This invention relates to a process for wrapping articles to form a sealed package and to the package produced by the process. It has for its object the provision of an improved and attractive package in which the wrapper is efficiently sealed and also the provision of a package in which the steps of forming the package are efficiently and economically carried out. The invention is exemplified in the combination and arrangement of parts, and in the steps of the process, illustrated in the accompanying drawings, and described in the following specification and is more particularly pointed out in the appended claims.

In the drawing Fig. 1 is an end view of a partially wrapped package illustrating one step in the process of wrapping.

Fig. 2 is a side elevation of the partially wrapped package shown in Fig. 1.

Fig. 3 is a transverse section of the package showing a step in the wrapping process subsequent to that in Figs. 1 and 2.

Fig. 4 is an end view of the completely wrapped package with an enclosing carton in transverse section.

Fig. 5 is a plan view of a partially wrapped package containing articles of a different nature from those shown in Figs. 1 to 4.

Fig. 6 is a transverse section on line 6-6 of Fig. 5.

Fig. 7 is a plan view of the completed package shown partially formed in Figs. 5 and 6.

Fig. 8 is a transverse section of a wrapping applied to a rectangular article.

In Figs. 1 to 4 inclusive there is illustrated the process of wrapping a series of circular articles such as cookies or other disc shaped commodities.

For many articles especially those intended to be eaten it is desirable to provide an inner wrapping of wax or paraffin paper and to seal the same as closely as possible. It has been found that by heating and subsequently chilling the paraffin paper the wax is partially melted and then cooled thus causing the contacting layers of paper to adhere. Where the articles are wrapped in the ordinary way by over-lapping the edges of the paper, difficulty has been experienced in applying the requisite heat to the overlapping edges. It will be apparent that, in the usual method of wrapping, the overlapping edges will be disposed on the outer face of the package with the enclosed article on the inner side, and that if a heated surface is brought against the over-lapping edges of the wrapper, opposite the uneven surface of the contents of the package, the heat sealing process will usually result in causing the wax to adhere only in spots where the greatest resistance is offered from the interior of package. At the end of the package where the wrapper extends beyond the article there will be no backing within the package and consequently the end portions on the wrappers are usually not sealed or else very imperfectly sealed.

Instead of over-lapping the edges of the wrapper the present invention contemplates drawing both edges away from the article as shown in Figs. 1 and 2, and bringing the inner surfaces into contact with each other. The wrapper 10 in Figs. 1 and 2 has its opposite edges 11 and 12 carried outwardly away from the contents 13 of the package 15 and the inner faces of these edges brought together to contact along surface 14. While the wrapper is in this position, heat may be applied in any suitable manner to cause the surfaces 14 to adhere to each other. For this purpose, abutment blocks 15 and 16 are illustrated in Fig. 1 and either one or both of these blocks may be heated for partially melting the wax on the wrapper. Two such blocks are preferably employed as the result is more uniform, the wax is heated from both sides at once, causing the wax to flow from both sides, and does not require the blocks to be in contact so long. It will also be noted that the blocks cause the heat to be applied over the entire surface simultaneously. This cuts down the time required and insures a uniform flow of the wax. It will be noted from Fig. 2 that the wrapper extends beyond the end of the contents of the package by the amount designated "a". It will be apparent that the overlapping edges 11 and 12 will be sealed adjacent the empty portion "b", as completed, as it is adjacent the contents of the package and that the
package, for the sealing operation, does not depend upon the nature of the contents.

After the contacting edges have been sealed they will be folded to one side as illustrated by Fig. 3. The sealed edges 11 and 12 will then be folded in against the end of the contents, thus providing a sealed flap covering substantially the entire end of the package. The sides of the wrapper shown at 17 and 18 in Fig. 4 may then be folded inwardly forming a bottom flap 19 which is folded upward. Heat may be applied to the end of the flap 19 to stick it in place or it may be put into an outer cover such as carton shown at 20.

In Figs. 5, 6 and 7 the invention is shown as applied to a pair of lozenges which represent a form of confection common in the trade. These are usually wrapped two in a package and sold for one-cent. Double sheets of wrapping material are provided for articles of this kind, the dufold wrapping commonly consisting of an inner layer of paraffin paper and an outer layer of foil, the two layers being either held together by adhesive material or by the paraffin of the inner layer. The double wrapping is supplied to the trade ready prepared. Difficulty has heretofore been experienced in using the heat sealing process for wrapping packages of this nature, for the reason that when the wrapping is applied the inner layer of waxed paper will over-lap the outer surface of the metal foil and the two will not adhere well together under the influence of the heat sealing process. Where the manner of wrapping of the present invention is employed, as in Figs. 5 and 6, the surfaces of the inner layer 21 of paraffin paper will be brought together and will adhere when heated. Since the articles 22 are of a flat shape the projecting edges will be brought into contact not only at the sides of the article forming the flap 24 but also at the ends to form the flap 25. It will be seen that the article will be completely sealed within the package when the side flap 24 and the opposite end flap 25 are sealed together by the application of heat. The end flaps 25 are then folded inwardly as illustrated in broken lines in Fig. 7 and the side flap 24 is also folded inwardly over the end flaps at the two corners of the package. The entire package is then secured by means of a band passed about its exterior and secured by adhesive material. It will be apparent that the projecting flaps will be sealed without bringing the heated instrument against the package. This is of very great advantage in many cases where the contents of the package would be affected by heat.

