April 13, 1937. J. M. WATSON 2,076,604

CLEANING PAD

Filed March 25, 1935 2 Sheets-Sheet 1

FIG. 1.

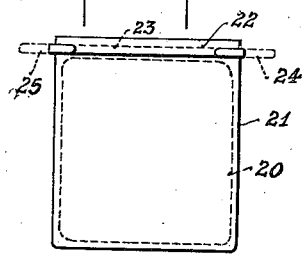

FIG. 2.

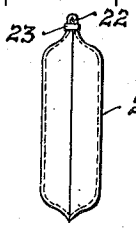

FIG. 3.

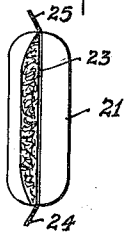

FIG. 4.

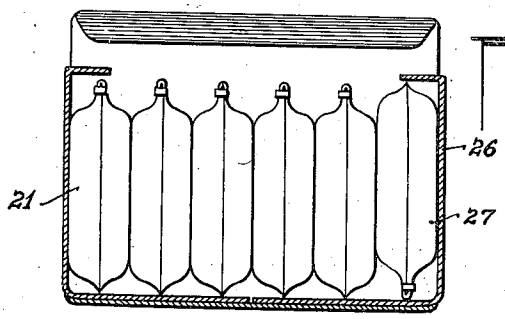

FIG. 5.

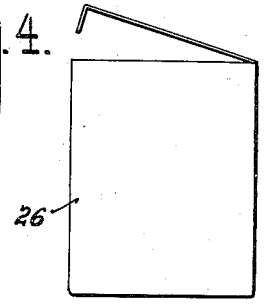

FIG. 6.

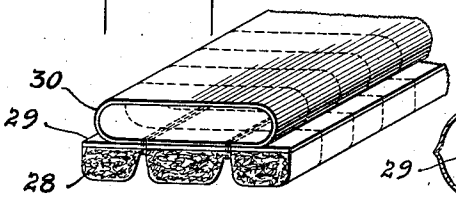

FIG. 7.

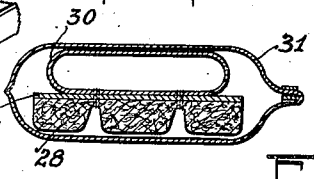

FIG. 8a.

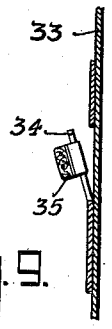

FIG. 8.

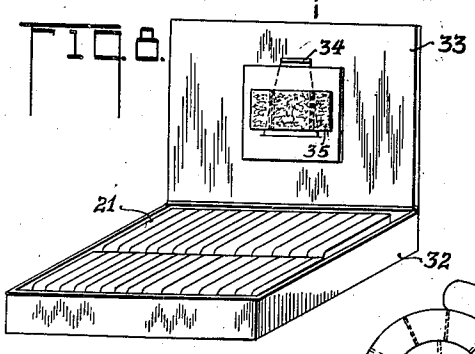

FIG. 9.

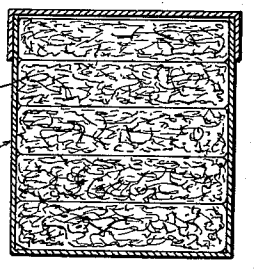

FIG. 10.

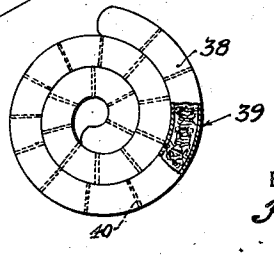

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FIG. 11.

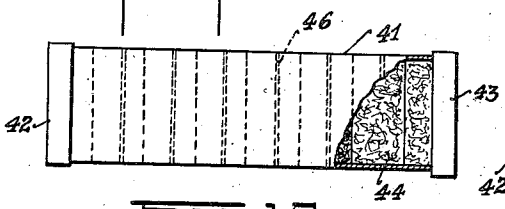


FIG. 12.

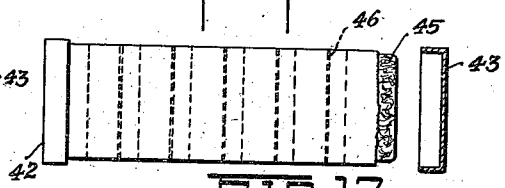


FIG. 13.

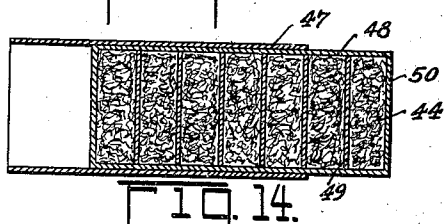


FIG. 17.

