March 12, 1968 A. W. ANDERSON 3,372,526

WRAPPING MECHANISM

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Fig. 1.

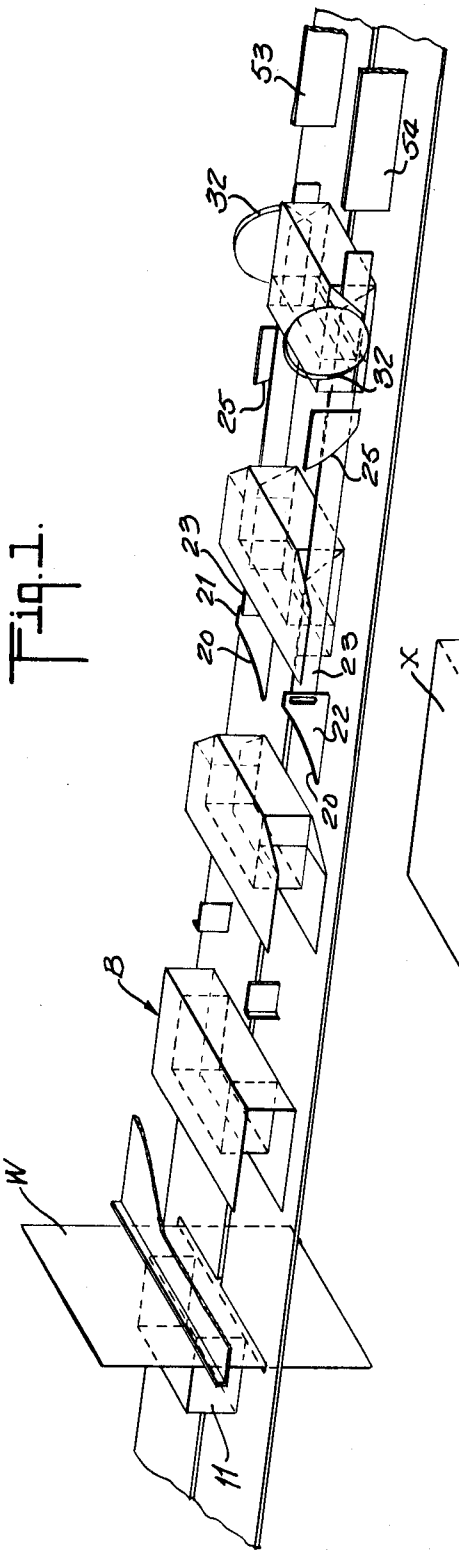
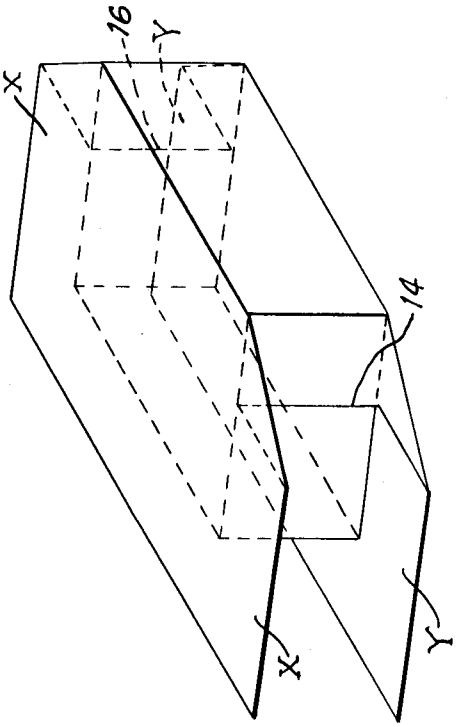


Fig. 1A.



