United States Patent

[11] **3,566,756**

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[54] **GUSSETER GUIDE**
4 Claims, 4 Drawing Figs.

[52] **U.S. Cl.** **93/84,** 93/1, 93/20
[51] **Int. Cl.** **B31b 45/00,** B31b 41/26, B31c 5/00
[50] **Field of Search** ..... 93/1 (WZ), 20, 58 (H), 84

[56] **References Cited**

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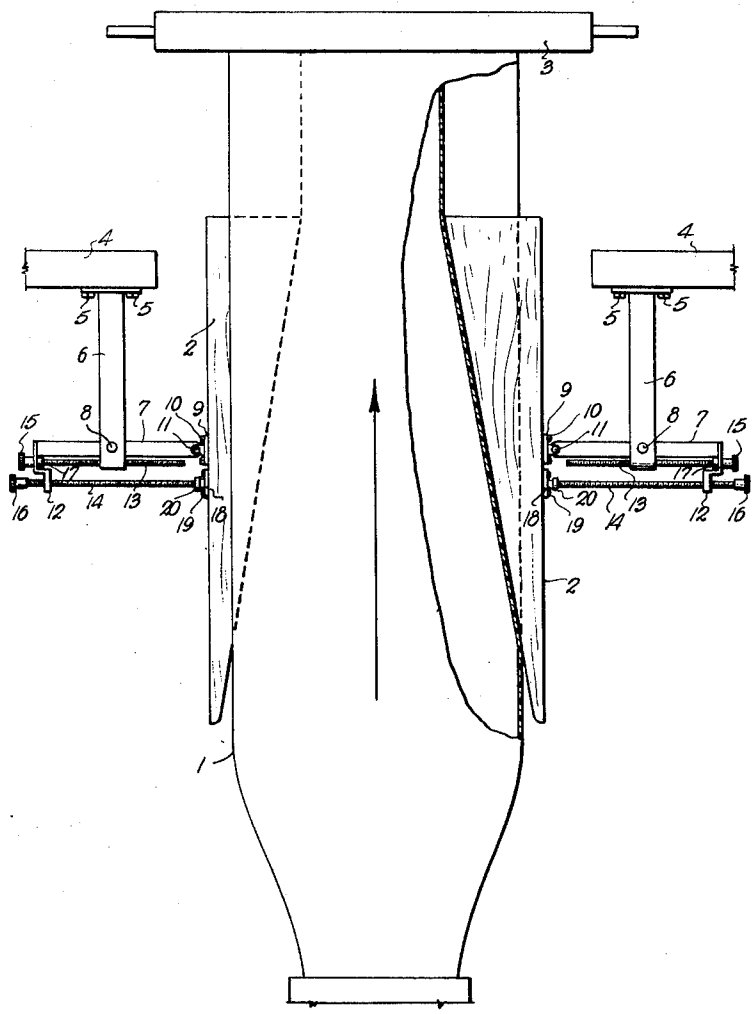
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ABSTRACT: A gusset is put into a bubble of blown film just before the film is flattened from a bubble by the pinch rolls by means of a gusseter guide sled which is shaped like a wedge in both lateral and transverse directions. The sled is positioned by a novel apparatus which controls depth of penetration of the sled into the bubble of blown film, and the angle of the sled in the film in both the transverse and lateral direction.



