Dec. 28, 1948. F. J. CHURNELL 2,457,128

WATER BARRIER

Filed Sept. 18, 1945 2 Sheets-Sheet 1

Fig. 1

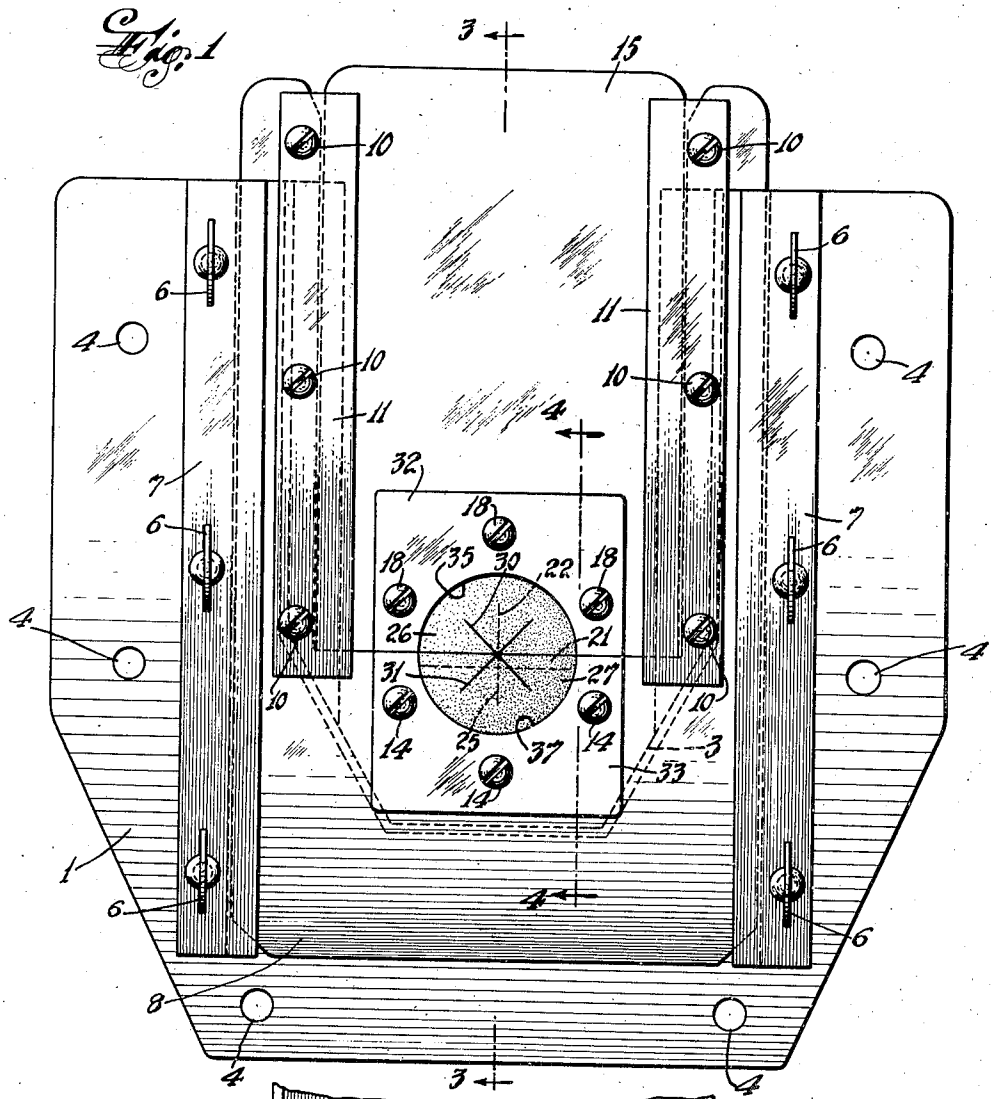
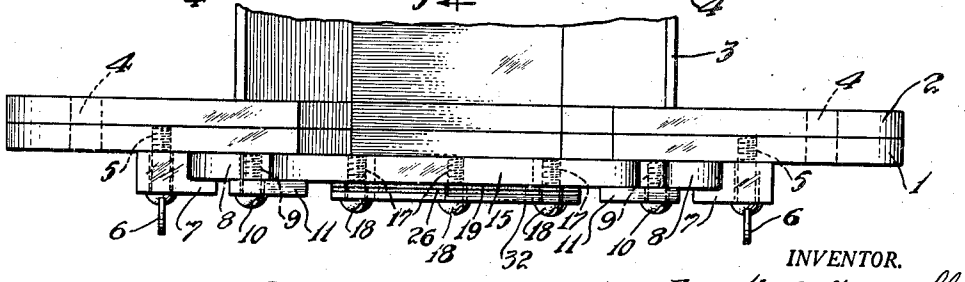