INVENTOR.
ANDREW W. ANDERSON
BY Luther W. Hawley
ATTORNEY

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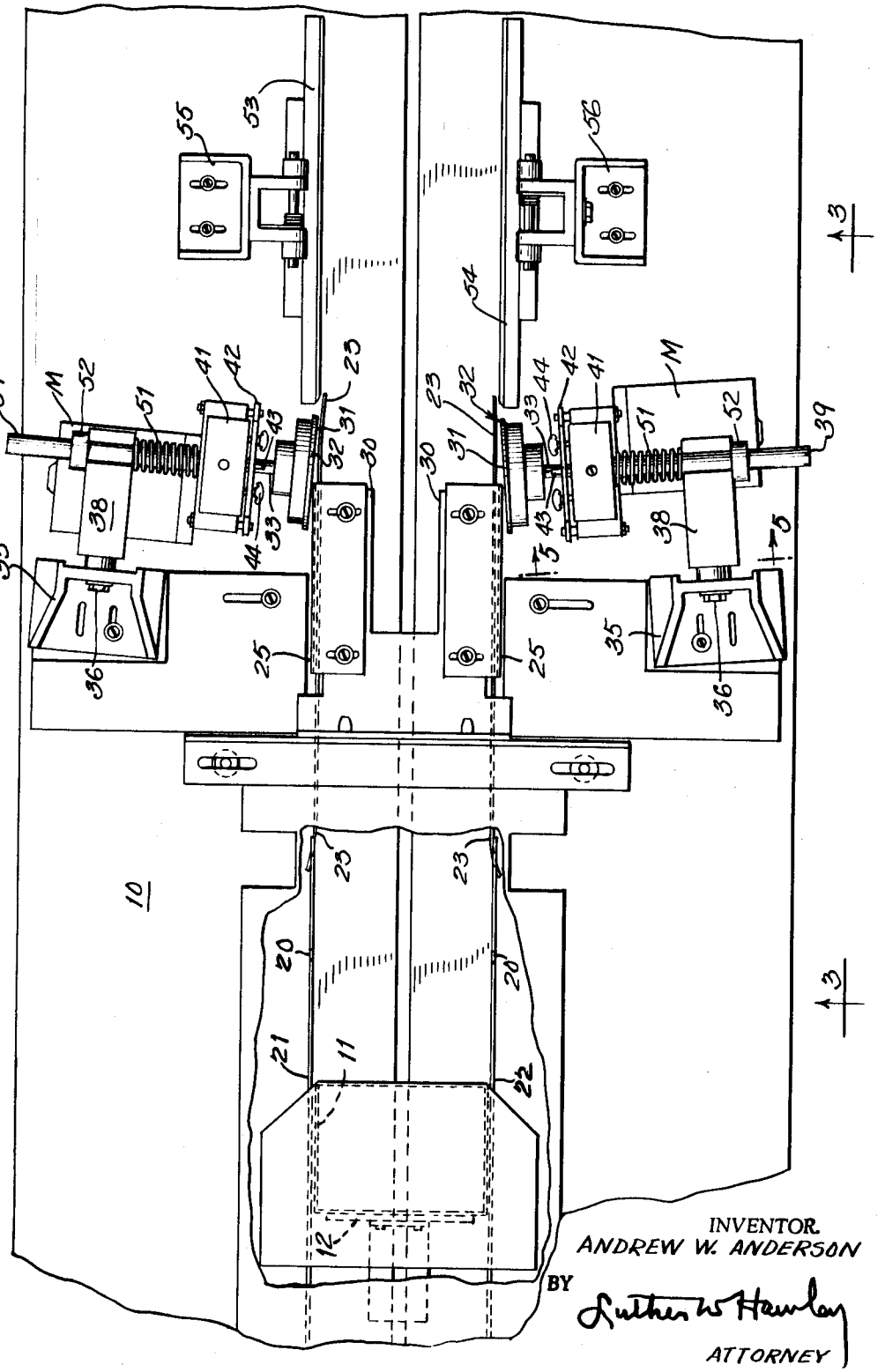


Fig. 2.

