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(54) **TAPE TAKE-UP ROLLER**

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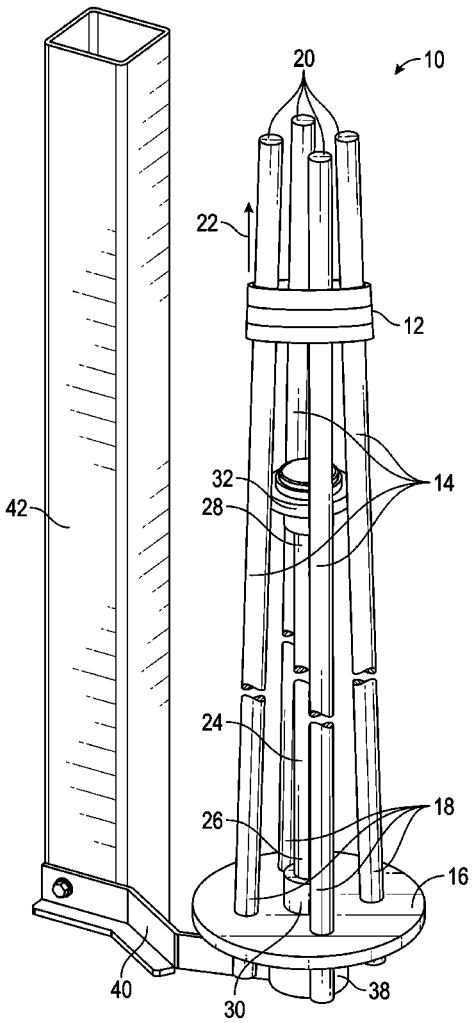
CPC ***B65H 75/20*** (2013.01); *B65H 2301/41446* (2013.01); *B65H 2403/47* (2013.01); *B65H 2701/37* (2013.01)

(57) **ABSTRACT**

The present invention relates in general to spool assemblies, and more specifically, to a tape take-up roller for collecting carrier strips, or tape, that attach a chain of bags for packaging food in a food production facility. A purpose of the invention is to provide an improved spool assembly that conveniently and safely allows an operator to collect and remove tape therefrom. In an exemplary embodiment, the spool assembly may comprise a series of cantilevered, elongated prongs having a closed first end secured to a base and an opposite open second end. The base may be rotatably coupled to a bearing housing that permits the base and series of prongs to rotate together around a longitudinal axis for collecting tape around the series of prongs. The spool assembly permits tape to be safely removed from the series of prongs by sliding the tape off the open second end without requiring the use of cutting tools.



