Final Diploma

Patent Examination Board

Amendment of Specifications FD3

Wednesday 11 October 2017 10:00 to 13:00

INSTRUCTIONS TO CANDIDATES

1. The whole assessment task is to be attempted.
2. The marks to be awarded are given at the end of the assessment task.
3. The total number of marks available for this paper is 100.
4. Start each part of your answer on a new sheet of paper.
5. Write your answers on alternate lines.
6. Do not state your name anywhere in the answers.
7. Write clearly, as examiners cannot award marks to answer scripts that cannot be read.
8. The scripts may be photocopied for marking purposes.
   a) Use only **black ink**.
   b) Write on one side of the paper only.
   c) Write within the printed margins.
   d) Do not use highlighter pens on your answer script.
9. Instructions on what to do at the end of the examination are on the Candidate Cover Sheet.
10. Any candidate script removed from the examination room will not be marked.
11. This question paper consists of 21 sheets, including this sheet, and comprises:

    Assessment task (1 sheet)
    Client letter (1 sheet)
    Examination Report (1 sheet)
    Client application 1428571.4 (9 sheets including 1 sheet of drawings)
    Prior art reference D1 – US 4646464 (5 sheets including 1 sheet of drawings)
    Prior art reference D2 – (1 sheet)
    A copy of the claims of 1428571.4 for you to use in your answer (2 sheets).

Assessment task

You have received the letter and documents listed on the Instructions to Candidate sheet regarding United Kingdom patent application number GB 1428571.4, which has been filed at the UK Intellectual Property Office.

Your task is to prepare:

1. **a letter to the UK Intellectual Property Office in response to the Examination Report;**
2. **a set of amended claims, if considered necessary;**
3. **notes on which you would base advice to your client in which you:**
    i. **explain the actions you have taken;**
    ii. **provide full reasoning for your actions;**
    iii. **outline future actions, if any, that your client could take to secure full protection of its commercial interests.**

Your advice should take into account that further information may be required.

Your notes should only relate to the invention(s) outlined in the client's correspondence to you.

Your notes should be directed to patent matters only.

Note the following:

a) You are NOT required to make any amendments to the description of the client's patent application.

b) You should accept the facts given to you and base your answer on those facts.

c) You should not make use of any other special knowledge that you may have of the subject matter concerned.

d) You should assume that the prior art referred to is complete.

e) You should identify clearly any amended claim set and/or divisional claim(s).

Allocation of Marks

Letter: 31 marks
Claims: 34 marks
Notes: 35 marks
Total: 100 marks

Client letter

Graham's Garden Supplies

Dear Mr Crow,

I wonder whether you can deal with this matter for me. My previous agent has decided to retire, and gave me your name as someone who might be able to take on my patent affairs. As you see, we have a deadline coming up – I rang the patent office, though, and they said we still had time.

We make garden supplies of various kinds, such as tools, furniture and, as you see, bird feeders. Our recent squirrel-proof feeder works very well and sales are increasing, but the patent application seems to have hit a snag in that the document the Examiner has found shows something rather similar to ours. It says it is for keeping out large birds rather than squirrels – in fact I don't think it would work well against squirrels, because they could reach down from the top hanging point, unless you put the feeder in a squirrel-inaccessible place. Still, the mechanism is fairly similar.

Another thing is that my design makes the whole sidewall of the feed holder, which is made of mesh and so does not need perches, accessible to the small birds. The Bird & Feather design, on the other hand, only has a few holes, so can only be used by one or two birds at a time, and you have to ensure that the holes line up, which they might not do if the mechanism starts to stick or the spring deteriorates. I think the transparent materials can also be quickly damaged or destroyed by the squirrels. But there is nothing new about mesh walls for feeders, so I am unsure whether we can make anything of this.

Incidentally, when I originally designed the feeder, we were working exclusively with metal mesh materials as these were superior to the plastic and other alternatives available. However, I have recently been in contact with a new manufacturer who has a very robust plastic mesh which we'd like to move to. The use of this cheaper material results in a much more aesthetically pleasing design and colour, and we think it will make it a more saleable product.

Assuming the patent office is right and we still have time to think about it, please could you send me a draft so that we can talk about the best way to go?