INVENTOR.
ANDREW W. ANDERSON
BY Luther W. Hawley
ATTORNEY

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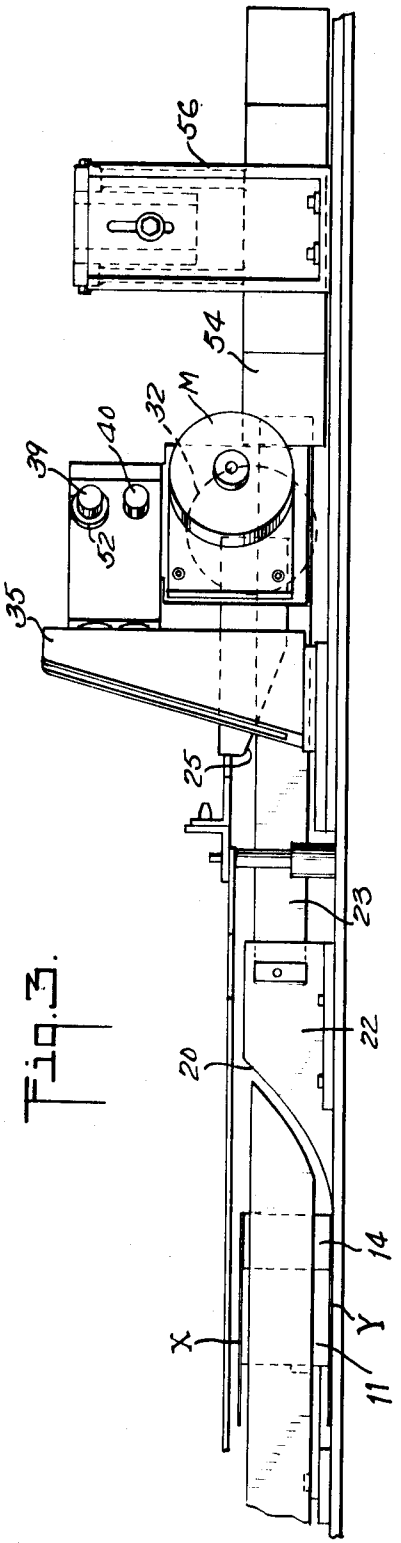


Fig. 3.

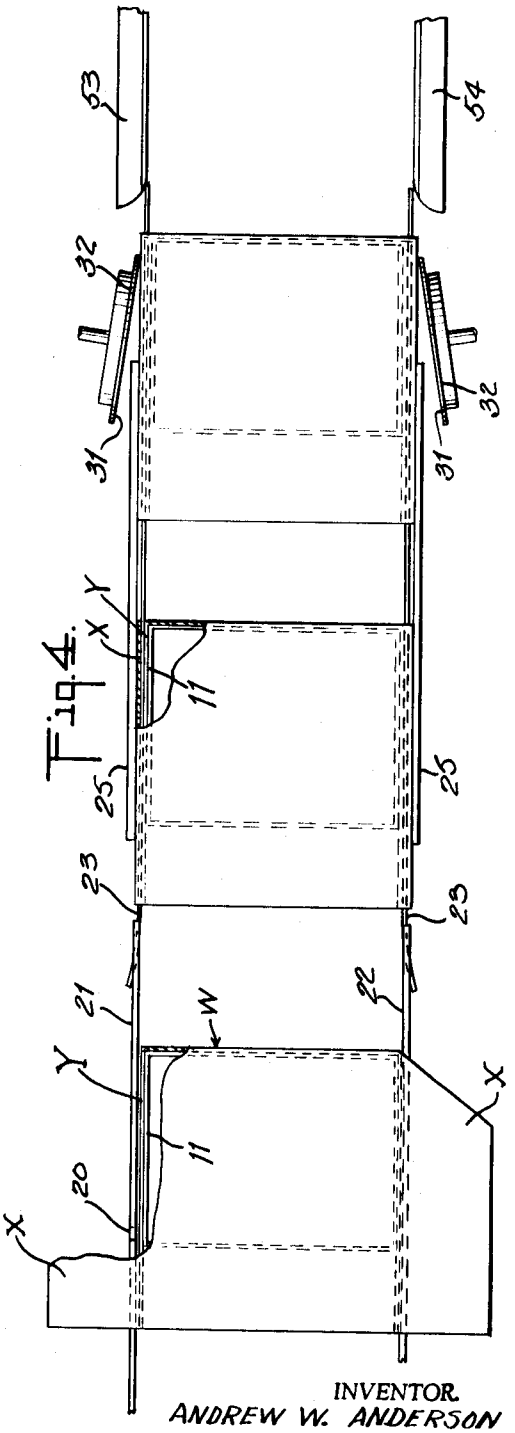


Fig. 4.

