Jan. 26, 1932. J. K. SMITH 1,842,480

COUNTER PASTING MACHINE

Filed Oct. 29, 1929 2 Sheets-Sheet 1

Fig. 6.

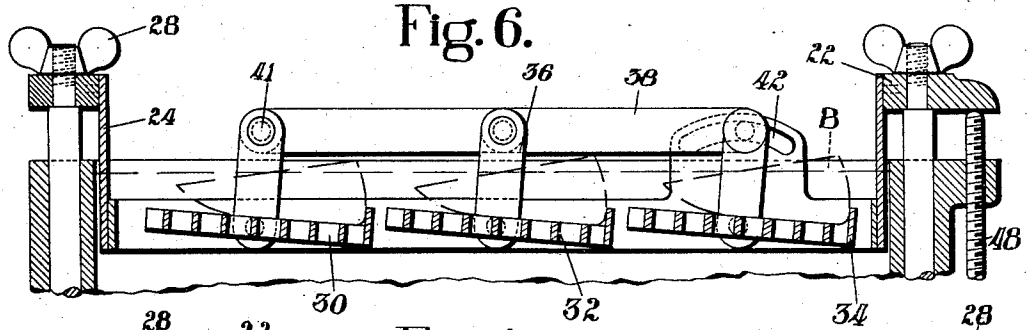


Fig. 1.

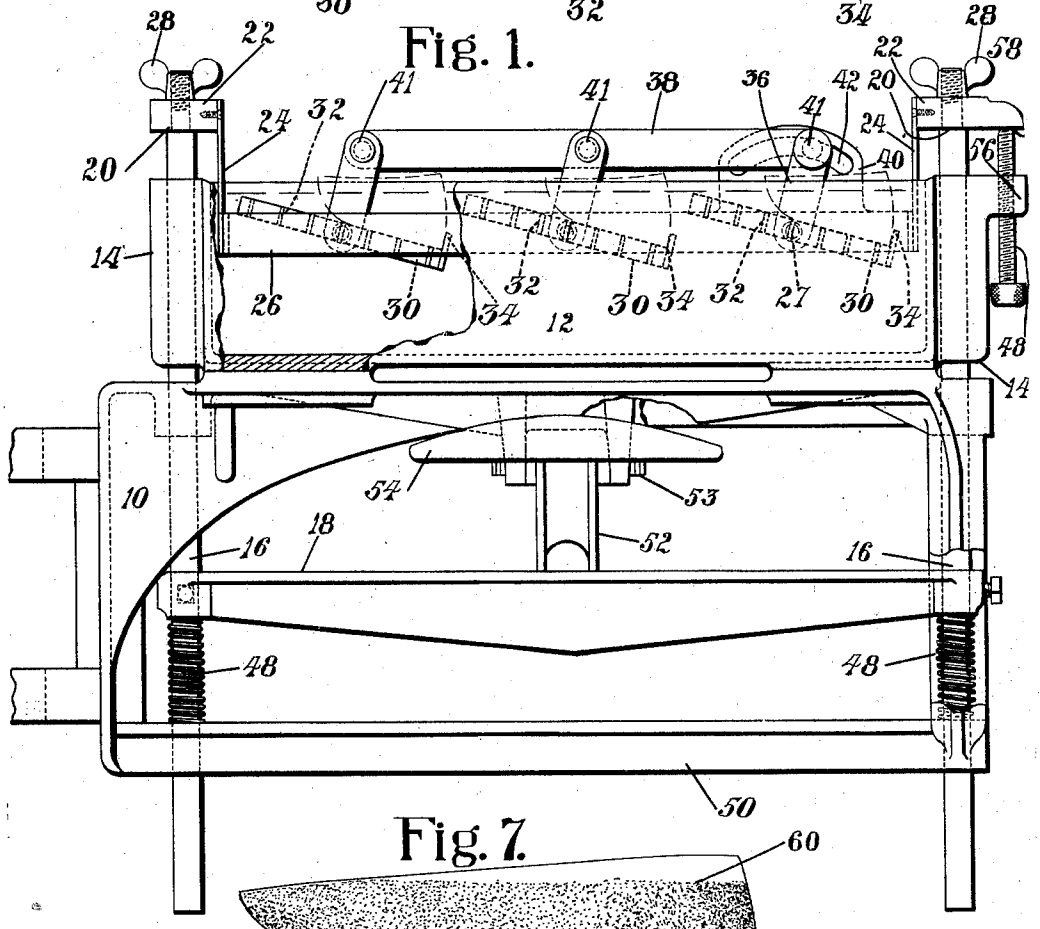
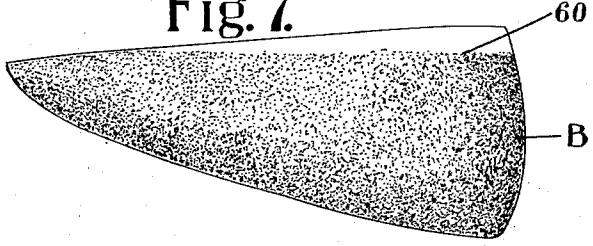


