

Oct. 14, 1930.

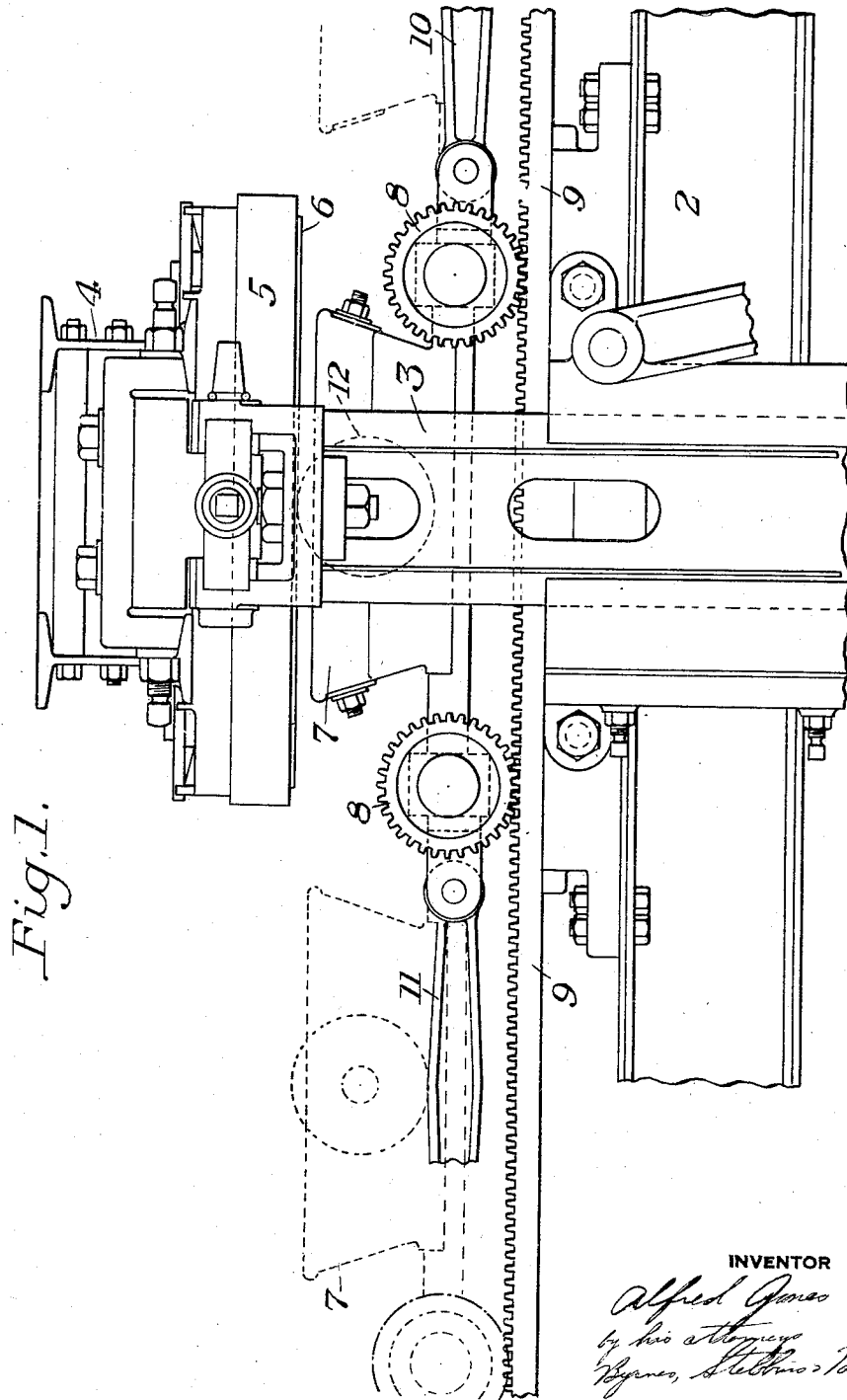
A. JONES

1,778,673

COLOR CARRIAGE FOR MACHINES FOR PRINTING FLOOR COVERINGS

Filed Oct. 20, 1926

3 Sheets-Sheet 1



Oct. 14, 1930.