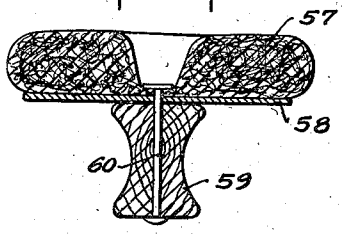


FIG. 14.

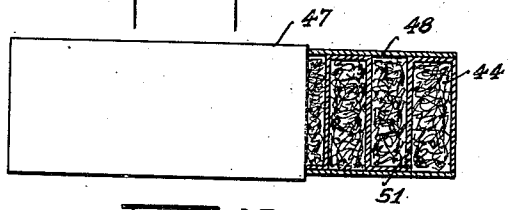


FIG. 18.

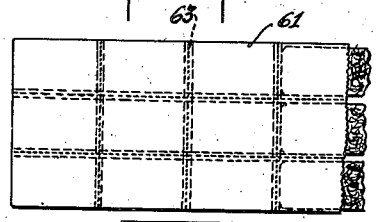


FIG. 15.

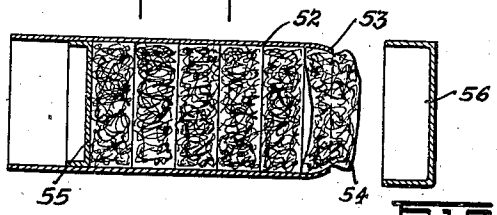


FIG. 19.

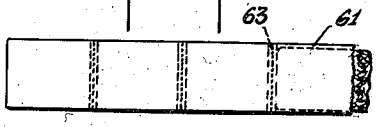
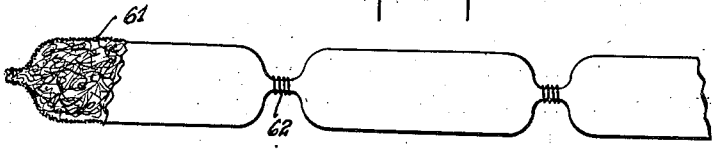


FIG. 16.



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Patented Apr. 13, 1937 2,076,604

UNITED STATES PATENT OFFICE

2,076,604

CLEANING PAD

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Application March 25, 1935, Serial No. 12,821

2 Claims. (Cl. 51—186)

This invention relates to improvements in cleaners for cleaning and polishing metal, and other surfaces, and more particularly to a cleaning pad, whereby the cleaner is ready for use and when not in use may be kept in the container which is adapted to protect the cleaner from the effect of the atmosphere.

An object of the invention is to provide a cleaner that is simple and cheap and relatively small as compared to the usual rag, sponge or cloth commonly employed for cleaning and which may therefore be discarded after having been used a few times.

Another object is to provide a cleaner compact that is cheap to make and readily transportable.

A further object is to provide a cleaner in combination with a container to keep the cleaner from evaporation.

Another object is to provide cleaner compacts that are readily displayed for sale.

Another object is to provide an improved formula for impregnating suitable wads of fibrous material for use as cleaners.

The invention consists substantially in the construction, combination and relative arrangement of parts, all as will be more fully hereinafter set forth, as shown by the accompanying drawings and finally pointed out in the appended claims.

In order to more fully describe the invention, reference is had to the following drawings, in which:

Figure 1 is an external view of an individual container having therein a cleaning unit;

Figure 2 is an external end view of Figure 1;

Figure 3 is a top view showing the top open;

Figure 4 is a sectional view of a package container having therein six of the individual containers shown in the preceding figures;

Figure 5 is an end view of package container shown in Figure 4;

Figure 6 is an isometric view of another form of cleaning unit;

Figure 7 is a sectional view of the cleaning unit, Figure 6, in the individual container shown in Figure 1;

Figure 8 is an exterior view of a display box containing a quantity of the individual containers, Figure 1, which in turn may contain any form of cleaning units;

Figure 8a is a sectional view of the lid of the box shown in Figure 8 showing one of the cleaning units of the type shown in Figure 7 removed from its individual container;

Figure 9 is a sectional view of an alternate form of package container for cleaning units;

Figure 10 is a view, partly in section, of a roll of cleaning units adapted to fit into the container shown in Figure 9;

Figure 11 is a view partly in section, of a package container adapted to hold individual cleaners to be pressed out of one end for use as hereinafter described, the container to act as a holder for the cleaners while in use;

Figure 12 is another view, partly in section, of the combination shown in Figure 11;

Figures 13, 14 and 15 are other alternate forms of construction for a combination package, holder and cleaner;

Figures 16, 17 and 18 are forms of construction of a plurality of cleaners adapted to be divided into individual units; and

Figure 19 is a side view of the cleaners shown in Figure 18.

Cleaners have heretofore been offered the public in various forms, such as liquid contained in bottles or various paste compositions in boxes and the user was obliged to apply the contents of the bottle or box to a suitable rag or sponge, rub the article to be cleaned and then remove the surplus material with another rag. This necessitated the user keeping on hand a suitable supply of rags in addition to the cleaner.

