E. F. WHITE.

PAINT SHOP APPLIANCE.

APPLICATION FILED FEB. 17, 1921.

1,413,087.

Patented Apr. 18, 1922.

Fig. 1.

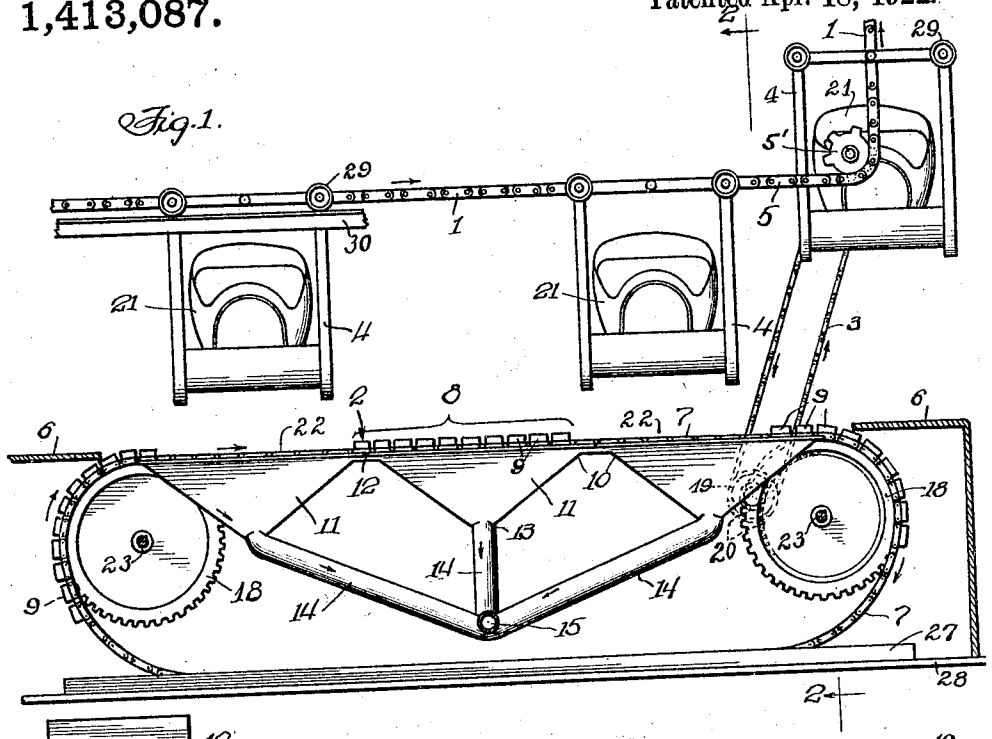
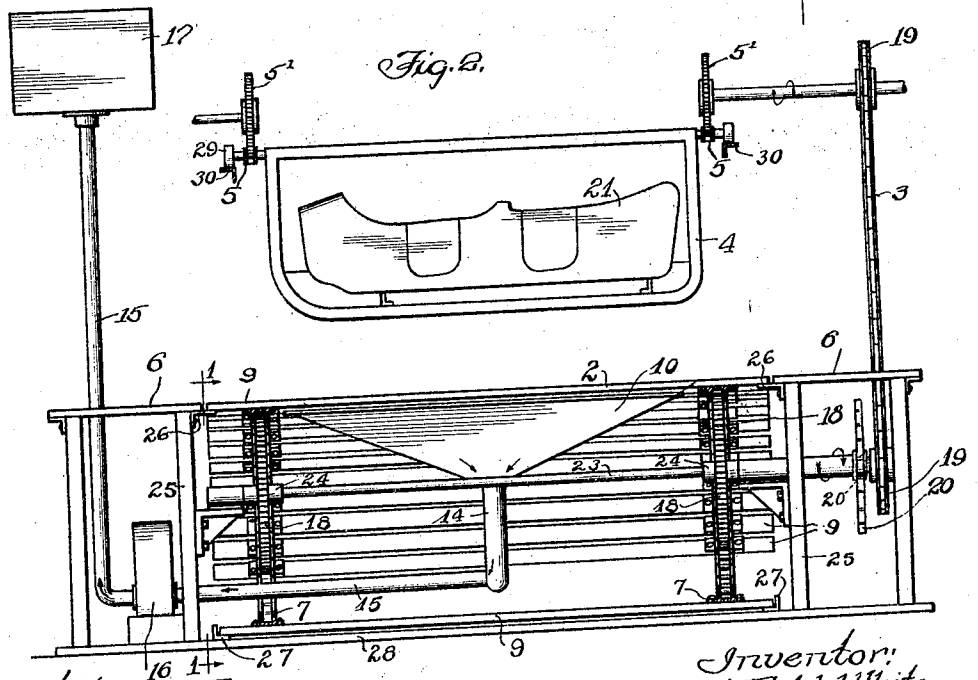


