

[54] **STUFFING MACHINE FOR ASSEMBLING NEWSPAPERS OR THE LIKE**

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[51] Int. Cl. **B65h 5/30**

[58] Field of Search 270/54, 55, 57, 58; 198/209

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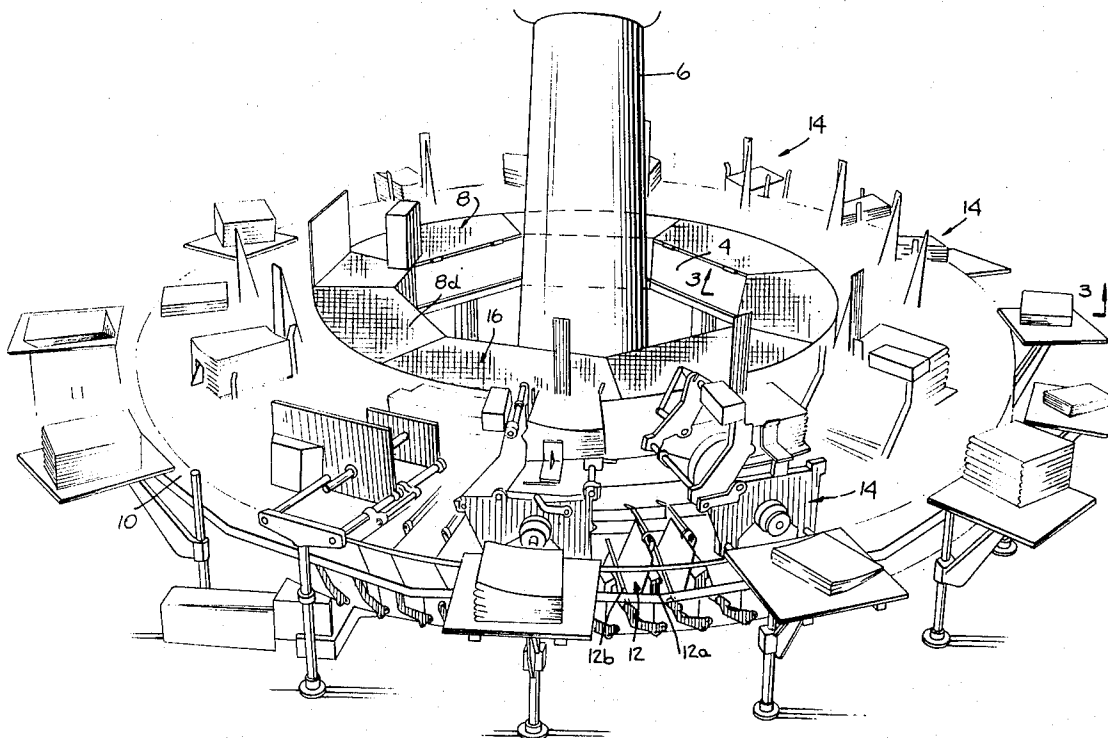
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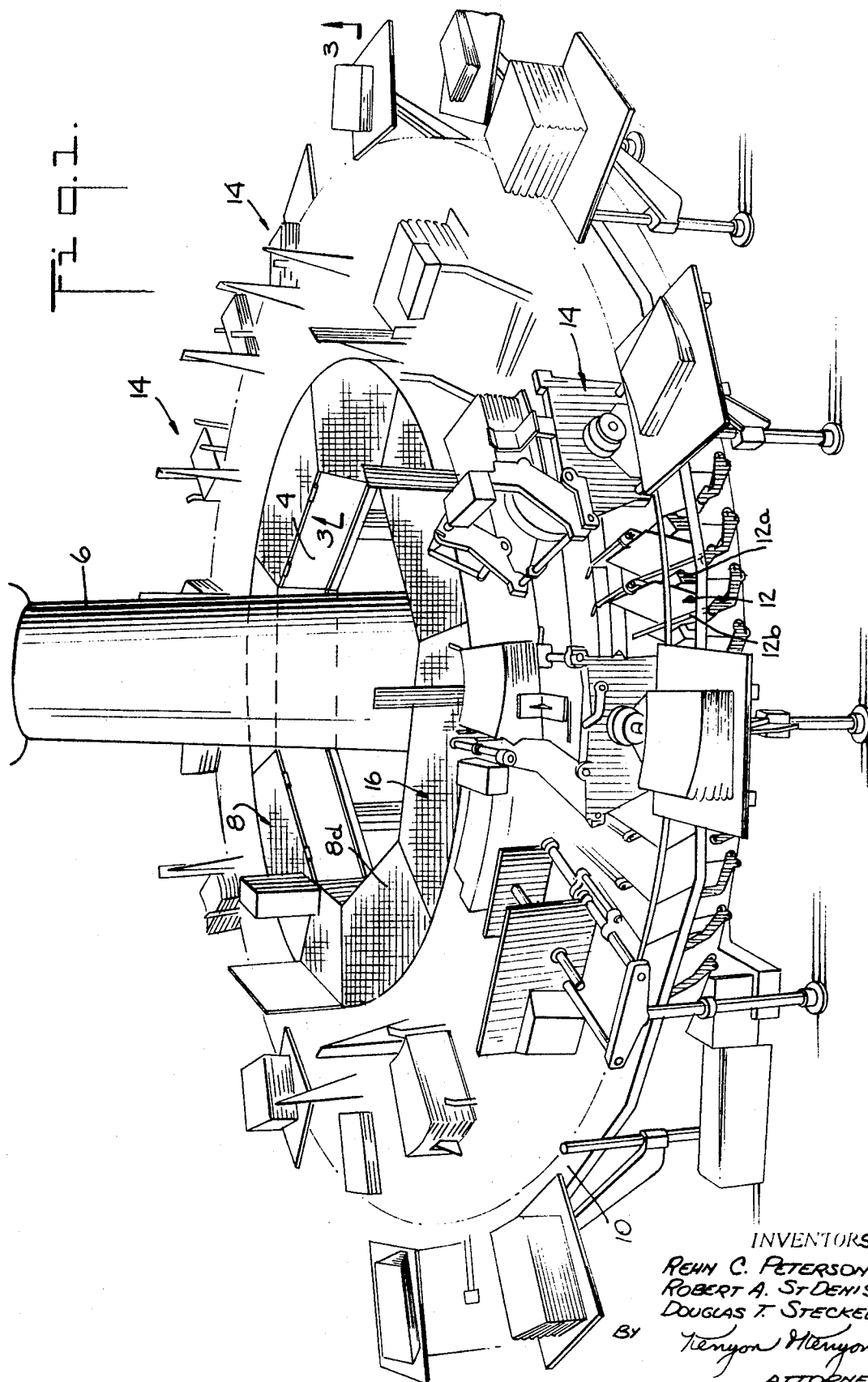
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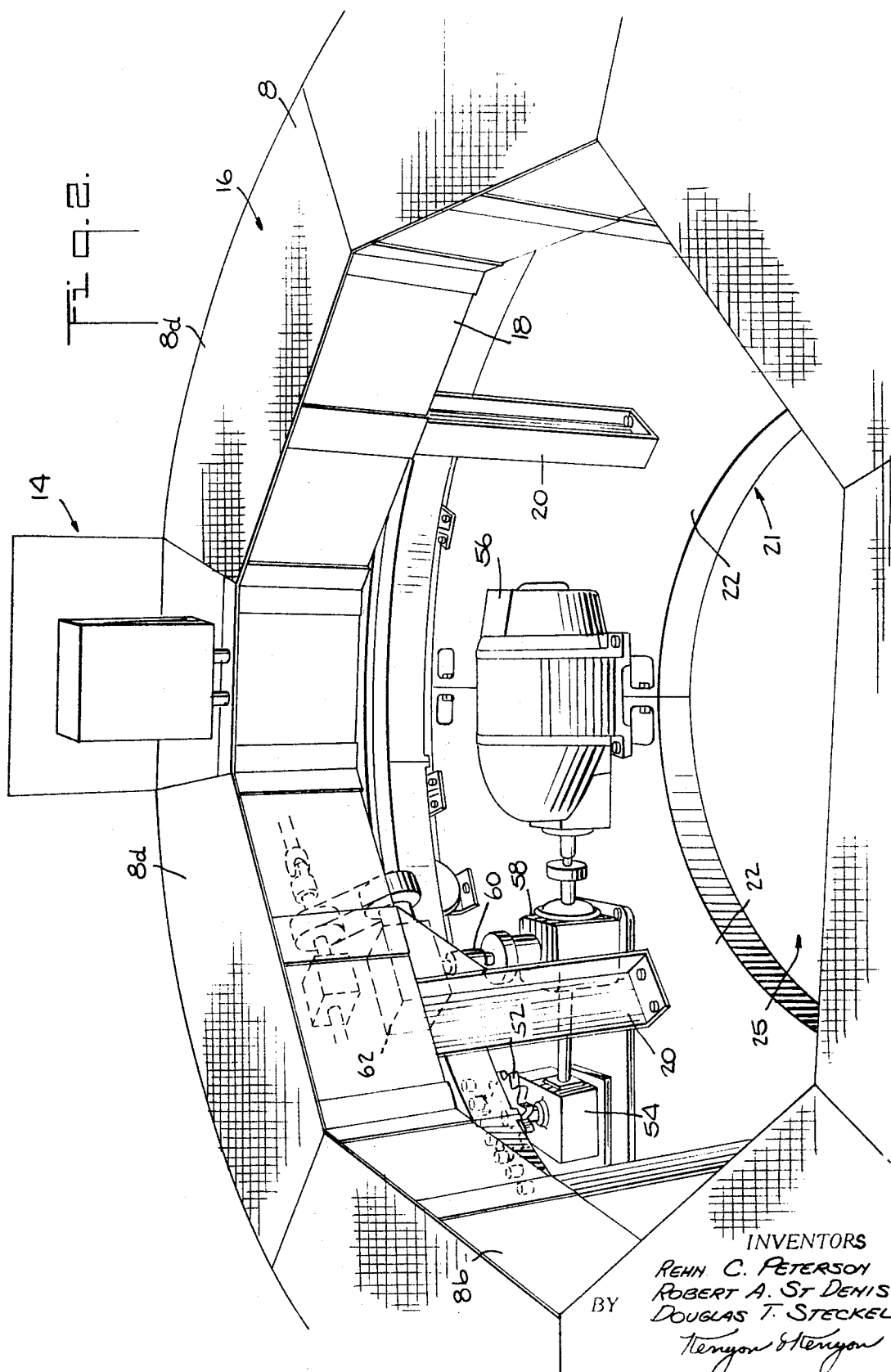
ABSTRACT