Yours sincerely,

Harry Graham

Intellectual
Property
Office

Your ref:		Examiner:	M. Poppins
Application no.	1428571.4	Tel.	01633 812345
Applicant	Graham's Garden Supplies	Date of report:	18 May 2017
Latest date for reply:	18 September 2017	page	1/1

Patents Act 1977

Examination report under Section 18(3)

Basis of the examination

1. The examination has been carried out on the basis of the application as filed.

Novelty

2. The invention as claimed in claims 1–4, 6, 9 and 10 is not new in view of D1 (US 4646464). D1 shows a holder 2, apertures 42, 48, attachment 60, a moveable shroud 14, and open and closed configurations (Figures 2 and 3).

3. As concerns claims 2 and 3, the upper tube 28 is in effect a support as claimed.

Inventive Step

4. Claims 7 and 8 are rendered obvious by D2, the feeder shown in the Avian Supplies magazine, taken with D1. Moreover, it would be obvious to make a shroud out of metal instead of plastic, so claim 5 is also not inventive.

Clarity

5. In claim 1 the shroud is, in line 5, said to be mounted on the bird feeder, yet it is also stated to be a part of this bird feeder. Clarification is needed as to whether the shroud is a part of the claimed bird feeder or not.

6. The figure given in claim 6 seems improbable and may be a mistake, in which case correction is advisable.

Client application

GB 1428571.4

Bird Feeders

This invention relates to bird feeders and in particular to bird feeders that prevent squirrels from gaining access to the food.

Various different types of bird feeders are known in the art. They usually comprise a container made from a wire mesh material, the openings in the mesh being large enough for birds to be able to access food within the container but small enough to contain the food therein.

A hook is provided so that the container can be hung from the branch of a tree or other suitable supporting point.

The immense ingenuity of squirrels to gain access to bird food held in such feeders is well known. This is so even when the feeder is hung in seemingly inaccessible places.

Numerous attempts have been made in the past to make a feeder which is strong enough to stand up to the squirrels and which is configured so that the squirrels cannot gain access to the food. Hitherto, no satisfactory feeder has been devised.

It is an aim of the present invention to provide a bird feeder which offers much greater resistance to squirrels on the one hand, whilst not restricting access to birds on the other hand.

According to the present invention there is provided a bird feeder comprising: a food holder for containing bird food, having a sidewall including apertures for permitting birds access to the food; attachment means for allowing the bird feeder to be suspended from a fixing point; a shroud movably mounted with respect to the food holder between an open position in which the apertures are accessible to birds and a

closed position in which the shroud surrounds the sidewall so as to prevent access to the food; and bias means for maintaining the shroud in the open position except when an animal having a weight exceeding a predetermined level attempts to gain access to the food by standing on the shroud whereby the shroud descends to the closed position under the weight of the animal against the action of the bias means.

In a preferred embodiment, the bird feeder includes a rod for supporting the food holder at its lower end, the rod being supported at its upper end for allowing the bird feeder to be suspended from a fixing point.

In a preferred embodiment, the shroud is formed of metal to ensure resistance to attack by squirrels.

The sidewall of the food holder is ideally of mesh formed of galvanised wire for durability not only against attack from squirrels but also against the weather. Alternatively, the sidewall may be formed of stainless steel wire mesh or even of perforated sheet metal.

The shroud is spaced from the food holder by no more than 1 to 1.5 mm so as to prevent squirrels from forcing their claws between the shroud and food holder and forcing the latter open.

The distance between the attachment of the bird feeder and the lower open end of the shroud is preferably greater than the reach of the squirrel in order to prevent the squirrel from hanging from the attachment means with its hind legs and getting food from the food holder with its front claws.

Embodiments of the invention have the advantage that they offer an effective and durable squirrel-proof bird feeder. There is no need to provide perches, as small birds can perch directly anywhere on the wire mesh sidewall, since its whole surface is exposed until the weight of an animal pulls the food holder down.

The invention will now be further described by way of example, with reference to the accompanying drawings, in which:

Figure 1 is a sectional view of a bird feeder embodying the present invention; and

Figure 2 is a view of the feeder in the closed configuration.

As shown in **Figure 1**, a bird feeder comprises a food holder 1 made of a galvanised wire mesh material. The food holder is generally cylindrical in shape and attached at its upper end to a support disc 3. The food holder 1 is closed at its lower end by means of a closure cap 5, which is in the form of a metallic disc and resilient side flanges gripping the bottom end of the food holder. The cap enables the user to refill the holder when the feeder is detached from its fixing point and inverted.