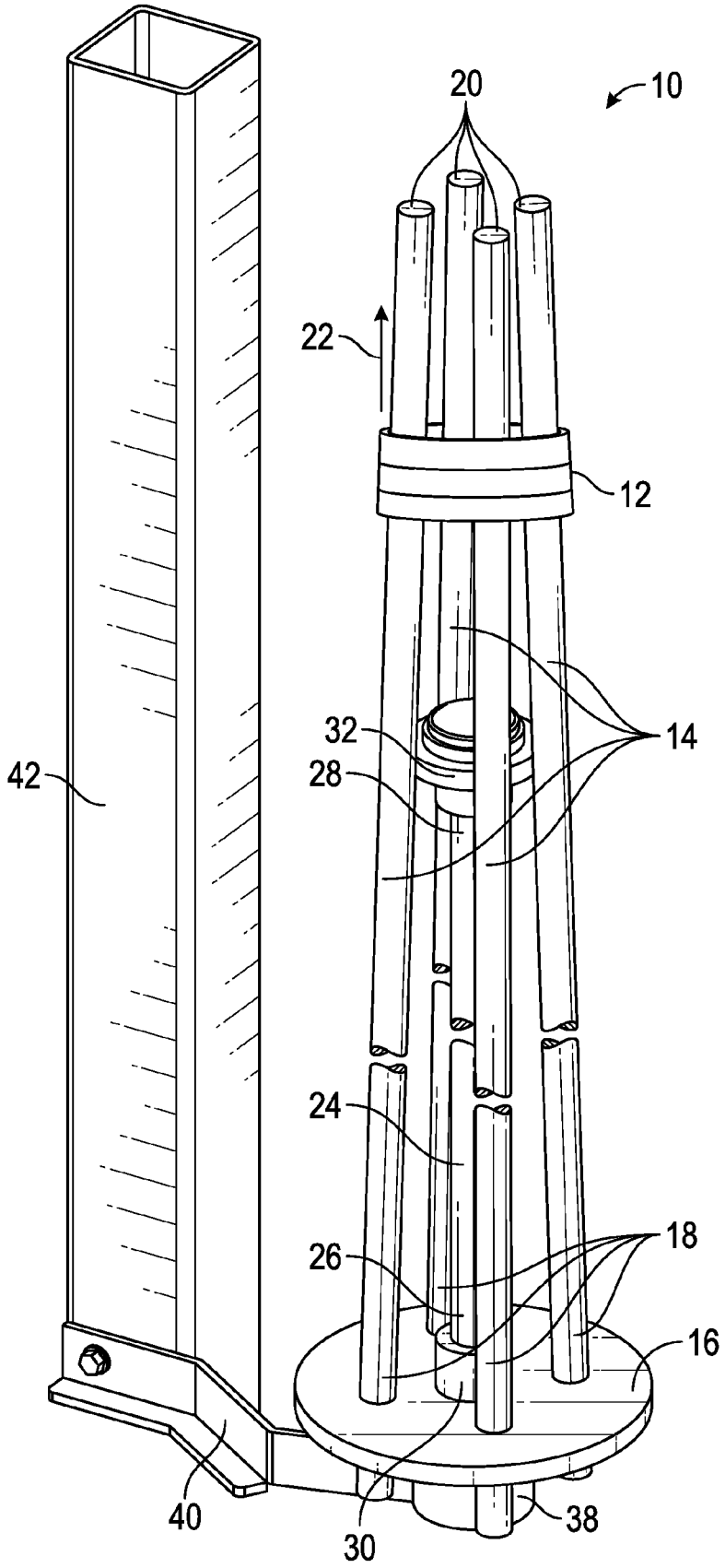


FIG. 1

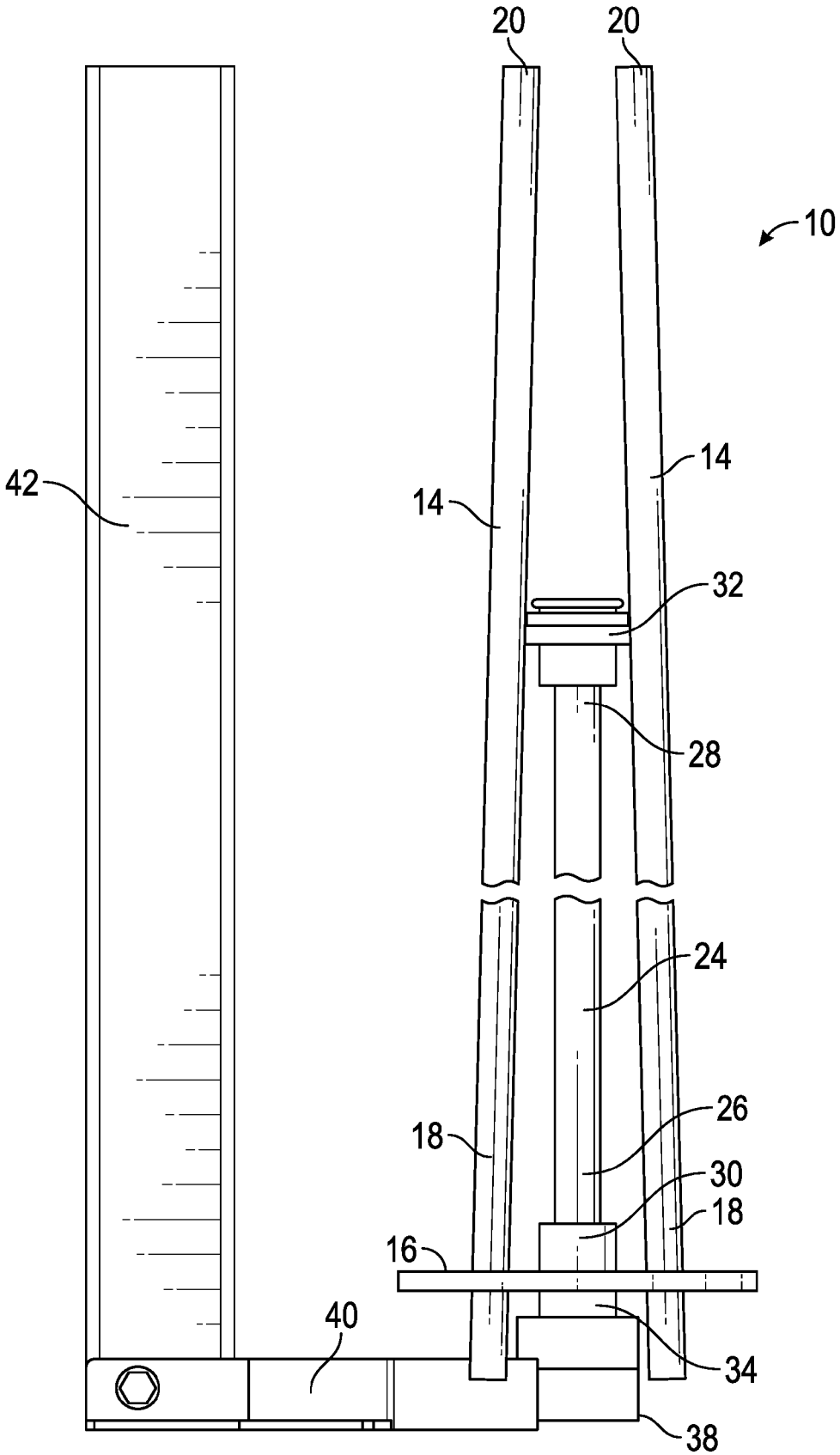


FIG. 2

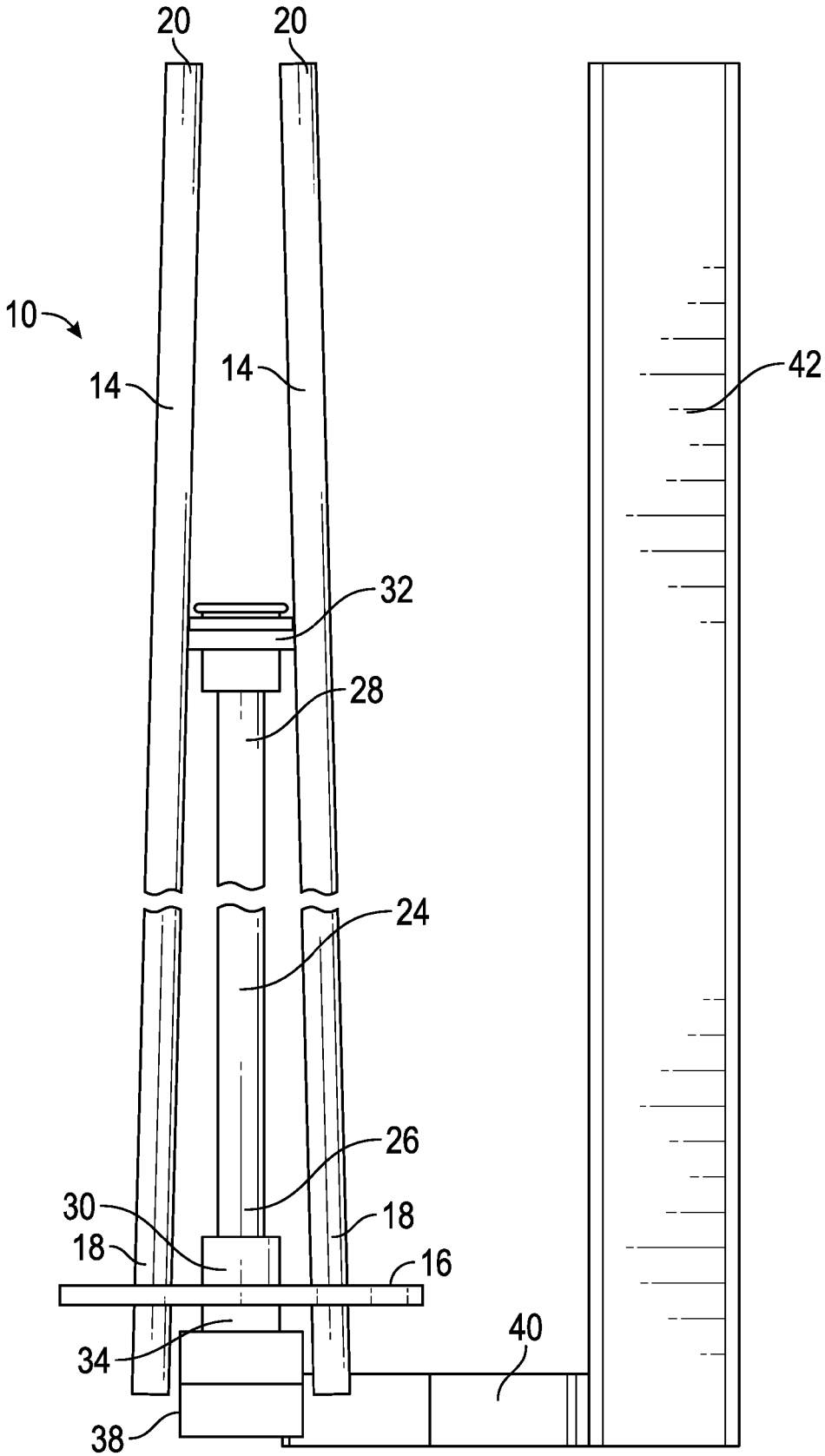


FIG. 3

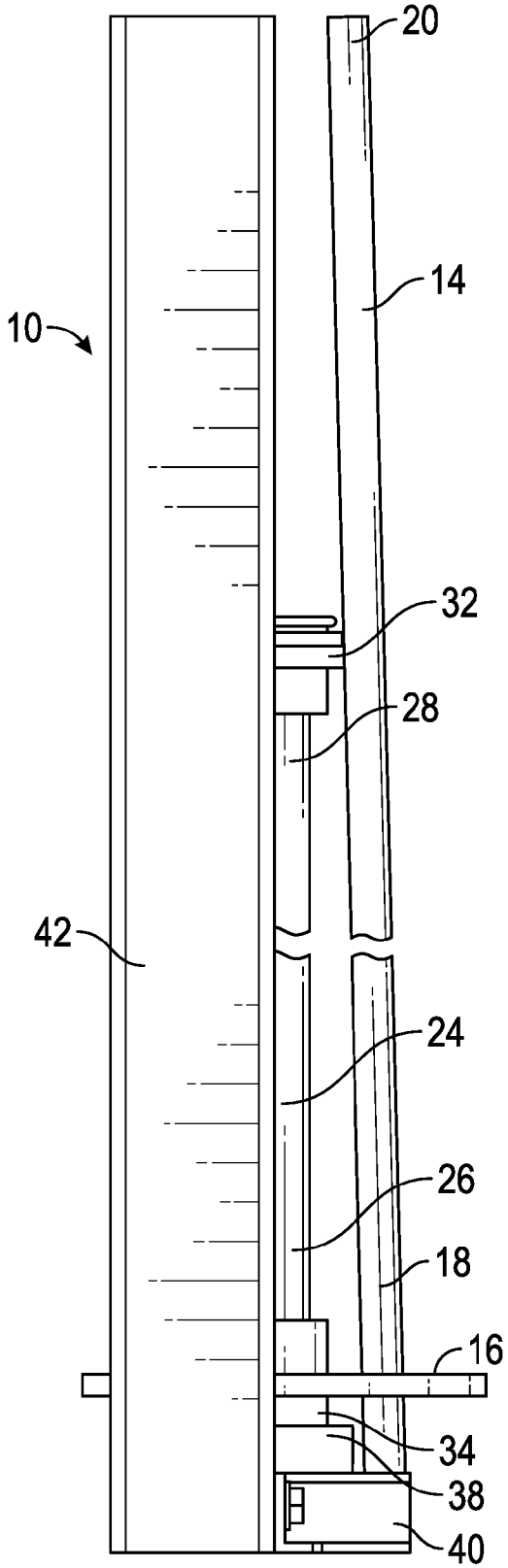

