S. GOLDSTONE.

OIL SAVING DRIP PAN FOR SEWING MACHINES.

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1,334,088.

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Fig. 1.

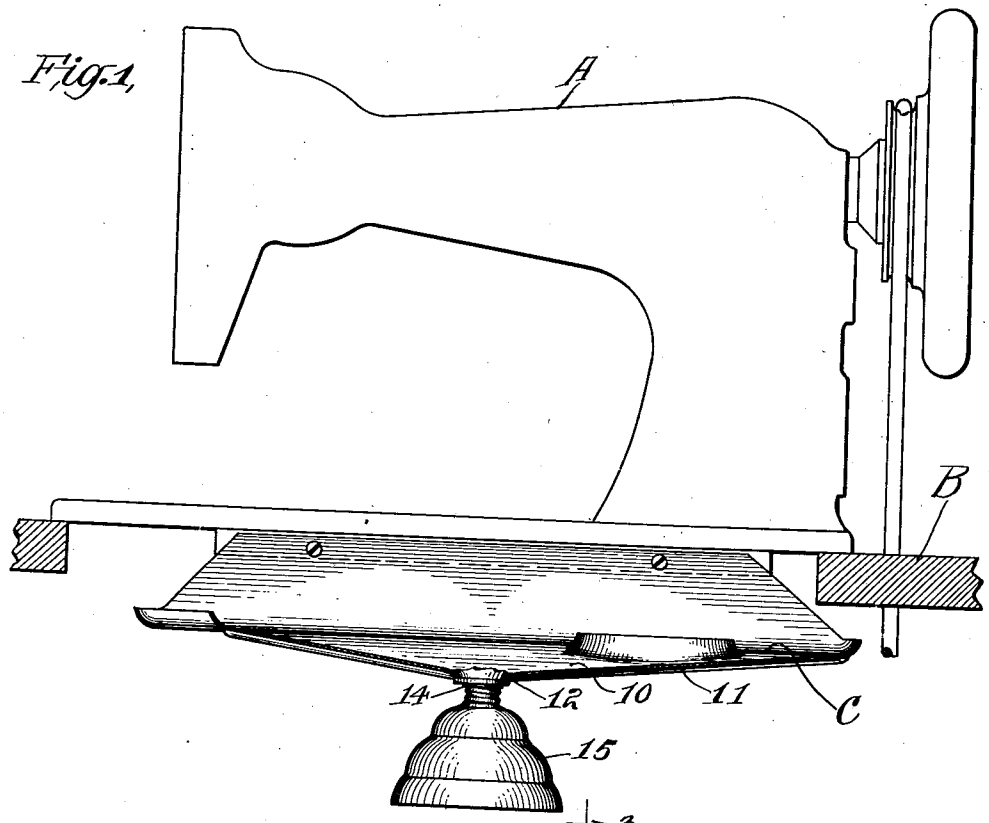


Fig. 2.

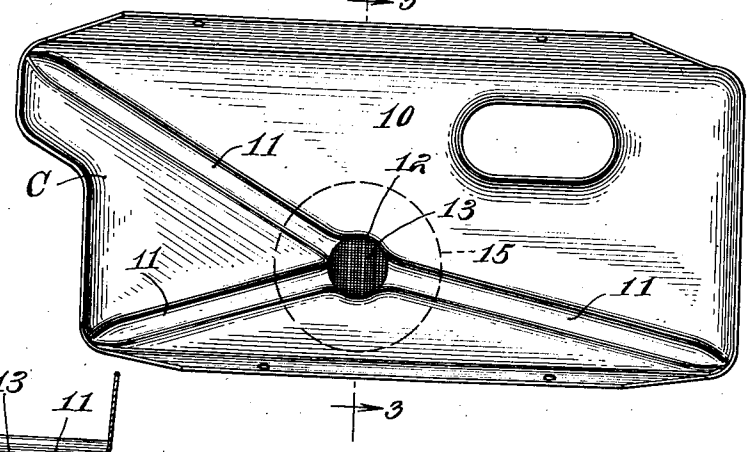
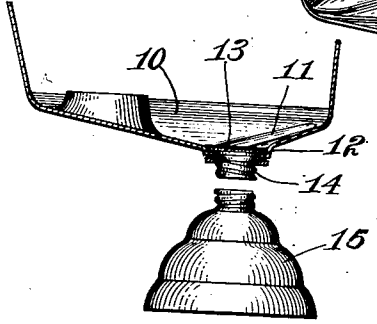


Fig. 3.



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OIL-SAVING DRIP-PAN FOR SEWING-MACHINES.

1,334,088. Specification of Letters Patent. Patented Mar. 16, 1920.

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To all whom it may concern:

Be it known that I, SAUL GOLDSTONE, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented new and useful Improvements in Oil-Saving Drip-Pans for Sewing-Machines, of which the following is a specification.

