Aug. 3, 1943. C. P. DOWNER ET AL 2,325,907

METHOD OF COMPLETELY MACHINE-IRONING SHIRTS

Filed June 5, 1940 3 Sheets-Sheet 1

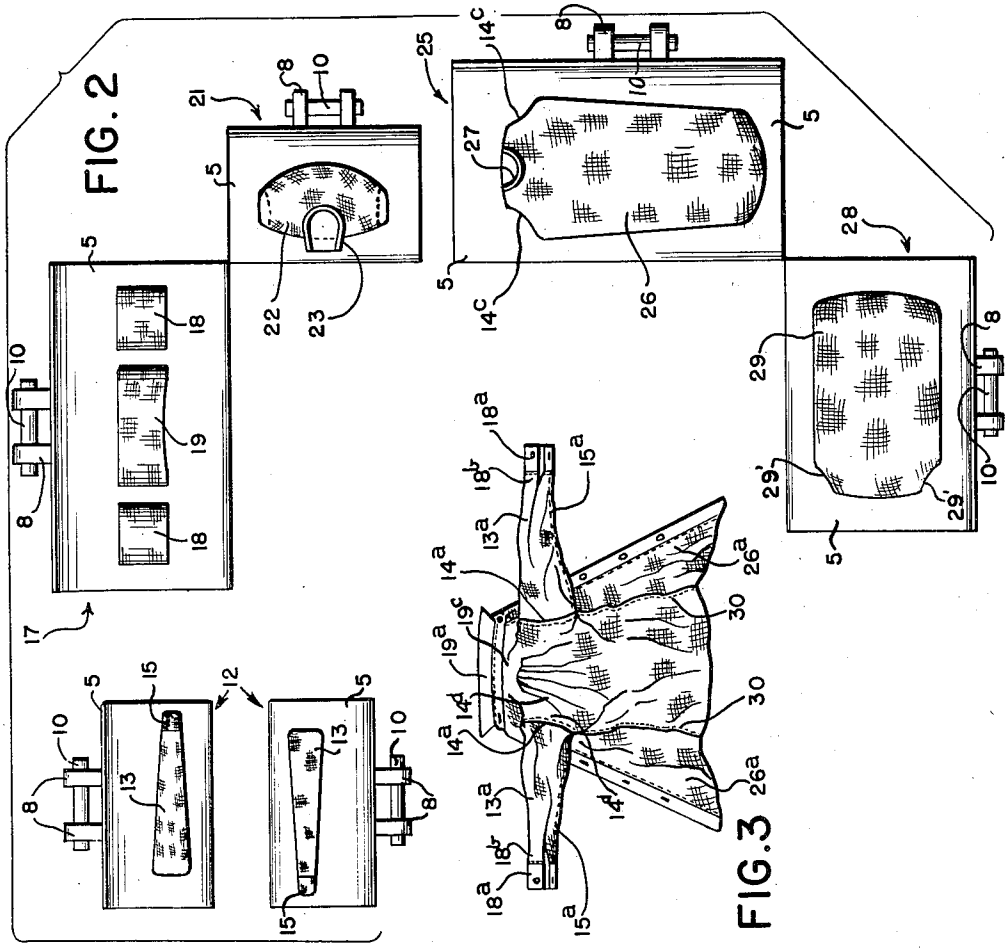


FIG. 2

FIG. 3

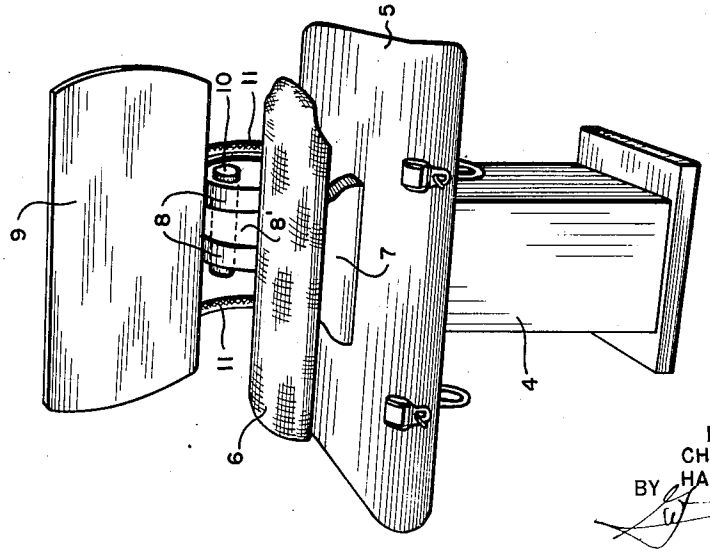


FIG. 1

INVENTORS
CHARLES P. DOWNER
HARRY G. COOPER
BY
ATTORNEY.