The food holder 1 has a multiplicity of apertures 7 by virtue of the fact that the food holder sidewall is formed from the mesh material. The apertures 7 are sufficiently small to contain bird food within the food holder 1 but sufficiently large to enable birds to gain access to the food. The wire diameter, about 2 mm, and mesh size, say 5-8 mm, are also suitable for small birds to grasp easily. In principle the sidewall could be a cylinder of sheet metal, with a number of perforations, but metal mesh is preferred.

The food holder 1 is connected to a fixing point 9 via a hook 11 connected to one end of a rod 13 of the bird feeder. The other end of the rod 13 is connected to the support disc 3, thus forming the support to which the food holder 1 is attached. The hook 11 forms the attachment means of the bird feeder.

A shroud 15 formed from a metallic material such as copper, steel or aluminium is slidably mounted on the support, i.e. on the rod 13, so as to move with respect to the food

holder 1. For ease of manufacture, the shroud 15 may be formed from a generally cylindrical material. At its upper end the shroud 15 has a roof portion 17 formed from wood or a plastics material. The roof portion is pitched so as to provide a surface which is difficult for squirrels to grip, and further has a downwardly extending portion 19. The roof portion 17 can be attached to the end of the shroud 15 in a known way by any one of a number of methods. The rod 13 extends through an opening 21 in the roof portion 17.

A sleeve 23 extends downwardly from the opening 21 and has a diameter slightly larger than that of the rod 13, to allow the roof portion 17 and shroud 15 to slide freely on the rod 13.

A helical spring 25 is disposed between the roof portion 17 and the support 3 for maintaining the shroud in an open position. In this position, essentially the whole sidewall surface is exposed and easily accessible to birds, as is evident in Figure 1.

The force constant of the spring is such that the spring overcomes the weight of the shroud and the roof portion in order to maintain them in the open position, but is sufficiently small that, when an animal not intended to feed from the bird feeder stands on the shroud 15 or roof portion 17, the shroud will descend against the biasing action of the spring 25, thus closing the apertures. This is illustrated in **Figure 2**, which shows the spring 25 compressed and the shroud 15 entirely covering the feed holder.

The helical spring 25 lies on the outer surface of the sleeve 23 in Figure 1. However, the helical spring 25 may alternatively be housed between the rod 13 and the inside surface of the sleeve 23 provided that the inside diameter of the sleeve 23 is large enough to accommodate both the spring 25 and the rod 13. The advantage with the latter configuration is that the spring 25 gathers in the annular space between the rod 13 and the sleeve 23 as the shroud 15

descends. The degree to which the spring buckles laterally is reduced, thereby enhancing the durability and smooth operation of the bird feeder.

The bird feeder is preferably hung from a fixing point 9 which is sufficiently isolated to prevent an unwanted animal, in particular a squirrel, jumping from a tree directly on to the food holder 1. In this case, the only way the animal can gain access to the food holder is by climbing onto the roof portion 17 and shroud 15 via the fixing point 9. The shroud 15 will then descend under the weight of the animal (typically about 500 g) so as to cover the food holder 1, thereby preventing the animal from gaining access to the food.

The shroud 15 should be at least as long as the food holder 1 so that the open end 27 of the shroud 15 extends to below the cap 5 when in the closed position. In fact, the length of the shroud should be greater than or equal to the combined lengths of food holder 1 and spring (when in its compressed state).

The shroud 15 is also at least as long as the reach of the squirrel to prevent the squirrel from gripping the fixing point 9 or hook 11 with its hind legs and extending over the length of the shroud 15 to reach the food holder 1 with its claws without putting weight onto the shroud 15. A minimum length might be of the order of 250 mm. The height of the roof portion 17 may be of the order of 4.5 cm.

The shroud 15 and food holder 1 are preferably cylindrical and are of similar dimension so that there is only 1 to 1.5 mm space between the inner surface of the shroud 15 and the outer surface of the food holder 1. This makes it difficult or impossible for a squirrel to force its claws between the shroud and food holder with a view to gaining access to the food holder by forcing off the cap 5. The shape may be other than cylindrical, such as square. The important aspect is that the shape of the food holder 1 matches the

shape of the shroud, that is to say, the shroud slides closely over the food holder 1.