INVENTOR.
ANDREW W. ANDERSON
BY Luther W. Hawley
ATTORNEY

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WRAPPING MECHANISM

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Fig. 5.

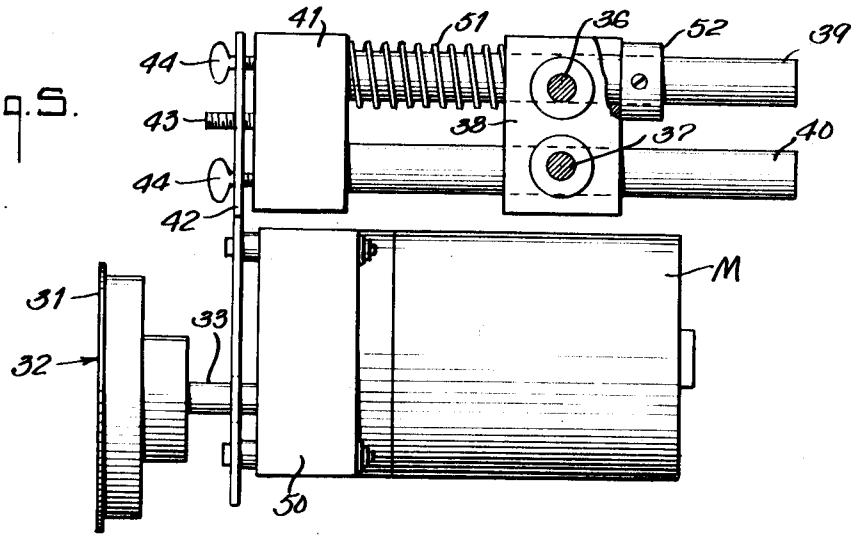


Fig. 6.

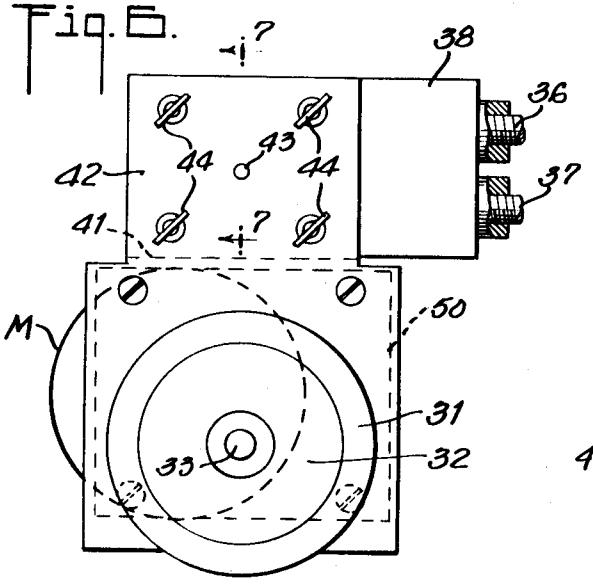
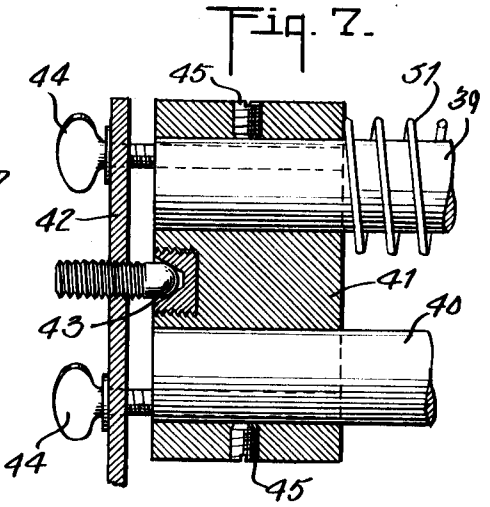


Fig. 7.



INVENTOR.
ANDREW W. ANDERSON

BY Luther W. Hawley

ATTORNEY

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WRAPPING MECHANISM

Andrew W. Anderson, Caldwell, N.J., assignor to Scandia Packaging Machinery Company, North Arlington, N.J., a corporation of New Jersey

Filed Jan. 22, 1965, Ser. No. 427,383
6 Claims. (Cl. 53—230)

ABSTRACT OF THE DISCLOSURE

A machine is provided for applying a wrapper around an article to have wrapper flaps protruding from the article. Spring-loaded discs then engage an upper or outer one of the flaps at each end and tighten the flaps and wrapper about the article.