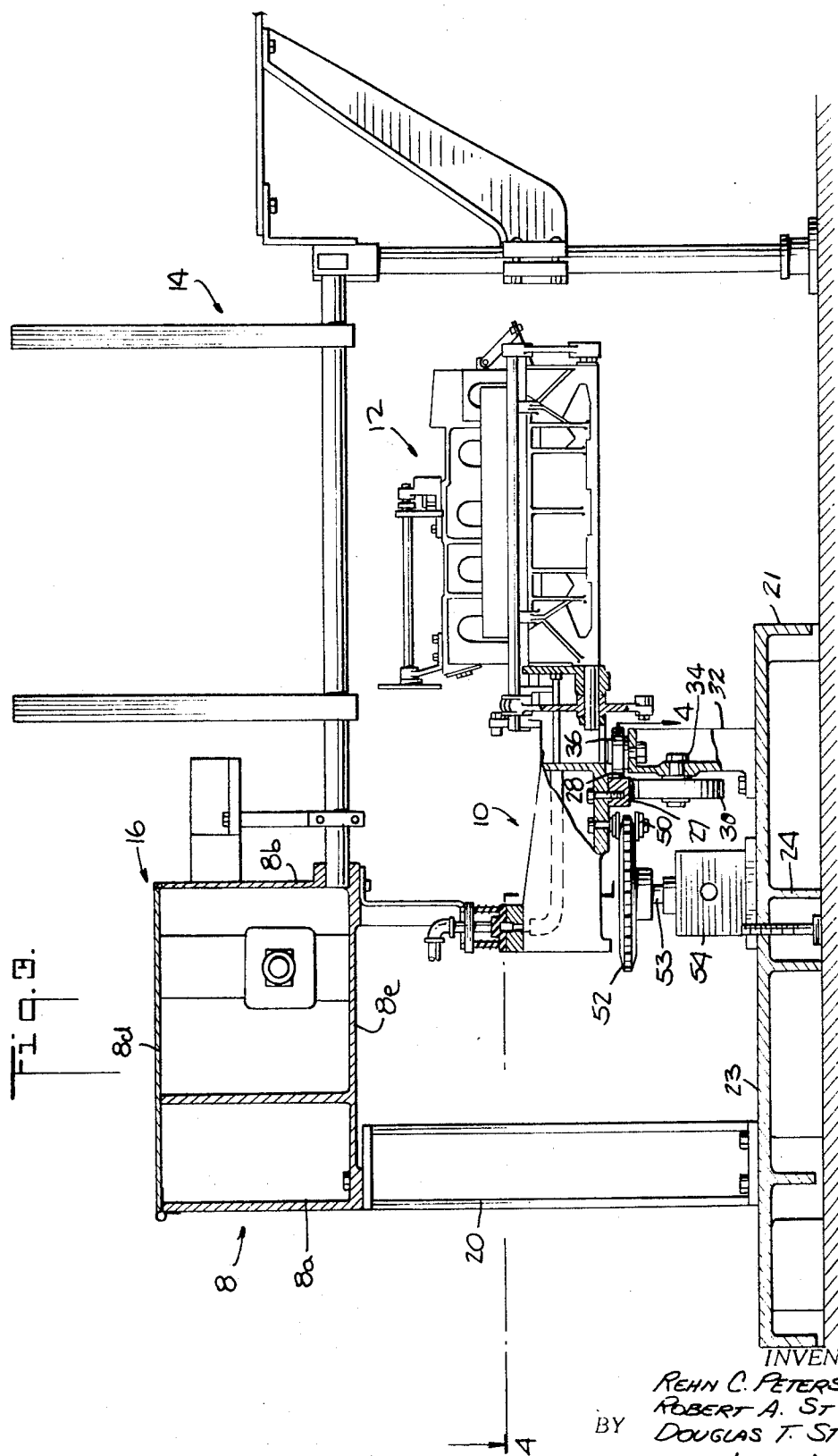
A newspaper stuffing machine for assembling the sections of a newspaper, which includes a generally toroidal rotor carrying an endless series of carrier pockets past a series of feeding stations. The feeding stations feed sections of the newspaper into each pocket as it moves past the stations. The rotor is rotatably mounted upon a frame with both the rotor and the frame having generally aligned, vertically extending, central openings of sufficient size to enable the stuffing machine to be assembled about an obstruction, such as a building column.