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FIG. 4

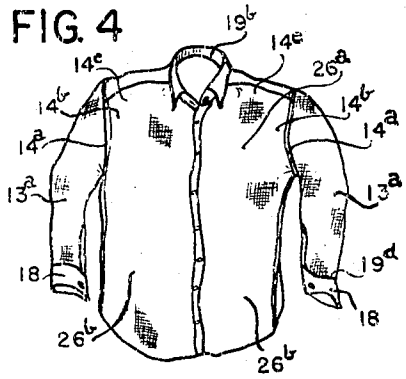


FIG. 5

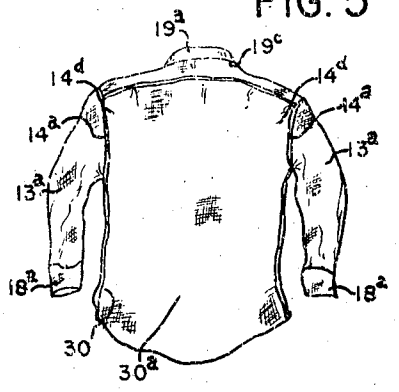


FIG. 6

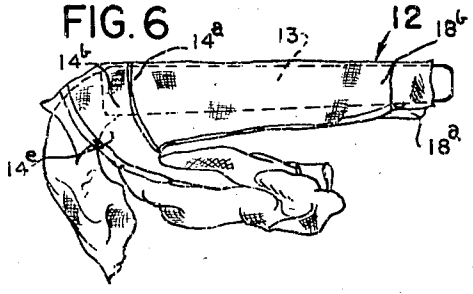


FIG. 7

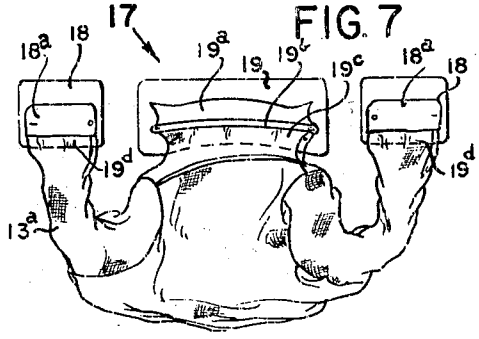


FIG. 8

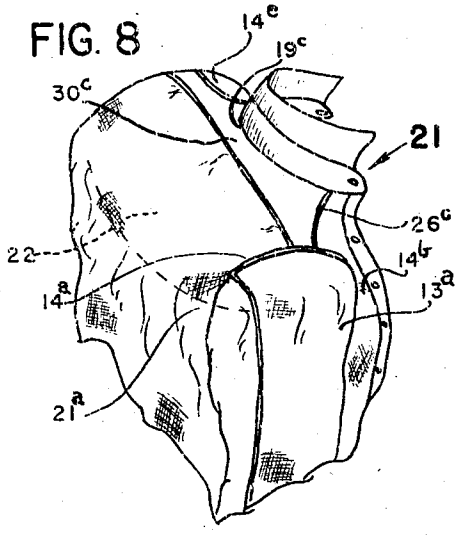
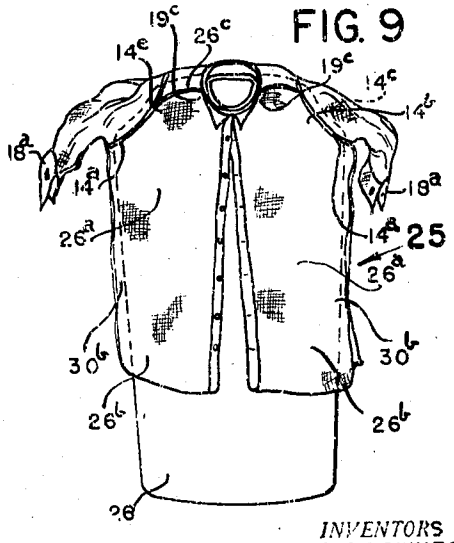