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FIG. 4

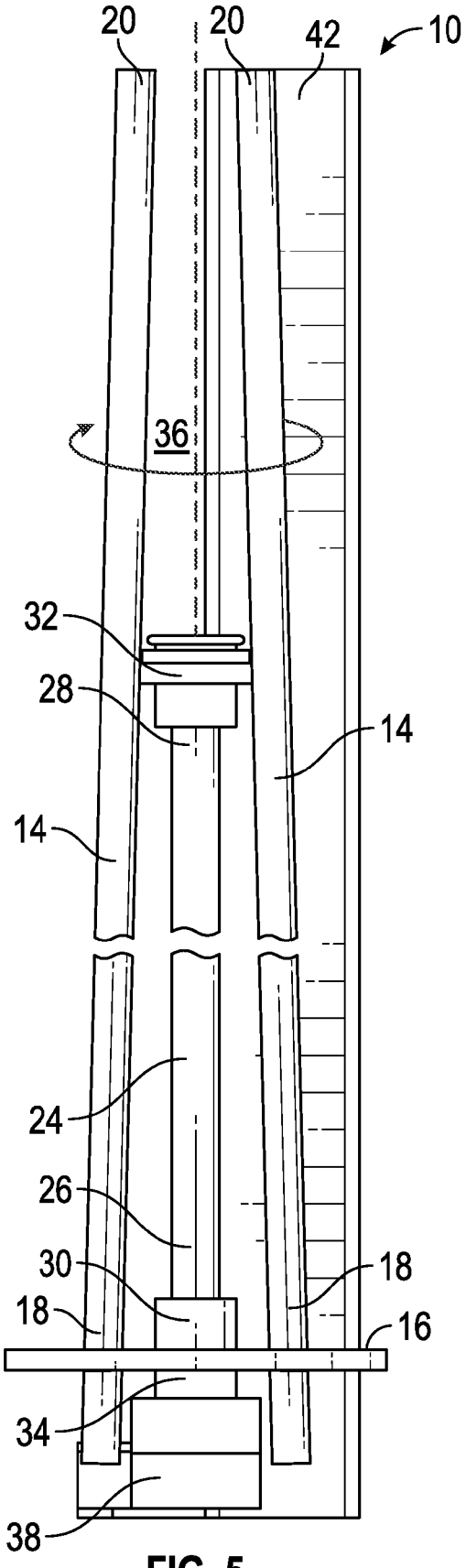
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FIG. 5