Patented March 2, 1971 3,566,756

2 Sheets-Sheet 1

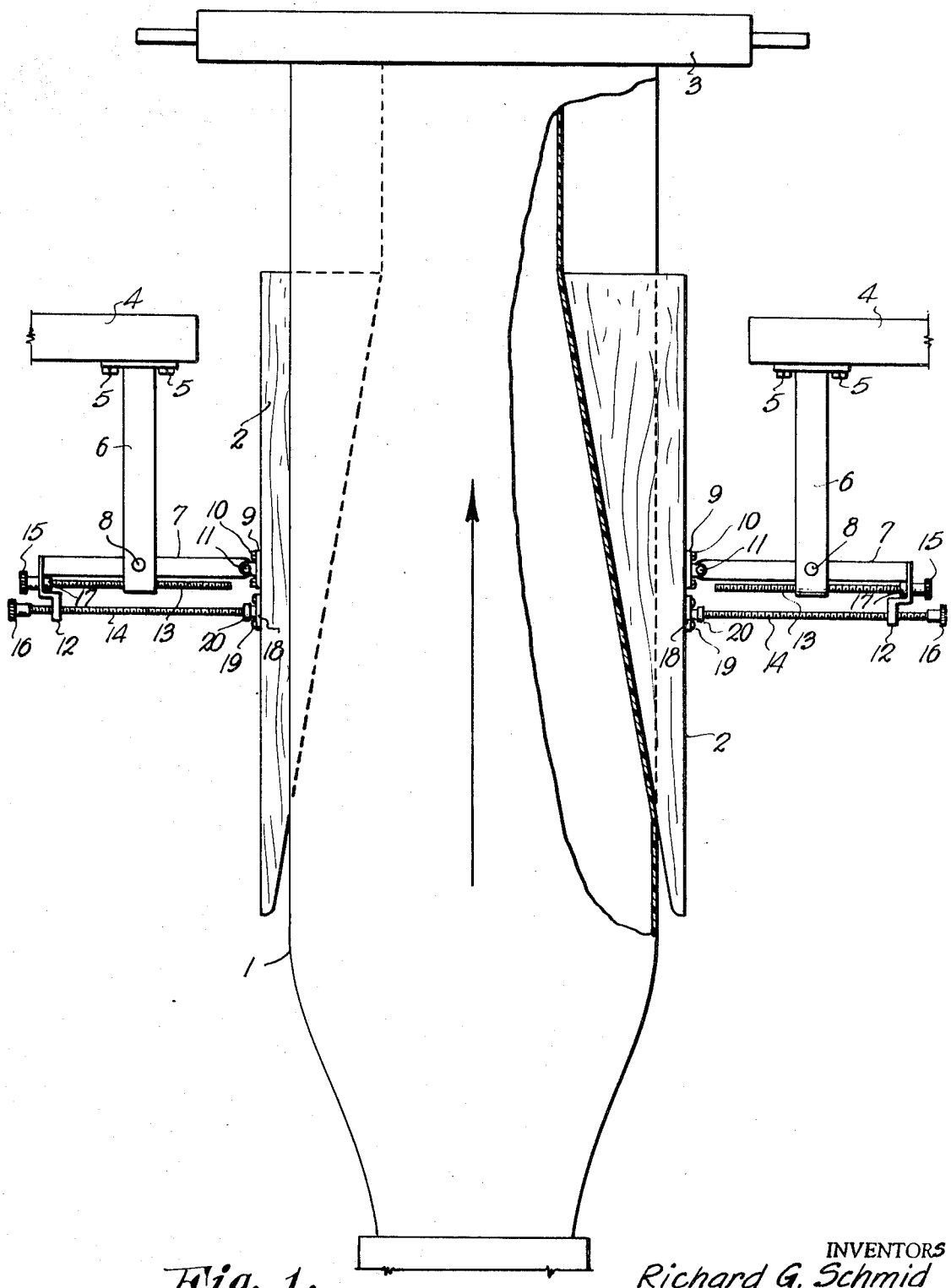


Fig. 1.

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Patented March 2, 1971 3,566,756

2 Sheets-Sheet 2

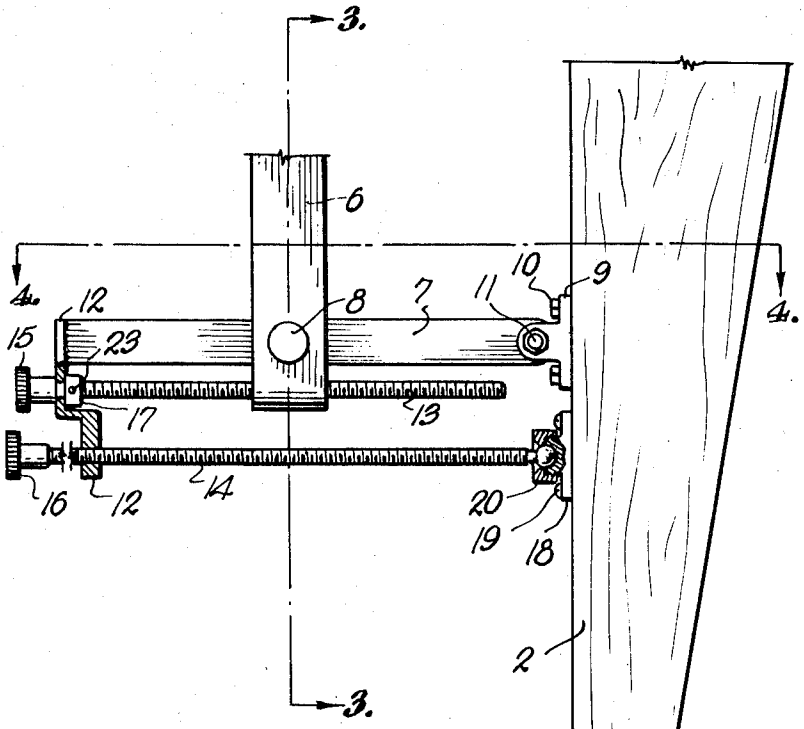


Fig. 2.