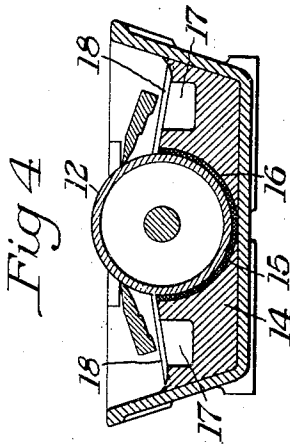
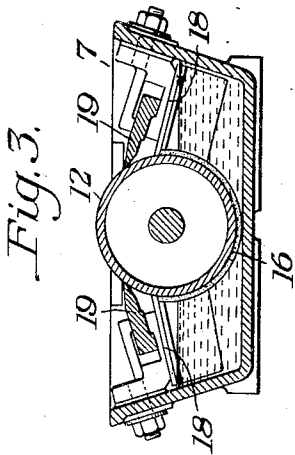
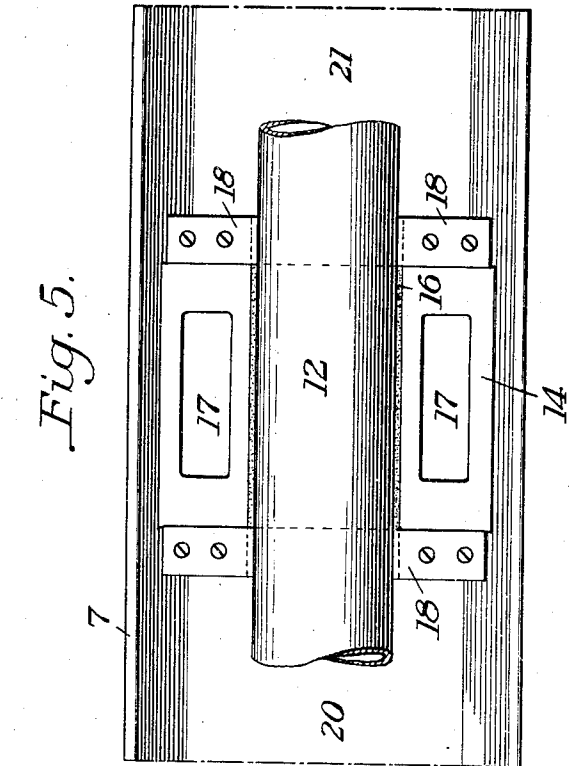
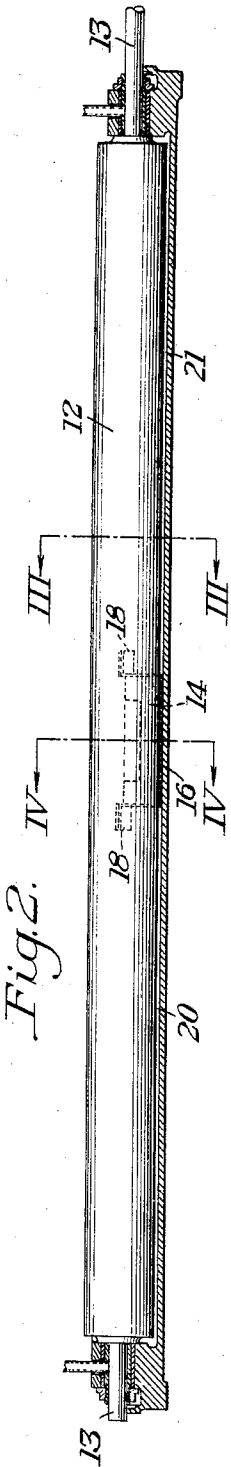
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COLOR CARRIAGE FOR MACHINES FOR PRINTING FLOOR COVERINGS

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3 Sheets-Sheet 2



INVENTOR

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Oct. 14, 1930.

