April 3, 1928. 1,665,197

F. J. LEDERER

MARKING MACHINE

Filed Sept. 8, 1925 3 Sheets-Sheet 1

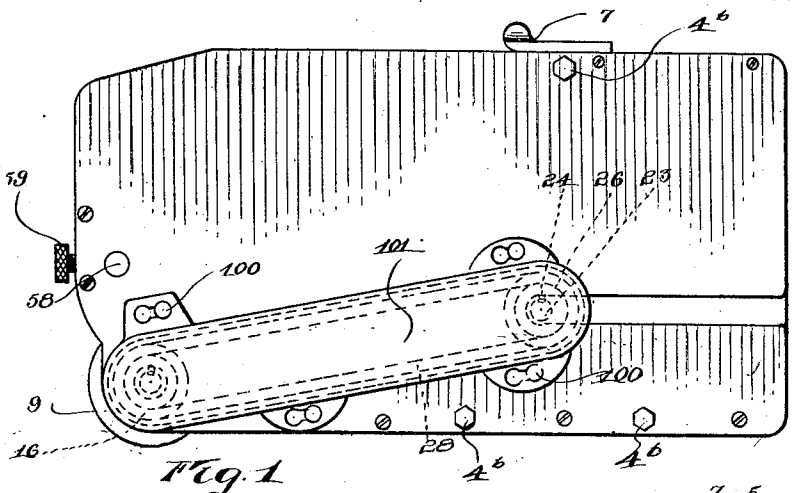


Fig. 1

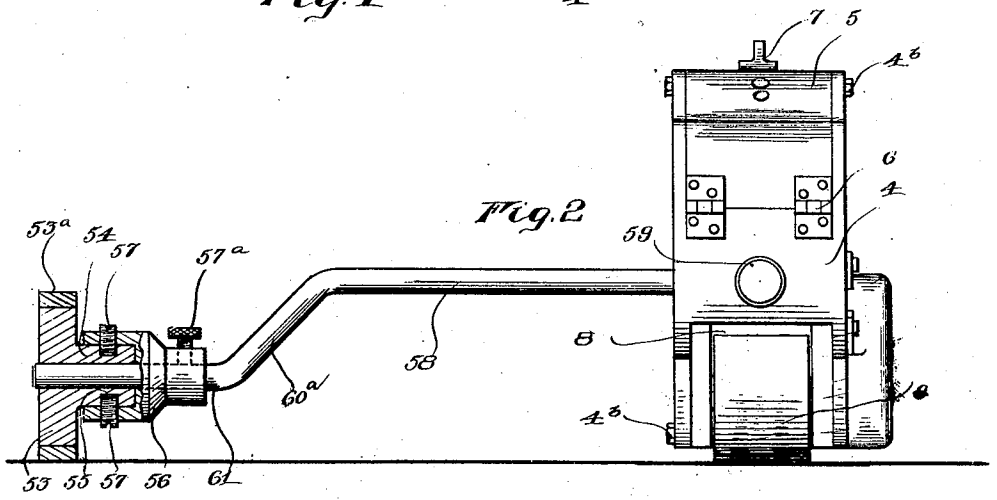


Fig. 2

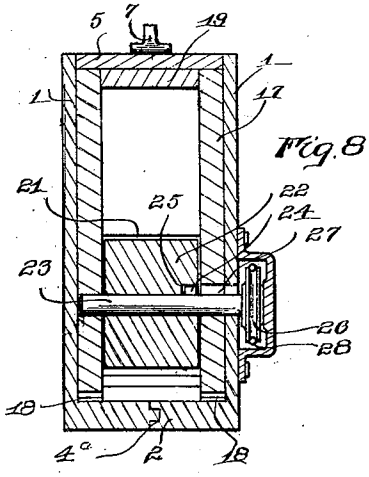


Fig. 8

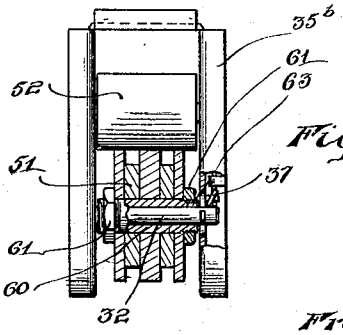


Fig. 10

