MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-V583-A
COMMONWEALTH OF AUSTRALIA
The Patents Act 1952-1973

APPLICATION FOR A PATENT

64327/80

I, ELIO GIANNI

of GIRU, QUEENSLAND 4809,

hereby apply for the grant of a Patent for an invention entitled:

"AN IMPROVED CONTROL VALVE FOR LOW PRESSURE IRRIGATION SYSTEMS"

which is described in the accompanying Provisional/Complete specification.

My address for service is: C/- G.R. CULLEN & COMPANY, Patent Attorneys, of 289 Queen Street, Brisbane, in the State of Queensland, Commonwealth of Australia.

DATED this 16th day of November, 1979.

ELIO GIANNI

By his Patent Attorneys,
G.R. CULLEN & COMPANY

To:
The Commissioner of Patents, Commonwealth of Australia.
COMMONWEALTH OF AUSTRALIA
Patents Act, 1952-69
DECLARATION IN SUPPORT OF AN APPLICATION
FOR A PATENT.

In support of the Application 64327/80
made by ELIO GIANNI

for a patent for an invention entitled:
"AN IMPROVED CONTROL VALVE FOR LOW PRESSURE IRRIGATION SYSTEMS"

I, ELIO GIANNI

of GIRU, 4809, Queensland, Australia

do solemnly and sincerely declare as follows:-

1. I am the applicant for the patent.

2. I am the actual inventor of the invention.

Declared at Kumunurra this 2nd day of December, 1980.

Signature of Declarant

G.R. CULLEN & COMPANY,
289 Queen Street, Brisbane,
Queensland, Australia.

To: The Commissioner of Patents
Commonwealth of Australia.
1. A low pressure irrigation control valve including a tubular body having opposed ends wherein adjacent sections of irrigation fluming may be engaged closely on each respective end, said tubular body also having a continuous side wall, there further being included a valve flap member within the interior of the tubular body which is removably secured to a stem which extends transversely to the longitudinal axis of the tubular body, said stem extending through oppositely located bearings associated with the side wall, and means being provided for manually rotating the valve flap member to open or close the control valve and thus allow or prevent fluid flow through the tubular body.

8. A method of controlling the flow of water through irrigation conduit formed from "lay flat" fluming formed from plastics material wherein a control valve as claimed in any preceding claim is interposed between adjacent sections of said fluming and operated so as to vary the flow of water through the irrigation conduit from a position wherein the water flow is fully shut off to a position wherein the water freely passes through the irrigation conduit.
COMMONWEALTH OF AUSTRALIA
The Patents Act 1952-1969

Name of Applicant: ELIO GIANNI
Address of Applicant: GIRU, Queensland 4809, Australia

Actual Inventor: ELIO GIANNI
Address for Service: G.R. CULLEN & COMPANY,
Patent & Trade Mark Attorneys,
289 Queen Street, Brisbane, in
the State of Queensland,
Commonwealth of Australia.

COMPLETE SPECIFICATION FOR THE INVENTION ENTITLED:

"AN IMPROVED CONTROL VALVE FOR LOW PRESSURE IRRIGATION SYSTEMS"

The following statement is a full description of the invention including the best method of performing it known to us:
THIS INVENTION relates to an improved control valve for low pressure irrigation systems.

It is well known to irrigate certain crops, such as sugar cane, using "lay-flat" plastic fluming, by means of which water is conducted from a pump along the top end of a paddock. Small outlet openings are formed in the fluming at about 1.5 metre spacing so that water may escape from these outlets and flow down similarly spaced drills. If the extent of the irrigation is required to be reduced, supply of water to part of the fluming may be cut off by means of a clamping device used to pinch the fluming closed.

The present invention has been devised with the general object of providing a control valve which may be quickly and easily introduced removably to a low pressure irrigation system of the type set out so that flow of water to part of the system may be readily shut off or reduced, the control valve being such that any wearing parts thereof may be simply replaced as and when required.

With the foregoing and other objects in view, the invention resides in a low pressure irrigation control valve including a tubular body having opposed ends wherein adjacent sections of irrigation fluming may be engaged closely on each respective end, said tubular body also having a continuous side wall, there further being included a valve flap member within the interior of the tubular body which is removably secured to a stem which extends transversely to the longitudinal axis of the tubular body, said stem extending through oppositely located bearings associated with the side wall, and means being provided for manually rotating the valve flap member to open or close the control valve and thus allow or prevent fluid flow through the tubular body.

Preferably there is provided within the body a sealing member such as an annular sealing ring, the valve flap member bearing against this when closed. Means may be
provided for releasably holding the valve in closed, fully open, or a number of intermediate positions.

Reference will now be made to a preferred form of the invention as shown in the attached drawings wherein:

FIG. 1 is an end view of a control valve constructed in accordance with the invention;

FIG. 2 is a sectional side view of the control valve shown in FIG. 1;

FIG. 3 is an end view of a control valve of the invention which is a modified construction when compared to FIG. 1; and

FIG. 4 is a sectional side view of the control valve shown in FIG. 3.