The shroud is without apertures, at least in the portion of the shroud lying adjacent to the sidewall of the holder when in the closed position. If the food holder is a perforated cylinder rather than a mesh, it is sufficient that the shroud has no apertures opposite the perforations.

The open end 27 of the shroud is flared. This strengthens the shroud so as to prevent it from becoming deformed if the bird feeder is dropped.

CLAIMS

1. A bird feeder comprising: a food holder, for containing bird food, having a sidewall including apertures for permitting birds access to the food; attachment means for allowing the bird feeder to be suspended from a fixing point; a shroud movably mounted on the bird feeder between an open position, in which the apertures are accessible to birds, and a closed position in which the shroud surrounds the sidewall so as to prevent access to the food; and bias means for maintaining the shroud in the open position except when an animal having a weight exceeding a predetermined value attempts to gain access to the food by standing on the shroud, whereupon the shroud descends to the closed position under the weight of the animal against the action of the bias means.

2. A bird feeder according to claim 1, comprising a support for supporting the food holder at one end thereof, the attachment means being supported at the other end of the support for allowing the bird feeder to be suspended from the fixing point.

3. A bird feeder according to claim 2, wherein the support includes a rod on which the shroud is slidably mounted.

4. A bird feeder according to claim 3, wherein the bias means is in the form of a helical spring positioned on the rod and is disposed between the shroud and the food holder.

5. A bird feeder according to any preceding claim, wherein the shroud is formed of metal, such as copper, steel or aluminium.

6. A bird feeder according to any preceding claim, wherein the shroud has a length of about 250 cm.

7. A bird feeder according to any preceding claim, wherein the sidewall is formed from a metal mesh or perforated sheet metal.

8. A bird feeder according to claim 7, wherein the mesh is of galvanised wire or stainless steel.

9. A bird feeder according to any preceding claim, wherein the inner surface of the shroud has substantially the same shape as the outer surface of the sidewall.