Attempts to overcome the difficulties inherent in the foregoing method of cleaning have been made, in which a rag or piece of fibrous material was impregnated with the cleaning fluid or paste and which rag was applied to the object to be cleaned. Such rags, however, rapidly become very dirty and must be thrown away, not because they will no longer function, but because they are so badly soiled as not to be usable.

The present invention eliminates all of the foregoing difficulties, by providing an impregnated wad of cotton, wool, paper or other fibrous material. Such an impregnated wad may be given any suitable physical form. Some forms are shown in the drawings and are hereinafter more fully described. Such wads or cleaners may be small in size, say 2 x 2 x ¼" and may be used until soiled and then thrown away, which cannot be done with the larger cleaning cloths heretofore commonly used for cleaning because of the expense thereof.

Such wads must, however, be prevented from drying out when not in use. Accordingly, it is necessary to provide them with inexpensive casings from which they can be repeatedly removed, used and replaced. Such casings are a

proper part of the cleaner combination to form a commercial usable article for sale and use.

Such a cleaner combination is shown in Figure 1 in which the wad is shown in dotted lines at 20 and the individual container may comprise a bag 21 of "cellophane", of oil-proof or metallized paper or any other suitable material having a top portion 22 adapted to be folded on itself to form a substantially air-tight seal, the folded top being held by the metal strap 23 having projecting ears 24, 25, which may be repeatedly opened and bent over the top as shown in Figures 1, 2, 3 and 4. Such an individual package or compact may also have a wad of plain material suitably packed to keep it from contact with the impregnated wad, to be used on the work to remove all traces of the mixture with which the wad is impregnated, and such compacts may be retailed for a few cents and the purchaser receives a complete cleaning kit ready for use and all bottles or tins of liquid or paste polish and the necessity of finding cloths or waste, or of repeatedly using a large dirty rag that has outlived its usefulness, is eliminated.

These compacts may be assembled in a carton 26 as shown in Figures 4 and 5. The compact that has been used may be inverted, as shown at 27, and when thrown away, the next compact is brought into use and so on until all the compacts have been used. The resultant package affords the purchaser a plurality of compacts each ready for use without opening the others, and a carton to contain all the compacts.

Figures 6 and 7 show an alternate form of cleaner comprising a wad 28 stitched or otherwise secured to a backing 29 of heavy cardboard or the like to which a suitable holder 30 is secured. The user places two or three fingers in the holder and is therefore enabled to use the cleaner without the hands coming in contact with the impregnated wad 28.

When not in use, the cleaner, Figure 6, may be included within the casing 31 which may be similar in construction to the bag 21 previously described.

In Figures 8 and 8*a* is shown a display case, generally indicated by the numeral 32, having a lid 33 adapted to be raised therefrom, said lid having means such as an outwardly projecting tongue 34 adapted to receive one of the cleaners such as that shown in Figure 6, and which is generally denoted by the numeral 35, Figure 8*a*. This enables a cleaner to be displayed where a prospective purchaser may remove it from the tongue or support 34, give it a trial and return it thereto. The casing 32 contains a plurality of the compacts, as shown in Figures 1 or 7, for it is obvious that the plain wad without the holder can be placed on the support instead of the form shown in Figure 6.

Figure 9 shows a plurality of impregnated wads 36 placed in an ordinary tin container 37 whereby they are protected from the action of air and instead of these individual wads 36, a strip of wadding 38, Figure 10, may be impregnated and provided with an inner and outer wall 39 which is stitched or partially severed in any suitable manner as indicated by the dotted lines 40 so that the individual pieces may be detached from the roll which as a whole can be enclosed within the cam 37.

In Figures 11 and 12 is shown a casing 41 provided with heads 42, 43, on each end thereof, containing a plurality of impregnated wads 44. By removing the heads, the wads may be pushed outwardly one at a time as shown at 45, Figure 12, and from time to time as the wads are used up the outer casing may be torn off along the perforated lines indicated at 46.

Figures 14 and 15 show an alternate form of outer casing 47 and an inner casing 48. In the modification shown in Figure 13 the wads 44 are merely separated from each other by the partitions 49, and if the head 50 is removed with a knife and some of the casing 48 torn off along a perforated line or cut away with a knife, the wadding may be used. This operation is repeated as the stack of wads is used up.

In Figure 14, the arrangement is substantially the same except that instead of separate partitions 49 being used, a single zigzag piece of treated cardboard 51 is employed as a spacer.

In Figure 15, a modification is shown in which an outer casing 52 is employed which is bent inwardly as indicated at 53 in order to restrain the wads 54 as they are pressed out by means of the sliding rear cap 55. The front end of the casing is provided with a cap 56 to protect the wads remaining in the casing when not in use.