As illustrated, the low pressure irrigation control valve shown in FIGS. 1 - 2 includes a valve body 1 of cylindrical form, which may suitably be moulded of polyvinyl chloride, and of such external diameter that ends of sections of plastic irrigation fluming, of "lay flat" type (not shown), may be stretched to fit closely over its ends.

At the middle of the body 1, two diametrically opposed holes are formed through it to serve as bearings for a valve stem 3, which is preferably of stainless steel, with a longitudinal slot 7 formed diametrically through it for the greater part of its length. The stem is fitted rotatably in its bearings in the body, and a flap member, which may suitably be a disc of polyvinyl chloride 5, is inserted through an end of the valve body 1 and through the slot 7 in the valve stem, being secured therein by means of two screws 4 passing through diametral holes in the stem and through the valve engaged in the slot in the stem, the screws then being engaged by nuts.

One end of the stem, extending outwardly of the body, has a tapped diametral hole formed through it, and a threaded end of a handle 2 is engaged in this hole. By means of the handle 2 the valve may be moved to fully open:
or fully closed positions, and to any desired intermediate position. Means (not shown) may be provided for releasably holding the handle in any desired selected position, and for this purpose the handle may be movable adjacent to a surface of a projection moulded on the body, a pin passed through a hole in the handle and any selected one of a series of holes in this surface holding the handle in desired position. Alternatively the handle may lie between a pair of plates moulded on the body and with corresponding holes for a handle retaining pin or pins. Alternatively the handle may include a pawl selectively engageable in a band of ratchet teeth surrounding the tubular body.

For the reduction or elimination of possible leakage, an annular sealing ring 6 as shown in FIGS. 3-4 may be installed within the body 1, being a strip of resiliently compressible material located between a pair of spaced parallel retaining rings recessed into the body, the stem passing through holes in the sealing ring at diametrically opposite points.

In use, ends of succeeding lengths or sections of plastic fluming are stretched to engage tightly over the end portions of the valve body 1, and if desired clamping rings (not shown) are engaged over the plastic fluming ends to compress them into circumferential grooves about the valve body 1. When it is desired to close, or restrict, the flow of water to a fluming section, the handle is moved to appropriate position and so locked. If the valve is fully closed, it will bear against the sealing ring to prevent leakage.

To disengage the valve for replacement upon undue wear occurring, one fluming section end is disengaged from the body, the valve holding screws are disengaged, and the valve disc 5 is withdrawn and replaced by another.

The invention, although of simple character, will be found to be very effective in achieving the objects for
which it has been devised. It will, of course, be understood that the particular embodiment of the invention herein described and illustrated may be subject to many modifications of constructional detail and design, which will be readily apparent to persons skilled in the art, without departing from the scope and ambit of the invention.
The Claims defining the invention are as follows;-

1. A low pressure irrigation control valve including a tubular body having opposed ends wherein adjacent sections of irrigation fluming may be engaged closely on each respective end, said tubular body also having a continuous side wall, there further being included a valve flap member within the interior of the tubular body which is removably secured to a stem which extends transversely to the longitudinal axis of the tubular body, said stem extending through oppositely located bearings associated with the side wall, and means being provided for manually rotating the valve flap member to open or close the control valve and thus allow or prevent fluid flow through the tubular body.

2. A low pressure irrigation valve as claimed in claim 1 wherein there is provided a sealing member within the tubular body which bears against the valve flap member when it is in the closed position.

3. A low pressure irrigation valve as claimed in claim 1 wherein there is further provided means for releasably holding the valve flap member in a closed, fully open or partially open position.

4. A low pressure irrigation valve as claimed in claim 1 wherein the stem is provided with a longitudinal slot which extends through the body of the stem for the greater part of its length, said valve flap member being releasably secured within said slot.

5. A low pressure irrigation valve as claimed in claim 4 wherein there are provided one or more pairs of opposed apertures within the stem and screws which are inserted through the or each respective pair of apertures and through an aligned hole in the valve flap member.

6. A low pressure irrigation valve as claimed in claim 5 wherein the means for manually rotating the valve stem includes a laterally extending portion of said stem.
which extends outwardly from the side wall of the tubular body.

7. A low pressure irrigation valve as claimed in claim 1 substantially as herein described with reference to the accompanying drawings.

8. A method of controlling the flow of water through irrigation conduit formed from "lay flat" fluming formed from plastics material wherein a control valve as claimed in any preceding claim is interposed between adjacent sections of said fluming and operated so as to vary the flow of water through the irrigation conduit from a position wherein the water flow is fully shut off to a position wherein the water freely passes through the irrigation conduit.

DATED THIS TWELFTH DAY OF NOVEMBER, 1980

ELIO GIANNI
By his Patent Attorneys,
G.R. CULLEN & COMPANY.