FIG. 9



INVENTORS
CHARLES P. DOWNER
HARRY G. COOPER
BY
ATTORNEY

Aug. 3, 1943. C. P. DOWNER ET AL 2,325,907

METHOD OF COMPLETELY MACHINE-IRONING SHIRTS

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FIG. 10

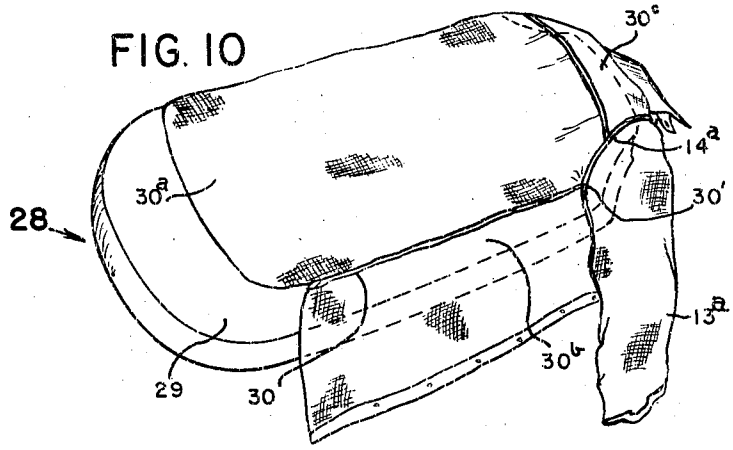


FIG. 12

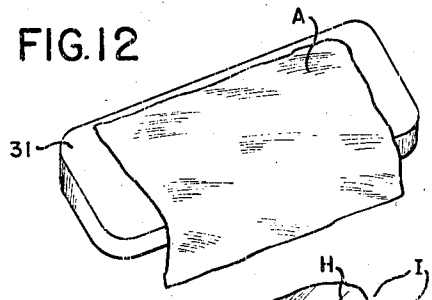


FIG. 11

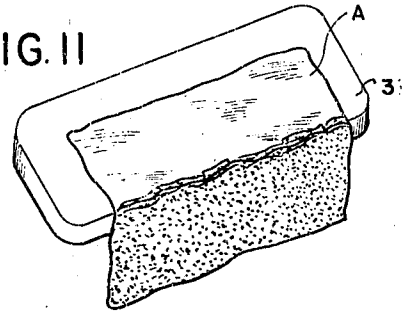


FIG. 13

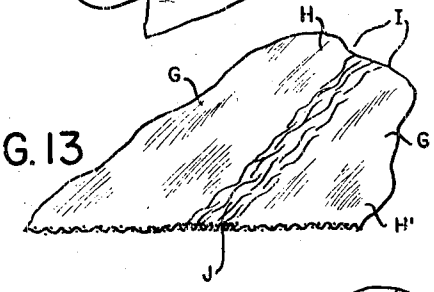


FIG. 14

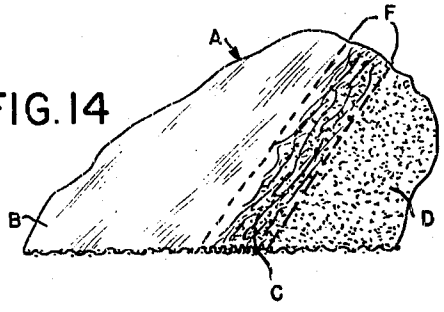
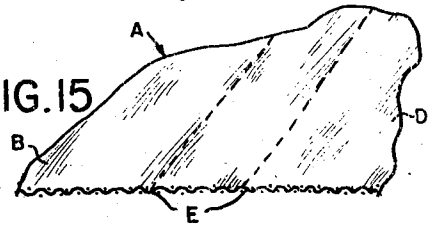


FIG. 15



INVENTORS
CHARLES P. DOWNER
HARRY G. COOPER
BY
ATTORNEY.

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METHOD OF COMPLETELY MACHINE-IRONING SHIRTS

Charles P. Downer, Winchester, and Harry G. Cooper, West Medford, Mass., assignors to The Prosperity Company, Inc., Syracuse, N. Y., a corporation of New York

Application June 5, 1940, Serial No. 339,610

3 Claims. (Cl. 38—144)

This invention relates to a method of completely machine-ironing a shirt. The method may also be used in connection with completely machine-ironing of other coat-like or similar articles of apparel.

The present method of completely machine-ironing shirts is particularly adaptable for use in commercial laundries. The method of completely machine-ironing the shirts is effected by use of several machines which are hereinafter more particularly referred to so that a full and clear understanding of the said method may be had.