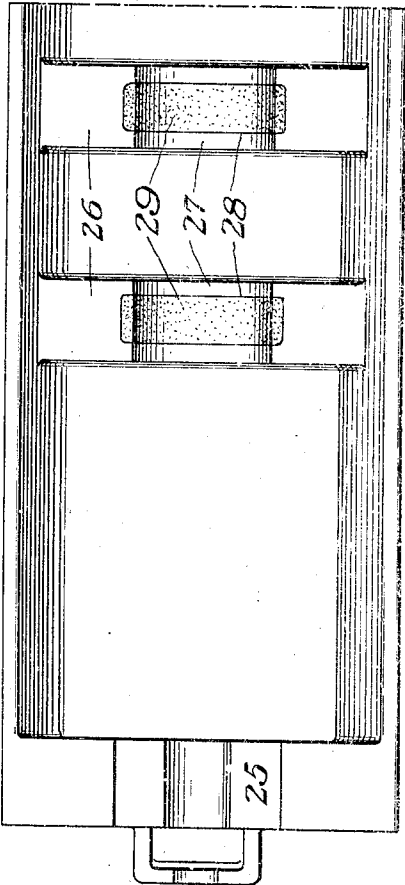
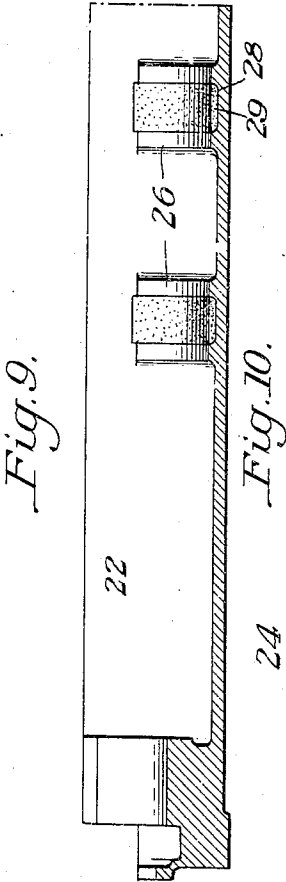
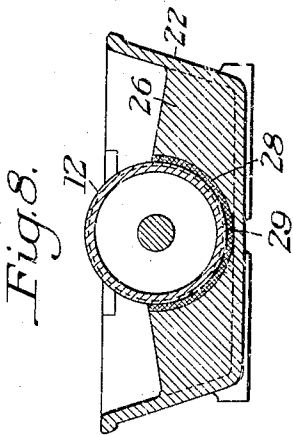
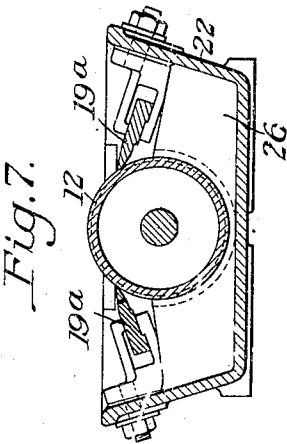
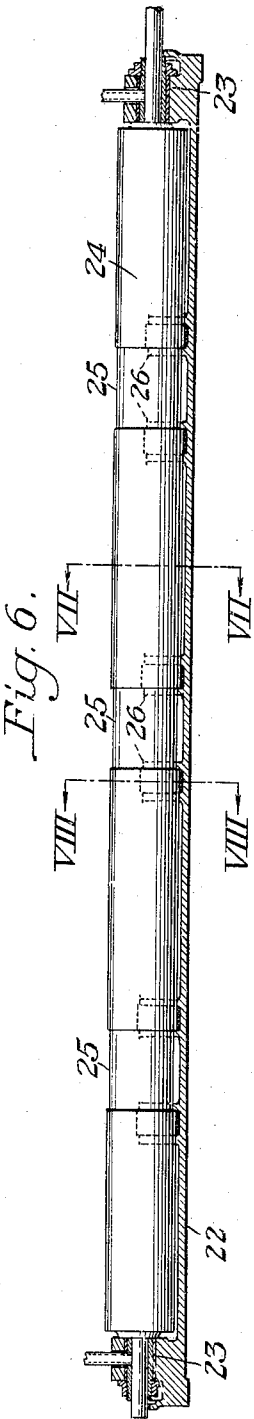
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1,778,673