Fig. 7.



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Fig. 4.

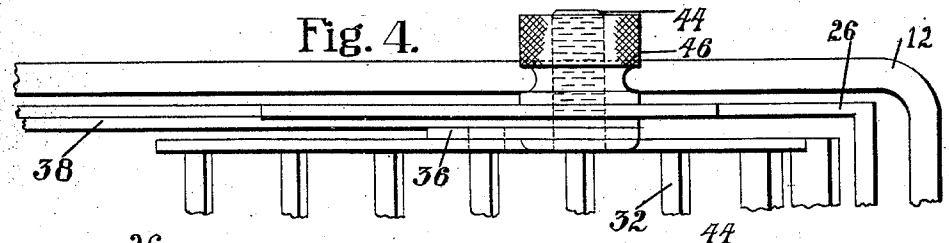


Fig. 2.

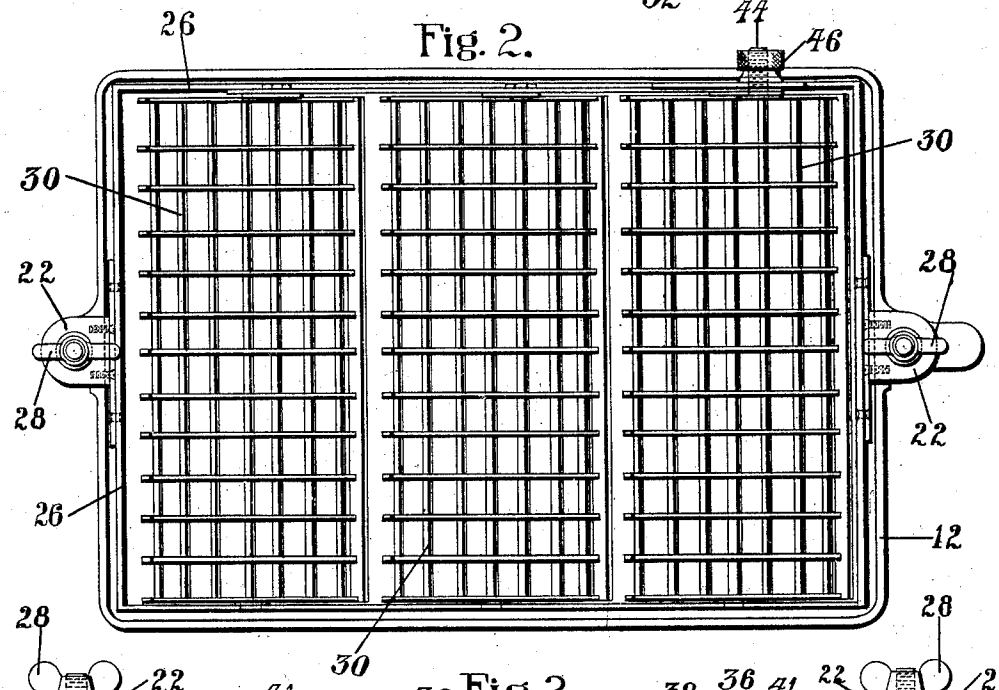


Fig. 3.