21 Claims, 13 Drawing Figures









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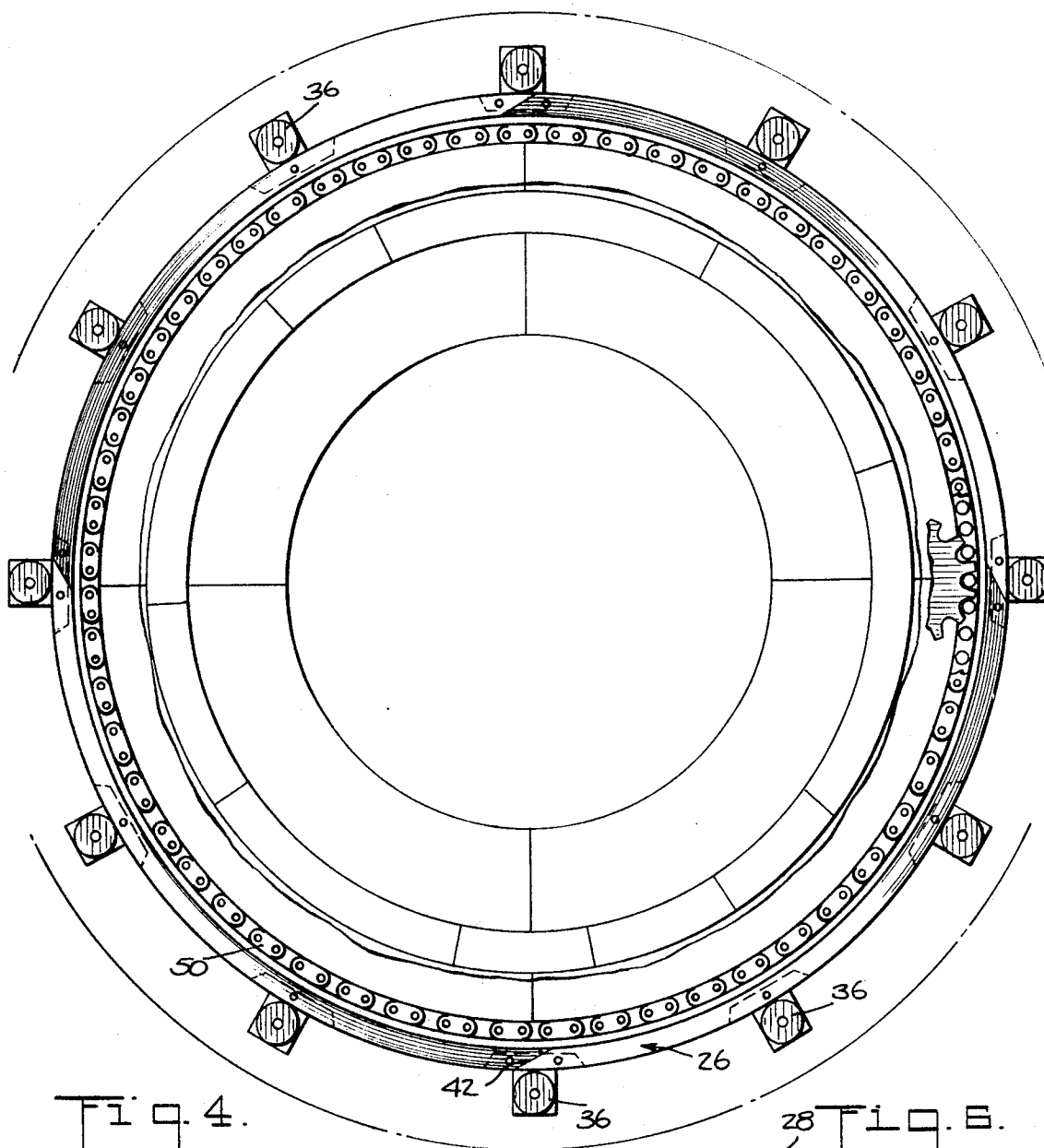


Fig. 4.

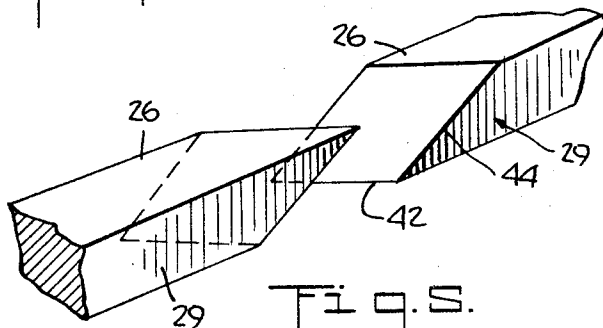
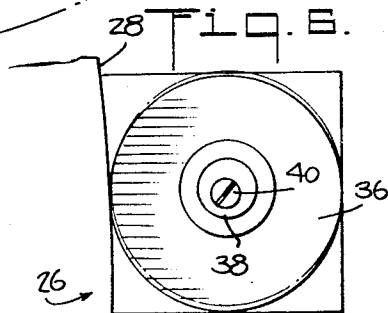
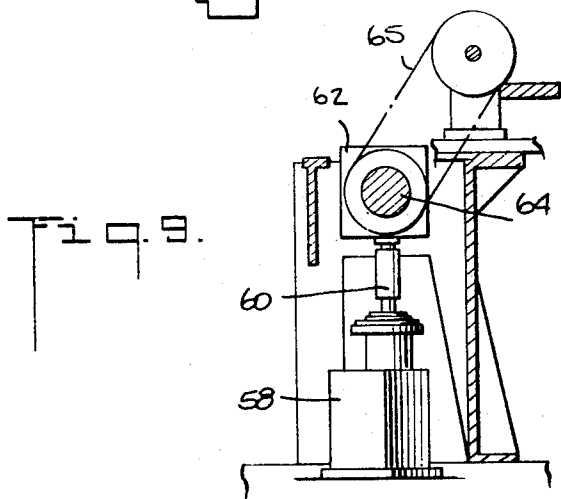
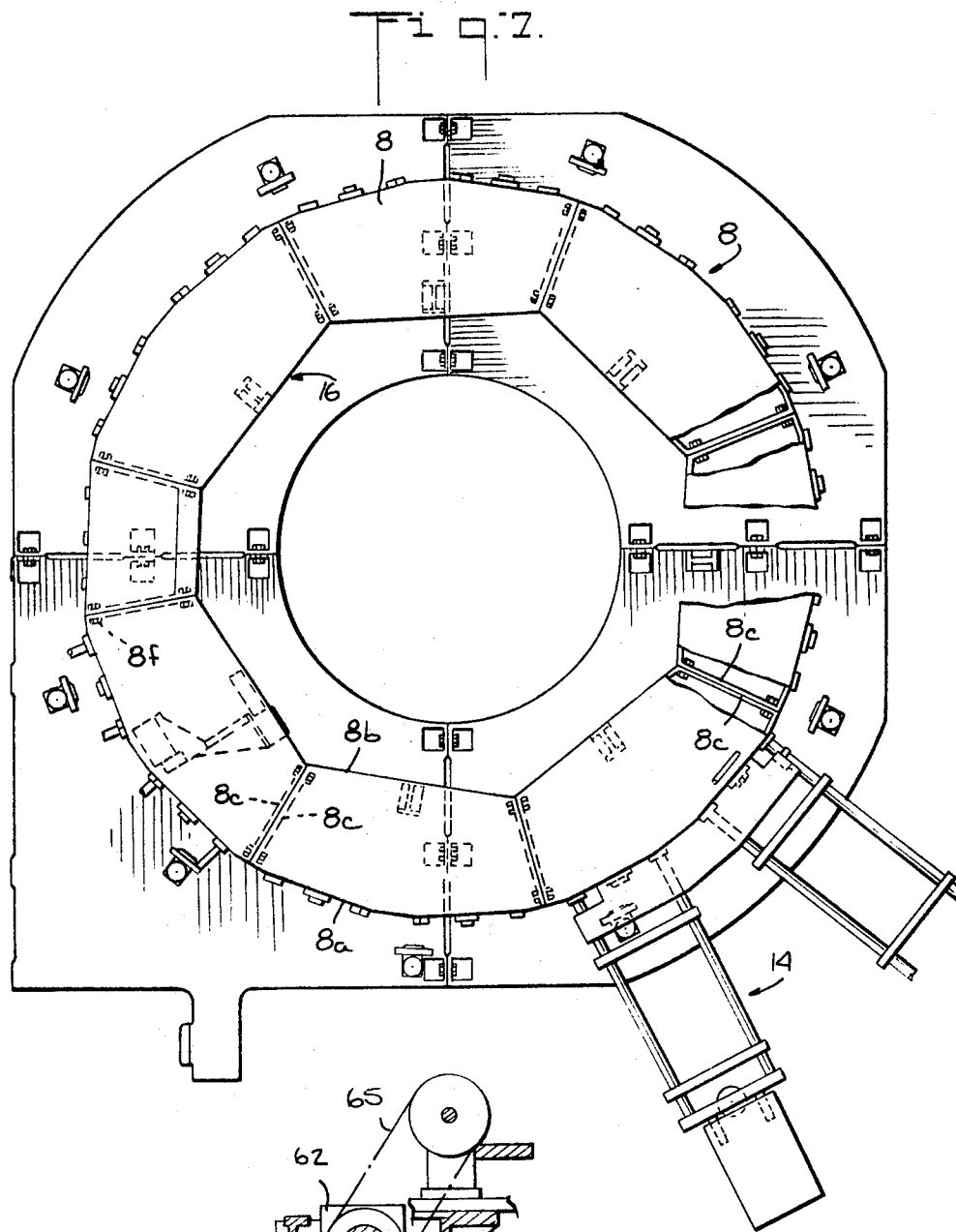