Up to the present time there are two known methods of ironing shirts. One of these methods is that which is now employed by most commercial laundries. This method consists of the machine-ironing of certain portions of a shirt and in such commercial laundries the practice for finishing the sleeves of a shirt is to draw these sleeves over well known elongated frusto-conical formers and the sleeves, therefore, are not machine-ironed. This finishing of the sleeves as accomplished on the frusto-conical formers does not impart to the outer surface of the sleeves of the shirt the usual luster which would result from a machine ironing operation. In commercial laundries the shirt is partially ironed on one pressure ironing machine and then transferred to another pressure ironing machine, and these steps are repeated including the step of finishing the sleeve on the frusto-conical formers, until the machine operations are complete. In other words, the machine-ironing of the shirt is complete so far as can now be accomplished on known shirt ironing machines. The shirt, however, is far from being completely machine-ironed and finished on the entire outer surface. The shirt when removed from the last ironing machine in known methods has certain portions thereof which were not ironed and could not have been completely machine-ironed by present ironing machines and methods. These said unironed portions give the appearance of a rough-dry finish. The rough-dry areas or portions of the shirt must then be redampened by hand and also retouched or hand-ironed by an experienced operator. The rough-dry areas or portions of the shirt result from present machine-ironing methods which may be called abutting ironing methods. This so-called abutting ironing machine method as now practiced results in the aforesaid rough-dry areas or portions which become dried out in the present ironing method and consequently require the aforesaid redampening thereof. This redampening results in a dispersion of the starch in the rough-dry areas or portions of the shirt and necessitates the subsequent touching up by an experienced operator with a hand iron and necessarily results in a different finish than the finish that had been imparted to the adjacent portions of the shirt by the machine ironing of certain portions only thereof.

Stating it in another way, the line of demarkation between the part of a shirt ironed on one machine and the adjacent part of the shirt ironed by another machine which purports to abut the edge of the first said ironed part of the shirt, does not do so in reality, and does not result in a complete and uniform finish. This line of demarkation, if it may be called such, is easily discernible, and in all, results after redampening and touching up with a hand iron, in a shirt of uneven finish. An experienced operator must necessarily sponge or redampen the portion of the garment between the abutted ironed portions accomplished on the different machines and finish this redampened portion with a hand iron. The operator that performs this hand ironing finish must be a highly experienced one and in view of the fact that the hand operation must be performed on several portions of each shirt which has been previously machine-ironed, naturally the progress of machine-ironing shirts at present is rather slow, yet necessarily requiring an experienced operator to finish the aforesaid apparent rough-dry portions of a shirt.

There is serious objection to the present commercial machine ironing of shirts on the part of the customer, primarily because the shirt does not possess a uniform finish throughout. This non-uniform finish is due to the fact as aforesaid, that the experienced operator must redampen certain portions of the garment and touch up these redampened portions with a hand iron. The redampening, of course, disperses the starch in the shirt and the resultant touched-up portion with the hand iron and consequent different pressure by hand than applied by machine results in a materially different finish from that finish which was imparted to the shirt by the machine ironing thereof.

There, of course, is the well known method of hand ironing shirts, such as practiced by either the housewife or laundress. This hand ironing method is highly objectionable in that with the preliminary dampening of the shirt and the length of time required to completely hand iron a shirt, and before the shirt has been completely hand ironed, it is necessary to frequently re-

dampen the shirt as the ironing of the same progresses, and the resultant hand ironed shirt is of a non-uniform finish throughout for this and later stated reasons. In other words, with the well known hand ironing operation it is simply impossible to produce a shirt that is ironed having a complete uniform finish throughout, because the human element is involved and the pressures applied differently at different portions of the shirt, etc. results in a non-uniform finish which is very unsatisfactory. It is practically impossible to hand iron a shirt and to apply the same pressures to all portions of the shirt so ironed and then, too, a goodly portion of the shirt will be ironed twice so to speak, resulting in a high gloss finish which is objectionable, and this finish will be entirely different from a finish applied by a single hand ironing operation. It seems hardly necessary to state that it is practically impossible to avoid ironing certain portions twice when the hand method of ironing is used.

The primary object of the present invention is to provide a method whereby a shirt or similar article of apparel is completely machine ironed, after having been properly dampened.

Another object of the present method is to render unnecessary, due to the rapidity of execution of the several steps thereof, any redampening or hand ironing finish or touch-up of the shirt.

Another object of the method is the completely machine ironing of a shirt so that the shirt is of a uniform finish throughout its entirety.

Another object of the present method is to overlap iron all portions of a shirt so that when the shirt is completely machine-ironed in accordance with the present method the result will be that it is of a uniform finish throughout its entirety.

Another object of the invention is to accomplish by this method the overlap ironing of all portions of the shirt without redampening the shirt during the ironing method so that the resultant completely machine-ironed shirt is of a uniform finish throughout.