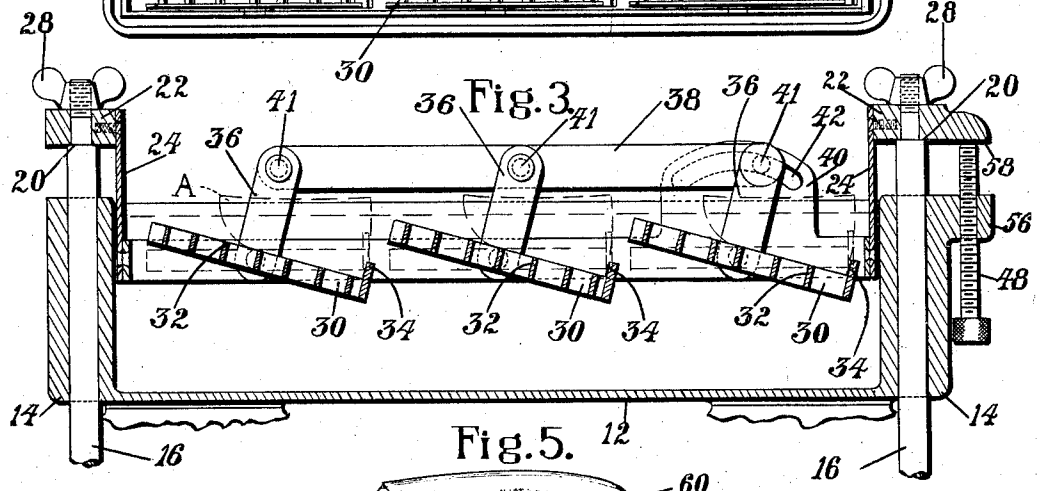
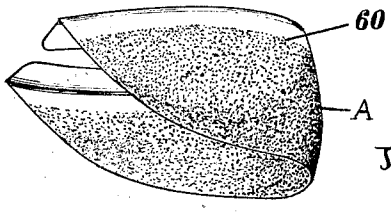


Fig. 5.



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UNITED STATES PATENT OFFICE

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COUNTER-PASTING MACHINE

Application filed October 29, 1929. Serial No. 403,282.

This invention relates to machines for applying adhesive to work pieces and is illustrated herein as embodied in a counter-pasting machine.

Prior to inserting a molded counter between the rear portion of the quarters and the lining of a shoe upper, it is customary to coat the counter with an adhesive, to cause it to adhere to the associated elements and unite all into a firm structure which will resist displacements tending to affect the appearance and comfort of the finished shoe. It is desirable that the adhesive be of such a nature that, after it has been applied to the counter, it will remain moist during the subsequent side-lasting and heel-seat-lasting operations in order that the operator may remove wrinkles or like displacements appearing in the upper elements before he fastens them firmly in lasted relation to the insole and the last. Molded counters are incorporated in shoes for the purpose of giving added support to the shoe upper around the heel end of the shoe, and for this purpose counters of the usual lengths are generally employed, such counters having their front ends or wings extending only a short distance beyond the heel breast line of the shoe. In the manufacture of shoes having uppers of soft flexible material, it is customary to use a counter having extra long front ends or wings which extend a substantial distance beyond the heel breast line of the shoe and along the shank portion thereof for the purpose of giving added support to the shoe upper not only around the heel end but also along the shank portion of the shoe and particularly along the inner side of the shank portion. In coating counters of the more usual lengths it is desirable that the adhesive be applied only to the body or upstanding portions of the counters since their inwardly turned margins or flanges are attached to the upper elements by tacks in the heel-seat-lasting operation. Moreover, in assembling a molded counter of any type with a shoe upper, the operator holds the counter by its inwardly turned margin or flange while inserting the counter between the rear of the quarters and the lining of the shoe upper and then grasps the shoe with both hands while inserting assembling tacks through the upper and into the last. It is, therefore, desirable that the inwardly turned margins or flanges of counters be free from adhesive rearwardly of the heel breast line, so that no paste will be transferred by the operator's hands from the counter to the shoe upper.

In work requiring the use of extra long counters, however, the adhesive should be applied in such a way that not only are the body portions of the counters coated with adhesive but also their extreme front ends or wings for the purpose of causing the lining and upper to adhere to the extreme front ends or wings of the extra long counters, thus preventing wrinkling of the lining at that point and also giving added support to the shank portions of the shoe.