This invention relates to wrapping mechanism and particularly to mechanism for ensuring a tight wrap of the wrapping sheet around the article or articles being wrapped.

The invention has for its salient object to provide in a wrapping machine simple and practical means for tightening the wrapped sheet around the article or articles being wrapped.

Further objects of the invention will appear from the following specification taken in connection with the drawings which form a part of this application and in which:

FIG. 1 is a diagrammatic view illustrating the path of the article or articles and wrapper through the machine showing the folds made in the wrapper at successive stations.

FIG. 1A is a perspective elevational view of the wrapped articles before the flaps have been folded against the sides of the package.

FIG. 2 is a top plan view of the machine embodying the invention.

FIG. 3 is an elevational view taken substantially on line 3—3 of FIG. 2 looking in the direction of the arrows.

FIG. 4 is a diagrammatic plan view on an enlarged scale of the structure embodying the invention.

FIG. 5 is a sectional elevational view taken substantially on line 5—5 of FIG. 2 looking in the direction of the arrows.

FIG. 6 is an elevational view at right angles to FIG. 5; and

FIG. 7 is an enlarged sectional elevation taken substantially on line 7—7 of FIG. 6 looking in the direction of the arrows.

The invention briefly described is incorporated in a wrapping machine having means for folding a wrapper around the advance or forward end of an article or articles to be wrapped, across the top and bottom of the article with the lateral edge portions of the wrapper extending beyond the sides of the article and the ends of the wrapper extending rearwardly from the article. The machine has folders and tucks of the usual construction and the laterally projecting sides of the wrapper are folded against the sides of the articles, one flap being folded upwardly and the other one downwardly.

The invention consists of providing means engageable with the folded outer flaps for stretching the wrapper tightly around the articles to form a tight wrap.

In FIG. 2 there is shown a machine having a support or table **10** on which the articles **11** are fed by suitable feeding lugs or pushers **12** preferably mounted on conveyor chains below the table **10** and not illustrated.

As shown diagramatically in FIG. 1 a wrapper sheet W is fed into the path of travel of the article or articles **11**, and is fed across the top and bottom and advanced edge of the articles as shown at station B in FIG. 1.

As shown in FIG. 1A the side edges of the wrapper extend beyond the lateral edges of the article and form upper and lower flaps X, X and Y, Y, tucks **14** and **16** having been previously formed in the wrapper.

After the package has been fed in the manner shown in 1A the lower flaps Y, Y are folded upwardly by folding slots **20**, the lower flaps being folded against the sides of the articles being wrapped.

The packages are initially moved between side plates **21** and **22** and thereafter between relatively thin metal strips **23**, the folded portions Y, Y moving between the strips **23** and engaging the inner surfaces thereof.

At this stage in the operation the upper flaps X, X engage folders **25** which fold the flaps X, X downwardly and against the outer surfaces of the strips **23**. As the packages move along the strips **23** cover plates **30** are provided to hold the packages in place between the strips **23**.

In order to tighten the wrap the upper flaps which have now been folded downwardly against the outer surfaces of the strips **23** are engaged by friction surfaces **31** of discs **32** which are rotated in a direction to frictionally engage and pull downwardly the outer flaps.

The discs are mounted on shafts **33** which are driven by motors M through suitable gearing. The mounting for the shafts is particularly shown in FIGS. 2, 5, 6 and 7. From FIG. 2 it will be noted that brackets **35** are mounted on the bed of the machine and that the brackets have bolted thereto by bolts **36** and **37** blocks **38**. Posts **39** and **40** are slidably mounted in the blocks **38** and on the front ends of the posts is mounted a block **41** to the front of which is tiltably mounted a plate **42**. This plate can tilt on a pivot or fulcrum **43** and is held in adjusted position by set screws **44**. Posts **39** and **40** are fixed to the block by screws **45**.

The plate **42** extends beyond the block **41** and is bolted to a block **50** to which is secured the motor M and through which extends the motor shaft **33**.