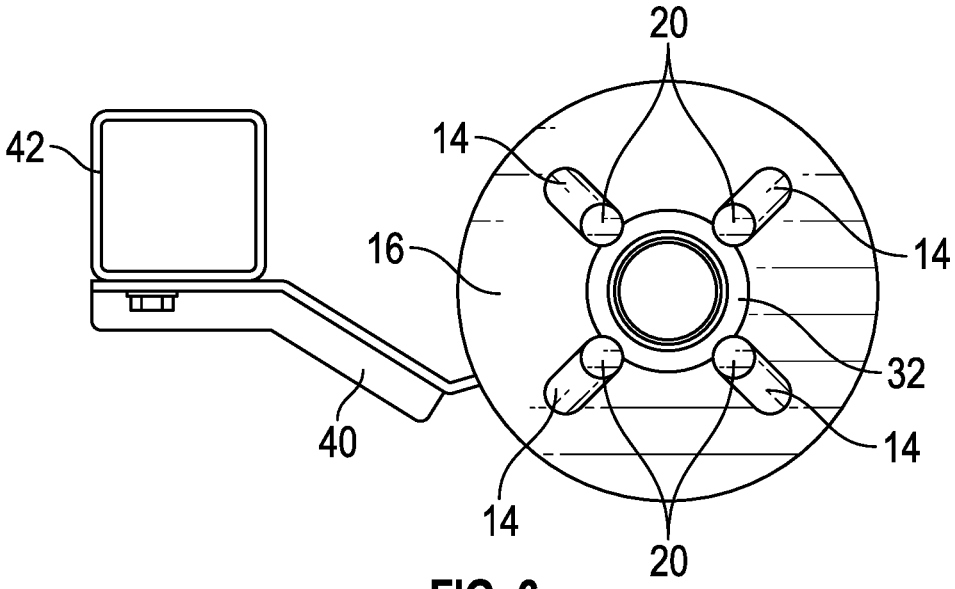

FIG. 6

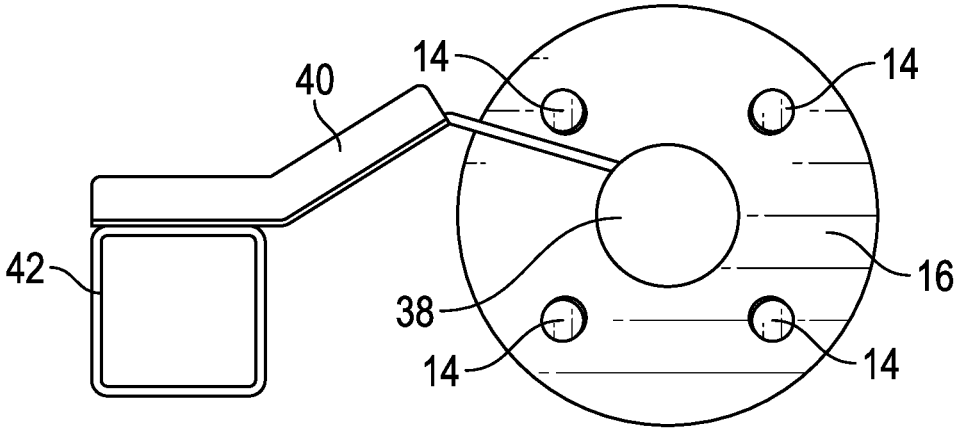

FIG. 7

TAPE TAKE-UP ROLLER

CROSS REFERENCE TO RELATED APPLICATIONS

[0001] This application is a Continuation-in-Part of U.S. Pat. Application No. 29/778,600 filed Apr. 14, 2021, herein incorporated by reference in its entirety.

FIELD OF THE INVENTION

[0002] The present invention relates to packaged food products and, more particularly without limitation, to an improved spool assembly, also called a tape take-up roller, for collecting carrier strips that attach a chain of flexible bags for packaged food in an imbricated manner and providing convenient removal thereof for disposal or recycling purposes.

BACKGROUND OF THE INVENTION

[0003] Food products such as cuts of beef, poultry, and other categories of meat have been traditionally packaged in flexible plastic bags at food production facilities. Such flexible plastic bags are often dispensed at the food production facility in an imbricated manner where individual bags are attached together in a chain configuration using at least one carrier strip. The carrier strip is generally a single sided adhesive tape for adhering to the bags, wherein the tape may be made of materials comprising polypropylene, polyesters, or combinations thereof (hereinafter, "carrier strip" or "tape"). Carrier strips often utilized in the food production industry typically have a width of approximately 6.0 - 7.0 millimeters ("mm"), a thickness of approximately 0.1 - 0.3 mm, and a length ranging between .5 - 15 meters.