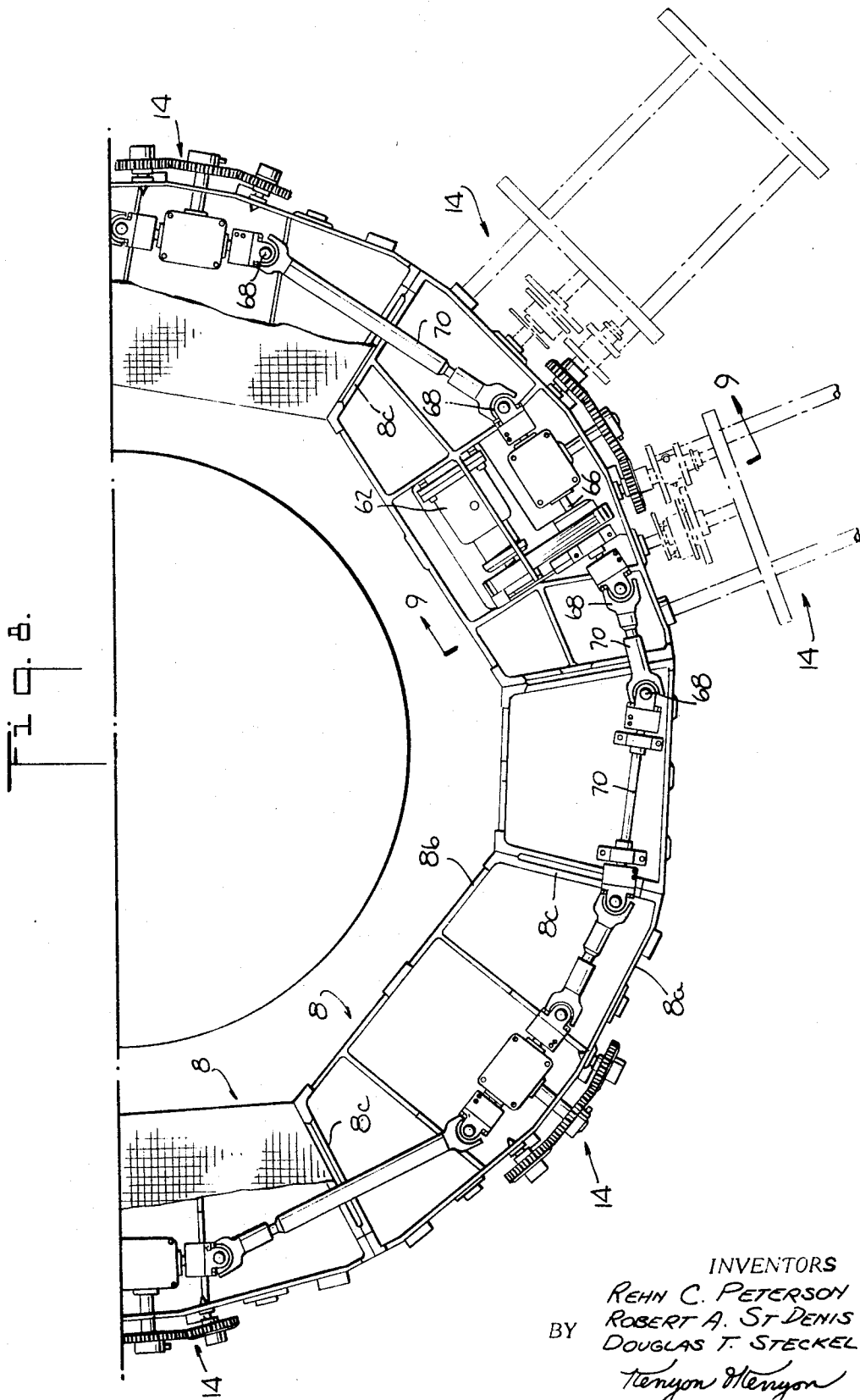
Fig. 5.