COLOR CARRIAGE FOR MACHINES FOR PRINTING FLOOR COVERINGS

Filed Oct. 20, 1926

3 Sheets-Sheet 3



INVENTOR

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UNITED STATES PATENT OFFICE

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COLOR CARRIAGE FOR MACHINES FOR PRINTING FLOOR COVERINGS

Application filed October 20, 1926. Serial No. 142,917.

This invention relates to machines for printing floor coverings, such as linoleum, felt base goods, and the like, and relates more particularly to a color carriage for machines for this purpose.

In the manufacture of printed linoleum and allied floor coverings having multiple color designs printed thereon in oil paint, a specially constructed printing machine is employed having a horizontal bed or platen on which the material to be printed is supported, and above which are arranged a plurality of vertically reciprocable printing heads. These printing heads are arranged along the platen at regularly spaced intervals, and the goods is moved progressively beneath them in a step by step movement. Each of the printing heads carries a printing block or type face on the under side thereof, so that the pattern is printed by the lowering of the type face against the top surface of the goods on the platen. Each printing head has associated therewith a paint or color carriage. This carriage is supported in the machine frame in such manner that it can be rolled or passed under the printing head when the same is in an elevated position. The carriage is provided with a roll which contacts with the type to spread the paint on the type. The carriages of the machine are all arranged to be reciprocated in unison, and are moved alternately in opposite directions under the printing face of the head, moving in one direction preceding one printing stroke and moving in the opposite direction preceding the next printing stroke.

In machines of this character it has always been proposed that each color carriage apply one color only to its respective type, so that the design which was printed was strictly limited in the number of colors employed and in the arrangement of such colors by the number of printing heads which could be accommodated in the given length of a printing machine.

According to the present invention it is proposed to divide the color carriage into two or more compartments so that different colors can be put in different compartments

of the same carriage. It is further proposed to provide a construction wherein the paint from one compartment is prevented from flowing over into the paint of the next adjacent compartment.

The invention may be readily understood by reference to the accompanying drawings, which illustrate preferred embodiments of my invention, and in which—

Figure 1 represents the end view of a single printing unit of a printing machine, together with the color carriage therefor, the view being somewhat diagrammatic so as to show the relation of the several parts;

Figure 2 is a longitudinal section through the color carriage showing a single partition in the carriage for dividing the carriage into two compartments;

Figure 3 is a transverse section on a slightly larger scale in the plane of line III—III of Figure 2;

Figure 4 is a similar section in the plane of line IV—IV of Figure 2;

Figure 5 is a plan view on a larger scale of that portion of the carriage in which the partition is located;

Figure 6 is a view similar to Figure 2 of a slightly modified construction;

Figures 7 and 8 are transverse sections on a slightly larger scale in the planes of lines VII—VII and VIII—VIII respectively of Figure 6;

Figure 9 is a longitudinal section through a portion of the carriage with the roll removed; and

Figure 10 is a plan view of that portion of the trough shown in Figure 9, the roll being removed.

In the drawings, 2 designates the frame of a printing machine for printing floor coverings. 3 is one of the reciprocable posts provided at each side of the machine for supporting the printing head 4. Secured to the under side of the printing head 4 in the usual manner is a printing block 5 having projecting type faces 6.