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April 3, 1928. 1,665,197

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MARKING MACHINE

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Fig. 3

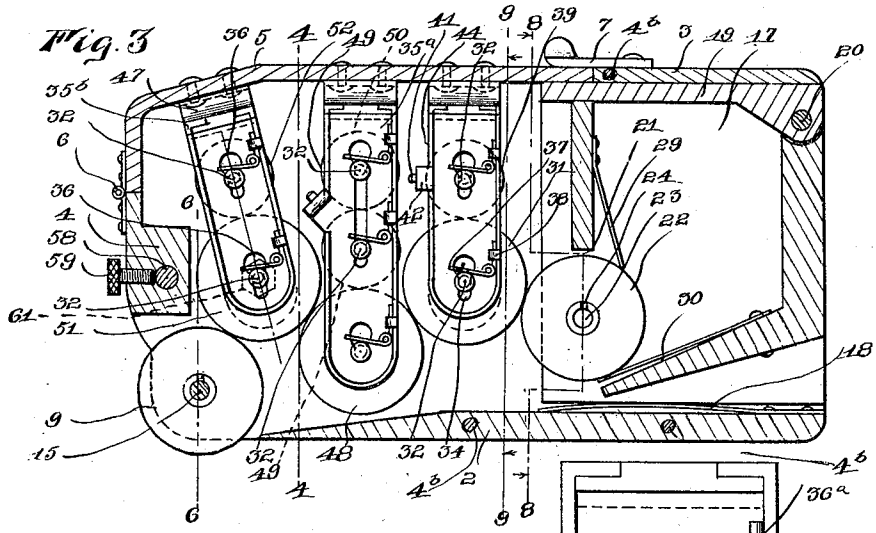


Fig. 4

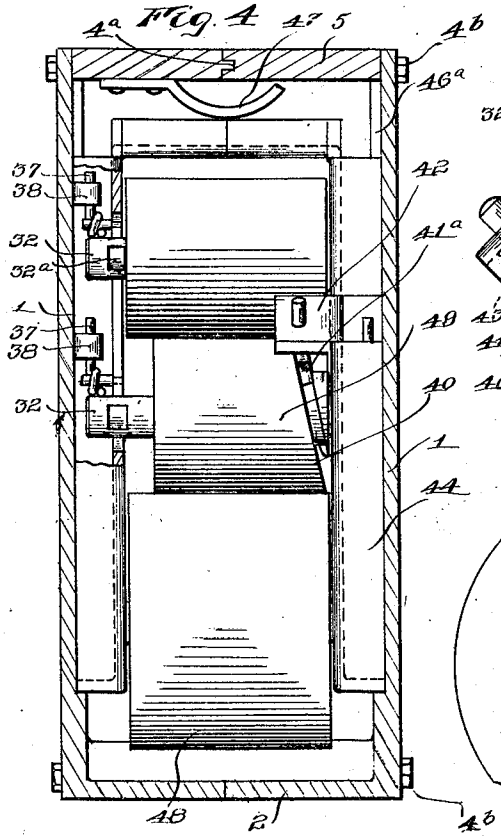
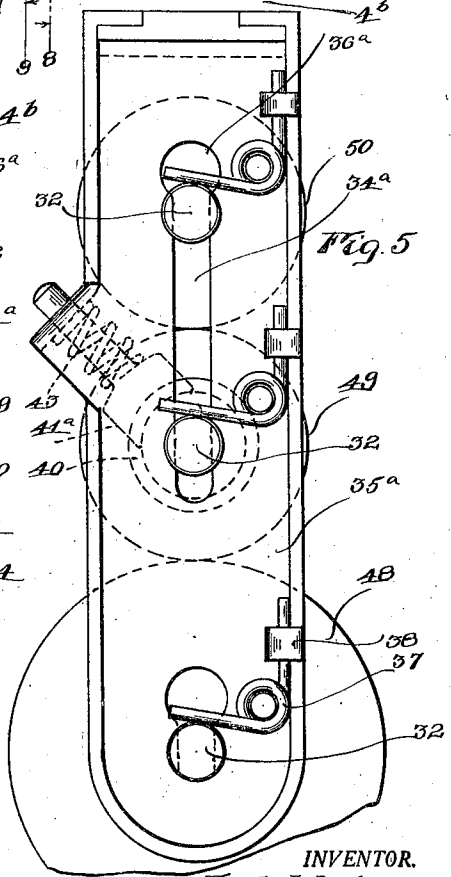


