine, the combination of a pair of grinding rolls, and means for rotating said rolls and an adjustable scraper engaging one of the rolls, said scraper having a concave edge; with a pair of guard pieces adapted to be entered between the upper side of the rolls and adjustable supports to which said guard pieces are attached.

4. In an ointment grinding machine, the combination of a frame, a pair of rolls journaled therein, means for pressing one of said rolls yieldingly toward the other, gearing for driving said rolls at different peripheral speeds, and a scraper engaging one roll; with guard pieces adapted to be placed between the rolls and pivoted arms supporting said guard pieces.

5. In an ointment grinding machine, the combination of a pair of grinding rolls, and means for rotating said rolls; with a pair of

adjustable guard pieces adapted to be entered between the upper sides of the rolls, and adjustable swinging levers to which said guard pieces are attached, substantially as described.

6. In an ointment grinding machine, the combination of a pair of grinding rolls, means for rotating said rolls, a pair of guard pieces adapted to be entered between the upper sides of the rolls, and adjustable swinging levers to which said guard pieces are attached; with a scraper frame pivoted beside one of the rolls, a scraper mounted in said frame adapted to engage the adjacent roll, and springs for holding the scraper in yielding contact with such roll.

7. In an ointment grinding machine, the combination of a pair of grinding rolls, a swinging scraper frame pivoted beside one of the rolls, a scraper adjustably mounted in said frame, and springs adapted to hold the scraper frame in operative position with the scraper in yielding contact with the roll, or

to hold the scraper frame in inoperative position with the scraper separated from the roll.

8. In an ointment grinding machine, the combination of a main frame, a pair of grinding rolls journaled therein, and means for rotating said rolls; with a scraper frame pivoted to the main frame beside one of the rolls; a scraper mounted in said frame and adapted to engage the adjacent roll, and springs connected with said frame for holding the frame in operative position with the scraper in yielding contact with such roll; or for holding the scraper frame in inoperative position with the scraper out of contact with the roll.

In testimony that I claim the foregoing as my own, I affix my signature in presence of two witnesses.

WILLIAM O. KAISER.

Witnesses:

Mrs. A. M. KAISER,
HERBERT O. BACHER.

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