This invention relates to improvements in drip pans for sewing machines, pertaining more particularly to structures of this type adapted to provide for the saving of the oil drippings.

While the invention is adapted for use in connection with various work-performing mechanisms, and is not limited to use with sewing machines, it is more particularly designed for use with this latter class and more especially to machines of this class designed for operation under high-speed conditions.

Machines of this latter type are generally employed under large capacity conditions, being power-driven and operating generally under piece-work conditions wherein the time factor is one of importance to the workman; hence, there is a constant incentive to maintain the quantity output regardless of the effect on the mechanism itself. Under high-speed operation these machines require frequent oiling, and, owing to the time factor, the workman is inclined to employ larger quantities of the oil than may be actually necessary, the result being that there is more or less constant dripping of oil into the drip pan. Consequently there is a comparatively rapid accumulation of oil, and since the drip pan of this type of machines is generally open-ended with a small upturned flange at the open ends to produce a shallow pan effect, there is a constant liability of the oil accumulations becoming such as to overflow these end flanges without, however, providing a sufficient flow to insure direct dripping from the pan on to the floor, the result generally being that the oil will follow the outer face of the pan bottom and tend to form a film on this bottom face; if then permitted to accumulate the drippings pass on to the floor.

This condition becomes an important factor in operations of this kind, owing to the fact that the exposed film is in such position where it may reach the clothing of the operator, since the mechanism controls are generally located at a point below the pan accessible to the knee of the operator. Not only does this film condition tend to affect the clothing of the operator, but a greater damage results from the inherent necessity of the operator placing the work in a position where it may come in contact with the soiled portions of the clothing or even be brought into direct contact with this outer face of the pan through the movements of the operator in manipulating the controls. This, of course, produces an oil stain on the particular garment forming the work, and practically renders the latter unsalable. In commercial operation this condition is of frequent occurrence, so that on final inspection such stains are frequently found present, requiring the discarding of the garment and the practical loss of the material and time employed in the manufacture of the garment.

One way generally employed in an attempt to prevent this condition is to place a number of fabric clippings in the pan, these clippings being designed to take up the oil content as it drips, and where the operator gives the proper attention, this solution is more or less satisfactory. The difficulty, however, lies in the presence of this time factor, the operator either forgetting to take out the more or less saturated clippings and substitute others—thus tending to keep the pan free from accumulations—with the result that the accumulations reach the point where this overflow action takes place. Not only is this forgetting a common habit among the operators, but even where the clippings are periodically removed, the operator simply takes up the mass of saturated clippings, "balls" them and tosses them to one side instead of placing them in a particular receptacle. Since these clippings are highly inflammable, this carelessness of the operator brings about the conditions leading to fire conflagrations, this having been found to be the basic cause of a number of fires which have taken place; and this is accentuated by the fact that the oil accumulations from the drip pan, even if the clothing of the operator does not remove the film in manipulating the controls, drip on to the floor of the room and thus make the latter a tinder box.

These are the conditions which the present invention is designed to meet, through eliminating the difficulties at the source, viz: by preventing accumulations in the pan sufficient to provide the overflow action, and in

preventing this through the automatic and constant removal of drippings, providing the relief structure in such form as to save the oil in a condition capable of being re-used, thus not only eliminating the chain of difficulties which flow from this source, but in addition actually provide a saving in cost through the ability to reuse the oil employed.

Other objects of the invention are to provide this result in a simple and efficient manner and at a comparatively small expense, the invention being adapted for application to drip pans heretofore employed by a few simple changes, or can be utilized in the construction of new structures.

To these and other ends, therefore, the nature of which will be readily understood as the invention is hereinafter disclosed, said invention consists in the improved constructions and combinations of parts hereinafter more fully described, illustrated in the accompanying drawings, and more particularly pointed out in the appended claim.

In the accompanying drawings, in which similar reference characters indicate similar parts in each of the views,—

Figure 1 is a view partly diagrammatic and partly in section, showing a sewing machine head to which a drip pan of my improved construction is applied, the latter being shown partly in section.

Fig. 2 is a top plan view of the drip pan of Fig. 1.

Fig. 3 is a cross sectional view taken on the line 3—3 of Fig. 2.

A indicates a sewing machine head mounted on the usual table B, the latter having the usual opening to receive the parts which generally extend below the top plane of the table.