Molded counters may be coated by dipping, in groups for example, by supporting them in inverted positions, that is, resting on the slanting edges of the counters which are uppermost when the counters are incorporated in shoes and the shoes are in their normal right-side-up positions, those edges being frequently termed herein for convenience the upper edges of the counters, and dipping them simultaneously into an adhesive. When a molded counter of one of the more usual short lengths is thus supported in inverted position, it is desirable that the dip-line or upper edge of that portion of the counter which is immersed in the fluid be parallel to but slightly below the corner formed by the body portion of the counter and the inwardly turned margin or flange, while on an extra long counter it is desirable that the dip-line intersect the corner between the inwardly turned flange and the sides and rear of the body portion of the counter, thus allowing the extreme front ends or wings of the counter to be immersed in the fluid while the inwardly turned margin or flange is kept free from adhesive rearwardly of the heel breast line. However, owing to the counters being of different lengths, a variation exists in the angular relation between their slanting upper edges and their inwardly turned flanges, which causes the flanges of counters of differ-

ent lengths to lie on the grid or support in different inclined planes relatively to the surface of the fluid into which they are dipped.

In view of the foregoing, it is an object of the present invention to provide an improved adhesive-applying machine by the use of which the coating of articles such, for example, as molded counters may be facilitated and which will produce the required dip-lines on the articles, provision being made for variation in the angular relation of the dip-line to a surface or corner of the article.

To this end and in accordance with a feature of the invention, the illustrated adhesive-applying machine comprises a receptacle for fluid and a support for articles to be coated, which support and receptacle are relatively adjustable to determine the angular relation of the article to be coated and the surface of fluid in the receptacle into which the article is dipped upon relative movement of the support and receptacle.

In accordance with a further feature of the invention, the illustrated machine is provided with a plurality of work-supporting grids adapted to hold rows of individual counters, said grids being simultaneously adjustable relatively to the level of the fluid into which they are to be dipped and provision being made for holding them in their adjusted positions.

These and other objects and features of the invention, including certain details of construction and combinations of parts, will be described as embodied in an illustrative machine and pointed out in the appended claims.

Referring to the accompanying drawings,

Fig. 1 is a front elevation of the machine with parts broken away;

Fig. 2 is a plan view of the machine;

Fig. 3 is a vertical transverse section through the machine illustrating the adjusted positions of the work-supporting grids and the depth to which the grids are immersed in the fluid when coating counters of the ordinary short lengths;

Fig. 4 is an enlarged plan view of one end of the right-hand grid and the supporting frame, illustrating means for holding the grids in their adjusted positions;

Fig. 5 shows in perspective a coated counter of the ordinary short length ready for the assembling operation;

Fig. 6 is an enlarged vertical transverse section through the upper portion of the machine, showing the adjusted positions of the work-supporting grids and the depth to which the grids are immersed in the fluid when coating counters of the extra long type; and

Fig. 7 is a perspective view of a coated counter of the extra long type ready for the assembling operation.

A frame 10 adapted to be mounted upon a column of a machine with which the illustrated coating machine is to be used has associated with it a receptacle in the form of a generally rectangular pan 12 to receive the paste or other adhesive which is to be applied. Arranged to slide vertically in alined openings in the frame and passing through openings in extensions 14, 14 at opposite ends of the pan are carrier-rods 16, 16 connected near the lower portions of the frame by a cross-bar 18. Somewhat below the top of each rod 16 is formed an annular shoulder 20 upon which rests a bracket 22 to the depending bar 24 of which is secured a grit-supporting frame 26 of the same peripheral contour as the pan. Winged nuts 28 are provided to fix the grid supporting frame 26 in place upon the carrier rods 16.

The illustrated machine comprises three work-supporting grids 30 pivotally mounted on the grid-supporting frame 26 at 27—27. If desired, the dimensions of the pan 12 and frame 26 may be such that any number of grids may be similarly mounted on the frame 26. Each grid is made up of a series of bars 32 intersecting each other at right angles and has at one side thereof an upstanding rib or stop 34 which serves not only to keep the counters from sliding off the grid but acts also as a gage to position the counters in alinement on the grid. The grid frame 26 has an upstanding portion 40 in which a circular groove 42 is formed concentric with the fulcrum 27 of the right-hand grid 30. In order simultaneously to move the grids 30 into the same angular position with respect to the surface of the fluid in the pan a rod 38 is provided to which are pivotally connected arms 36—36 the lower ends of which are rigidly secured to the grids 30. For the purpose of holding the grids 30 in their adjusted positions a binding screw 44 and nut 46 are provided to lock the arms 36—36 and rod 38 in their adjusted positions against the upstanding portion 40 of the frame 26.

