G. H. FISCHER.

PAINTING APPARATUS.

APPLICATION FILED AUG. 18, 1909.

991,709. Patented May 9, 1911.

Fig. 1.

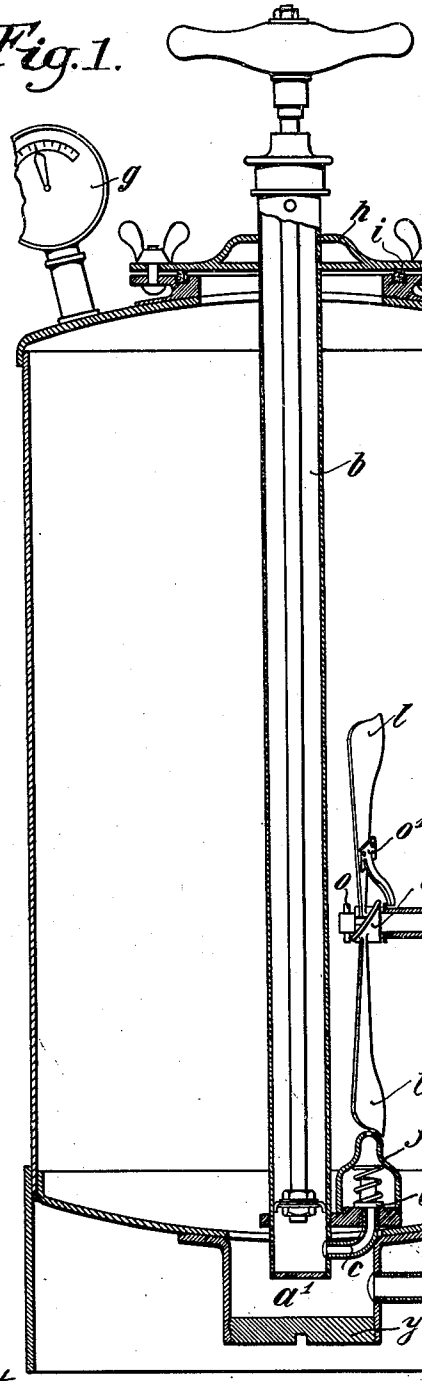
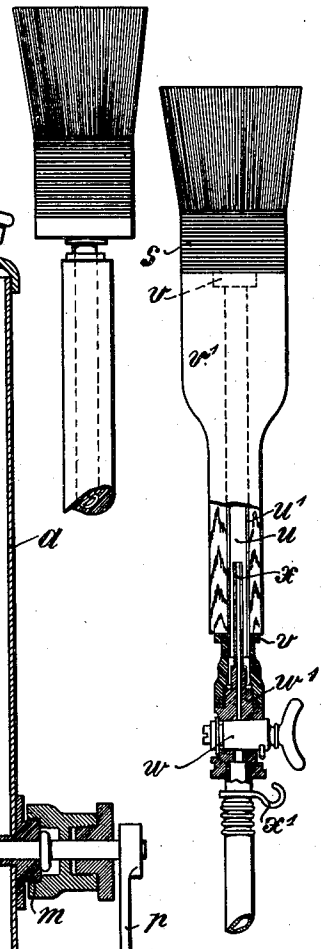


Fig. 2.



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UNITED STATES PATENT OFFICE.

GEORG HEINRICH FISCHER, OF NEUSTADT-ON-THE-HARDT, GERMANY.

PAINTING APPARATUS.

991,709. Specification of Letters Patent. Patented May 9, 1911.

Application filed August 18, 1909. Serial No. 513,397.

To all whom it may concern:

Be it known that I, GEORG HEINRICH FISCHER, a subject of the King of Bavaria, residing at Neustadt-on-the-Hardt, Rheinpfalz, Germany, have invented new and useful Improvements in Painting Apparatus, of which the following is a specification.

My invention relates to an improved apparatus for applying paint and the like, in which provision is made for mixing the material, and for conducting it automatically to the brush or brushes.

The new apparatus is differentiated from prior contrivances of this class by the current of air employed for exerting pressure on the paint, being forced through the latter into the receptacle, whereby the paint is simultaneously agitated and its ingredients intimately mingled. Such mixing is of particular advantage in the case of metallic paints, whose pigments owing to their weight rapidly settle; for by means of the present invention the paint while being fed to the brush, and while being spread by the latter, can be kept in such a state that an extremely durable coat is insured.

A practical embodiment of the invention is represented in the accompanying drawing, in which—

Figure 1 is a vertical section and part elevation, while Fig. 2 is a sectional view of a substitute paint brush for the apparatus.

The vessel *a* for holding the supply of paint is furnished with an opening for the introduction of an air-pump *b*, whose air exit *c* is located at the bottom of the receptacle *a* and is controlled by a valve *e*, contained in a nozzle-shaped cap *f*. On actuation of the pump *b* the air is forced out through the pipe *c* and cap *f* and will pass upward through the paint into the vessel *a*, thus agitating and mixing the contents, and by accumulating at the top it will place the paint under pressure. The extent of pressure at which the paint is to be maintained may be controlled with the aid of the gage *g* mounted on the top of the vessel *a*. The latter is hermetically closed by a cover *h*, which is preferably screwed down upon a gasket *i* to make the air-tight joint.

