PATENT REQUEST: STANDARD PATENT

I/We, the Applicant(s) and Nominated Person(s) specified below, request I/We be granted a patent for the invention disclosed in the accompanying standard complete specification.

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[54] Invention: A Male Excluder Poultry Feeder

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ASSOCIATED PROVISIONAL APPLICATION DETAILS

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By: [Signature]
Registered Patent Attorney

OUR REF: 326925

S&F CODE: 7225
I, Fraser P. Old, of 31 Market Street, Sydney, New South Wales, 2000, Australia, being the Patent Attorney for the Applicant/Nominated Person in respect of Application No. 42107/96, state the following:-

The Applicant/Nominated Person has entitlement from the actual inventors: Mr Gerry Bigeni ("Mr Bigeni") of 6 Barfil Crescent, Wentworthville, New South Wales, 2145, Australia; and Mr Francis Hedley Horwood ("Mr Horwood") of 34 Niblick Crescent, Oatlands, New South Wales, 2117, Australia as follows:

The Applicant/Nominated Person is the assignee of Mr Bigeni.

The Applicant/Nominated Person, by virtue of a Contract of Employment between Mr Horwood as employee and the Applicant/Nominated Person as employer, is a person which would be entitled to have the patent assigned to it if a patent were granted on an application made by Mr Horwood.

DATED this Sixteenth Day of April 1998

Fraser P. Old
Title:
A MALE EXCLUDER POULTRY FEEDER

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Prior Art Documents
FR 2685854
FR 2436559
EP 288101

Claim

1. A poultry feeding apparatus comprising:

   a male exclusion grill comprising an annular collar having a plurality of curved arm members which extend to a rim of said male-exclusion grill;

   a cage coupled to a feeder pan, said cage comprising a plurality of curved arm members which extend over said feeder pan to a cage rim; and

   releasable interconnecting means to interconnect the rim of said grill and the rim of said cage.
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Invention Title: A Male Excluder Poultry Feeder

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[31] Application No(s): PN0697  
[33] Country: AU  

The following statement is a full description of this invention, including the best method of performing it known to me/us:-
A MALE EXCLUDER POULTRY FEEDER

Field of the Invention

The present invention is directed towards the field of poultry feeders for dispensing feed to poultry livestock. In particular, it is directed to poultry feeders that can be selectably utilised to prevent male poultry from accessing the interior of the poultry feeder.

Background of the Invention

In the prior art, grills have been used to restrict access to poultry feeders. A conventional poultry feeder 1 and a conventional male exclusion grill 12 shown in Fig. 1 can be coupled together to restrict male poultry (which have combs) from accessing the interior of the poultry feeder 1.

An auger pipe 5 is coupled to receiver 7 having an aperture 10 (a similar aperture on the opposite side is not shown). The pipe 5 includes a feed opening (not shown) disposed within the receiver 7 for providing poultry feed to the poultry feeder 1. An auger 6 is rotatably disposed in the distribution pipe to transport the poultry feed. The receiver 7 is coupled to a feeder tube 11. The receiver 7 and the feeder tube 11 typically comprise a series of plastic mouldings.

A shut-off valve 2 is incorporated in the receiver 7 and consists of a shutter 3A reciprocally mounted within a shutter aperture 4 as to be substantially at right angles to the pipe 5. The shutter 3A also includes an opening 3B for connecting the receiver 7 to the inside of the feeder tube 11. A cage 9 comprising a plurality of downwardly curved arms 9A-9H extends from the receiver 7 and has a gap 9I that allows the cage 9 to be radially expanded. The rim of the cage 9 is mated with the rim of a feeder pan 8. A large gap is defined between each pair of adjoining cage arms 9A-9F that allows poultry including day old chickens access to the interior of the pan 8.

Such a conventional poultry feeder 1 utilises a circular male-exclusion grill (or skirt) 12 to prevent male poultry from accessing the interior of the feeder pan 8 containing poultry feed while allowing female birds access. The circular grill 12 has a
plurality of grill arms 15A-15L which curve downwardly to connect with a grill rim 17. The grill arms 15A-15L define a plurality of apertures and are positioned to be aligned with the corresponding cage arms 9A-9H of the cage 9 of the poultry feeder 1.