10. A bird feeder according to any preceding claim, wherein the shroud and the food holder are both cylindrical.

Application drawings

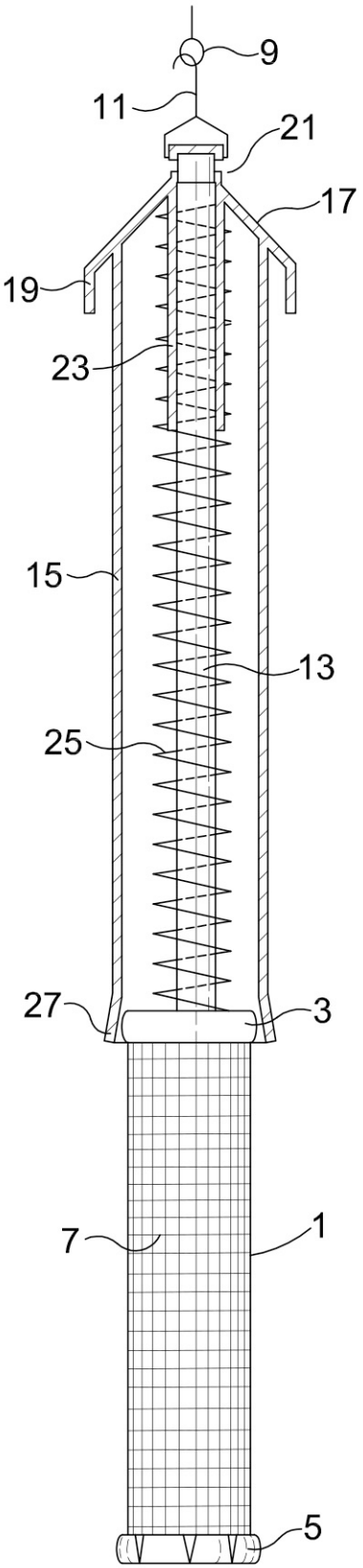


Fig. 1

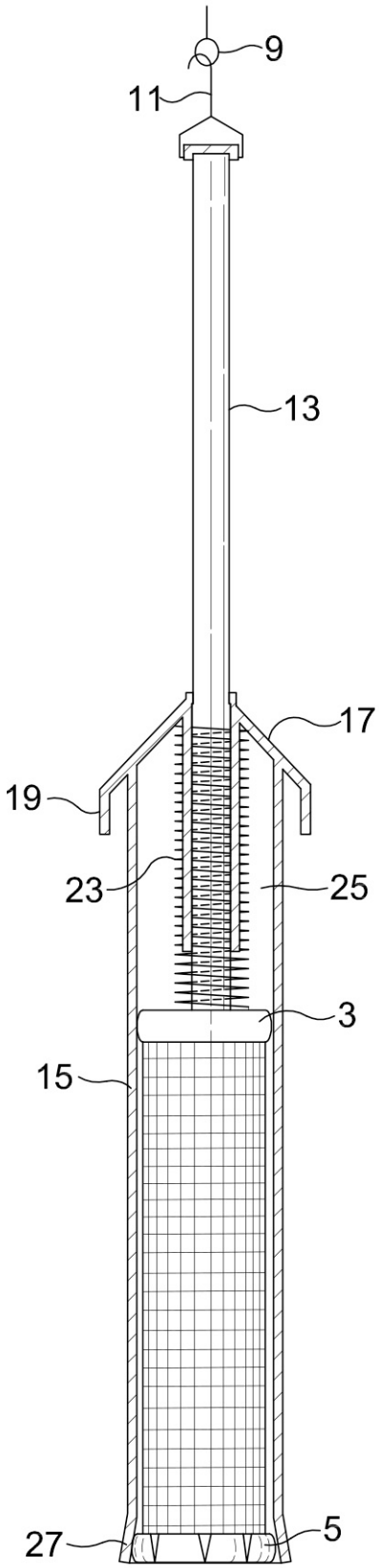


Fig. 2

Prior art reference D1 – US 4646464

US 4,646,464

Granted March 3rd, 1982

Bird & Feather, Inc.

This invention relates to selective bird feeders, i.e., bird feeders which are selective in the sense that only birds of less than a predetermined weight can gain access to birdseed or feed within the feeder.

BACKGROUND AND PRIOR ART

Many persons who feed birds want to use a bird feeder that is selective as to the maximum size of a bird that is able to extract feed from a feeder. This limitation or selection thereby excludes larger birds such as pigeons, and animals, such as squirrels, which tend to frighten away smaller birds and consume excessive quantities of feed.

SUMMARY OF THE INVENTION

One of the objects of the invention is to provide a bird feeder that is simple in design and can be manufactured at low cost while being effective to selectively limit access to bird feed in accordance with the weight of a bird.

Another object is to provide a bird feeder which allows both people and birds to readily see any bird feed within the feeder.

A bird feeder in accordance with the invention has a vertical cylindrical hopper provided with at least one side opening. A cylindrical concentric shroud is mounted on the hopper for movement relative thereto under the bias of a compression spring. The shroud has an opening alignable with the hopper opening. A bird perch is attached to the shroud whereby heavier birds or animals cause the shroud to move down and misalign the openings to preclude access to the feed while allowing lighter birds to obtain feed through the normally aligned openings.

Thus, the present invention includes an inner feed hopper or holder surrounded by a movable shroud which has openings therein that are normally aligned permitting access to the feed by lighter birds but which become misaligned to preclude access to the feed by heavier birds or animals.

BRIEF DESCRIPTION OF THE DRAWINGS

Other objects and advantages of the invention will be apparent from the following description taken in connection with the accompanying drawings wherein:

FIG. 1 is a top plan view of a bird feeder embodying the invention;

FIG. 2 is a vertical view, partly in section, along reference lines 2--2 of FIG. 1, showing the relationship of the parts in the normal feeding position;

FIG. 3 is a view similar to FIG. 2 showing the relationship of the parts in the non-feeding position; and

FIG. 4 is a side elevational view, viewed in the direction of reference arrow 4 in FIG. 2, of a detail.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring now to **FIGS. 1 and 2**, a bird feeder 10 comprises a hopper or container 12 for holding a supply of birdseed or other feed. The container 12 is adapted to be supported in a vertical position and is surrounded by a shroud 14. A coil compression spring 16 is mounted on the container 12 and supports the shroud 14 on the container 12 for movement between the two positions shown in FIGS. 2 and 3 as described below. Three feeding rungs or bird perches 20, 21 and 22 are mounted on the shroud 14 and are spaced equiangularly about the shroud axis; they are also at different heights along it so as to afford access to birdseed at different levels in the container. Both the container 12 and the shroud 14 are made of transparent plastic to allow external observation of the feed and level thereof.