Fig. 5



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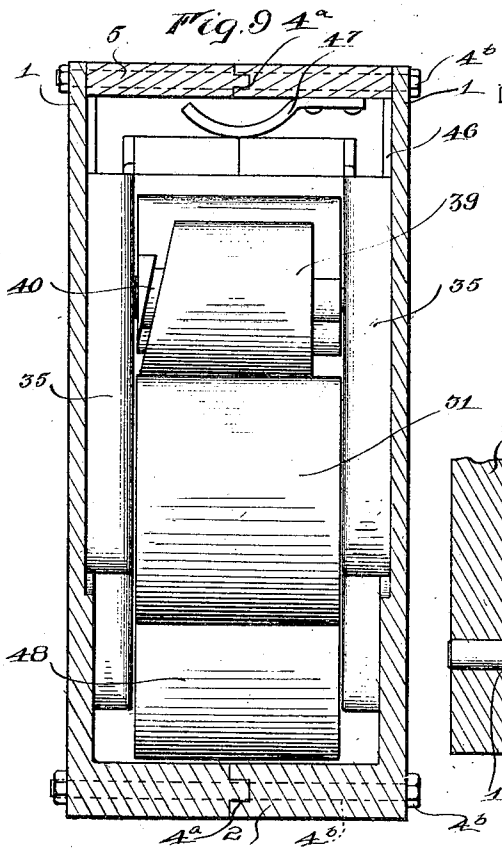
April 3, 1928. 1,665,197

F. J. LEDERER

MARKING MACHINE

Filed Sept. 8, 1925 3 Sheets-Sheet 3

Fig. 9



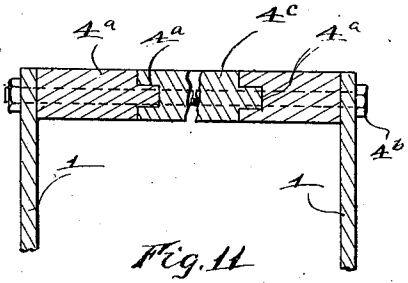
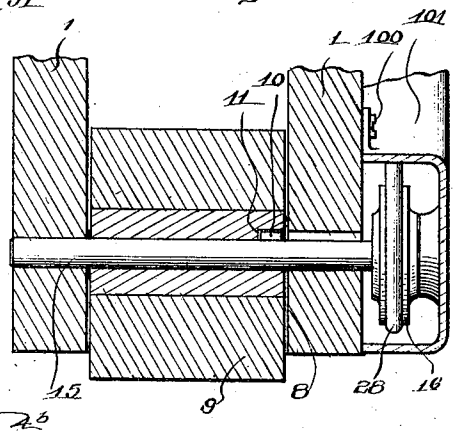


Fig. 11

Fig. 6



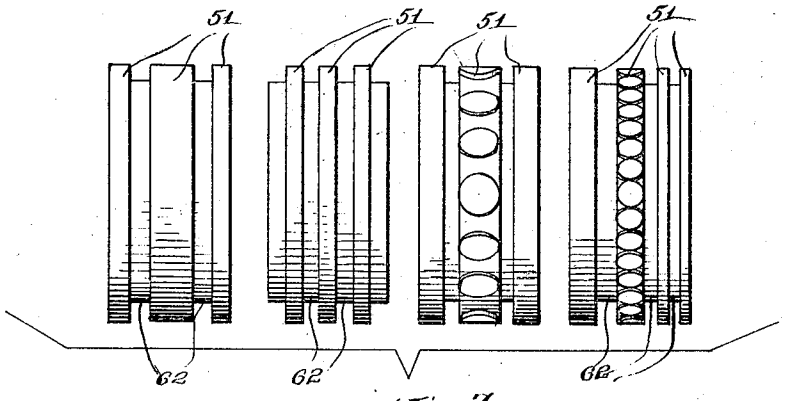


Fig. 7

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Patented Apr. 3, 1928. 1,665,197

UNITED STATES PATENT OFFICE.