A compressed spring **51** is mounted on the post **39** and is disposed between the block **38** and the block **41** and a collar **52** is mounted on the post **39** and limits the outward movement of the block **41** and parts carried thereby away from the block **38**.

From the foregoing description it will be seen that by adjusting the set screws **44** the discs **32** can be tilted to right angles to get the best results from frictionally engaging the folded outer flaps X, X.

After the wrap has been tightened around the articles the packages pass between heaters **53** and **54** which are mounted on brackets **55** and **56**.

From the foregoing description it will be seen that simple and practical means has been provided in a wrapping machine for tightening the wrapper around the packages.

Although one specific embodiment of the invention has been particularly shown and described, it will be understood that the invention is capable of modification and that changes in the construction and in the arrangement of the various cooperating parts may be made without departing from the spirit or scope of the invention as expressed in the following claims:

I claim:

1. In a wrapping machine having means for folding a wrapper around the front face and top and bottom of the articles to be wrapped with the wrapping sheet extending rearwardly of the top and bottom of the articles and laterally beyond the ends of the articles, means for tucking the projecting ends of the wrapper against the ends of the articles to form upper and lower end flaps, means for folding the lower flaps upwardly against the tucks, means for folding the upper flaps downwardly aaginst the folded lower flaps and rotating disc means for

engaging the outer folded flaps to tighten said flaps around the inner flaps and articles and to induce a tightening of the wrapper portions overlying the article tops, between the upper flaps.

2. In a wrapping machine having means for folding a wrapper around the front face and top and bottom of the articles to be wrapped with the wrapping sheet extending rearwardly of the top and bottom of the articles and laterally beyond the ends of the articles, means for tucking the projecting ends of the wrapper against the ends of the articles to form upper and lower end flaps, means for folding the lower flaps upwardly against the tucks, means for folding the upper flaps downwardly against the folded lower flaps and rotating discs having planar friction surface means for engaging the outer folded flaps to tighten said flaps around the inner flaps and articles.

3. In a wrapping machine having means for folding a wrapper around the front face and top and bottom of the articles to be wrapped with the wrapping sheet extending rearwardly of the top and bottom of the articles and laterally beyond the ends of the articles, means for tucking the projecting ends of the wrapper against the ends of the articles to form upper and lower end flaps, means for folding the lower flaps upwardly against the tucks, means for folding the upper flaps downwardly against the folded lower flaps and rotating discs having planar surface portions for engaging the outer folded flaps to tighten said flaps around the inner flaps and articles; said discs being spring-biased for resiliently pressing said discs against the folds.

4. In a wrapping machine having means for conveying an article along a predetermined path, means for folding a wrapper around the front face and top and bottom of the articles to be wrapped with the wrapping sheet extending rearwardly of the top and bottom of the articles and laterally beyond the ends of the articles, means for tucking the projecting ends of the wrapper against the ends of the articles to form upper and lower end flaps, means for folding the lower flaps upwardly against the tucks, means for folding the upper flaps downwardly against the folded lower flaps and driven discs having planar surface portions for engaging the outer folded flaps to tighten said flaps around the inner flaps and articles said discs being angularly adjustable to vary the angles between said surface portions relative to the direction of movement of articles along their path.

5. In a wrapping machine, means for continuously feeding articles to be wrapped, means for wrapping a wrapper sheet around articles to be wrapped, with the lateral edges of the wrapper projecting beyond the side edges of the articles, means for folding said projecting portions of the wrapper against the sides of the articles and positively driven disc means at the sides of the path of travel of the packages for engaging folded flaps with planar surfaces of said disc means and tightening the wrapper.

6. In a wrapping machine, means for continuously feeding articles to be wrapped, means for wrapping a wrapper sheet around articles to be wrapped, with the lateral edges of the wrapper projecting beyond the side edges of the articles, means for folding said projecting portions of the wrapper against the sides of the articles and positively driven disc planar surface means at the sides of the path of travel of the packages for frictionally engaging folded flaps and tightening the wrapper.

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TRAVIS S. McGEHEE, *Primary Examiner.*

N. ABRAMS, *Assistant Examiner.*