The container 12 is in the form of a cylinder having a circular cross section. The container 12 has a lower or main portion or sidewall 24, the bottom of which is closed by a circular plate or floor 26. An upper portion or sidewall 28 is of a smaller diameter than the lower portion 24 and is joined thereto by a circular, ring-shaped shoulder 30. The total length of the container 12 is roughly four times the diameter of the main portion 24 to accommodate a sufficient quantity of feed.

The shroud 14 is similarly cylindrically shaped, with a circular cross section, but has a diameter greater than that of the container 12. The shroud 14 has a sidewall 32 open at its lower end. The upper end of the sidewall 32 is connected to and integral with a ring-shaped upper end wall 34 that overlies and is spaced from the container shoulder 30. A spring 16 extends between the upper surface of the container

shoulder 30 and the lower surface of the shroud end wall 34. The upper portion 28 of the container extends through and above the wall 34 and is open to provide an opening through which feed can be placed or poured into the container 12. A removable cap 36 fits over the upper end of the upper portion 28.

A retainer pin 38 is connected to or mounted upon the container 12 and extends radially outwardly through a slot 40 in the sidewall 32. The end walls of the slot 40 – also shown in **FIG. 4** – limit relative movement between container 12 and shroud 14 and define the two limit or end positions of movement of the shroud 14 relative to the container 12. The pin 38 also prevents relative rotation between the container 12 and the shroud 14 and holds these parts together, with the spring 16 between them.

The container 12 has an access opening 42 which co-operates with a similarly shaped hole or opening 44 in the shroud 14 to control access through the shroud to the feed. Openings 42 and 44 are circular and each have a diameter sufficient to allow small birds to peck at and reach feed immediately inside the hole 42. The perch 20 is located at a distance beneath the hole 44 so that small birds can stand thereon while feeding. Access openings 48 and 50 in the container 12 and the shroud 14 are located near the bottom of the feeder 10 and are associated with the second perch 21 to allow birds to feed there, particularly when the level of feed in the container 12 is low. The third perch 22 is located vertically between perches 20 and 21 and is adjacent to access openings (not shown) similar to 42, 44, 48 and 50, to allow birds to feed while standing on the perch 22.

The feeder 10 is intended to be supported or hung vertically. To accomplish this, the feeder 10 is provided with a wire hanger 60 attached to the upper end of the container 12.

The spring 16 has a diameter between those of the neck portion 28 and the shroud wall 32 and is coaxial with them. The compressible travel of the spring 16 is equal to or slightly greater than the length of movement of the shroud 14 between the two limit positions. The spring 16 also has a spring constant chosen to accommodate the sizes of the birds desired to obtain feed. When the shroud is in the position shown in FIG. 2, the spring 16 is compressed slightly as it bears the weight of the shroud 14 and perches 20, 21 and 22. The spring 16 can be precompressed to force the pin 38 against the lower end of slot 40, the precompression being sufficient that no movement of the shroud 14 will occur unless the weight of a bird or birds on the perches exceeds a predetermined value. The spring constant of the

spring 16 and the diameter of the access holes determine the predetermined weight of a bird which will close or vertically misalign the access openings and prevent access to feed.

To use the feeder 10, it must first be supported in a vertical position by the hanger wire 60. The cap 36 is then removed and the container 12 filled with feed. Light birds can then feed at any one or all perches. As the level of feed falls, such feeding will be limited to the lower perches. In the normal feeding position shown in FIG. 2, all of the access holes in the container 12 are aligned and concentric with the corresponding access holes in the shroud 14. When the weight of birds or animals on the perches exceeds a predetermined level, the shroud 14 moves downwardly to the position shown in **FIG. 3**, wherein the shroud or sidewall 32 completely covers the access openings in the container 12 to preclude access to the feed. In this position, the spring 16 is substantially fully compressed.

The above-described feeder has several advantages. There are few moving parts and no close tolerances so the feeder is reliable and should have a long life. The parts have simple shapes and are low in number so the feeder is relatively inexpensive to manufacture. The cap 36 covers or overlies exposed feed in the container 12 and prevents vertically falling rain from directly wetting the feed.