Fig. 2.



Witnesses:

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UNITED STATES PATENT OFFICE.

EZEKIEL FIELD WHITE, OF DETROIT, MICHIGAN.

PAINT-SHOP APPLIANCE.

1,413,087. Specification of Letters Patent. Patented Apr. 18, 1922.

Application filed February 17, 1921. Serial No. 445,801.

To all whom it may concern:

Be it known that I, EZEKIEL FIELD WHITE, a citizen of the United States of America, and a resident of Detroit, county of Wayne, State of Michigan, have invented certain new and useful Improvements in Paint-Shop Appliances, of which the following is a specification.

This invention relates mainly to methods and means adapted to facilitate applying paint, varnish and other coatings to vehicle bodies and other articles, and to means for recovering surplus coating materials or drippings from the articles treated.

The main objects of the invention are to provide an improved system of apparatus adapted for carrying on a continuous process in the application of coatings to the goods treated; to provide coambulant carrier and platform means for the goods and operators respectively; to provide an improved form of platform and operating mechanism therefor; to provide automatic means for positive coaction of the carrier and platform; to provide in combination with a moving platform and carrier to collect surplus material or drippings when a wash or flow coating is applied to goods on the carrier; and to provide for use in connection with a flow system of applying coatings, a perforated platform, a drip collector and circulating means to return the recovered material to its source or supply tank.

An illustrative embodiment of this invention is shown in the accompanying drawings, in which—

Figure 1 is a side elevation in somewhat diagrammatic form of coambulant conveyer and platform members adapted for carrying the operators along with the work while applying the coatings, only part of the conveyer being shown.

Fig. 2 is a view taken transversely of Fig. 1 substantially on the line 2—2 of said figure.

In the construction shown in the drawings, the endless conveyer 1 and the endless platform 2 are positively connected by a belt or sprocket chain 3 whereby the travel speeds of the platform and work carriers 4 are coequal at all times regardless of variations in the absolute speed.

The conveyer 1 is to be understood as including a pair of endless belt members or chains 5 between which the carriers 4 are suspended and a series of stationary bearings 5′ substantially as set forth in my copending application, Serial No. 439,137. Said conveyer extends through a drying room (not shown) and through a continuous circuit, as will be understood, though only a part of the conveyer adjacent to the platform 2 is here shown.

The platform 2 is disposed directly beneath and parallel with the conveyer 1 with ample space for clearance of the depending carriers. Said platform is surrounded by a stationary platform 6. The moving platform comprises a pair of endless belt or chain members 7 spaced apart in parallel relation and a series of floor sections 8 by which said members are connected at intervals along their length. Each floor section 8 comprises a plurality of cross members 9 such as boards, planks, bars or the like spaced apart sufficiently to permit drainage of fluid coating material falling thereon into the drip pan 10 which is mounted stationarily beneath the upper half of the platform.

The drip pan 10 is oblong in plan to correspond with the working area of the platform, and comprises a plurality of compartments 11 merging together at their adjacent edges 12 where the pan as a whole is shallow. Each section 11 is provided with a trough-like bottom of conoidal shape with downwardly convergent sides. The downward extremity of each pan section communicates as at 13 with a discharge pipe 14 leading to a common return main 15. A pump 16 is connected in said main and delivers the recovered material to the tank 17 where it is again available for use.