FRED J. LEDERER, OF BUFFALO, NEW YORK.

MARKING MACHINE.

Application filed September 8, 1925. Serial No. 54,952.

The present invention relates to marking machines and an object of the same is to provide a marking machine for striping, marking, or stencilling any suitable object and which will be so enclosed that the distributing means for the coloring matter will not be exposed to dust or dirt. Another object of the invention is to provide a yielding impression member on which the design is marked by a design member so that the machine can be used for striping uneven surfaces. A further object of the invention is to provide a machine of the class described in which an adjustable guide is provided enabling the user to follow any suitable line or edge in order to make the stripe or mark parallel with such line or edge, and at the same time at any desired distance from such line or edge. Still another object of the invention is to provide a construction which while the operating parts are enclosed, may have the parts thereof readily reached for cleaning or for repair. To these and other ends, the invention consists of certain parts and combinations of parts, all of which will be hereinafter described: the novel features being pointed out in the appended claims.

In the drawings:

Fig. 1 is a side view of a machine constructed in accordance with this invention;

Fig. 2 is a front end view of the machine;

Fig. 3 is a vertical longitudinal section through the machine;

Fig. 4 is a section on the line 4—4, Fig. 3;

Fig. 5 is an enlarged view of one of the frames carrying some of the inking, distributing and carrying rollers;

Fig. 6 is a section on the line 6—6, Fig. 3;

Fig. 7 shows design elements of different designs;

Fig. 8 is a section on the line 8—8, Fig. 3;

Fig. 9 is a section through the line 9—9, Fig. 3;

Fig. 10 is a section on the line 10—10, Fig. 3; and

Fig. 11 is a detail view showing the manner in which the casing may be widened.

In the illustrated embodiment of the invention there is employed a support in the form of a casing comprising side walls 1 connected by a bottom wall 2, a top wall 3 and an end wall 4. These walls may be divided into two parts connected by joints 4^a which will make it possible to make the casing of two parts connected by bolts 4^b permitting the casing to be widened by the insertion of widening strips 4^c as indicated in Fig. 11. Also arranged between the side walls is a top wall 5 hinged at 6 and secured at its rear swinging end by a pivoted latch 7. At the lower front portion of the casing, an opening 8 is provided in which is arranged an impression roller 9. This impression roller is made of a composition and is yielding so that it will yield in traveling over uneven surfaces. The roller is secured on a shaft 15 which is journalled in the side walls 1, one end of the shaft being projected beyond one of the side walls and having on the outside thereof a drive wheel such as a grooved pulley 16 driven preferably as will be hereinafter set forth. The shaft may have a lug 10 thereon which fits in a notch 11 in one end of the roller to cause the latter to turn with the shaft.

The opposite end wall of the casing is open and adjacent this open end a chamber is formed for a coloring compartment 17. This coloring compartment is held against loose movement in the casing 1 by a spring 18 secured to the bottom of the wall of the casing and engaging the lower edges of the side walls of the coloring compartment. The top 19 of the coloring compartment is hinged at 20 and is held closed by cooperating with the top wall 3 of the main casing. At its forward portion the coloring compartment has an opening 21 and in the opening a metal roller 22 turns. Preferably this metal roller is secured to a shaft 23 which has a web or projection 24. The shaft extends through the roller and is journalled at opposite ends in the side walls of the coloring chamber 17, the web projecting laterally in a recess 25 of the roller so that the roller turns with the shaft 23. The shaft 23 extends through one of the side walls of the coloring compartment 17 and has on its outer end a drive wheel such as a pulley 26 which is spaced from the side wall of the color housing 17 so that the color compartment may be introduced into the main casing by passing the shaft 23 through a slot 27 in one of the side walls 1. The shaft cooperates with the end of this slot and limits the inward movement of the color housing. A belt 28 or other drive connection connects the wheel 26 with the wheel 16, so that when the impression roller 9 is moved over a surface to be marked, it will be turned and transmit rotation to the roller 22 in the coloring receptacle. Detachably secured to the out-

side of the casing by screws 100 is a gear casing 101.