[0004] While packaging food at the food production facility, the chain of individual bags attached together by the at least one carrier strip are typically transitioned towards a loading station for introducing food into each bag. Before loading food into each bag, however, the carrier strip needs to be removed. While removing carrier strips from the chain of bags is simple enough, current techniques for collecting large amounts of sticky tape is anything but convenient or safe. For example, winding spools currently utilized in the food production industry often include support bearings protruding from each end of the spool. These support bearings are configured to allow the spool to rotate around a longitudinal axis to wind up carrier strips thereon. While useful in collecting carrier strips, however, such configurations prevent the carrier strips from being conveniently removed from, or slid off of, one end of the spool to be disposed or recycled. As a result, carrier strips collected on current winding spools have to be cut off of the spool using knives, scissors, or other cutting tools. Not only are such cutting techniques dangerous to the operator and others adjacent, but these techniques also create small pieces of tape that may be introduced into the finished, bagged food product. Foreign materials in food products are significant safety concerns to end customers, and enhance the liability risk to the food production facility.

[0005] Thus what is needed is an improved spool assembly that may be used to reliably collect carrier strips in an efficient manner during the food production process. What is further needed is an improved spool assembly that conveniently allows for an operator to remove collected carrier strips therefrom to be disposed or recycled. What is still further needed is an improved spool assembly for collecting carrier strips that protects the health and safety of workers while being operated and of end customers by preventing foreign material in food products.

SUMMARY OF THE INVENTION

[0006] The present disclosure solves the aforementioned issues by providing an improved spool assembly, or tape take-up roller, that conveniently and safely allows an operator to collect and remove carrier strips therefrom without requiring the use of cutting tools. In essence, the spool assembly includes a series of cantilevered, elongated prongs having a closed first end secured to a base and an opposite, open second end. An axle may rotatably couple the base to a bearing housing, wherein an arm further secures the bearing housing to a frame designed to facilitate attachment of the spool assembly to existing mechanical equipment of a food processing facility for incorporation into a food processing process. The base and series of prongs may rotate together around a longitudinal axis to facilitate the collection of carrier strips around the series of prongs. For removal of the carrier strips from the spool assembly, the carrier strips may be simply slid off the open second end of the series of prongs for disposal or recycling without requiring the tape to be cut off.

[0007] In other instances, the present disclosure solves the aforementioned issues by providing a method of collecting and disposing of carrier strips using an improved spool assembly. In essence, the method may include providing the spool assembly of the present disclosure. The method may further include incorporating the spool assembly into a food processing process by attaching the frame to existing mechanical equipment of a food processing facility. Carrier strips may be provided that are used to attach individual, plastic bags together when packaging food at the food production facility. The carrier strips may be wound around the series of prongs of the spool assembly for collection. After collecting a desired amount of carrier strips, the carrier strips may be removed from the spool assembly by sliding the carrier strips off the open second end of the series of prongs to be disposed or recycled.

PRINCIPAL OBJECTS AND ADVANTAGES OF THE INVENTION

[0008] Therefore, it is a principal object, feature, and/or advantage of the present disclosure to overcome the aforementioned deficiencies in the art and provide an improved spool assembly, or tape take-up roller, that may be used to reliably collect carrier strips in an efficient manner during the food production process.

[0009] Another object, feature, and/or advantage of the present disclosure is to provide an improved spool assembly that conveniently allows for an operator to remove collected carrier strips therefrom to be disposed or recycled.

[0010] Yet another object, feature, and/or advantage of the present disclosure is to provide an improved spool assembly for collecting carrier strips that protects the health and safety of workers by not requiring the carrier strips to be cut off from the assembly and of end customers by preventing foreign material in food products.

[0011] A further object, feature, and/or advantage of the present disclosure is to provide an improved spool assembly

that may be used with all makes, manners and manufacturers of carrier strips.

[0012] A still further object, feature, and/or advantage of the present disclosure is to provide an improved spool assembly for collecting carrier strips that is inexpensive to manufacture, convenient to repair, comprised of lightweight and durable materials, and that may be easily incorporated into the food production process.

[0013] Other objects, features, and advantages of this disclosure will become apparent from the following description taken in conjunction with the accompanying drawings wherein are set forth, by way of illustration and example and without limitation, certain aspects of this disclosure. The present disclosure is not to be limited to or by these objects, features, and advantages. No single aspect need provide each and every object, feature, or advantage. The scope of the present disclosure is intended to cover all such embodiments that may fall within the scope of the appended claims, either literally or under the doctrine of equivalents.

BRIEF DESCRIPTION OF THE DRAWING FIGURES

[0014] FIGS. **1-7** represent examples of the improved spool assembly, or tape take-up roller, for collecting carrier strips of the present disclosure.

[0015] FIG. **1** is a front perspective view of the improved spool assembly with carrier strips collected thereon;

[0016] FIG. **2** is a right side view of the improved spool assembly of FIG. **1** with carrier strips removed therefrom;

[0017] FIG. **3** is a left side view of the improved spool assembly of FIG. **2**;

[0018] FIG. **4** is a front view of the improved spool assembly of FIG. **2**;

[0019] FIG. **5** is a rear view of the improved spool assembly of FIG. **2**;

[0020] FIG. **6** is a top view of the improved spool assembly of FIG. **2**; and

[0021] FIG. **7** is a bottom view of the improved spool assembly of FIG. **2**.

DETAILED DESCRIPTION OF THE INVENTION

[0022] Referring generally to FIGS. **1-7**, the present disclosure is directed to an improved spool assembly, or tape take-up roller, for the collection and convenient disposal of carrier strips. While certain aspects of the present disclosure are shown and described herein, it is understood that such aspects are merely exemplary. The present disclosure is not intended to be limited to these specific aspects and may encompass other aspects or embodiments. Therefore, specific structural and functional details disclosed herein are not to be interpreted or inferred as limiting, but merely as a basis for the claims and as a representative basis for teaching one skilled in the art how to make and use the disclosed subject matter.