Another object of the invention of the present method is to machine iron pre-selected portions of the shirt on particularly designed pre-selected ironing forms to accomplish overlap ironing, the latter conforming in contour to the pre-selected portion of the shirt applied thereto, and repeating the removal of the shirt from one machine to another to be partially ironed thereon, until the shirt is completely machine-iron finished on the entire outer surface thereof.

Another object of the invention of the present method is to provide in the method of ironing the steps of pre-selecting all portions of the shirt and overlap iron certain edge portions of these portions on the different particularly designed pre-selected ironing forms conforming in contour to the pre-selected portion of the shirt applied thereto so that the resultant completely machine-ironed shirt will be of a uniform finish throughout its entire outer surface.

Other objects will appear hereinafter as the description of the method proceeds and develops.

In order to more fully understand the invention as embodied in the present method, the drawings hereinafter referred to depict certain typical examples of machines that may be used in carrying out this method. The drawings are also enlightening as to following of the steps of the method.

In the drawings:

Figure 1 is a front elevational view of one type of ironing machine that may be used in carrying out the present method and the remaining figures of the ironing machine in the drawings may be of this same type or any other type, so long as the pressing bucks and other portions of the machine are so designed as to permit carrying out of this method.

Figure 2 is a top plan diagrammatic view of several of the machines used in carrying out the present method.

Figure 3 is a view of a typical shirt opened so as to disclose clearly the collar, sleeves, cuffs, bosom, shoulder and back portion of the shirt.

Figure 4 is a front elevational view of a typical shirt.

Figure 5 is a rear view of a typical shirt.

Figure 6 discloses a sleeve of the shirt which has been drawn over a pressing buck.

Figure 7 denotes the shirt with the cuff and collar portions thereof on their respective ironing bucks.

Figure 8 denotes the shirt with a pre-selected portion thereof placed on a shoulder ironing buck.

Figure 9 denotes a shirt with a pre-selected portion thereof placed on a bosom ironing buck.

Figure 10 denotes a shirt with a pre-selected portion thereof placed on a back ironing buck.

Figures 11 and 12 denote the steps of overlap ironing of certain portions of the shirt.

Figure 13 shows a portion of a shirt which has been machine ironed and redampened and hand ironed or touched up by an experienced operator in accordance with known methods, and

Figures 14 and 15 indicate the result of the present method of overlap ironing certain portions of the shirt.

Inasmuch as the several ironing machines shown in the drawings are concerned, these machines are more or less diagrammatically shown and only the vital portions thereof, namely, the ironing surfaces, or bucks, are shown, except in Figure 1, where as illustrative of the remaining machines, a more or less complete machine is shown. It is understood that the particular structural characteristics of one or more of the machines is, or may be, embodied in separate patent applications. A brief description of the machines is believed sufficient to enable one familiar with this art to fully comprehend the present method of completely machine-ironing shirts or like articles on the said machines.

Figure 1 is illustrative of the type of machine that may be employed, but of course, as aforesaid, any type of machine may be used so long as it embodies the necessary structural characteristics to permit carrying out of the method herein described. In Figure 1 the machine consists of a base **4** on which is mounted a table **5** and on which table the ironing surface or buck **6** is mounted on a bracket or support **7**, the latter of which is suitably secured to the said table **5** and frame **4**. At the rear of the machine there are upstanding spaced brackets **8** having pivotally associated with the frame at **8'** a pressing element or head **9**, the pivotal association being affected by means of the pintle **10**. The head **9** is suitably polished or otherwise treated on its under-ironing surface so that it will impart a smooth, firm finish, or as sometimes referred to as the luster or sheen, to the shirt. The buck **6**, which is usually yieldable or padded, and the head **9** are heated in some manner, and as shown,

the heating is accomplished by means of the flexible pipes 11. The source of heat may be steam conducted through said flexible pipes, or any other known source of heat may be employed. It is understood, of course, that the head and/or buck of the ironing machine is heated to the proper temperature so as to result in the satisfactory machine ironing of the shirt. There is provided a suitable leverage (not shown) to actuate the pivoted ironing head 9 and such a leverage may be manual or automatic or semi-automatic.