In order to prevent too much coloring material being carried on the surface of the roller 22, two scrapers 29 and 30 are provided, the scraper 29 being secured above the roller 22 and having its edge engaging such roller above the axis of the latter, while the scraper 30 is secured to the bottom of the receptacle 17 and has its edge engaging the surface of the lowermost portion of the roller 22. In this way, the periphery of the roller is scraped before it passes from the coloring receptacle and also before it enters the coloring receptacle. It will be noted that the roller 22 is situated entirely below the highest liquid level of the receptacle and, with the scrapers, forms a substantial closure for said opening. This arrangement particularly adapts the receptacle to use with thick paint employed in striping work. The pressure of the paint above the roller is exerated on the roller thus maintaining the paint in constant contact with the roller and preventing the latter turning in the paint without picking up any on its surface. Because the roller is made of metal and the scrapers cooperate with the surface of the same, there is an equal distribution of the paint over the surface of the roller.

Between the primary distributing roller 22 in the coloring receptacle and the marking roller 9, a number of distributing and spreading rollers are employed. Engaging with the periphery of the metal roller 22 is a composition roller 31 which turns loosely on a shaft 32. This shaft has grooves 32^a on opposite sides and is held against turning in slots 34 formed in the two arms 35 of a removable U-shaped frame, these slots merging into larger openings 36 which permit the removal of the shaft when the U-shaped frame is removed from the casing 1. Any suitable means may be employed for holding the shaft 32 in one direction, in this instance, a two armed spring 37 has one arm secured at 38 to the frame and the other arm resting upon those portions of the shaft 32 which project beyond the frame. Cooperating with the roller is a metal roller 39 which not only rotates but has an axial movement. It is mounted upon a shaft 32 like that on which the roller 31 is mounted and is formed with an annular groove 40 which is arranged in a plane at an angle other than a right angle to the axis of turning of the roller 39. Within this groove operates a guide piece 41 which is guided in a lug 42 on the frame 35 and is pressed into the groove by a spring 43. It is apparent that, as the roller 31 turns, any coloring matter delivered thereto by the roller 22 will be distributed over the surface of the roller 31 by the roller 39. The frame 35 has a marginal flange 44 on each arm thereof and this marginal flange is guided in ways 46 formed in each of the side walls 1. A spring 47 carried by the top plate 5 acts on the top of this frame 35 and tends to hold the roller 31 downwardly with yielding pressure against the roller 22 and also another distributing roller 48.

This distributing roller 48 is mounted on a frame 35^a of U-shaped construction through a shaft 32, this frame 35^a also carrying a metal roller 49 and a composition roller 50, the periphery of the metal roller 49 engaging the periphery of the roller 48 and the periphery of the composition roller 50 engaging the periphery of the metal roller 49. The metal roller 49 has like the metal roller 39 an annular groove 40 in which the guide 41^a operates in order to effect the movement of the roller 49 during its rotation and in order to effect the distribution of the coloring matter on the composition roller 48. The rollers 49 and 50 are each mounted to turn on separate shafts 32 both of which, in this instance, are mounted in the same slots, which have large openings 36^a at their upper ends.