[0023] It must be noted that the singular terms "a," "an," and "the" as used herein may include plural referents unless the context clearly dictates otherwise. As used herein, in particular aspects, the terms "about" or "approximately" when preceding a numerical value indicates the value plus or minus a range of 0.1, 0.2, 0.3, 0.4 or 0.5 mm. In other aspects, the terms "about" or "approximately" when preceding a numerical value indicates the value plus or minus a range of 0.6, 0.7, 0.8, 0.9, or 1 mm. In still further aspects, the terms "about" or "approximately" when preceding a numerical value indicates the value plus or minus a range of 1, 2, 3, 4, or 5 meters. In additional aspects, the terms "about" or "approximately" when preceding a numerical value indicates the value plus or minus a range of 0.1, 0.2, 0.3, 0.4, 0.5, 0.6, 0.7, 0.8, 0.9, or 1 inch. Furthermore the transitional phrase "comprising" that is synonymous with "including," "containing," and "characterized by" as used herein is inclusive or open-ended and does not exclude additional, unrecited elements, steps or ingredients. Alternatively the transitional phrase "consisting of" as used herein is closed and excludes any element, step or ingredient not specified. The term "generally" as used herein is defined as being mostly but not necessarily wholly that which is specified. The term "larger" as used herein is defined as exceeding most other things of like kind especially in size. The term "smaller" as used herein is defined as having a comparatively little size or slight dimensions.

[0024] FIG. **1** illustrates a front perspective view of the improved spool assembly **10** with carrier strips **12** collected thereon. The improved spool assembly **10** is designed to collect carrier strips **12** used to attach individual, plastic bags together (not shown) when packaging food at a food production facility. Each carrier strip **12** may comprise a tape formed of materials such as, but not limited to, polypropylene, polyesters, or combinations thereof. One side of the tape may be lined with an adhesive composition for adhering to the bags. Carrier strips utilized with the spool assembly **10** may have a width of approximately 6.0 - 7.0 mm, a thickness of approximately 0.1 - 0.3 mm, and a length of approximately .5 - 15 meters. However, it is contemplated by the present disclosure that larger or smaller sized carrier strips may also be utilized with the spool assembly **10**. The spool assembly **10** of the present disclosure may be utilized with all makes, manners and manufacturers of carrier strips **12**.

[0025] Shown in FIG. **1**, the spool assembly **10** may comprise a series of cantilevered, elongated prongs **14** (hereinafter, the "series of prongs **14**") having a closed first end **18** secured to a base **16** and an opposite, open second end **20**. The carrier strips **12** may be wound around the series of prongs **14** during collection of tape from the individual, plastic bags (not shown). In some instances, the series of prongs **14** may include two prongs **14** secured to the base **16**. In other instances, the series of prongs **14** may include three prongs **14** secured to the base **16**. In further instances, the series of prongs **14** may include four prongs **14** secured to the base **16**. In still further instances, the series of prongs **14** may include more than four prongs **14** secured to the base **16**. The series of prongs **14** may be rigidly secured to the base **16** and arranged equidistant from one another around a longitudinal axis **36**. The series of prongs **14** and the base **16** may be integrally formed together during the manufacturing process. Alternatively, the series of prongs **14** and the base **16** may be separately formed during the manufacturing process and thereafter joined together using, e.g., welds, adhesives, or a threaded connection where a threaded end of each prong may be screwed into a corresponding threaded opening in the base **16**. While FIG. **1** depicts a distal portion of each prong **14** extending through base **16**, it is also contemplated by the present disclosure that each prong **14** may terminate at base **16** to provide for an alternative configuration. The series of prongs **14** and the base **16** may be formed of

lightweight, durable materials such as, but not limited to, stainless steel or aluminum.

[0026] Further shown in FIG. **1**, each prong **14** may comprise a closed first end **18** and an opposite, open second end **20**. The closed first end **18** of each prong **14** may be attached to the base **16** as discussed above. The open second end **20** of each prong **14** is not attached to any object, such as another base, bearing, or support structure. It is important for the second end **20** of each prong **14** to remain open to allow for an operator to conveniently remove collected carrier strips **12** therefrom by sliding the carrier strips **12** in longitudinal direction **22**. Thus the collected carrier strips **12** may be slid off the open second ends **20** of prongs **14** to remove the carrier strips **12** from the spool assembly **10**. To facilitate the removal of collected carrier strips **12** from the spool assembly **10**, each prong **14** may slope inwardly in relation to the base **16** from the closed first end **18** towards the open second end **20**. In other words, the closed first ends **18** of each prong **14** may be spaced apart laterally on the base **16** a further distance (e.g., approximately 3-6 inches) as compared to the open second ends **20** that are spaced closer together medially (e.g., approximately 1-3 inches). To further facilitate the removal of collected carrier strips **12** from the spool assembly **10**, each prong **14** may gradually taper from the closed first end **18** towards the open second end **20**. For example, the closed first end **18** of each prong **14** may be approximately 0.250 inches in diameter and gradually narrow to approximately 0.125 inches in diameter at the open second end **20**. Thus, the particular configuration of the series of prongs **14** attached to base **16** provide for an improved spool assembly **10** as compared to winding spools currently utilized in the food production industry. Namely, the spool assembly **10** of the present disclosure allows for the operator to remove collected carrier strips **12** therefrom without cutting the strips off using knives, scissors, or other cutting tools. This approach not only provides enhanced safety to the operator and surrounding employees, but moreover prevents small pieces of tape from being introduced into the finished, bagged food product that may pose substantial health risks to end customers. Once the carrier strips **12** are removed from the series of prongs **14** of the spool assembly **10** in direction **22**, the carrier strips **12** may be properly disposed or recycled.

[0027] Still further shown in FIG. **1**, each prong **14** may comprise a circular tubular shape. However it is contemplated by the present disclosure that other tubular shapes may also be utilized for the prongs **14** such as, but not limited to, oval, triangular, square, pentagonal, hexagonal, and octagonal tubular shapes. While the prongs **14** are also depicted in FIG. **1** as solid in nature, it is further contemplated by the present disclosure that the prongs **14** may be alternatively hollow in nature. The base **16** depicted in FIG. **1** may comprise a circular shape, however, it is also contemplated by the present disclosure that the base **16** may comprise other shapes such as triangular, pentagonal, hexagonal, and octagonal. In some instances, the base **16** may be approximately 3-6 inches in diameter and the prongs **14** approximately 6-24 inches in length. In other instances, the base **16** may be approximately 6-9 inches in diameter and the prongs approximately 24-36 inches in length.