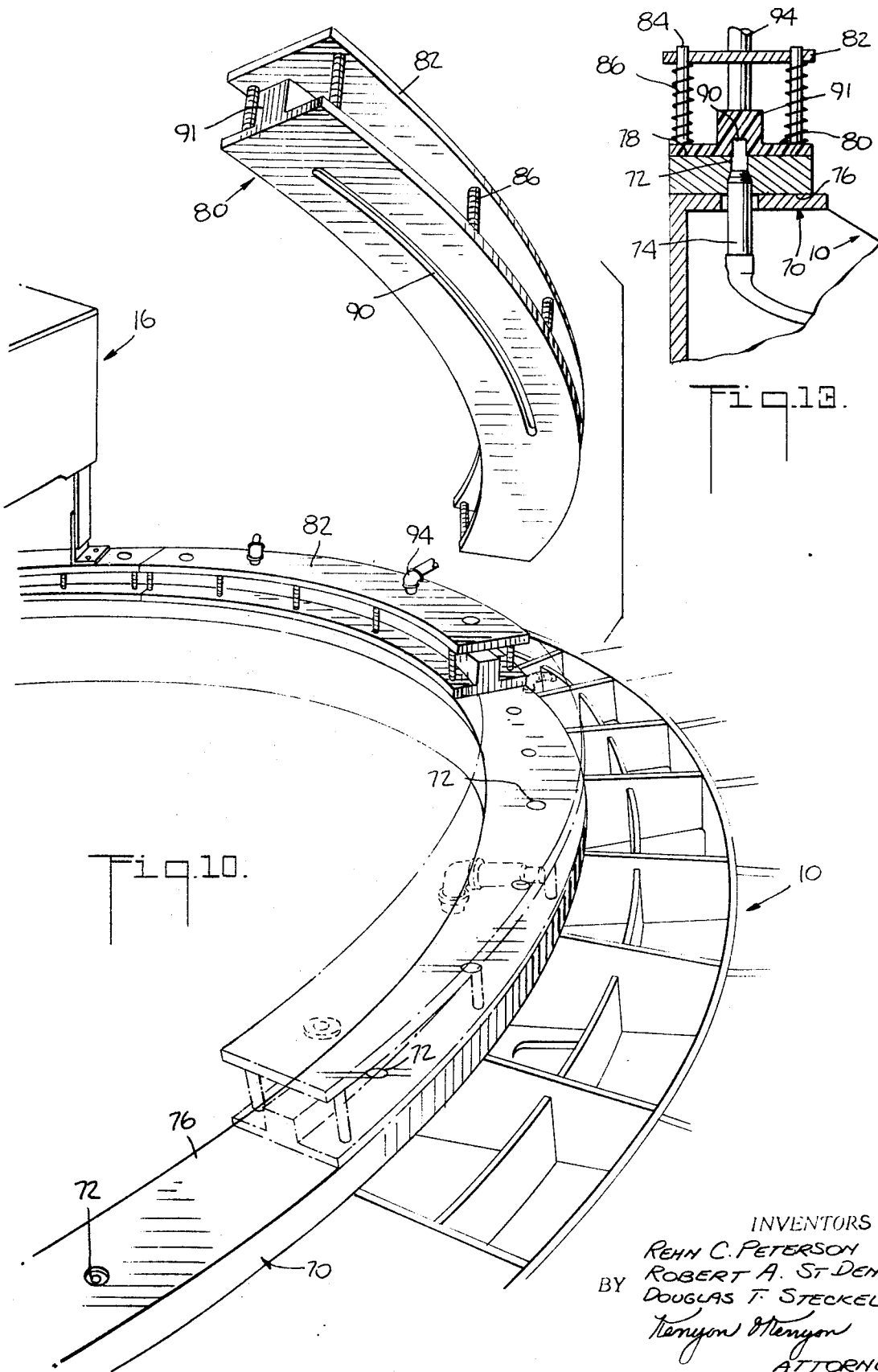
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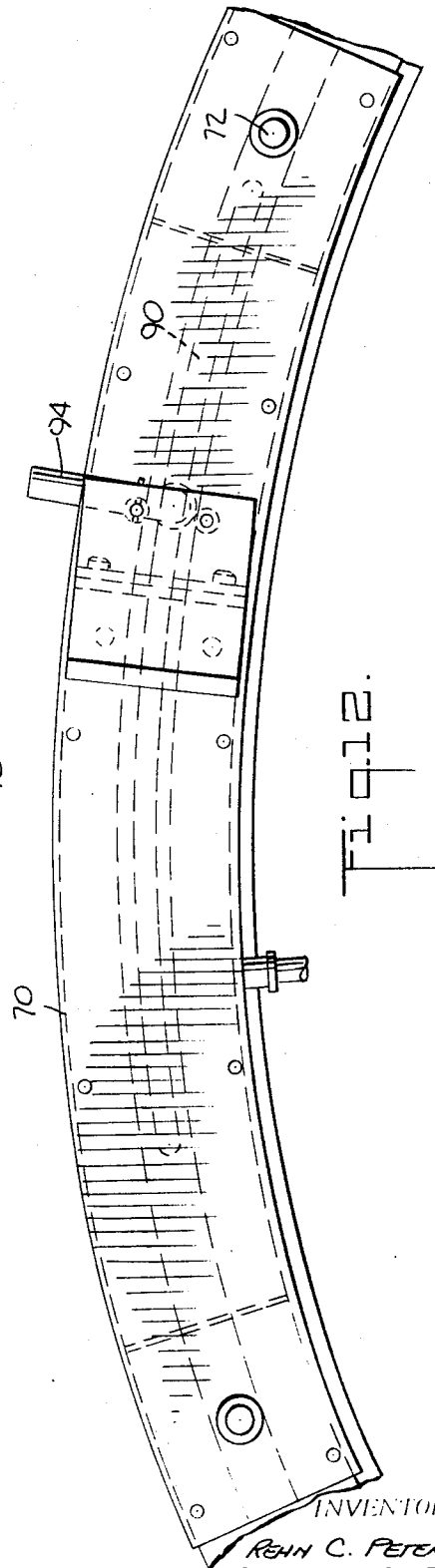
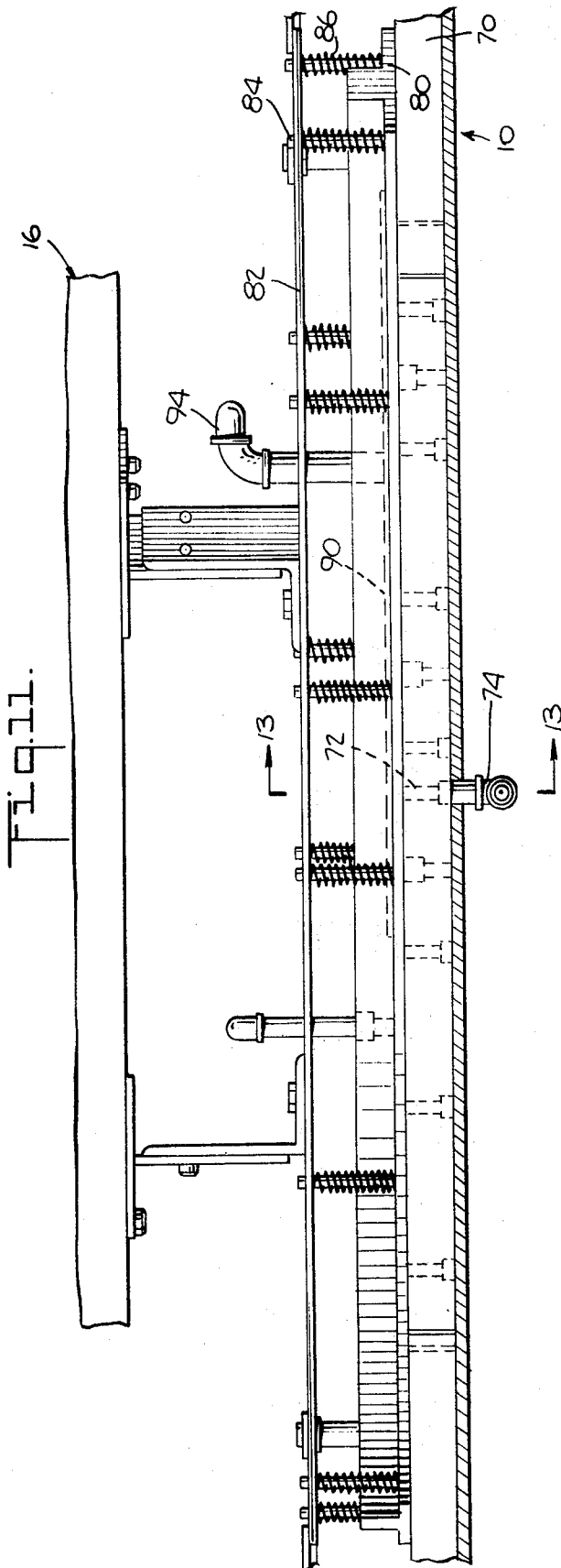


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STUFFING MACHINE FOR ASSEMBLING NEWSPAPERS OR THE LIKE

BACKGROUND OF THE INVENTION

This invention relates to a stuffing machine for assembling the sections of a newspaper or similar assemblage of folded sheet material.

In the preparation of newspapers, it is often necessary to print the various sections of a newspaper at different times and later assemble the separately printed sections to form a complete newspaper. Such assembly of the newspapers from the separately printed sections may occur at the printing plant or, quite commonly, at the plant of a newspaper distributor. To perform the function of newspaper assembly, it has been the practice to employ stuffing machines which assemble the newspapers automatically.

Such stuffing machines have usually comprised a generally circular rotor carrying an endless series of V-shaped carrier pockets in a horizontal circular path past a series of feeding stations. The rotor is usually supported by providing a central vertical shaft having a plurality of spider arms extending radially outwardly to drive the rotor. Typically each carrier pocket includes two radially extending walls, a generally vertical, fixed wall and an upwardly inclined, movable wall, pivotally connected adjacent their lower extremities to define an upwardly facing, V-shaped opening. At one of the feeding stations, a V-folded newspaper jacket is fed into each pocket. One wall of the jacket may be held against the fixed wall by a vacuum cup therein while the other wall of the jacket falls against the inclined wall, thus opening the jacket. At each successive feeding station a different section of the newspaper is fed into the opened jacket in each carrier pocket as the carrier pockets move past the feeding stations. A stuffing machine of the type generally described is exemplified by the disclosure of Schweizer, U.S. Pat. No. 2,461,573, issued on Feb. 15, 1949.

Although generally satisfactory, it has been desired to increase the capacity of such machines by increasing the number of carrier pockets. Such a step necessitates increasing the diameter of the rotor. However, the modern buildings in which stuffing machines are often installed are frequently provided with building columns pitched apart at a distance which restricts the maximum diameter of any stuffing machine installed. As a result, stuffing machines currently in use are restricted by diameter considerations to a range of about 48 carrier pockets per machine.

Another problem with some of the earlier stuffing machines may arise in relating the actuation of the vacuum cups associated with each carrier pocket utilized to open the outer section of the paper for reception of the inserted sections, with the arrival of a carrier pocket in registry with each feeding station.