The right-hand extension 14 of the pan 12 has a boss 56 through which is threaded an adjustable set screw 48 adapted to cooperate with the under surface 58 of an extension on the right-hand bracket 22 to limit the downward movement of the grids 30 and supporting frame 26. Normally the grids are held with their upper faces near the top of the pan conveniently for the application of the work-pieces by the operator by springs 48, 48 (Fig. 1) which surround the rods 16 between the cross-bar 18 and a bottom bar 50 of the frame. The grids may be lowered for their immersion with the work in the fluid contained in the pan by a lever 52 fulcrumed at 53 upon the frame and resting at its underside against the cross-bar 18.

In coating molded counters, for example, the operator places a row of separated unnested counters side-by-side on each grid 30

with the upper edges of their bodies resting thereon and their flanged, normally lowermost edges uppermost, moves the rod 38 either to the right or left sufficiently to position the flanged edges of the counters in the desired plane relatively to the surface of the fluid in the receptacle, and tightens the nut 46 to hold the grids in their adjusted positions. Adjustment of the screw 48 regulates the depth to which the grids may be immersed in the fluid. Depression of the grids is effected through pressure by the operator upon a pad 54 at the forward extremity of the lever 52.

Thus, according to the angular position of a grid relatively to the surface of the fluid in the receptacle, the upper edge of that portion of the counter on the grid which is immersed in the fluid, herein referred to as the dip-line 60, may be either parallel to the flanged edge of the counter, as shown in Fig. 5, when it is desired to coat a short counter A or the dip-line 60 may be inclined relatively to the flanged edge of the counter, as shown in Fig. 6, when it is desired to coat an extra long counter B.

Having described my invention, what I claim as new and desire to secure by Letters Patent of the United States is: —

1. In a coating machine, a receptacle for fluid, a support for an article to be coated, said support and receptacle being relatively movable to dip the article in the fluid, and said support and receptacle being relatively adjustable to determine the angular relation of the article on the support and the surface of the fluid during the dipping operation.

2. A counter-pasting machine comprising a receptacle for paste and a grid for supporting counters, said grid and receptacle being relatively movable to immerse the grid and a part of each counter in the paste, and said grid being constructed and arranged variably to determine that portion of the counter to be coated.

3. A counter-pasting machine comprising a receptacle for fluid, a grid for supporting counters movable relatively thereto, means for moving the grid into any one of a number of angular positions inclined to the horizontal thereby to determine that portion of the counter to be coated, and means for determining the depth to which the inclined grid may be immersed in the fluid.

4. A counter-pasting machine comprising a receptacle, an adjustable work support movable in the receptacle, means for adjusting the angular position of the work support to incline it with respect to the level of fluid in the receptacle, and means for holding the work support in its adjusted inclined position.

5. A counter-pasting machine comprising a receptacle for paste, a grid support, a plurality of grids movably mounted on the support adapted to hold a plurality of counters, and means for controlling the angular position of a grid to determine the dip-line on the counters supported by that grid, and means for locking the last-named means against further movement.

6. A counter-pasting machine comprising a receptacle for paste, a grid support, a grid adjustably mounted on the support, and means for moving the grid into any one of a number of angular positions to control the portion of the counter which is dipped in the paste.

7. A counter-pasting machine comprising a receptacle for paste, a work support movable therein and angularly adjustable with respect to the level of the fluid in the receptacle, and means for varying the depth to which the adjusted work support may be dipped in the paste.

8. A counter-pasting machine comprising a receptacle for paste, a grid-supporting frame, a plurality of grids movably mounted thereon, means carried by the receptacle for limiting the downward movement of the supporting frame, and means constructed and arranged to vary the angular position of the grids to determine the dip-lines on the counters.