Fig. 8 shows the application of the process to a rectangular package such as a package of mince-meat, this material, because of its nature, is liable to injury by the application of heat, but where the edges of the wrapper are brought together at one corner as illustrated by the contacting flaps 27 and 28, it is apparent that the sealing process may be produced without bringing the heated instrument into contact with the package. The flap 28 will be brought to bear upon the unheated support and the heated instrument applied to the flap 27. The flaps may then be folded against the side 29 and the ends folded together as explained in connection with the Figs. 2, 3 and 4.

I claim:

1. The method of forming a package wherein a waxed wrapper is placed about an article, the opposite edges of said wrapper being brought together with their inner faces in contact while said edges project away from the article, heat being then applied to said edges to cause them to adhere to each other, after which the projecting edges are folded against the outer faces of the package.

2. The method of forming a package wherein a wrapper is placed about an article so that opposite edges of the wrapper will be brought together with their inner faces in engagement with each other, the ends of said wrapper being permitted to extend beyond the ends of the article, after which contacting faces of said edges are heat sealed adjacent the sides of the article, the sealed projecting portions of said wrapper being then folded against the article.

3. The method of forming a package wherein a wrapper is folded against opposite sides of the article, and the edges of the wrapper are permitted to extend beyond the article at three sides thereof, with the inner faces of the said projecting edges being applied to said projecting edges while in projecting position to cause said edges to adhere to one another, after which said edges are folded against said package.

4. The method of forming a package wherein a wrapper, having two layers of material of different natures, is employed, said wrapper being folded about the article so that the edges thereof project to bring the inner faces of the edges of the inner layer into contact with each other, said edges being sealed by the application of heat and subsequently folded against the package.

5. The method of forming a package wherein a wrapper is provided having an inner layer of prepared material and an outer layer of a different material said wrapper being folded against opposite sides of the article to cause the inner faces of the projecting edges of said inner layer to be brought into contact, said projecting edges being sealed while in projecting position by the application of heat and folded against the package after which an outer wrapper is applied to the package.

6. A package comprising an article and a wrapper applied thereto, said wrapper con-
sisting of an inner and outer layer, one edge of said wrapper being folded back upon itself to expose the inner layer, while the inner layer of the opposite edge of said wrapper is applied to the exposed inner layer of said folded edge.

7. A package comprising an article and a double wrapper folded against opposite faces of said article, said wrapper having projecting edges which are heat sealed to one another about three sides of said article, said edges being folded back against the package and an outer wrapper applied about said package to hold said folded edges in position.

8. The method of forming a package wherein a wrapper provided with a sealing coating is placed about an article, the opposite edge portions of said wrapper being brought together with their inner faces in contact while said edge portions project away from the article, heat being then applied to said edge portions to cause them to adhere to each other, after which said projecting edge portions are folded along a single line closely adjacent the package against the outer faces of the package.

9. The method of forming a package wherein a waxed wrapper is placed about an article, the opposite edge portions of said wrapper being brought together with their inner faces in contact while said edge portions project away from the article, heat and pressure being then applied to said edge portions to cause them to adhere to each other, after which said projecting edge portions are folded along a single line closely adjacent the package against the outer faces of the package.

10. The method of forming a package wherein a wrapper provided with a sealing coating is folded against the opposite sides of the article and the edge portions of the wrapper are permitted to extend beyond the article at three sides thereof with the inner faces of the projecting edge portions contacting, heat and pressure being applied to said projecting edge portions to cause said edge portions to adhere to one another, after which said edge portions are folded along a single line closely adjacent the package.

11. The method of wrapping an article of any desired shape or size wherein the article is wrapped by means of a waxed wrapper having the free ends thereof extending beyond the article with their inner faces contacting and sealing the free edges together by heat applied over the entire surface of the contacting edges regardless of the shape or size of the article and on the outer faces of both free ends of the wrapper to cause a uniform flow of the wax to seal the edges.

12. The method of wrapping an article of any desired shape or size wherein the article is wrapped by means of a wrapper placed around the article with the inner faces of its free ends contacting and extending outwardly from the article, the contacting surfaces being of such a nature as to adhere upon the application of heat thereto, and applying heat to all parts of the contacting surface at substantially the same time.

In testimony whereof I have signed my name to this specification on this 31st day of December, A. D. 1924.

MICHAEL J. MILMOE.