Figure 17 is an alternate form of cleaner, comprising the wad 57 secured to the back plate 58 of cardboard or other suitable material and is provided with a handle 59, the wad, back plate and handle being secured together by any suitable means such as the pin 60. This cleaner may be packed in a suitable envelope, such as used for the cleaners Figures 1 and 7.

Figures 16, 18 and 19 show various forms of wads having outer fabric casings, generally denoted in all of the figures by the numeral 61. These wads are made up in the form of long strips or pads and are divided in the case of the pad shown in Figure 16 by the stitching or ribbing 62, or as shown in Figures 18 and 19 by the cross cuts or stitches 63. This enables the large pads to be cut up into small cleaning wads which can be used one at a time and then thrown away, and these pads can be packed in any suitable containers such as that shown in Figure 9, removed therefrom and a single wad cut off and used and thrown away, the balance of the pad being retained in its air-tight box ready for use.

A suitable composition or mixture for impregnating any of the wads described herein is as follows:

75 pints of a suitable solvent of medium volatility such as "varnolene", xylene, solvent naphtha or chlorinated hydrocarbons, mixed with 25 pints of a solvent of lower volatility than the first mentioned solvent used such as kerosene (odorless preferred). 8 lbs. of a suitable wax is added to the foregoing solvents. Montan or carnauba wax is suitable and the wax is dissolved in the solvents by heat. The resultant mixture is allowed to cool.

The "varnolene" mentioned above is a product well known in the art and may be designated as a petroleum fraction free from aromatic hydrocarbons and containing not over 2 per cent of unsaturated hydrocarbons; which petroleum fraction has an initial boiling point between 300° F. and 310° F., a dry or maximum boiling point between 400° F. and 415° F., a flash point between 105° F. and 115° F., a fire point between 120° F. and 125° F., and a gravity between 49° Bé. and 50° Bé.

To 20 pints of the foregoing is added 5 lbs. of a mixture of equal parts of a suitable abrasive such as amorphous silica (infusorial earth, air-

floated 300 mesh) and a suitable soft polishing agent such as whiting (precipitated chalk).

The entire mixture is thoroughly mixed in any suitable manner such as by a mill and is then applied to the wads by saturating same therewith. The wads may be wrung or pressed out to remove the surplus liquid and may be given a light drying to remove more of the surplus volatile solvents. The resultant wad is thoroughly impregnated with the mixture without any free excess and is adapted to be handled without drip and is now ready for use. The amount of liquid in the wad is such that any liquid adhering to the fingers soon evaporates, so that the hands are not soiled thereby.

The term "volatility" corresponds with the vaporization of the solvent, the vaporization continues over a period of time. The commercial cleaner has to be applied by a fibrous material of which paper is selected as the most practical. It is necessary to reduce the wax to such a state of viscosity that it will penetrate and saturate the fibers of the paper when it is applied; but a solvent of a high volatility that secures this result soon evaporates, resulting in a hardening of the wax which would gradually impair its usefulness as a cleaner. To avoid this condition, the second solvent is used having a low volatility and is slow to evaporate, hence for practical purposes the second solvent remains in the wax and maintains it in a plastic condition until it is to be used. If the second solvent only were used, the fibers of the paper would not be fully impregnated with the cleaning agent, the paper could not be used either side for cleaning, and the cleaner pad could not be applied by removing the top sheet for use by itself. The result produces a cleaning pad made of layers of paper, each layer being removable and being a complete cleaning agent in itself which is instantly ready for use. There is no excess wax or plastic material between the layers to prevent the removal of the top sheet and which might ultimately harden and destroy the usefulness of the cleaning pad.

It will be observed from the foregoing specification that the invention broadly contemplates a cleaner wad consisting of a piece of fibrous material impregnated with a mixture containing a solvent, a wax, an abrasive and a polishing agent and that in some of the forms shown, this cleaning wad is combined with a reusable substantially air-tight container, the whole forming what is herein termed a "cleaner compact", the same constituting a new and useful article of manufacture not heretofore known and of general utility especially for household use, as it eliminates the keeping on hand of bottles of liquid cleaner which are often inflammable, and the necessity for keeping on hand a supply of rags, polishing cloths and the like.

A division from this application is filed under Serial Number 121,344, on January 19, 1937.

What is claimed:

1. A cleaner wad comprising a piece of paper impregnated with a mixture comprising a wax solvent of a higher volatility than kerosene, a second wax solvent of a volatility corresponding to kerosene, a wax, an abrasive, and a polishing agent adapted to maintain said mixture in a condition for immediate use on the work to be cleaned.

2. A cleaner wad consisting of a piece of fibrous material impregnated with a mixture of "varnolene", kerosene, wax, an abrasive and a polishing agent, and adapted to apply said mixture to the work to be cleaned.

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