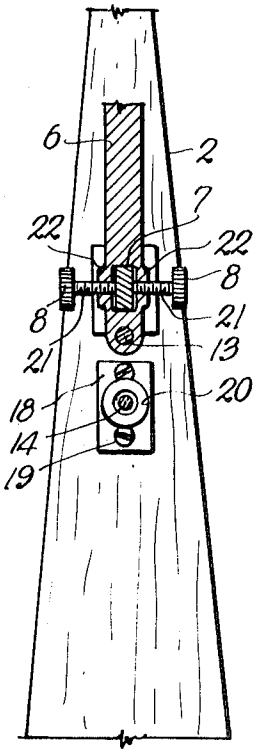


Fig. 3.

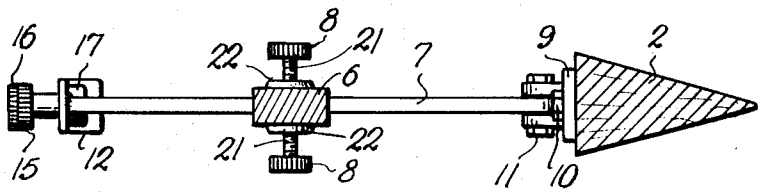


Fig. 4.

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GUSSETER GUIDE

BACKGROUND OF THE INVENTION

This invention relates to a gusseter guide for putting a gusset into a bubble of blown film.

It is known to put gussets into paper bags with gusseter guides having positioning means. For example, see U.S. Pat. No. 2,818,004 to Taylor. However, the shape of the gusseter guide sled of this invention and the positioning means, making possible positioning the sled with regard to depth into the bubble of blown film and also with regard to the angle of the sled in both transverse and lateral direction are novel.

SUMMARY

By means of this invention a gusseter guide sled, which is shaped like a wedge in both the lateral and transverse directions, can be positioned in a bubble of blown film to put a gusset into the film just as it is flattened into the pinch roll. Superior performance in providing an efficient gusseter means is provided both by the shape of the wedge and by the positioning means. The positioning means can control (1) the depth of penetration of the sled into the bubble of film, (2) the angle of the sled in the transverse direction, and (3) the angle of sled in the lateral direction. This is provided by a positioning means fastened to a part of the stationary frame portion of the building. The positioning means consists of four main components. First is a stationary member which is connected to the stationary frame portion of the building so that it is parallel to the flow of the blown bubble of film. A second major portion of the positioning means is the flat bar, which is slideably mounted through the stationary member, but held in a fixed position during operation. The stationary member has mounted on it, on each side, threaded bushings holding short threaded rods having knobs on the ends of them. The ends of the short threaded rods press against each side of the flat bar. The flat bar is pivotally attached to the side of the gusseter guide sled but the pivot is mounted so that the sled can pivot only in the transverse, or long, direction. By adjusting the short threaded rods the flat bar can be tilted in either direction, thereby tilting the sled and adjusting the angle of the sled in the lateral direction. The third component of the positioning means is a rigid member connected to the other end of the flat bar from the sled. This rigid member has apertures to receive the fourth major component of the positioning means, two long threaded rods. The first long threaded rod is rotatably mounted in a fixed position in a smooth bore aperture in the rigid member so that it is substantially parallel to the flat bar. This first long threaded rod is also mounted vertically in the stationary member in a mated threaded connection. Both long threaded rods have knobs on the ends so that they can be rotated. Thus by twisting the knob on the first long threaded bar when the flat bar is free to slide through the stationary member the depth of penetration of the sled is adjusted by screwing the first long threaded rod back and forth through mated threaded connection in the stationary member. The second long threaded rod is pivotally mounted on the gusseter guide sled at one end and mounted in a mated threaded aperture of the rigid member so that it is substantially parallel to the flat bar. Thus, by turning the knob on the second long threaded rod through the mated threaded aperture of the rigid member the angle of the sled is adjusted in a transverse, or long, direction.

BRIEF DESCRIPTION OF THE DRAWING

FIG. 1 is a partially cutaway elevation view of the gusseter guide in position in a bubble of blown film.

FIG. 2 is a closeup elevation view of the positioning means showing a portion of the sled.