9. A counter-pasting machine comprising a receptacle for paste, a grid support, a grid movably mounted on the support, and interconnecting means between the grid and the support for holding the grid in any one of a number of angular positions to control the portion of a counter which is dipped in the paste.

10. A counter-pasting machine comprising a receptacle for paste, a grid support, a grid movably mounted on the support, means for holding the grid in any one of a number of angular positions, and means for engaging the body portions of the counters to keep the counters from sliding off the grid.

11. A counter-pasting machine comprising a receptacle for paste, a grid support, a grid movably mounted on the support, means for moving the grid into any one of a number of angular positions, and an upstanding rib at one side of the grid adapted to retain work on the grid.

12. A counter-pasting machine comprising a receptacle for liquid, an adjustable work support for a plurality of molded counters movable in the receptacle, and means for adjusting the work support with respect to the level of liquid in the receptacle to position the flanged edges of the counters in the same horizontal plane.

13. A counter-pasting machine comprising a receptacle for fluid, an adjustable work support for a plurality of molded counters movable in the receptacle, and means for adjusting the work support relatively to the level of fluid in the receptacle to position the

flanged edges of the counters in the same inclined plane.

14. A counter-pasting machine comprising a receptacle for fluid, a grid support, a grid for supporting counters to be coated, and means for varying the relative planes of the level of fluid in the receptacle and of the grid to determine the dip lines on the counters.

15. A counter-pasting machine comprising a receptacle for fluid, a grid support, a grid movably mounted thereon, means for holding the counters in alined positions on the grid and means for rocking the grid on the support, said means being adapted variably to predetermine the angular relation of the grid with respect to the level of fluid in the receptacle.

16. A counter-pasting machine comprising a receptacle for fluid, a grid support, a plurality of grids movably mounted on the support, a gage carried by each of the grids and adapted to retain the counters on the grids, and means for simultaneously adjusting the angular positions of the grids relatively to the level of fluid in the receptacle.

17. A counter-pasting machine comprising a receptacle for fluid, a grid support, a plurality of grids movably mounted on the support, means for simultaneously adjusting the angular positions of the grids relatively to the level of fluid in the receptacle, means for holding the counters in alined positions on the inclined grids, and means for holding the grids in their adjusted positions.

18. A counter-pasting machine comprising a receptacle for fluid, a grid support. a plurality of grids movably mounted on the support, connecting means for simultaneously adjusting the angular positions of the grids relatively to the level of fluid in the receptacle, and means for holding the connecting means with the grids in their adjusted positions.

19. A counter-pasting machine comprising a receptacle for fluid, a grid support, a plurality of grids movably mounted on the support, said grids having upwardly extending arms, a common connection for the arms constructed and arranged to adjust the angular positions of the grids relatively to the level of fluid in the receptacle, and a single means for simultaneously holding the grids in their adjusted positions.

20. A counter-pasting machine comprising a receptacle for fluid, a grid-supporting frame, a plurality of individual grids movably mounted on the frame, said grids having vertically extending arms, a common connecting rod for the arms constructed and arranged to move the grids simultaneously into any desired angular position relatively to the level of fluid in the receptacle, and means for holding the connecting rod against further movement.

21. A counter-pasting machine comprising a receptacle for fluid, an adjustable work support movably mounted therein, said support being adapted to hold a plurality of rows of separated unnested counters, means for variably determining the angular relation of the work support relatively to the level of fluid in the receptacle, and clamping means for holding the work support in adjusted angular position.

22. A counter-pasting machine comprising a receptacle for fluid, a grid support, a plurality of grids movably mounted thereon and adapted to support a plurality of rows of separated unnested counters, means for moving the grids relatively to the support to control the angular positions of the grids with respect to the surface of fluid in the receptacle, means for locking the last-named means against further movement thereby to hold the grids in adjusted inclined position during the dipping operation, and means for producing relative movement between the support and the receptacle to dip the counters in the fluid.

23. A counter-pasting machine comprising a receptacle for fluid and a grid for supporting a plurality of extra-long counters, said grid and receptacle being relatively movable to immerse the grid in fluid in the receptacle, and said grid being adjustable with respect to the level of the fluid in the receptacle so as to immerse the extreme front ends of the extra-long counters in the fluid.

In testimony whereof I have signed my name to this specification.

JOHN K. SMITH.