In Figure 2 of the drawings the pivoted ironing head has been eliminated from the several machines. Considering the machines shown in Fig. 2 from left to right, the two machines indicated generally at 12 are the sleeve ironing machines. It has been found practicable to use at least two of the sleeve ironing machines in carrying out the present method which results in a rapid flow of the garments in the ironing method by the operators. No operator is required to wait for completion of partial ironing by another operator on or from another machine. The present method results in continuous uninterrupted ironing by the operators on the several ironing machines with no delay and the resultant complete machine-ironing of the shirt. These sleeve ironing machines embody the table 5 upon which is mounted in any suitable manner the ironing surface or bucks 13 which bucks permit the shirt sleeves to be drawn thereover, see Fig. 6. Coming to the next machine, a collar and cuff ironing machine, is indicated generally at 17, and it has the usual table 5, and mounted in any suitable manner thereon are the two curved cuff ironing surfaces or bucks 18 in between which there is mounted in any suitable manner the curved collar ironing surface or buck 19. Immediately adjacent this machine there is disclosed a shoulder and yoke ironing machine, indicated generally at 21, and again it will be seen that this machine embodies the usual table 5 and the shoulder ironing buck 22 with a collar holder 23 attached thereto. The buck 22, of course, is attached to the table in any desired manner. At 25 the bosom press, for ironing the front of the shirt, is indicated, and this press embodies the usual table 5 and has mounted thereon the elongated tapering bosom buck or ironing surface 26 with the collar holder 27 attached thereto. It is to be noted in this bosom press that the shoulder portions thereof are cut out or rather curved inwardly adjacent each side of the collar holder, as indicated at 14c, and for a purpose later to be described. At 28 the backing press or ironing machine, for ironing the back of the shirt, is indicated generally and the usual table 5 is employed upon which is mounted the backing pressing surface or buck 29 and this pressing buck 29 may be mounted on the table in any desired manner and it is cut out or curved inwardly adjacent the shoulder portions as indicated at 29', for a purpose later to be described, similar to the cut-out portions 14c in the bosom ironing buck, as shown in the machine 25.

A still further specific description of the method including the precise positioning of the various pre-selected portions of the shirt on the several ironing machines is as follows, and is merely illustrative of a specific method and not in any way to be intended to be limiting as to the sequence of steps here described. Assuming now that we are to completely machine iron the typical shirt shown in Figures 3, 4 and 5 of the drawings, and further assuming that the said shirt has been previously properly dampened. The immediately described method has been found to be highly practicable, rapid and satisfactory. The sleeves 13a of the dampened shirt are drawn over the sleeve bucks 13, such as shown in Figure 6, so that the cuff portion is adjacent one end of the buck and may be clamped thereat as indicated at 15 in Figure 2, and the sleeve and part of the shoulder portion of the shirt extend around or about the other end of the buck, as in Figure 6. With the sleeves in this position on the bucks the ironing head 9 of the machine is lowered or otherwise brought into engagement with the buck and the entire sleeve portion of the shirt up to the cuff and the armhole seam 14a of the sleeve and inwardly beyond the same including parts of the shoulder portion 14b, back portion 14d and a portion of the bosom 14e of the shirt will be machine-ironed, and it will, of course, be necessary that the sleeve be rotated on the buck, without removing same herefrom, to accomplish this complete machine-ironing of the sleeve and the said adjacent portions of the shirt. Having completely machine-ironed the sleeves of the shirt up to the cuff and the said portions of the shirt adjacent the sleeve, the shirt is then removed from the sleeve ironing machine. Then, the shirt is immediately transferred by an operator to the cuff and collar ironing machine 17 and the cuffs and the collar of the shirt are properly positioned or placed on the respective bucks 18 and 19 so that the collar 19a and neck band 19b and approximately one-half inch over the shirt portion around the collar, indicated at 19c, the cuffs 19a and overlap ironing of a portion 19b of the already ironed sleeves is accomplished by means of the ironing head 9 or similar machine iron and as more clearly shown in Fig. 7 of the drawings. After this ironing operation the shirt is immediately transferred by an operator to the buck 22 of the shoulder and yoke ironing machine 21, and the shirt is properly positioned thereon with the collar about the collar holder 23, such as shown in Figure 8, and in this ironing operation, the shirt is ironed down the back to a point adjacent the arm pits, as indicated by the dotted lines 21a in Figure 8, the yoke portion 30c and yoke seams 26c including both shoulders and shoulder sleeve seams 14a overlapping the previously ironed portion of the sleeves 13a and overlap-ironing around the neck band at 19c and overlap-ironing of a portion of the bosom at the shoulders at 14e previously ironed on the sleeve press and the collar press. Upon completion of this shoulder ironing step the shirt is then immediately transferred by an operator to the buck 26 of the bosom ironing machine 25, and on this machine the bosom 26a and front lower body portion 26b is ironed and overlap-ironing of a portion 14e already ironed on the yoke and shoulder press 21 and overlap-ironing the sleeve shoulder seam portion 26c which was previously ironed on the yoke and shoulder press 21 and overlap ironing the portion around the front edge 19c of the collar neck band previously ironed on the collar and cuff press 17 and the yoke and shoulder press 21. The cut-out portions 14c in the bosom buck 26 permit the shoulder sleeve seams 14a to lie on the buck so as to not cause wrinkling of the already ironed sleeve.