For the purpose of further promoting agitation and mixing of the paint, vanes *l* are provided. These are loosely mounted on a shaft *n*, which rotates in a long bearing *m*, having a tubular extension projecting inside the vessel *a* and at the place where the shaft passes through the wall of the vessel *a* a stuffing-box is preferably fitted, so as to prevent loss of pressure through leakage. The vanes lie immediately above the nozzle of the cap *f*, and since they are loose on the shaft, the air issuing from the nozzle, on operation of the pump *b*, will rotate them, thus causing them thoroughly to stir up the paint. Should the pressure in the vessel *a*, however, be so high that further increase is undesirable, though continued mixing of the paint is requisite, the shaft *n* must be drawn toward the outside, whereby pins *o* projecting from its end will be brought into engagement with corresponding slots furnished in the hub *l'* of the vanes, so that the latter are coupled with the shaft and can be rotated by turning the crank *p*. In this manner the paint can be mixed quite independently of working of the air pump. To prevent unintentional engagement of the pins *o* in the slotted hub *l'*, a guide-arm *o'* is secured on one vane *l*. This arm engages the flange of the inside extension of the bearing *m* and rides on said flange, as the vanes revolve. The arm *o'* prevents the hub *l'* from sliding toward and engaging with the pins *o* when the vanes are intended to turn loosely on the shaft *n*.

At the bottom of the vessel *a* is a well *a'*, closed below by a screw plug *y*, which admits of the contents of the vessel being drained off. From the well *a'* there conducts a passage or pipe *r*, controlled by a cock *q*, for discharging the paint. The pipe *r* is connected to the flexible pipe *t* through which the paint is fed to the brush *s*. Instead of only one passage *r* there may be a number of such, each conducting through a separate pipe *t* to a brush of its own. The brush *s* is provided with a central passage *u*, formed in the present instance by a metal tube *u'*, to which there is screwed a flanged connecting-piece *v*, which admits of brush handles of different sizes or different descriptions (see Fig. 2) being used. Means are provided for regulating the flow of paint to the brush, consisting in the present case of a cock *w*, whose casing *w'* accommodates a thin tube *x* for admission of the paint to the tube *u'* and for preventing spurting of the same during painting. When not in use the

brush may be hung up by means of the hook x'. The head carrying the bristles can be arranged to screw off, so that different brush heads may be used on the same handle. A strap or the like may be attached to the vessel a to admit of its being secured to the back of the painter.

In use, the cover h together with the pump b is removed and paint poured into the vessel. The latter should not be more than three-quarters filled at the most. The pump is then replaced and the cover tightly secured down. Hereupon air is pumped in, until the gage g indicates the desired pressure. The requisite pressure can be readily produced and will be retained until the paint in the vessel is exhausted; repeated pumping, therefore, is not necessary.

Owing to the peculiar construction of the air valve and its location at the bottom of the vessel, the air will pass up through the paint. Thus during pumping the paint will be in a state of constant agitation, whereby thorough mixing will be effected. During this active mingling of the paint, the loosely mounted mixing-vanes l, as already explained, will be set in operation automatically by the air escaping from the nozzle below them. Should the vanes fail to start operating automatically on actuation of the pump (for instance in the case of a specially tough varnish-paint resisting their motion), or should repeated stirring be necessary during painting (such as may happen when heavy, and thus quickly settling, metallic pigments are employed) the vanes must be coupled with the shaft n in the manner above described and the crank p then rotated.

The construction of the vanes is such as to admit of their being readily removed for cleaning purposes. Their presence is naturally not imperative for operation of the apparatus, and if the latter has to be employed during their absence, a screw-plug may be inserted in the hole which ordinarily receives the shaft bearing.

Having thus described my invention, I declare that what I claim as new and desire to secure by Letters Patent is:—

1. A painting apparatus, comprising a closed vessel, an air pump mounted centrally therein and having an upwardly directed outlet nozzle near the bottom of said vessel, and rotatable means for agitating the paint mounted above said nozzle, whereby said means can be rotated by the air issuing from said nozzle.

2. A painting apparatus comprising a closed vessel, an air pump mounted centrally therein and having an upwardly directed outlet nozzle near the bottom of said vessel, rotatable means for agitating the paint mounted above said nozzle, whereby said means can be rotated by the air issuing from said nozzle, and means located without said vessel for rotating said agitating means manually.

3. A painting apparatus, comprising a hermetically closable vessel having a paint-outlet at the bottom, means for introducing an air-current into the said vessel, its air-outlet being located at the bottom of the latter, and vanes loosely mounted within the vessel, above said air-outlet, and adapted to be driven by the escaping air, substantially as described.

4. A painting apparatus, comprising a hermetically closable vessel having a paint-outlet at the bottom, means for introducing an air-current into the said vessel, its air-outlet being located at the bottom of the latter, an axially sliding shaft extending through the wall of the vessel, vanes loosely mounted on said shaft, above said air-outlet, means for coupling the vanes to the shaft on the latter being axially slid, and means for rotating the shaft from without the vessel, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

GEORG HEINRICH FISCHER.

Witnesses:

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