The general construction of the machine is similar to that disclosed in United States Patent No. 1,263,900, dated April 23rd, 1918, to Jones and Webster.

Mounted for movement beneath the printing head when the printing head is in an elevated position is a paint carriage. This paint carriage comprises a trough 7 whose length is substantially co-extensive with the width of the printing machine. The trough is mounted on rollers or gears 8, these gears riding on a rack 9. The carriage is connected with links 10 and 11 through which it is connected with the carriages of adjacent printing units, not shown. The links 10 and 11 are disposed at the ends of the carriage so that they do not obstruct the vertical movement of the printing head.

In its operation the carriage is normally positioned at one side or the other of the printing head. In Figure 1 I have indicated in dotted lines the two different positions of the carriage during the printing stroke of the printing head. When the printing head is raised to the position shown in Figure 1, the carriage moves from one of its positions to the other, and in so doing moves beneath the printing head. In Figure 1 the full line position of the carriage indicates the paint-applying position of the carriage.

Extending longitudinally of the carriage in the trough thereof is a paint-applying roll 12 having trunnions 13 at the opposite ends thereof which are engaged in bearings in the opposite ends of the carriage. This roll is arranged to be rotated in the usual manner upon reciprocation of the carriage, the gearing through which this is effected being now well understood in the art and forming no part of the present invention. Consequently, such gearing has not been shown.

In the arrangement of the present invention as shown in Figures 2 to 5, the roll is of uniform diameter throughout its length, and there is set into the trough at a point intermediate its ends a partition block 14. This block 14 conforms to the shape of the trough, and has a semi-circular recess 15 therein into which is set a semi-circular band of packing or sealing material 16. On the top of the block at each side of the roll is a recess 17. Supported on the block at each end thereof and at each side of the roll are scraper or squeegee blades 18. These blades are located above the normal paint level of the trough and bear against the surface of the roll in such manner as to scrape clean that portion of the roll immediately adjacent the partition block. These scrapers or squeegee blades are relatively narrow as compared with the total length of the roll, and are used in addition to the usual doctor blades 19 ordinarily provided on color carriages of this nature. The doctor blades 19 are adjustable toward and away from the roll, and their function is to regulate and spread the film of paint carried by the roll up to the type surface of the printing block. In Figures 3 and 4 the doctor blades have been shown, but for

the sake of clarity they have been omitted from Figures 2 and 5.

In the operation of the invention one color of paint can be put into the compartment 20 at one side of the partition, and another color can be put in the compartment 21 at the other side of the partition. The number of partitions employed can be varied according to the design to be printed. The partitions are held against movement during the operation of the printing machine by the holders for the doctor blade 19, as clearly shown in Figure 3. The packing 16 prevents the paint in one of the compartments from flowing around the roll into the other compartments. The scrapers 18 tend to clean the roll immediately adjacent the partition, but notwithstanding the provision of these scrapers, some paint will tend to flow over the surface of the roll onto the partition. Such paint as works over onto the partition is collected in the recesses 17, so that it cannot flow from one compartment into the next, and the machine attendant can remove the paint from the recesses 17 at such times as may be necessary by means of a bulb or other suitable means.

In Figures 6 to 10, inclusive, there is illustrated a slightly modified construction wherein the partitions, instead of being formed separately from the trough of the carriage, are formed as an integral part thereof. The construction of the roll is also modified in this form of the invention. In these figures of the drawings, 22 is the trough carriage having bearings 23 at the ends thereof for supporting the roll 24. The roll 24, instead of being of uniform diameter throughout its entire length, has its diameter reduced at those points in its length where the partitions are provided. These reduced portions are designated 25. Formed in the trough 22 at those points where partitions are to be provided, are two spaced-apart partition members 26. These partition members have semi-circular recesses 27 therein in which the roll is received, and each partition has a groove 28 in the face of the recesses in which a packing 29 is set. The packing is for the purpose of preventing the coloring material in the adjacent compartments from flowing around the roll into the space between the partitions 26.