Cooperating with the rotary impression roller is a rotary design roller 51 which turns in engagement with the impression roller 9 and also in engagement with the distributing roller 48 of the color distributing mechanism. This design roller 51 may consist of one or more disks having on their peripheries any suitable designs. Any suitable means may be employed for supporting this design roller. In this instance, the disks 51 are arranged on a tubular shaft 60 which is screw threaded on opposite ends for engagement with nuts 61, the disks being separated if desired by washers or spacers 62. This shaft 60 turns on a shaft 32 which is similar to the other shafts 32 used in the distributing mechanism. If desired this tubular shaft 60 may have a notch 63 at one end which will permit the position of the impression and design rollers to be reversed so that the design roller becomes the impression roller and the impression roller becomes an ink distributing roller. This adjustment could be made if it is desired to make an impression on soft material and a yielding impression roller is unnecessary. The shaft 32 of the impression of the design roller may be arranged on the U-shaped frame 35^b which is mounted in guides on the exterior of the casing and is yieldingly held is position by a spring 47. This frame 35^b also carries a distributing roller 52 which is mounted on a shaft 32 like the other shafts 32.

To the end of making it possible to cause the impression roller 9 to follow and run parallel with some other line or edge a guide roller 53 is provided. This guide roller has a hub 54 provided with an annular groove 55. This hub turns in a member 56 which carries screws 57 entering said annular

groove to hold the hub and guide wheel to the member 56. The socket member 56 is secured by a bolt 57ª to an arm 58, this arm being secured in the casing by a set screw 59 and extending laterally from the casing, the arm having a deflected portion 60ª and the shaft 61 extending from said deflected portion on which the socket member 56 is secured, the shaft portion 61 also extending through the wheel 53. The surface of the wheel 53 may be provided with a rubber or other yielding tire 53ª to prevent its injuring the surface over which it travels.

In the use of the invention, the receptacle 17 is filled with coloring matter which is to be applied through the apparatus. Through the wheel 22 this coloring matter is delivered through the distributing mechanism to the design roller which marks the design on the impression roller 9 which in turn marks the object to be striped. The impression member being yielding adapts itself to an uneven surface so that it is possible to mark or stripe such surface. The impression roller may be caused to give its impression along any line defined by the guide roller 53. This guide roller is adjustable toward and from the casing through a set screw 59, so that it is possible to make the impression roller operate at any distance from a given line.

From the foregoing it will be seen that there has been provided a marking machine in which all the parts are suitably enclosed to prevent the collection of dust on the ink distributing and impression surfaces. The impression roller does not have any design on its surface, but receives the design from a design roller. Preferably this impression roller has a yielding surface so that it will adapt itself to unequal surfaces. The parts of the device are so mounted that they may be readily separated for the purpose of cleaning the same. The ink receptacle is also removable so that a receptacle containing other colors may be readily inserted in the casing.

What I claim as my invention and desire to secure by Letters Patent is:

1. An apparatus of the class described comprising a casing having an opening, a rotary impression roller of soft material mounted in the casing having its periphery operable through said opening, design roller engaging the soft impression roller and enclosed in the casing, a color receptacle connected with the casing, and distributing means interposed between the color receptacle and the design roller and enclosed by the casing.

2. An apparatus of the class described comprising a casing, a rotary impression roller mounted on the casing, a color receptacle removably supported on the casing, a distributing roller carried by and removable with said color receptacle, and distributing rollers operating between the distributing roller on the color receptacle and the rotary impression roller.

3. An apparatus of the class described comprising an elongated casing having openings at opposite ends and an opening between the first mentioned openings, a removable closure for the intermediate opening, a rotary impression roller mounted in the opening at one end, a color receptacle removably fitted in the opening in the opposite end, and distributing devices arranged between the color receptacle and said impression roller removable through the opening between the two openings and held in place by the closure.

4. An apparatus of the class described comprising a support, an impression roller on the support, a color receptacle on the support, distributing means between the impression roller and the color receptacle embodying a removable frame and a roller mounted on the arms of the frame, and guiding means on the support on which the frame is moved to and from operative position.

5. An apparatus of the class described comprising a support, an impression roller mounted on the support, a color receptacle mounted on the support, and distributing means interposed between the color receptacle and the impression roller embodying a plurality of independently removable frames mounted on the casing and each carrying a plurality of distributing rollers.