[0028] FIG. **2** illustrates a right side view of the spool assembly **10** with carrier strips **12** removed. FIG. **3** illustrates a left side view thereof. Shown in FIGS. **2**, **3**, the spool assembly **10** may comprise a support column **24** designed to reinforce and maintain the series of prongs **14** in their fixed position. The support column **24** may be positioned internally to the series of prongs **14** and comprise a circular tubular shape. However it is contemplated by the present disclosure that other tubular shapes may also be utilized for the support column **24** such as, but not limited to, triangular, square, pentagonal, hexagonal, and octagonal tubular shapes. While the support column **24** is depicted in FIGS. **2**, **3** as solid in nature, it is further contemplated by the present disclosure that the support column **24** may alternatively be hollow in nature.

[0029] Further shown in FIGS. **2**, **3**, the support column **24** may include a first end **26** and an opposite second end **28**. In some instances, the first end **26** may be fixedly secured to an interior side of the base **16**. In other instances, the first end **26** may be fixedly secured to the base **16** via an intermediary pedestal **30** mounted on an interior side of the base **16**. The pedestal **30** and the base **16** may be integrally formed together, or alternatively, formed separate and thereafter fixedly secured via, e.g., welds, adhesives. The first end **26** of the support column **24** may be fixedly secured to the pedestal **30** using, e.g., welds, adhesives, or a threaded connection where a threaded first end **26** of the support column **24** may be screwed into a corresponding threaded opening in the pedestal **30**. In other instances, the first end **26** of the support column **24** may be fixedly secured to the interior side of the base **16** without incorporating the intermediary pedestal **30**. In such instances, the first end **26** of the support column **24** and the base **16** may be integrally formed together, or alternatively, formed separate and thereafter fixedly secured via, e.g., welds, adhesives, or a threaded connection where a threaded first end **26** of the support column **24** may be screwed into a corresponding threaded opening in the base **16**.

[0030] Still further shown in FIGS. **2**, **3**, the second end **28** of the support column **24** may include a bracket **32** fixedly secured to an interior side of each prong **14** of the series using, e.g., welds or adhesives. In some instances, the bracket **32** may be fixedly secured to each prong **14** at a position approximately midpoint between the closed first ends **18** and the open second ends **20**. In other instances, the bracket **32** may be fixedly secured to each prong **14** at a position between the midpoint and the open second ends **20**. The bracket **32** is designed to reinforce and maintain the series of prongs **14** in a fixed position during operation of the spool assembly **10** while collecting or removing carrier strips **12** therefrom. In some instances, the bracket **32** may include a bearing that assists in the rotation of the series of prongs **14** and base **16** around longitudinal axis **36** to assist the operator in winding carrier strips **12** around the series of prongs **14** for collection. In other instances, the bracket **32** may not include a bearing. The support column **24**, pedestal **30**, and bracket **32** may be formed of lightweight, durable materials such as, but not limited to, stainless steel or aluminum.

[0031] FIG. **4** illustrates a front view of the spool assembly **10**. FIG. **5** illustrates a rear view thereof. Shown in FIGS. **4**, **5**, the spool assembly **10** may comprise an axle **34** that rotatably couples the base **16** to a bearing housing **38**. The bearing housing **38** may include an internal bearing(s) (not shown) that permits the base **16** and series of elongated prongs **14** to rotate together around longitudinal axis **36** via axle **34** to assist the operator in winding carrier strips **12** around the series of prongs **14** for collection. In

some instances, the bearing housing **38** may also include an internal ratchet (not shown) that allows continuous rotary motion in only one direction around the longitudinal axis **36** while preventing motion in the opposite direction. In other instances, the bearing housing **38** may not include the ratchet to consequently permit continuous rotary motion in either direction around the longitudinal axis **36**. The axle **34** and bearing housing **38** may include lightweight, durable materials such as, but not limited to, stainless steel or aluminum.

[0032] FIG. **6** illustrates a top view of the spool assembly **10**. FIG. **7** illustrates a bottom view thereof. Shown in FIGS. **6**, **7**, the spool assembly **10** may comprise an arm **40** designed to fixedly secure the bearing housing **38** to frame **42**. In some instances, the arm **40** may include angled portions designed to avoid obstructing the rotational movement of the series of prongs **14** and base **16** around the longitudinal axis **36** during operation of the spool assembly **10**. In other instances, the arm **40** may be entirely comprised of a single straight portion to facilitate incorporation of the spool assembly **10** in the food processing process (not shown). The arm **40** and frame **42** may be integrally formed together, or alternatively, formed separate and thereafter rigidly attached via, e.g., welds, adhesives, screws, or bolts. The frame **42** is designed to provide support to the spool assembly **10** during operation. The frame **42** is further designed to facilitate attachment of the spool assembly **10** to existing mechanical equipment of the food processing facility for incorporation into the food processing process. The arm **40** and frame **42** may be formed of lightweight, durable materials such as, but not limited to, stainless steel or aluminum. While the frame **42** is depicted in FIGS. **6**, **7** as hollow in nature, it is further contemplated by the present disclosure that the frame **42** may be alternatively solid in nature.

[0033] Another aspect of the present disclosure is a method of collecting and disposing of carrier strips **12** using the improved spool assembly **10** disclosed in FIGS. **1-7**. In particular, the method may comprise providing the spool assembly **10**. Next, the spool assembly **10** may be incorporated into the food processing process by attaching the frame **42** to existing mechanical equipment of the food processing facility. The method may further comprise providing carrier strips **12** used to attach individual, plastic bags together (not shown) when packaging food at the food production facility. The carrier strips **12** may be wound around the series of prongs **14** of the spool assembly **10** for collection by rotating the base **16** and series of prongs **14** together around longitudinal axis **36**. After collecting a desired amount of carrier strips **12** around the series of prongs **14**, the carrier strips **12** may be conveniently and safely removed by sliding the carrier strips **12** off the open second ends **20** of prongs **14** in longitudinal direction **22**. The method may further comprise properly disposing or recycling the carrier strips **12** that have been removed from the spool assembly **10**. Thus, the method of using the spool assembly **10** of the present disclosure allows for the removal of collected carrier strips **12** therefrom without cutting strips off using knives, scissors, or other cutting tools. This method not only provides enhanced safety to the operator and surrounding employees, but moreover prevents small pieces of tape from being introduced into the finished, bagged food product that may pose substantial health risks to end customers.