SUMMARY OF THE INVENTION

The present invention provides a newspaper stuffing machine having a larger number of carrier pockets than heretofore possible, which can still be installed in conventional buildings despite space limitations imposed by the presence of building columns or other obstructions.

This advantageous result is achieved by providing a rotor having an unobstructed central area enabling the rotor to be assembled about the obstruction without interfering contact with it. The rotor which may thus be made of sufficient diameter to carry an increased number of carrier pockets, is supported on a frame which also has a central opening sufficiently large to enable the frame to be assembled about the obstruction. Supporting structure interposed between the rotor and the frame externally of the openings supports the rotor for rotation.

In another aspect of the invention, correlation of the operation of the suction devices associated with each carrier pocket with the arrival of the pocket adjacent each feeding station is achieved by a vacuum application system. The rotor is provided with a peripherally extending, travelling ring seated in

continuous sliding sealing contact against a stationary ring secured to the frame. The travelling ring is provided with a series of ports, each positioned adjacent to one of the carrier pockets with each port being connected to the vacuum cup of the associated pocket. The stationary ring adjacent each feeding station is provided with a groove positioned in the path of travel of the ports in the travelling ring. As a carrier pocket moves adjacent a feeding station, its associated port moved into registry with the groove associated with that feeding station. The groove is in fluid communication with the vacuum cup of the carrier pocket so that the vacuum is applied to the vacuum cup for operation thereof as the carrier pocket moves adjacent the station.

BRIEF DESCRIPTION OF THE DRAWINGS

A stuffing machine constructed in accordance with one preferred embodiment of the invention, is illustrated in the accompanying drawings in which,

FIG. 1 is a perspective view of a stuffing machine according to the preferred embodiment, shown installed about an obstruction, such as for example a building column;

FIG. 2 is a perspective view of a portion of a stationary frame forming a part of the stuffing machine shown in FIG. 1;

FIG. 3 is a vertical cross-sectional view of a portion of the stuffing machine shown in FIG. 1 taken along the lines 3—3 therein;

FIG. 4 is a fragmentary plan view of a rotor forming part of the stuffing machine shown in FIG. 1, together with a track secured to the rotor and locating wheels abutting the track to locate the rotor for rotation about a fixed axis of rotation;

FIG. 5 is a perspective view on an enlarged scale of a portion of the track shown in FIG. 4;

FIG. 6 is a fragmentary plan view on an enlarged scale of one of the locating wheels contacting the track shown in FIG. 4;

FIG. 7 is a plan view of the frame showing the frame segments forming the frame;

FIG. 8 is a fragmentary plan view on an enlarged scale of the frame with portions thereof removed to show a drive train positioned within the frame;

FIG. 9 is a vertical cross-sectional side view of a portion of the frame shown in FIG. 8 taken along the lines 9—9 therein;

FIG. 10 is a perspective, exploded view of a portion of a vacuum application system associated with the stuffing machine shown in FIG. 1;

FIG. 11 is a side elevational view of a portion of the vacuum application system shown in FIG. 10;

FIG. 12 is a plan view of the portion of the vacuum application system shown in FIG. 10, and

FIG. 13 is a vertical cross-sectional end view of a portion of the vacuum application system shown in FIG. 11 taken along the lines 13—13 therein.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring to FIG. 1 of the drawings, a stuffing machine according to a preferred embodiment of the present invention, includes a stationary frame 2 having a central opening 4 extending vertically through the frame of sufficient area to extend with ample clearance about an obstruction, such as a building column 6 shown for illustration.

Supported by the stationary frame 2, in a manner to be described, is a horizontal rotor 10 of generally circular configuration which rotates about a vertical, central axis of the rotor. The rotor 10 carries an endless series of carrier pockets 12 in a circular path and beneath a series of fixed feeding stations 14 spaced peripherally about and fixedly secured to the frame 2.

Each of the carrier pockets 12 includes two radially extending walls, a generally vertical, fixed wall 12a and an inclined, movable wall 12b. The walls are connected for relative pivoting motion about a horizontal radially extending axis adjacent their lower extremities. The walls of each carrier pocket

define an upwardly facing generally "V" shaped opening. As each pocket 12 passes a first one of the feeding stations 14, a newspaper jacket comprising a V-folded sheet, is fed into the pocket. A vacuum cup (not shown) connected to the fixed wall 12a holds one-half of the V-folded jacket against the upright fixed wall of the pocket 12 while the other wall of the jacket falls against the inclined wall of the pocket. The jacket is thus sufficiently unfolded to enable it to receive successive sections of the newspaper which are fed into the jacket as the pocket passes successive feeding stations 14.

Insofar as the construction of the carrier pockets 12 and the feeding stations 14 is the same as that disclosed in prior U.S. Pat. Nos. 2,461,573, issued on Feb. 15, 1949 and 2,634,971 issued on Apr. 14, 1953 owned by the assignee of the present application, the relevant disclosure of those patents is deemed to be incorporated herein by reference.

Referring to FIGS. 2 and 7, the previously mentioned frame 2 may be seen to include a toroidal shell 16 built up from a plurality of box-like segments 8. The use of segments simplifies the transporting and erection of shell 16 at its ultimate location. Each segment 8 (FIG. 8) includes vertically and peripherally extending outer walls 8a and inner walls 8b joined at their peripheral extremities by vertical, radially extending end walls 8c. Horizontal upper walls 8d and lower walls 8e secured to the inner, outer and end walls of each segment completely enclose the space within the segment (FIG. 3). The upper walls of the segment may be removable, or hinged to the remaining segment structure, to permit access into the interior for servicing or like purposes (FIG. 1). The segments 8 of the shell 16 are fixedly secured together by fasteners 8f, with the end walls 8c of adjacent segments in abutting relation (FIGS. 7 and 8). The outer vertical walls 8a of the segments 8 define a polygonal peripheral surface approximating a circular configuration, while the inner walls 8b of the segments 8 define a polygonal opening extending symmetrically about the vertical axis of the frame.

The toroidal shell 16 is supported horizontally above the ground by a plurality of legs 20 secured at their upper ends to the under side of the shell (FIG. 2). At their lower ends, the legs 20 are secured to a toroidal platform 21 secured to suitable supporting structure such as the floor. The platform 21 is also built up from a plurality of segments 22 which are generally arcuate in form and each include a horizontal upper wall 23 (FIG. 3) supported on a plurality of depending webs 24. The platform segments 22 are fixedly connected together around the obstruction, and define a circular central opening 25 concentric with the axis of the frame and of sufficiently great internal diameter to extend outside the area beneath the central opening in the toroidal shell 16.

The previously mentioned rotor 10, which is also constructed as a plurality of segments, is of toroidal shape and is supported for rotation about a vertical axis concentric with the vertical axis of the frame. The rotor has a larger internal diameter than the largest cross-sectional dimension of the opening 4 in the frame so that when the frame is installed about an obstruction, the rotor 10 may rotate freely without interfering contact with the obstruction. Fixedly secured to the outer periphery of the rotor 10 (FIG. 3) are a plurality of the carrier pocket assemblies 12 which, as previously indicated, are of the type disclosed in U.S. Pat. No. 2,461,573.

To support and locate the rotor 10 for rotation, a circular track 26 (FIG. 3) of generally rectangular vertical cross section is fixedly secured to the underside of the rotor 10 in concentric relation therewith. The track 26 includes a downwardly facing, horizontal, peripherally extending supporting surface 27 and a vertical, peripherally extending, outwardly facing locating surface 28. The track 26 is constituted by a plurality of arcuate track segments 29 in end-to-end relation. The supporting surface 27 of the track rests upon the peripheral, edge surfaces of a plurality of supporting wheels 30 spaced about the circumference of a circle concentric with the vertical axis of the frame 2. Each of the supporting wheels 30 is rotatably mounted on an associated one of a plurality of

fixed supporting brackets 32. The brackets 32 are fixedly secured at their lower ends to the supporting platform 21.