6. An apparatus of the class described comprising a support, an impression roller mounted on the support, a color receptacle mounted on the support, and distributing means interposed between the color receptacle and the impression roller embodying a plurality of inverted U-shaped frames slidably and removably mounted on the support and each carrying between its two arms a plurality of distributing rollers.

7. An apparatus of the class described comprising a support, an impression roller on the support, a removable color receptacle on the support, a distributing roller mounted on the color receptacle with its uppermost portion below the highest level of the coloring matter containable in the receptacle, scrapers cooperating with the roller above and below its axis, and distributing means interposed between said roller and the impression roller.

8. An apparatus of the class described comprising an impression roller supported by the casing, a color receptacle removably fitted in the casing and having a movable closure held in closed position by the casing,

and distributing mechanism arranged in the casing and interposed between the color receptacle and the roller.

9. An apparatus of the class described comprising a support, an impression roller on the support, a color receptacle on the support, and distributing means between the color receptacle and the impression roller embodying a U shaped frame yieldingly mounted on the support and having its arms provided with marginal flanges, distributing rollers mounted between the arms of the frame, and non-rotating shafts yieldingly mounted on the arms and having the rollers turning thereon.

10. An apparatus of the class described comprising a casing having a hinge closure and provided with guides in opposite walls thereof, an impression roller arranged at one end of the casing at one side of the guides, a color receptacle arranged on the casing on the opposite side of the guides, and distributing mechanism interposed between the color receptacle and the roller and embodying a frame guided on the guides of the casing, and a spring means interposed between said frame and the closure of the casing.

11. An apparatus of the class described comprising a casing, an impression roller on the casing, a color receptacle on the casing, guides formed on opposite walls of the casing, a frame mounted on the guides and having arms provided with marginal flanges and also with slots formed with enlargements, a shaft adapted to be fitted into said enlargements of the slots and to pass in the narrow portions of the slots to be held against turning, spring means acting on the shaft, and a roller turning on the shaft and acting as part of a distributing means between the color receptacle and the impression roller.

12. A marking machine comprising a support, an impression roller mounted to turn on the support and having a yielding cylindrical surface, a roller cooperating with the impression roller to place a design thereon, a color receptacle, and color distributing means interposed between the receptacle and the design roller.

13. A marking machine comprising an impression roller having a yielding cylindrical surface, a design roller cooperating therewith, and means for supplying color to said design roller.

14. A marking machine comprising an impression roller having a yielding cylindrical surface, a design roller engaging such surface, a color receptacle, color distributing means interposed between the color receptacle and the design roller, and a casing enclosing the distributing means and the design roller and the impression roller and having an opening through which the impression roller projects.

15. A marking machine comprising a color receptacle having a discharge opening below the liquid level of the receptacle, a hard surfaced roller arranged to operate a scraper cooperating with said hard surfaced roller to distribute the coloring material thereover in said opening, an impression roller having a soft cylindrical surface, a hard surfaced design roller engaging with the soft surfaced impression roller, and soft surfaced distributing rollers interposed between the design roller and the hard surfaced roller operating in the opening of the color receptacle.

16. A marking machine comprising a pressure feed color receptacle, a hard surfaced distributing roller in contact with the coloring matter in the receptacle, a scraper cooperating with said hard surfaced roller to distribute the coloring material thereover, an impression roller having a yielding cylindrical surface, a hard surfaced design roller engaging the yielding cylindrical surface of the impression roller, and color distributing means interposed between the design roller and the hard surfaced roller that operates in contact with the color matter, said color distributing means embodying a soft surfaced roller.

17. A marking machine comprising an impression roller having a soft cylindrical surface, a design roller engaging said surface and having a relatively hard surface, a color receptacle, a distributing roller having a hard surface operating in contact with the coloring matter in the receptacle, color distributing means interposed between the last mentioned roller and the design roller, and a direct driving connection between the impression roller and its roller operating in contact with the coloring matter so that the latter roller may be turned directly from the impression roller independently of the peripheral engagement between the distributing means interposed between the said impression roller and the roller operating in contact with the coloring matter.

FRED J. LEDERER.