The carrier 4 and platform sections 8 are arranged alternately in succession so that said platform section shall provide standing room for the operator between the carriers. The platform is entirely open directly under the carriers so that the greater part of the drippage may fall directly into the pan 10. This mutual relation of the carriers and platform sections is maintained permanently by the positive connection 3 above mentioned. Suitable sprocket wheels 18 and 19 and gear wheels 20 are arranged in connection with chains 3 to effect synchronous speeds for the platform 2 and carriers 4. The carriers 4 are of open frame construction to permit of ready loading and unloading and to give the workmen access to the work 21 for applying the coatings usually in wash form. In

the drawings the carriers are each shown loaded with a vehicle body.

When the device is in operation the articles to be treated are placed on the carriers successively at a loading station, not shown. The conveyer moves slowly at about two or three feet per minute. As the carriers pass over the synchronously moving platform 2 in registry with the corresponding drip apertures 22 therein the operatives standing or walking upon the platform sections 8 direct the wash material upon the goods to be coated. Said material is supplied through a hose as understood in the art, though not here shown. All surplus material drains into the pan 10 through the floor openings 22 and to some extent through the floor cracks in sections 8.

When automobile bodies, for instance, are being treated the operator passes in between two carriers, washes the side of one body, turns and washes the side of the next body, then walks around the rear end of the body which is also washed, and then in between the second mentioned body and the next adjacent or third body, and so on, in the direction from which the work approaches. The speed of the conveyer, the drying room length and the working speed of the workman and wash nozzle are all mutually adjusted for a maximum speed consistent with efficiency.

Due coturning of the driving sprockets 18 on opposite ends of the axle shafts 23 is insured by fastening said members together rigidly. Said shafts 23 are journaled in bearings 24 set in the platform supporting frame 25. Level alinement of the platform between the upper sides of the sprocket wheels 18 is provided for by means of the guide rails 26 secured to frame 25 whereon this part of the platform is slidingly supported. Supporting guides 27 may also be provided for the platform adjacent to the floor 28.

The means for supporting the conveyer 1 and the means 29 and 30 to prevent tipping or tilting of the carriers 4 when moving horizontally are more fully shown and described in my said copending application.

Although but one specific embodiment of this invention is herein shown and described, it will be understood that numerous details of the construction shown may be altered or omitted without departing from the spirit of this invention as defined by the following claims.

I claim:

1. In a device of the character described coambulent means for carrying articles to be coated and workmen respectively, in combination with a stationary drip pan arranged to collect surplus material draining from the articles treated.

2. In combination an endless moving platform having a path of travel disposed in a vertical plane, a drip pan disposed between the upper and lower parts of said platform and a conveyer having carriers adapted to receive articles to be treated arranged to pass said articles along the length of the upper part of said platform, said conveyer and platform being positively connected for corresponding travel speed.

3. An endless chain platform having a floor formed with openings therethrough for drainage, in combination with a conveyer for articles to be coated with fluid material, which conveyer is arranged to pass over said platform within ready working distance of operatives walking upon said platform, a stationary drip pan beneath the working zone of said platform, and gearing positively connecting said platform and conveyer to insure speed synchronism.

4. A work platform of perforate character for drainage and a drip pan therefor, said platform comprising a pair of endless belt members, a series of cross-bar treads mutually spaced and connecting said members and a pair of rotary supports spaced apart with parallel axes in the same plane whereon the main body part of said platform is supported, and said drip pan being disposed between the two horizontal parts of said platform to receive the drainage from the upper part.

Signed at Chicago this 15th day of February, 1921.

EZEKIEL FIELD WHITE.

Certificate of Correction.

It is hereby certified that in Letters Patent No. 1,413,087, granted April 18, 1922, upon the application of Ezekiel Field White, of Detroit, Michigan, for an improvement in "Paint-Shop Appliances," errors appear in the printed specification requiring correction as follows: Page 1, line 26, after the word "carrier" insert the word *means;* same page, line 57, for "Serial No. 439, 137." read *Serial No. 439,637.;* and that the said Letters Patent should be read with these corrections therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 9th day of May, A. D., 1922.

[SEAL.]

KARL FENNING,

Acting Commissioner of Patents.