The peripheral edge of each of the wheels in rolling contact with the supporting surface 27 of the track is bevelled at such an inclination that the radius of the wheel diminishes in a direction radially inwardly of the track 26. Thus the edge of each wheel 30 has its greatest radius, and fastest peripheral speed at the outer edge of the supporting surface 27 of the track where the peripheral speed of the latter is largest, and its least radius and lowest peripheral speed at the inner edge of the supporting surface 27 where the speed is also correspondingly lower. Beveling of the edge surface of each supporting wheel 30 in this way thus enables the wheel to run in continuous non-skidding contact across the full width of the peripheral edge in contact with the track supporting surface.

To position the bevelled edge of each wheel 30 flat against the surface 27 of the track, each supporting wheel 30 is mounted upon an axle 34 which is skewed upwardly in a direction radially inward of the frame, in its connection to the associated one of the brackets 32.

To locate the rotor 10 for concentric rotation about the vertical axis of the frame 2, a plurality of locating wheels 36 (FIG. 4) is provided. Each of the locating wheels 36 is mounted on an associated one of the brackets 32 by a vertical axle 38 secured to horizontal portions 39 of the bracket (FIG. 3). The various locating wheels 36 each have their vertical peripheral edge surface in rolling contact with the locating surface 28 of the track and collectively maintain motion of the track in concentric rotation with the vertical axis of the frame.

To facilitate positional adjustment of each locating wheel 36 when initially locating the rotor for concentric rotation about the axis of the frame, each vertical axle 38 supporting the wheel for rotation, is fixedly secured to the associated bracket portion 39 by a threaded connector 40 extending vertically through the axle 38. Axle 38 is mounted in a bushing which is eccentrically supported with respect to bracket portion 39. By means of the eccentric bushing, the position of the wheel may be moved radially in or out relative to the frame as desired.

To promote quiet running and prolong track and wheel life, the peripheral edge surfaces of the supporting wheels 32 and locating wheels 36 are provided with tires of resilient material, such as polyurethane foam, natural or artificial rubber or the like.

As has been indicated the frame 2, comprising the shell 16 and the platform 21, the rotor 10 and the track 26 are all formed in segments. Thus at the site of installation, the various segments may be assembled together around an obstruction such as a building column to enable the completed machine to be installed about the obstruction. Thus, whereas previous stuffing machines having an obstructed central area had to be positioned between adjacent building columns in a plant, the stuffing machine of the present invention may be installed around a building column. Significant advantages result. In particular, with the present construction, the maximum rotor diameter of a machine installed about the center column of three equally pitched columns may be substantially equal to the distance between the two outside columns, whereas prior machines incapable of being mounted about a column were restricted to a maximum rotor diameter generally equal to the spacing between two adjacent columns. As a result stuffing machines having substantially greater diameters than heretofore, and hence carrying greater numbers of carrier pockets resulting in greater output, yet still capable of installation in the same restricted area locations as present machines, may be provided.

The ends of adjacent track segments 29 (FIG. 5) are bevelled in both the horizontal and vertical planes in mating relation. The bevelled ends of adjacent segments define a horizontal joint line (FIG. 4), extending across the supporting surface 28, which is inclined obliquely to the path of travel of the supporting wheels 30 relative to the track. This oblique inclination avoids the abrupt impact between the wheel

peripheries and the joint line 42 as it passes over the wheel (the type of impact well known to travellers by rail) and thereby prolongs the life of the supporting wheels and the tires thereon.

Similarly, the bevelled end faces of adjacent track segments 29 define a vertical joint line 44 on the locating surface which is also obliquely inclined to the path of travel of the locating wheels relative to the locating surface, to prolong the life of the locating wheels.

To drive the rotor 10, an endless chain 50 (FIGS. 3 and 4) is fixedly secured in circular configuration concentric with the axis of rotation of the rotor to the underside thereof. The chain 50 is drivingly engaged by a sprocket wheel 52 mounted on a vertical output shaft 53 of a gear box 54 (FIG. 2) fixedly secured to the platform 21. Drive to the gear box 54 is from a conventional electric motor 56 via an intermediate gear box 58.

The gear box 58 includes additional output shaft 60 (FIG. 9) extending vertically and connected at its upper end to a gear box 62 mounted within one of the segments 8 of the shell 16 of the frame. A horizontal output shaft 64 from the gear box 62 is connected by a belt and shaft drive 65 to a transverse power shaft 66 (FIG. 8) mounted in the same one of the segments 8 of the frame. The output of the transverse power shaft 66 is taken via a plurality of universal joints and shafts 68 and 70 respectively to the various feeding stations 14 distributed about the periphery of the frame, to provide driving power for these stations. It will be appreciated that the essentially closed loop power distribution arrangement described obviates the necessity to provide drive structure in the center of the frame, so that the center of the stuffing machine may be left entirely unobstructed to provide the advantageous results previously described.

As previously indicated it is necessary that vacuum be applied to each carrier pocket 12 during the period in which the newspaper jacket is being fed into the pocket in order that the jacket may be opened sufficiently for reception of the subsequent sections of the paper. A vacuum application system for this purpose is shown in FIGS. 10-13. The system includes a circular, travelling ring 70 concentric with and fixedly secured to the upper surface of the rotor 10. The travelling ring 70, which may be metal, is provided with a plurality of ports 72 extending vertically through the ring 70 spaced about the circumference of a circle concentric with the rotor. Each of the ports 72 is connected through a fluid line 74 to the vacuum cup in the adjacent one of the carrier pockets for application of vacuum thereto as described aforesaid in U.S. Pat. No. 2,461,573. The travelling ring 70 further includes a flat, peripherally extending, horizontal upper surface 76 in sliding, sealing continuous abutting contact with a corresponding flat horizontal lower surface 78 on a fixed ring 80.

The fixed ring 80 which may be of light material such as plastic is spaced below an upper ring 82 (FIGS. 3, 10, 13) which is fixedly secured to and underlying the shell 16 of the frame 2. A plurality of vertically extending locating pins 84 secured to the fixed ring 80 extend upwardly through mating holes in the upper ring 82 to maintain the upper and fixed rings in fixed alignment while permitting relative vertical motion therebetween. Extending between the upper ring 82 and the lower fixed ring 80 and sleeved about the locating pins 84 are a plurality of biasing springs 86. The biasing springs 86 urge the fixed ring 78 downwardly into contact with the travelling ring 70 to maintain a fluid tight seal therebetween. In addition it has been found that the vacuum applied (as will be described) draws the fixed and travelling rings together to enhance the seal.

Adjacent the feeding station 14 at which a vacuum is to be applied to each carrier pocket as it travels past the station, a groove 90 is provided in the lower surface of the ring 80, extending upwardly into an integral rectangular section rib 91 positioned centrally on the upper surface of the fixed ring. The groove 90 which is arcuate and extends along the path of travel of the ports 72 in the travelling ring 70 is in continuous

communication with a source of vacuum (not shown) through a suitable vacuum line 94. As a carrier pocket moves adjacent the feeding station 14 at which the vacuum is to be applied, the associated port 72 in the travelling ring 70 moves into registry with the groove 90 in the fixed ring 80 so that vacuum is applied through the groove and the port to apply vacuum to the vacuum cup in the carrier pocket. The groove 90 extends peripherally for a sufficient distance to permit vacuum to be applied as long as is required for opening of the jacket to facilitate subsequent insertion of further sections of the newspaper.

The fixed, the upper and travelling rings are each formed in segments which may be fixedly secured together in end-to-end relation to facilitate assembly of the machine around an obstruction, for the reasons previously discussed.

What is claimed is:

1. In a newspaper stuffing machine for assembling sections of a newspaper together, the machine including an endless series of carrier pockets adapted to move in a generally circular path and a series of feeding stations spaced along the path, the feeding stations feeding sections of the newspaper into each pocket as each pocket moves successively past the stations, the improvement comprising:

- a. a generally toroidal rotor adapted for rotation with respect to a vertical axis of rotation, said rotor carrying the series of carrier pockets, said rotor having an unobstructed opening extending vertically through said rotor, said opening disposed generally symmetrically about the vertical axis of rotation of said rotor passing generally centrally thereof;
- b. a frame having an additional unobstructed opening extending vertically through said frame;
- c. means interposed between said rotor and said frame externally of said opening and said additional opening for supporting said rotor for rotation about the vertical axis of rotation with said opening in said rotor and said additional opening in said frame being generally in vertical alignment to define an unobstructed central area extending vertically through the machine;
- d. means external to said openings in engagement with said rotor for driving said rotor in rotation about the vertical axis of rotation, and
- e. means external to said openings for operating said feeding stations whereby said openings are wholly unobstructed when the machine is operating.