[0034] The improved spool assembly **10** and method of use of the present disclosure are universally applicable to carrier strips of all makes, manners and manufacturers and may be easily incorporated into the existing food production process of food production facilities. Although the disclosure has been described and illustrated with respect to preferred aspects thereof, it is not to be so limited since changes, modifications, and combinations thereof may be made which are within the full intended scope of the disclosure.

What is claimed is:

1. A spool assembly, comprising:
a cantilevered series of prongs;
the series of prongs having a closed first end secured to a base and an opposite open second end;
the series of prongs arranged equidistant from one another around a longitudinal axis;
each prong of the series of prongs sloping inwardly from the closed first end towards the open second end;
a support column;
the support column positioned internally to the series of prongs;
the support column having a first end and an opposite second end;
the first end of the support column secured to an internal side of the base;
the second end of the support column secured to an interior side of each prong;
an axle coupling the base to a bearing housing; and
the spool assembly configured to take up tape thereon.

2. The spool assembly of claim **1**, further comprising:
the series of prongs designed to allow tape to slide off the open second ends to remove tape from the spool assembly;
wherein the tape is removed from the spool assembly without cutting the tape.

3. The spool assembly of claim **1**, wherein each prong is tapered from the closed first end towards the open second end.

4. The spool assembly of claim **11**, further comprising:
the axle rotatably coupling the base to the bearing housing;
the bearing housing including:
a) an internal bearing that permits the base and series of prongs to rotate together around a longitudinal axis via the axle; and
b) the internal bearing is configured to assist with winding tape around the series of prongs for collection.

5. The spool assembly of claim **4**, further comprising:
the bearing housing including an internal ratchet; and
the internal rachet configured to provide continuous rotary motion in only one direction around the longitudinal axis while preventing motion in the opposite direction.

6. The spool assembly of claim **14**, further comprising:
the second end of the support column including a bracket secured to an interior side of each prong;
wherein the support column is designed to reinforce and maintain the series of prongs in a fixed position.

7. The spool assembly of claim **6**, the bracket of the second end of the support column comprising a bearing to assist in the rotation of the series of prongs and base around the longitudinal axis.

8. The spool assembly of claim **1**, wherein the series of prongs comprises at least three prongs secured to the base.

9. The spool assembly of claim **1**, further comprising:
an arm for securing the bearing housing to a frame; and

wherein the frame is designed to facilitate attachment of the spool assembly to existing mechanical equipment of a food processing facility for incorporation into a food processing process.

10. The spool assembly of claim **1**, wherein the open second end of each prong is not attached to any object.

11. A spool assembly, comprising:

a cantilevered series of prongs;

the series of prongs having a closed first end secured to a base and an opposite open second end;

an axle coupling the base to a bearing housing; and

the spool assembly configured to take up tape thereon.

12. The spool assembly of claim **11**, further comprising:

the series of prongs designed to allow tape to slide off the open second ends to remove tape from the spool assembly;

wherein the tape is removed from the spool assembly without cutting the tape.

13. The spool assembly of claim **11**, wherein each prong is tapered from the closed first end towards the open second end.

14. The spool assembly of claim **11**, further comprising:

the axle rotatably coupling the base to the bearing housing;

the bearing housing including:

c) an internal bearing that permits the base and series of prongs to rotate together around a longitudinal axis via the axle; and

d) the internal bearing is configured to assist with winding tape around the series of prongs for collection.

15. The spool assembly of claim **14**, further comprising:

the bearing housing including an internal ratchet; and

the internal rachet configured to provide continuous rotary motion in only one direction around the longitudinal axis while preventing motion in the opposite direction.

16. The spool assembly of claim **14**, further comprising:

a support column;

the support column positioned internally to the series of prongs;

the support column having a first end and an opposite second end;

the first end of the support column secured to an internal side of the base; and

the second end of the support column including a bracket secured to an interior side of each prong;

wherein the support column is designed to reinforce and maintain the series of prongs in a fixed position.

17. The spool assembly of claim **16**, the bracket of the second end of the support column comprising a bearing to assist in the rotation of the series of prongs and base around the longitudinal axis.

18. A method of collecting and disposing of tape, comprising:

providing a spool assembly, comprising:

a) a series of prongs positioned coaxially from one another;

b) the series of prongs having a closed first end and an opposite open second end;

c) each prong of the series of prongs sloping inwardly from the closed first end towards the open second end;

d) the series of prongs cantilevered on one side wherein the closed first end is secured to a base;

e) a support column;

f) the support column positioned internally to the series of prongs;

g) the support column having a first end and an opposite second end;

h) the first end of the support column secured to an internal side of the base;

i) the second end of the support column secured to an interior side of each prong;

j) an axle coupling the base to a bearing housing;

k) an arm for securing the bearing housing to a frame; and

l) the spool assembly configured to take up tape thereon;

incorporating the spool assembly into a food processing process by attaching the frame to existing mechanical equipment of a food processing facility;

providing tape used to attach individual, plastic bags together when packaging food at the food production facility;

winding the tape around the series of prongs of the spool assembly for collection;

removing the tape from the spool assembly by sliding the tape off the open second ends of prongs; and

disposing or recycling the tape that has been removed from the spool assembly.

19. The method of claim **18**, wherein winding the tape around the series of prongs of the spool assembly for collection includes rotating the base and series of prongs together around a longitudinal axis.

20. The method of claim **18**, further comprising:

rotatably coupling the base to the bearing housing via the axle;

providing the bearing housing with the following:

a) an internal bearing that permits the base and series of prongs to rotate together around a longitudinal axis via the axle;

b) the internal bearing configured to assist with winding tape around the series of prongs for collection;

c) the bearing housing including an internal ratchet; and

d) the internal rachet configured to provide continuous rotary motion in only one direction around the longitudinal axis while preventing motion in the opposite direction.

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