C indicates the drip pan, the general configuration of which is similar to that normally supplied as a part of the standard machine represented in the drawing, with the exception that in the standard drip pan the bottom extends practically on a single plane, the ends carrying upwardly-projecting flanges, these flanges forming, with the bottom, a shallow pan into which the drippings normally pass, this particular type of drip pan being open-ended, the sides having flanges of suitable width which are secured to the head or to the table. As shown, this particular form of standard pan has one end recessed, this being provided to permit a ready manipulation of the bobbin structure usually employed. Adjacent to the operating end is an opening through which suitable controls may extend. The general construction is such that a limited amount of oil may accumulate within the pan, it being assumed that the accumulations will be removed before they reach an amount sufficient to provide an overflow. As above pointed out this is seldom done by the operator, and the make-shift preventive is provided by strewing clippings over the bottom of the pan for the purpose of absorbing the drippings.

In the present invention the difficulties are eliminated by having the bottom 10 of the pan of a suitable dish shape, the dishing being from each of the parts of the pan into which the drippings generally pass toward a common point, it being understood, of course, that the drippings from the head are restricted more or less to different local points. Figs. 1 and 3 of the drawings will indicate somewhat the general character of the shape employed.

To aid in bringing the oil to the collecting point with greater certainty I may employ one or more channels 11 leading from the vicinity of the points of drip, these channels tending to collect the oil from the adjacent surfaces of the bottom and form a runway for the collected oil toward the actual collecting point.

At this collecting point, the bottom 10 is shown as formed with an opening 12 of suitable size—its area need not be large for obvious reasons—and in this opening I locate a suitable screen 13, preferably of comparatively fine wire mesh, or it may be of gauze type, this screen being secured in position by suitable means, as by soldering, the screen being so positioned as not to prevent the ready flow of the oil to this point and at the same time will limit the passage of oil through the opening only to passage through the screen.

14 indicates a nipple secured to the bottom in suitable manner below the screen and through which the screened oil is required to pass. This nipple is shown as being threaded similar to the threaded portion of the ordinary oil can nozzle or spout, the threaded portion projecting below the bottom, and, by reason of the threaded formation, permitting an ordinary oil can body, indicated at 15, to be detachably secured thereto, the can body being threaded to and from its seat on the nipple in the usual manner and forming the collection receptacle for the oil. Obviously, since the receptacle is the body of the oil can itself, it will be readily understood that by employing two oil can bodies, one can be positioned on the nipple and serve as an oil saver and then, upon removal and the connection therewith of the ordinary oil nozzle, a filled structure is ready for re-use of the screened oil; the substitute can is, of course, located in position on the nipple.

The arrangement is such as to permit of the change in configuration of the bottom from the usual structure with but little difficulty, as for instance by a change in dies, or the change can be made in pan structures

heretofore in service by providing the additional dish configuration and channels through a stamping operation. In the latter case the screen and nipple can be readily located in position after an opening has been formed. Obviously the question of producing the elements at the time of initial manufacture becomes a question of shop practice.

As will be readily understood, there is no material accumulation of oil permitted, since the drippings immediately pass toward the screen, so that the liability of admixing of dust and oil within the pan is materially reduced, thus reducing the possibility of forming obstructions to the free passage of the oil toward the screen. Under service conditions, a pan of the type disclosed herein has remained uncleaned for a period of more than three months, the only attention paid to it being the substitution of one can body for another, the outer face of the bottom of the pan being wholly free from oil film and there being no drippings to the floor throughout the period, it being understood, of course, that no clippings or other absorbent material was employed, and that the oil which was saved was continuously re-used during the period.

Obviously, the particular peripheral configuration of the drip pan is more or less dependent upon the particular use in which it is to be placed, the variations in machine construction, requiring changes in such peripheral configuration. Nor is it materially essential that the pan be open-ended, the essential feature being the dishing of the pan in such manner as to provide a local point to which the drippings will pass—preferably quickly—and thus place the drippings at the point of screening before any material accumulation can occur, thus tending to eliminate contamination of the oil by dust, etc.; should dust be present, it will be screened from the oil at the collecting point, and the periodical cleaning of the pan would be made more particularly to remove any accumulations of extraneous matter which may have been removed from the oil drippings by the screen.

While I have herein shown and described a preferred way in which the invention may be provided and placed in service, it will be understood, of course, that changes and modifications therein may be found desirable or necessary in meeting the exigencies of use and I desire to be understood as reserving the right to make any and all such changes or modifications as may be found essential or desirable in so far as they may fall within the spirit and scope of the invention as expressed in the accompanying claim.

Having thus described my invention, what I claim as new is:—

The combination with a work-performing mechanism and its support, of a drip pan extending below said support in position to receive oil drippings, said pan being supported on two sides by suitable flange members and being open and unsupported at both ends to permit ready access for cleaning, said pan having a relatively shallow dished bottom to receive the drippings and provide a drippings collecting point, a screen member at said point, a nipple extending below the bottom of the pan at said point, and an oil saving receptacle detachably secured to said nipple.

In testimony whereof I have hereunto set my hand.

SAUL GOLDSTONE.