Fig. 2



INVENTOR.
Frank J. Churnell
BY
ATTORNEY

Dec. 28, 1948. F. J. CHURNELL 2,457,128

WATER BARRIER

Filed Sept. 18, 1945 2 Sheets-Sheet 2

Fig. 3

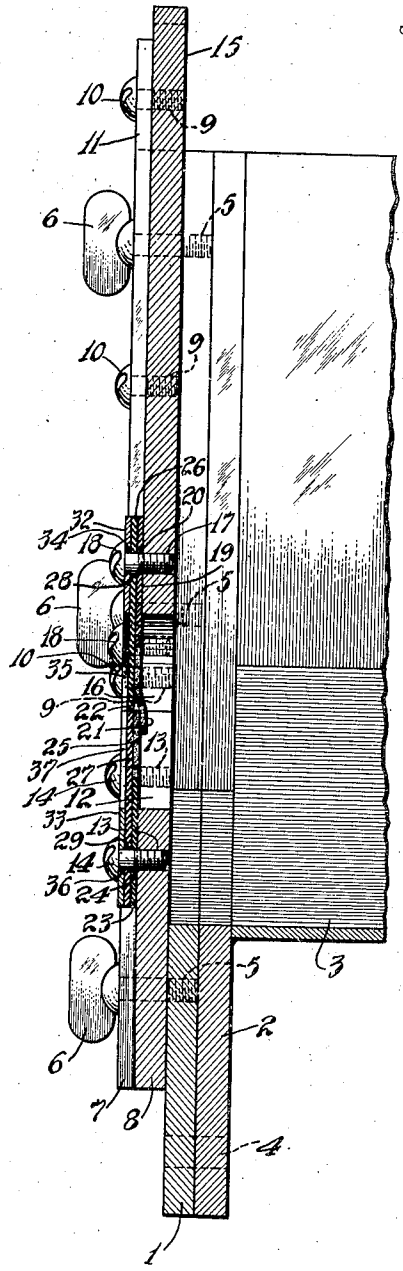
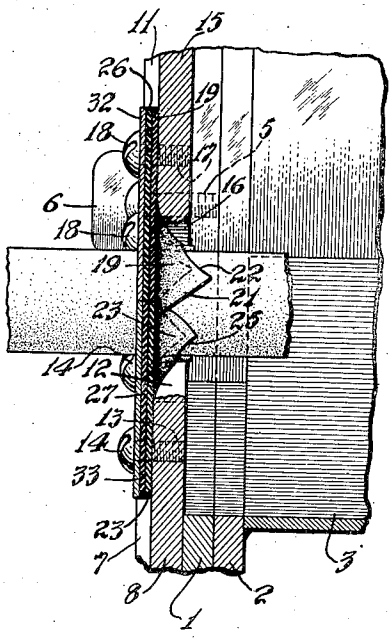


Fig. 4



INVENTOR.
Frank J. Churnell
BY
ATTORNEY

Patented Dec. 28, 1948

2,457,128

UNITED STATES PATENT OFFICE

2,457,128

WATER BARRIER

Frank J. Churnell, Bloomfield, N. J., assignor to Federal Telephone and Radio Corporation, New York, N. Y., a corporation of Delaware

Application September 18, 1945, Serial No. 617,003

2 Claims. (Cl. 61—22)

1

The present invention relates to water barriers particularly to those at the feed end of the water-trough from an extruder for cables or the like.

Difficulties have been encountered at the feed end of the water-trough from extruders in introducing the cable or any other object at the feed end of the water-trough with the minimum loss of water.

It is, therefore, the object of the present invention to provide means for providing a water barrier at the feed end of the water-trough.

It is another object of the present invention to provide a water barrier of simple construction which allows easy adjustment and separation of all elements.

With these and other objects in view the present invention will become apparent and clearly understood in connection with the following description and the drawings, in which:

Figure 1 is an elevational end view of the water barrier;

Fig. 2 is a top view of the water barrier shown in Fig. 1;

Fig. 3 is a sectional view along the lines 3—3 of Fig. 1; and

Fig. 4 is a sectional view along the lines 4—4 of Fig. 1 showing a cable inserted in the water barrier.

Referring now to the drawings the water barrier according to the present invention consists of a U-shaped front plate 1 substantially following the end flange 2 of a water-trough 3. The flange 2 and the plate 1 are equipped with a number of coordinated holes 4 adapted to receive screw bolts (not shown) in order to secure the plate 1 to the flange 2. The plate 1 is further equipped with a number of threaded borings 5 which receive wing screws 6 which are adapted for attachment of guide strips 7 of L-shaped cross-section to the plate 1. On front of the plate 1 another U-shaped plate 8 is provided between the two guide strips 7 screwed to the plate 1 and kept in properly leveled position by tightening the wing screws 6. The leg portions of the U-shaped plate 8 are equipped with a number of threaded borings 9 which receive screws 10 which secure another pair of strips 11 to the U-shaped plate 8. The top of the base of the U-shaped plate 8 has a half circular cutout 12 and around this cutout three threaded borings 13 preferably in triangular arrangement are provided adapted to receive screws 14 the purpose of which will be described later.