After removal of the shirt from the bosom ironing machine, the shirt is placed on the buck 29 of the shirt back ironing machine 28. See Figure 10, and on this machine the entire back portion of the shirt including the side seams 30

of the shirt and the portion thereof extending from the arm pit 30' to the tail 30a and overlap-ironing of the portion 30b previously ironed on the bosom press bordering on the side seams 30 and also overlap-ironing the shoulder yoke seams 26c previously ironed on the yoke and shoulder press 21 and the seams 14a ironed on the sleeve press 12 and ironing up to and overlapping the yoke portion 30c already ironed on the yoke and shoulder press 21, is accomplished, as will be clearly seen by examining Figure 10. The cut-out corners 29' of the buck 29 allow the already ironed shirt sleeves to drape downwardly (see Figure 10) without causing the sleeves to become wrinkled. To accomplish the ironing on the machine 28 it may be necessary, of course, for an operator to shift the shirt on the buck, perhaps twice only.

The resultant completely machine ironed shirt when removed from the last ironing machine, namely, the aforesaid backing ironing machine, is one that is of a uniform finish throughout. It is to be clearly understood that when the shirt is removed from the last ironing machine there is nothing further to be done in the way of finishing such as heretofore has been necessary in the redampening and retouching up with a hand iron by an experienced operator.

A clearer understanding of the overlap-ironing method step will be had by referring to Figures 11 to 15, inclusive, of the drawings. In Figures 11 and 12 there is shown a pressing buck or pressing surface 31. In Figure 11 it will be seen that a portion of the article, which in this instance is a shirt, thereon indicated at A has been partially machine-ironed. An enlarged sectional view of the texture of this partially ironed article is shown in Fig. 14 wherein the machine-ironed portion is indicated at B and the rough-dry portion at C and the unironed dampened portion at D. When the overlap ironing step is complete, such as shown on the buck in Figure 12, and in the portion of the article A as shown in Figure 15, it will be seen that there is no line of demarkation between the originally ironed portion B and the rough-dry and damp portions C and D, respectively, that have been subsequently completely overlap machine-ironed, as indicated by the area E which has been over-lap-ironed throughout the corresponding area indicated at F, see Figure 14. In other words, in viewing the portion of the article A in Figures 11, 12, 14 and 15, and particularly in Figure 15, it will be seen that this article which has been completely overlap-machine-ironed, according to the present method, results in a uniform finish throughout its entirety without disclosing the portion E that has been overlap-ironed and thereby resulting in the said uniform finish throughout. By contrast and upon examining Figure 13 of the drawings, it will be seen that the article G which has been partially machine-ironed at H and H' but not over-lap ironed, resulting in the abutting rough-dry area I and later sponged or redampened at said area I by an experienced operator, and then hand ironed by said operator, results in the clear line of demarkation of the different finish of the article, as indicated at J. In other words, the resultant article from machine ironing at present employed in commercial laundries is one that, as aforesaid, requires a sponging or redampening of the portion I, due to the fact that in present methods and machine ironing apparatus, it is impossible to accomplish the overlap-ironing step and this portion indicated at I when later touched up by an experienced operator with a hand iron results in the uneven finish and the line of demarkation, as shown at I between the two machine-ironed surfaces in Fig. 13.

Going back to the present machine ironing methods now employed in commercial laundries, there is another disadvantage, namely, that in the absence of actual machine-ironing and outer surface finishing of the sleeves of the shirt, which has not heretofore been performed, and due to the fact that the shirt after being partially machine-ironed, must necessarily be redampened and touched up with a hand iron, the resultant ironed shirt is one having varied blends of finish and not a complete uniform finish throughout as accomplished by the present method. In retouching the redampened portion of a shirt as is now done in commercial laundries, the starch is necessarily dispersed and that hand-ironed finished portion which has been previously dampened results clearly in a finish that is distinct and readily discernible from the remainder of the machine ironed finish of the shirt. This objection is absolutely overcome in practicing the present method of completely machine ironing a shirt.