D1 drawings

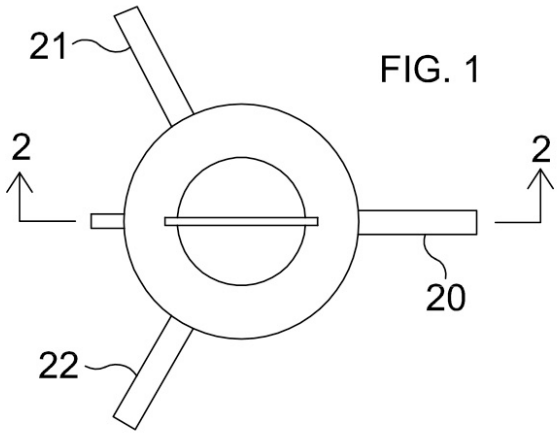


FIG. 1

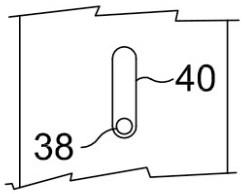


FIG. 4

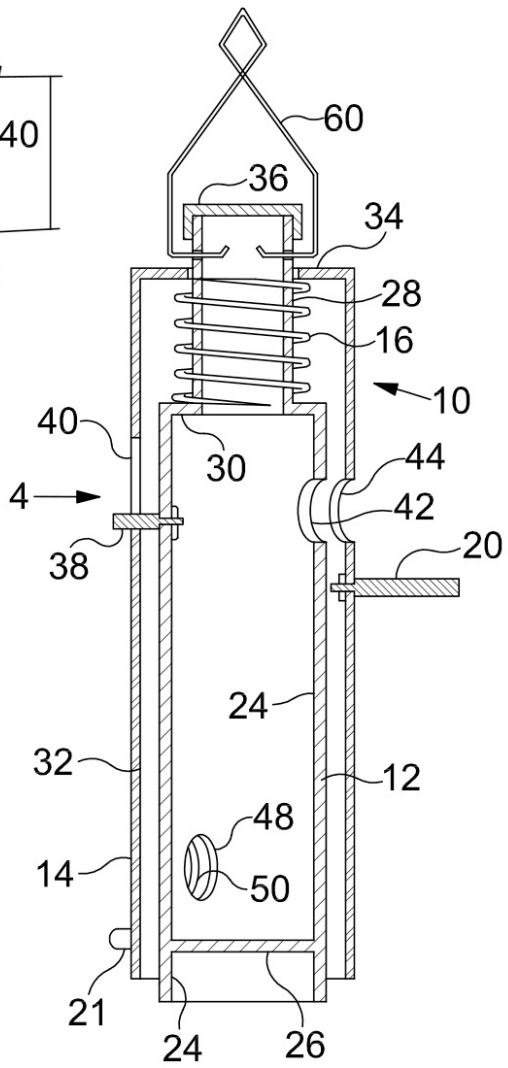


FIG. 2

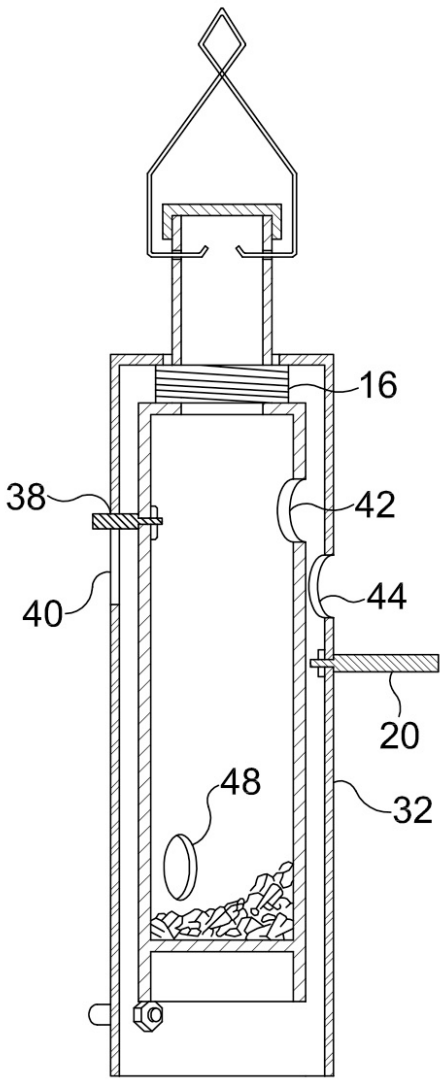


FIG. 3

Prior art reference D2

AVIAN SUPPLIES MAGAZINE October 1985

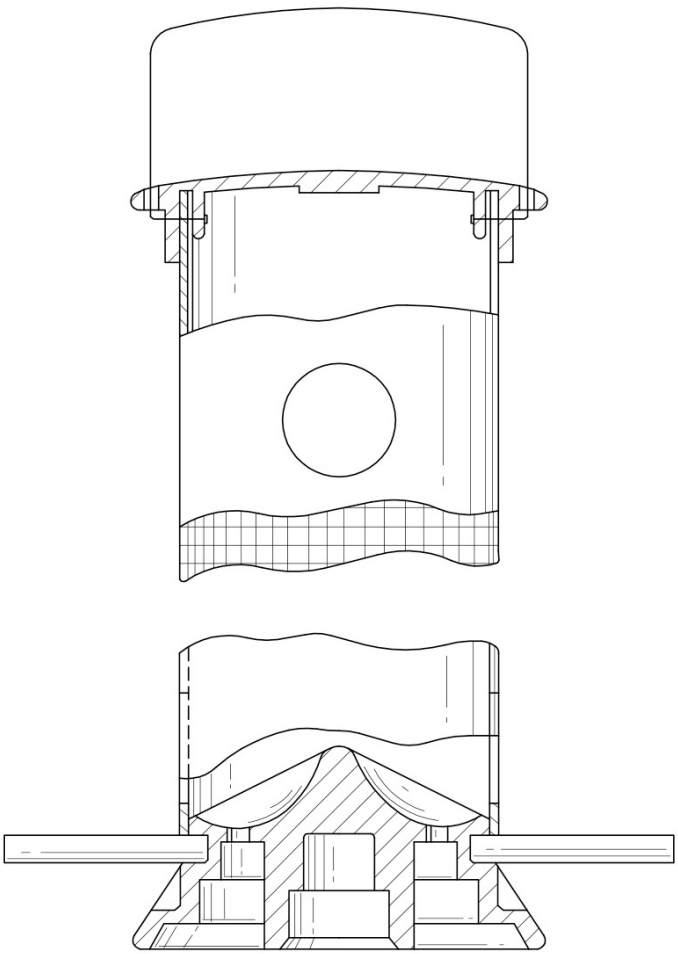
REVIEW OF “SMOOTHFLOW” BIRD FEEDER

This bird feeder is excellent for wild birds. It comes in two versions, one where the container is a tube of mesh, and the other where the container is a tube of plastics material with individual holes spaced around it. Food descends in the container by gravity. Although the container has a large diameter and so contains a good supply of seed, the central area of the container is still accessible to the birds because of the special design of the upwardly projecting plug located in the middle of the container base.

The base is made of aluminium, so is squirrel-resistant. Shields prevent loss of food particles by falling out of the holes.

A good budget buy.

D2 drawing



A copy of the claims

CLAIMS

1. A bird feeder comprising: a food holder, for containing bird food, having a sidewall including apertures for permitting birds access to the food; attachment means for allowing the bird feeder to be suspended from a fixing point; a shroud movably mounted on the bird feeder between an open position, in which the apertures are accessible to birds, and a closed position in which the shroud surrounds the sidewall so as to prevent access to the food; and bias means for maintaining the shroud in the open position except when an animal having a weight exceeding a predetermined value attempts to gain access to the food by standing on the shroud, whereupon the shroud descends to the closed position under the weight of the animal against the action of the bias means.

2. A bird feeder according to claim 1, comprising a support for supporting the food holder at one end thereof, the attachment means being supported at the other end of the support for allowing the bird feeder to be suspended from the fixing point.

3. A bird feeder according to claim 2, wherein the support includes a rod on which the shroud is slidably mounted.

4. A bird feeder according to claim 3, wherein the bias means is in the form of a helical spring positioned on

the rod and is disposed between the shroud and the food holder.

5. A bird feeder according to any preceding claim, wherein the shroud is formed of metal, such as copper, steel or aluminium.

6. A bird feeder according to any preceding claim, wherein the shroud has a length of about 250 cm.

7. A bird feeder according to any preceding claim, wherein the sidewall is formed from a metal mesh or perforated sheet metal.

8. A bird feeder according to claim 7, wherein the mesh is of galvanised wire or stainless steel.

9. A bird feeder according to any preceding claim, wherein the inner surface of the shroud has substantially the same shape as the outer surface of the sidewall.

10. A bird feeder according to any preceding claim, wherein the shroud and the food holder are both cylindrical.