Into the open space of the U-shaped plate 8

2

and held between the plate 1 and the strips 11 is inserted another substantially rectangularly shaped plate 15. The bottom of plate 15 has also a half circular cutout 16 of a diameter corresponding with the diameter of the cutout 12 in plate 8. By this arrangement of the two cutouts 12 and 16 the plates 8 and 15 provide together a circular opening into the water-trough 3. The plate 15 is also equipped with three threaded borings 17 which receive screws 18 adapted for a purpose to be described later.

A smaller substantially rectangularly shaped flexible cover 19 is provided in front of the bottom of the plate 15, which cover has three holes 20 in an arrangement corresponding to the three threaded borings 17 of plate 15. The cover 19 has an extension 21 of a width corresponding with the diameter of the circular opening formed by plates 8 and 15. The cover 19 is also equipped with a vertical slot 22 extending upwards from the center of its lower margin for a length shorter than the radius of the circular opening.

A second cover 23 is provided in front of the top of the base of the U-shaped plate 8 covering the half circular cutout of the plate 8. The cover 23 is formed exactly like cover 19 except it is not provided with an extension as disclosed before in connection with cover 19. Thus cover 23 has also three holes 24 arranged corresponding with the threaded borings 13 in the plate 8. A vertical slot 25 is also provided extending from the center of the upper margin of the cover 23 downwards, however, for a length shorter than the radius of the previously mentioned circular opening in plates 8 and 15.

The two covers 19 and 23 cover entirely the circular opening formed by the plates 8 and 15 whereby the extension 21 of the cover 19 overlaps inwards a portion of the upper margin of the cover 23.

Two additional preferably rectangular covers 26 and 27 of the same size as the above described cover 23 are provided namely the cover 26 in front of the cover 19 and the cover 27 in front of the cover 23. Both covers 26 and 27 have also three holes 28 and 29, respectively, corresponding with the threaded borings 13 and 17 of the plates 8 and 15, respectively. The upper cover 26 has two slots 30 extending from its lower center at an angle of 45° upwards and the lower plate 27 has corresponding slots 31 extending from the upper center downwards at an angle of about 45°. The covers 19, 23, 26 and 27 are made of rubber, vinylite or any other similar flexible material. In front of the covers

26 and 27 are arranged two metal plates, namely an upper plate 32 and a lower plate 33 which are preferably of rectangular shape and preferably of the same size as the above mentioned covers. The upper metal plate 32 is equipped again with three holes 34 in an arrangement corresponding with the three threaded borings 17 of the plate 15. The upper plate 32 has further a half circular cutout 35 of a diameter corresponding with the diameter of the half circular cutout in plate 15. The lower metal plate 33 has also three holes 36 corresponding with the three threaded borings 13 of the plate 8 as well as a half circular cutout 36 of the same diameter as the half circular cutout of the plate 8.

As stated above the threaded borings 13 and 17, respectively, are adapted to receive screws 14 and 18, respectively, the screws 14 penetrating the holes of the metal plate 33, of the cover 27, and of the cover 23 and then to be screwed into the threaded borings 13 of the plate 8, whereas the screws 18 penetrating the holes of the metal plate 32, of the cover 26, and of the cover 19 and then to be screwed into the threaded borings 17 of the plate 15, so that all covers and front metal plates are screwed to the respective plates 8 and 15 by means of the same screws 14 and 18, respectively.

This arrangement leaves a circular opening on the outside of the plate as well as on its inside, this opening being closed up by the respective covers which are provided with slots extending from the center of the circular opening. This arrangement allows the intrusion of a cable into the trough by opening the slots of the different covers, the latter providing a tight fit around the cable which will avoid any loss of water out of the trough.

The construction according to the present invention has as a particular feature that every one of the elements and particularly the covers which will be subjected to wear can easily be separated and exchanged and also can easily be adjusted. By providing guides for the different plates it is also possible to adjust the center of the opening on different desired levels.

While I have disclosed the principles of my invention in connection with a single embodiment, it will be understood that this embodiment is given by way of example only and not as limiting the scope of the invention as set forth in the objects and the appended claims.

What I claim is:

1. A cover forming a water seal while permitting the passage of a cylindrical body, comprising two rigid plate members formed with aligned holes, to accommodate said body, and a plurality of flexible diaphragms clamped between said plate members and formed of two parts each, including a first diaphragm adjacent one of said plate members having one part which extends substantially to the center of said holes and having another part formed with an extension lying within the hole of said one plate and extending across the width of said hole, said extension overlapping the edge of said one part, and further including a second diaphragm having two parts with abutting edges, said diaphragms being formed with slots extending radially of said holes but less than the full diameter thereof, in such a manner that the slots in said first diaphragm are staggered with respect to those in said second diaphragm.

2. A cover according to claim 1 wherein each of said plate members comprises two abutting parts having complementary cutouts to form the said hole.

FRANK J. CHURNELL.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,318,656	Fitzgerald	Oct. 14, 1919
1,370,296	Edwards	Mar. 1, 1921
1,868,794	Fuller	July 26, 1932
2,193,887	Seeley	Mar. 19, 1940
2,255,829	Spang	Sept. 16, 1941
2,374,887	Ohl	Mar. 1, 1945