2. A newspaper stuffing machine in accordance with claim 1 in which said toroidal rotor comprises a plurality of elements each in the form of a segment of a toroid, each of said plurality of elements being connected to said element adjacent thereto.

3. A stuffing machine in accordance with claim 1 in which said frame comprises a plurality of members, each segment of a toroid, each said member comprising:

- a. an inner wall;
- b. an outer wall arcuate in form spaced apart and substantially parallel to said inner wall;
- c. a pair of end walls converging with respect to one another toward the vertical axis of rotation and extending between said outer wall and said inner wall; and
- d. a pair of plate members covering the upper and lower portions of said rotor.

4. A stuffing machine in accordance with claim 3 in which said upper plate member is removably attached to said member in order to provide access to the interior thereof.

5. A stuffing machine in accordance with claim 3 and further comprising means extending through the interior of said plurality of frame members each in the form of a segment for operating the series of feeding stations.

6. A stuffing machine in accordance with claim 5 in which said means extending through the interior of said plurality of frame members each in the form of a segment comprises:

- a. a gear drive disposed in said frame members which are adjacent to each of the feeding stations, and

b. shafts extending through the interiors of said frame members which are segments of a toroid for coupling said gear drives to one another.

7. A stuffing machine in accordance with claim 6 in which each of said shafts coupling said gear drives to one another includes a flexible coupling connected to each of the opposite ends thereof to enable said shafts to extend through the interior of the frame members which are segments of a toroid.

8. A stuffing machine in accordance with claim 1 in which said means interposed between said rotor and said frame externally of said opening and said additional opening for supporting said rotor for rotation about the vertical axis of rotation comprises:

a. a generally toroidal track concentric with the vertical axis of rotation of said rotor and connected to the bottom portion of said rotor with an operable surface of said track facing downwardly, and

b. a plurality of means for providing rolling support to said rotor, said plurality of said supporting means being mounted upon said frame, spaced apart from one another about said opening of said frame, and in rolling engagement with said track.

9. A stuffing machine in accordance with claim 5 in which said track includes:

a. an additional operable surface extending in a substantially cylindrical form about the periphery of said track, and

b. a plurality of additional means for providing rolling support in a radial direction with respect to said additional surface of said track, said additional supporting means being mounted with respect to said frame and disposed spaced apart from one another radially outwardly of said track.

10. A stuffing machine in accordance with claim 9 in which said track is formed of a plurality of peripherally extending arcuate segments joined in end-to-end relationship with respect to one another, the adjacent ends of each of said segments being bevelled in a mating relationship with one another to provide a line of junction therebetween extending obliquely across said additional operable surface with respect to the path of travel of said additional supporting means thereon, whereby said additional supporting means progressively engages different portions of said joint line as said additional supporting means rolls with respect thereto.

11. A stuffing machine in accordance with claim 8 in which said track is formed of a plurality of peripherally extending arcuate segments joined in end-to-end relationship with respect to one another, the adjacent ends of each of said segments being bevelled in a mating relationship with one another to provide a line of junction therebetween extending obliquely across said operable surface with respect to the path of travel of said supporting means thereon, whereby said supporting means progressively engages different portions of said joint line as said supporting means rolls with respect thereto.

12. A stuffing machine in accordance with claim 8 in which said plurality of means for providing rolling support to said rotor comprises:

a. a plurality of supporting rollers spaced apart from one another and having the surfaces thereof engaged in rolling contact with the operable surface of said track, and

b. axle means for rotatably mounting each of said plurality of rollers with respect to said frame,

c. each of said plurality of rollers having a peripheral surface portion which is bevelled in the form of a portion of a cone,

d. each of said plurality of rollers being mounted by its respective axle means to position each of said rollers in rolling engagement with said track with said axle means extending radially and at an angle to the horizontal, whereby each of said plurality of rollers is enabled to be in rolling engagement with said track without skidding or slipping with respect thereto.

13. A stuffing machine in accordance with claim 12 and further comprising a tire disposed about the periphery of each of said plurality of rollers, said tire being formed of a layer of resin material adapted to withstand rolling engagement with said track, whereby said tire eliminates the need for lubrication between said plurality of rollers and said track and reduces vibration and noise resulting from the rolling engagement thereof with said track.

14. A stuffing machine in accordance with claim 1 wherein said driving means includes:

a. an endless driven element connected to said rotor and extending about said opening thereof; and

b. a driving element in engagement with said endless driven element and mounted with respect to said frame.

15. A newspaper stuffing machine according to claim 1 and further including means for selectively applying vacuum to at least one of said feeding stations for operation thereof as a carrier pocket moves adjacent said station, said vacuum applying means including,

i. a stationary ring fixedly connected with said frame externally of said additional opening and extending concentrically about said axis of rotation,

ii. a travelling ring fixedly connected with said rotor externally of said of said opening, said stationary and travelling rings having peripherally extending opposed mating surfaces in continuous sliding sealing contact,

iii. a series of ports in said travelling ring each positioned adjacent one of the carrier pockets, each said port being operatively connected with the associated carrier pocket and extending through said travelling ring to said sliding surfaces,

iiii. an arcuate groove in said mating surface of the stationary ring adjacent said one feeding station, said groove being positioned in the path of travel of said ports so that motion of one of said ports into registry with said groove causes vacuum to be applied thereto; and

v. means for connecting said groove to a source of vacuum.

16. A stuffing machine in accordance with claim 15 and further comprising means for resiliently biasing said opposed mating surfaces of said stationary ring and said travelling ring into contact with each other.

17. A stuffing machine in accordance with claim 16 in which said means for resiliently biasing said opposed mating surfaces into contact with one another comprises a plurality of springs in engagement with said stationary ring and urging said stationary ring toward said travelling ring.

18. A stuffing machine in accordance with claim 1 in which said means for operating said feeding stations includes, gear drive means on said frame adjacent to each of the feeding stations, and

shaft means extending around said additional opening and coupling said gear drives to one another.

19. A newspaper stuffing machine for assembling sections of a newspaper together, the machine including an endless series of carrier pockets adapted to move in a generally circular path, a series of feeding stations spaced along the path, said feeding stations feeding sections of the newspaper into each pocket as each pocket moves successively past the stations, a rotor adapted for rotation with respect to a vertical axis of rotation with said rotor carrying a series of carrier pockets, track means connected to said rotor with said track means having an operable surface parallel to the plane of rotation of said rotor, a plurality of supporting rollers spaced apart from one another and having the surfaces thereof engaged in rolling contact with the operable surface of said track, axle means for rotatably supporting each of said rollers, each of said rollers having a peripheral surface portion which is bevelled in the form of a portion of a cone and each of said plurality of rollers being mounted by its respective axle means to position each of said rollers in rolling engagement with said track with said axle means extending radially and at an angle to said plane

whereby each of said plurality of rollers is in rolling engagement with said track without skidding or slipping with respect thereto.

20. A newspaper stuffing machine for assembling sections of a newspaper together, the machine including, an endless series of carrier pockets adapted to move in a closed path, a series of feeding stations spaced along the path, each of said feeding stations including drive means for actuating feeding of sections of the newspaper into each pocket as each pocket moves successively past the sta-

tions, drive shaft means extending from station to station along said closed path and coupling said drive means to one another, and

means connected to said drive shaft means for rotating said drive shaft means in synchronism with the movement of said carrier pockets.

21. The stuffing machine of claim 23 wherein said drive shaft means includes a plurality of shafts and flexible couplings.

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