By reason of the reduced portions 25 in the roll, there is less tendency for the paint to spread over the roll than where the roll is of uniform diameter. Consequently, scraper or squeegee blades corresponding to the squeegee blades 18 of the construction first described are not necessary, although these blades could be used if desired. Any paint that does tend to spread over the surface of the rolls onto the reduced portions thereof is collected in the space between the partitions 26, and as the color material collects in these spaces it can be removed by an attend-

ant. The usual doctor blades 19^a are provided to extend across the entire length of the trough.

In Figure 6 there are shown three sets of partitions 26 dividing the trough into four separate compartments 30, 31, 32 and 33.

The advantages of the invention arise from the provision of a trough or carriage divided into compartments which can receive separate colors and which are so arranged that the paint from one compartment cannot work over into the paint in the next compartment. This division of the color trough allows for the arrangement of small type for small figures of different color upon a single head. This permits the printing of small portions of the design of the floor covering in different colors by a single head, whereas it has heretofore been necessary to provide a different head for printing each of these small parts of the pattern.

A further advantage of the invention resides in the fact that a variety of color can be obtained crosswise of the goods being printed, thereby adding to the attractiveness of the pattern.

While I have shown and particularly described certain preferred embodiments of my invention, it will be understood that the invention may be otherwise embodied, and that various changes and modifications may be made within the contemplation of my invention and under the scope of the following claims.

I claim:

1. A color carriage for machines for printing floor coverings, including a trough, a partition structure extending transversely of the trough and dividing it into a plurality of compartments, each partition structure having a paint-collecting recess therein for receiving paint which tends to pass from one compartment to the next.

2. A color carriage for machines for printing floor coverings, including a trough for receiving a liquid coating material, a transverse partition in the trough, said partition having a paint-collecting recess therein, a packing in the partition, and a roll extending longitudinally of the trough bearing against the packing.

3. A color carriage for machines for printing floor coverings, including a trough for receiving a liquid coating material, a roll extending longitudinally of the trough, a partition in the trough, and a scraper in the trough adjacent the partition.

4. A color carriage for machines for printing floor coverings, including a trough for receiving a liquid coating material, a roll extending longitudinally of the trough, a transverse partition in the trough, and a scraper at each side of the partition on each side of the roll above the normal liquid level

in the trough for cleaning the roll adjacent the partition.

5. A color carriage for machines for printing floor coverings, including a trough, a roll extending longitudinally of the trough, a transverse partition in the trough, and a scraper at each side of the partition on each side of the roll above the normal liquid level in the trough for cleaning the roll adjacent the partition, said partition having a paint-collecting recess therein into which any paint working over the roll past the scrapers is collected.

6. A color carriage for machines for printing floor coverings, including a trough, a roll extending longitudinally of the trough, a transverse partition in the trough, and a scraper at each side of the partition on each side of the roll above the normal liquid level in the trough for cleaning the roll adjacent the partition, said partition having a paint-collecting recess therein into which any paint working over the roll past the scrapers is collected, said partition having a packing therein extending about the lower part of the roll and bearing against the roll.

7. In a block printing machine for floor coverings and the like, a paint box, a longitudinally movable partition therein, and doctor blade means for holding the partition in place.

8. In a block printing machine for floor coverings and the like, a paint box, a longitudinally movable partition therein, a roll of uniform diameter extending longitudinally of the paint box, and doctor blade means cooperating with the roll and holding the partition in place.

9. In a block printing machine for floor coverings and the like, a paint box, a longitudinally movable partition therein, a roll of uniform diameter extending longitudinally of the paint box, and doctor blade means cooperating with the roll and holding the partition in place, the doctor blade extending substantially the length of the paint box.

10. A block printing machine for floor coverings and the like, including a paint box, doctor blade holders secured to the sides thereof, and a partition below the holders.

In testimony whereof I have hereunto set my hand.

ALFRED JONES.