FIG. 3 is a partial cross-sectional side view of the positioning means.

FIG. 4 is a partial cross-sectional top view of the positioning means.

DESCRIPTION OF THE PREFERRED EMBODIMENT

FIG. 1 shows a bubble of blown film 1 with gusseter guide sleds 2 in position to provide a gusset in the film as it is flattened in the pinch roll 3. Stationary frame 4 is a portion of the building super structure. Stationary member 6 of the positioning means is rigidly mounted on stationary frame 4 with bolts 5. Flat bar 7 passes through stationary member 6. Knobs 8 are used to turn short threaded rods 21 not shown in this FIG. Flat bar 7 is attached to gusseter guide sled 2 by means of yoke fixture 9 lag screws or bolts 10 and pin 11. Rigid member 12 is mounted on the end of flat bar 7. Rigid member 12 has apertures to receive long threaded rods 13 and 14. The aperture in rigid member 12 to receive long threaded rod 14 is also threaded. The aperture in rigid member 12 to receive long threaded rod 13 is smooth bore, and long threaded rod 13 is held in position by bushing 17. Long threaded rods 13 and 14 have knobs 15 and 16 so that they can be rotated. Long threaded rod 14 is pivotally attached to gusseter guide sled 2 by means of fixture 18 ball and socket joint 20 and screws 19. The larger views in FIGS. 2, 3 and 4 show the same elements in relationship and also show short threaded rod 21 in threaded bushing 22 mounted in stationary member 6. The detail also shows setscrew 23 is bushing 17 on long threaded rod 13.

To position the gusseter guide sled 2 for depth of penetration into blown film 1 knobs 8 are turned to loosen short threaded rod 21 from pressing on flat bar 7 so that it will slide. Then knob 15 is twisted to turn long threaded rod 13 through the threaded mated connection in stationary member 6.

To tilt the gusseter guide sled 2 in the lateral direction knobs 8 are twisted to tilt flat bar 7 which in turn tilts the sled by means of yoke fixture 9 and pin 11.

To tilt the gusseter guide sled 2 in the transverse, or long, direction, knob 16 on long threaded rod 14 is twisted so that it screws through threaded mated aperture in rigid member 12 and thus turns the sled 2 about an axis defined by pin 11 by means of the pivot connection shown as fixture 18 ball and socket joint 20 and screws 19.

Many variations of the shape of gusseter guide sled 2 can be envisioned. However, any shape which is essentially wedge-shaped in both the lateral and transverse direction is useful in this invention. The gusseter guide sled 2 can be made of any material such as metal or plastic, however wood is preferred. It is also preferred to cover the surfaces of the sled 2 which contact the plastic film, when the sled 2 is made of wood, with a hard, smooth, long wearing surface such as conventional hardboard. The gusseter guide is preferably mounted with the small end pointing against the direction of flow of the blown bubble of film. Sled 2 extends into the bubble of blown film with one elongated edge foremost.

We claim:

1. A gusseter guide for putting a gusset into a bubble of blown film comprising:

a stationary member parallel to the flow of the said bubble of blown film, said stationary member attached at one end to a stationary frame portion of the building superstructure and at the other end to a positioning means which has mounted upon it a gusseter guide sled shaped like a wedge in both the lateral and the transverse directions and extending into said bubble of blown film with one elongated edge foremost;

said positioning means comprising a flat bar extending generally perpendicularly through said stationary member and held in position by a pair of short threaded rods, one of which presses on each side of said flat bar, said pair of threaded rods respectively mounted in a pair of threaded bushings mounted respectively in each side of said stationary member, said flat bar pivotally attached to said gusseter guide sled at one end, and attached at the

other end to a rigid member having apertures to receive a pair of elongated threaded rods mounted through said rigid member;

one of said pair of elongated threaded rods being mounted through said stationary member in a mated threaded connection and rotatably mounted in a fixed position in a smooth bore aperture of said rigid member;

the other of said pair of elongated threaded rods being pivotally mounted to said gusseter guide sled and rotatably mounted through a threaded aperture of said rigid member so that said other rod is substantially parallel to said flat bar; and

means for rotating both said pair of elongated and said pair of short threaded rods.

2. The gusseter guide of claim 1 wherein the gusseter guide sled is wooden.

3. The gusseter guide of claim 2 wherein the gusseter guide sled is covered with hardboard on the surfaces which contact the blown film.

4. The gusseter guide of claim 1 wherein the gusseter guide sled is mounted with the small end pointing against the direction of the flow of the blown bubble of film.