With present available machines for ironing shirts, it is impossible to completely machine iron a shirt so that no further redampening and hand iron finishing is necessary. It is therefore to be borne in mind that the present method of completely machine-ironing shirts is not one that was merely evolved by the machine-ironing of certain portions of a shirt on now available shirt ironing machine. On the contrary, considerable ingenuity has been devised both as regards the perfection of the method and also the provision of shirt ironing machines having structural characteristics as to the particular ironing forms whereby the complete machine-ironing method could be carried out. Ironing machines that are now available prevented overlap ironing of certain portions of a shirt as described in connection with the present method and in such available machines the ironing was of what might be called, as hereinbefore referred, the abutting type, namely, that the portion of the shirt that had been ironed on one machine was then placed on another machine and the ironing on the second machine merely abutted the line of demarkation between the ironed and unironed portions as performed by the first machine so that the finished partially machine-ironed shirt necessarily required redampening of the "rough-dry"portions in the abutting ironing of those now employed and this redampened portion when hand-ironed by an experienced operator always resulted in an uneven blend of finish of the shirt throughout several portions thereof.

In carrying out the present method it is desirable that a pre-selected portion of the shirt which has been previously dampened be applied to a pre-selected pressing or ironing surface of a shirt ironing machine and that the said pressure or ironing surface be such that it will accommodate and conform to the shape of the portion of a shirt that is placed thereon to be ironed. In each of the ironing machines the ironing machine is extended past the main portion to be ironed so that in the subsequent ironing operations the portions adjacent these extended portions to be ironed will be overlap-ironed so that all of these portions of the shirt that are repeatedly overlap-ironed will eventually result in

the completely overlap-machine-ironed shirt that will be of a uniform finish throughout and show no signs of the overlap ironing portions and requiring no further redampening or hand finishing of certain portions of the shirt, as has been necessary heretofore.

What is claimed is:

1. The method of completely machine-ironing shirts including successive ironing operations in any order of the cuffs, collar and neckband, yoke and shoulders, and sleeves, back and front of the shirt, so that each successive ironing operation overlaps only adjacent previously ironed portions of the shirt, and each of said ironing operations involving a single application of pressure over a comparatively large area of the shirt.

2. The method of completely machine-ironing shirts including the steps if ironing a single thickness of each sleeve up to the cuff and including adjacent portions of the shoulder, back, and bosom, also adjacent portions of the shoulder seams and the arm-hole seams, ironing the neckband, collar, and cuffs while simultaneously overlap ironing adjacent portions only of the sleeves and an adjacent portion of the shirt about the collar, ironing the shoulder and yoke portions while simultaneously overlap ironing adjacent portions only about the neckband and the bosom at the shoulders previously ironed during the collar ironing operation and the sleeve ironing operation respectively, ironing the shirt bosom while simultaneously overlap ironing adjacent portions only of the bosom adjacent the collar and the shoulder seams that were previously ironed during the yoke and shoulder ironing operation and adjacent portions around the front edge of the neckband previously ironed during the collar and cuff ironing operation, then ironing the back of the shirt and simultaneously overlap ironing adjacent portions previously ironed during the bosom ironing operation and simultaneously overlap ironing the shoulder yoke seams previously ironed during the yoke and shoulder ironing operation and the seams ironed during the sleeve ironing operation and also simultaneously overlap ironing the yoke portions previously ironed during the yoke and shoulder ironing operation, and wherein each of said ironing operations involves a single application of pressure over a comparatively large area of the shirt.

3. The method of completely machine-ironing shirts including the steps of ironing a single thickness portion of each sleeve up to the cuff and then presenting an unironed single thickness portion thereof and ironing the same and including ironing of adjacent portions of the shoulder, back, and bosom, also adjacent portions of the shoulder seams and the arm-hole seams, ironing the neckband, collar, and cuffs while simultaneously overlap ironing adjacent portions only of the sleeves and an adjacent portion of the shirt about the collar, ironing the shoulder and yoke portions while simultaneously overlap ironing adjacent portions only about the neckband and the bosom at the shoulders previously ironed during the collar ironing operation and the sleeve ironing operation respectively, ironing the shirt bosom while simultaneously overlap ironing adjacent portions only of the bosom adjacent the collar and the shoulder seams that were previously ironed during the yoke and shoulder ironing operation and adjacent portions around the front edge of the neckband previously ironed during the collar and cuff ironing operation, then ironing the back of the shirt and simultaneously overlap ironing adjacent portions previously ironed during the bosom ironing operation and simultaneously overlap ironing the shoulder yoke seams previously ironed during the yoke and shoulder ironing operation and the seams ironed during the sleeve ironing operation and also simultaneously overlap ironing the yoke portions previously ironed during the yoke and shoulder ironing operation, and wherein each of said ironing operations involves a single application of pressure over a comparatively large area of the shirt.

CHARLES P. DOWNER.
HARRY G. COOPER.