The apertures defined by the grill arms 15A-15L are similar to the gaps defined by the plurality of cage arms 9A-9H having the same spacing between the centres. The conventional exclusion grill 12 is split radially and can be expanded to provide a gap 16 (indicated by two double ended arrows) to fit the grill 12 onto the cage 9 without decoupling the poultry feeder 1 from the distribution pipe 5. With the male-exclusion grill 12 overlying the cage 9, male poultry are prevented from feeding from the interior of the poultry feeder 1 because the additional exclusion grill has a reduced opening between the arms 15.

The grill 12 is utilised to prevent male poultry from consuming the food of female poultry. For example, a common ratio of female to male "broiler" poultry for producing hatchable eggs is 10 to 1. In order to produce the largest quantity of better quality eggs, the body weight of the poultry must be maintained at optimal, known values. In particular, the weight of male poultry must be maintained, without significant deviation, close to a set value. Deviation from this weight (due to overeating for instance) can result in decreased quality and/or quantity of eggs produced from the females due to insemination by the particular male poultry.

The grill 12 can also be used to prevent day old and other small chicks from entering the poultry feeder 1 through the large gaps defined by cage arms 9A-9H and becoming trapped therein. Once trapped in the feeder, such chicks may die from dehydration or suffocation.

However, the conventional male exclusion grill 12 cannot be easily and securely attached to the poultry feeder 1. This disadvantage is due to the fastening mechanism of the conventional grill 12. Each grill arm 15A-15L incorporates a slot with opposing tabs located in the longitudinal edges of the slot (not shown) to engage the corresponding cage arms 9A-9H of the poultry feeder 1. Such slot engaging tab
arrangements used to fasten the conventional grill 12 to the cage 9 are relatively
difficult and cumbersome to attach to the arms 9A-9H, and likewise are difficult to
disengage. In particular, the large number of individual engagements which must be
made slow the installation procedure and means that the grill 12 is often not properly
installed.

It is the object of the present invention to provide an arrangement by which
easy and correct installation can be better achieved.

Summary of the Invention

In accordance with an aspect of the present invention, there is disclosed a
poultry feeding apparatus comprising:

- a male exclusion grill comprising an annular collar having a plurality of curved
  arm members which extend to a rim of said male-exclusion grill;
- a cage coupled to a feeder pan, said cage comprising a plurality of curved arm
  members which extend over said feeder pan to a cage rim; and
- releasable interconnecting means to interconnect the rim of said grill and the
  rim of said cage.

Brief Description of the Drawings

The preferred embodiment of the invention will now be described with
reference to the drawings in which:

Fig. 1 is an exploded perspective view illustrating a conventional poultry
feeder and a conventional split male-exclusion disposed above the cage of the
poultry feeder;

Fig. 2 is an exploded perspective view illustrating a male excluder grill and a
poultry feeder according to the preferred embodiment;

Fig. 3 is a perspective view illustrating the male excluder grill coupled to a
cage of the poultry feeder according to the preferred embodiment; and
Fig. 4 is a partial cross-sectional view along the line IV-IV of Fig. 3 and illustrating a tab of the cage engaged with the rim of the grill according to the preferred embodiment.

**Detailed Description**

A male excluder grill 29 and a poultry feeder 18 (both of which are preferably fabricated from plastics according to the preferred embodiment) are shown separated in Fig. 2 and joined in Fig. 3. The grill 29 and feeder 18 can be coupled together to prevent male poultry from accessing the poultry feed in the poultry feeder 18. An auger pipe 22 for transporting feed in a poultry feeding system is coupled to a receiver 24 via apertures 27 of the poultry feeder 18 (the far aperture 27 is not shown). An auger 23 is rotatably disposed within the pipe 22 to transport the feed. A cage 26 that includes a plurality of cage arms 26A-26F extends from the receiver 24. The cage arms 26A-26F extend to a cage rim, which in turn surmounts a feeder pan 25. The cage 26 contains one or more outwardly extending tabs 36A-36F incorporated in a number of cage arms 26A-26F while the cage 26 shown in Figs. 2 and 3 illustrates a tab 36A-36F at each cage arm 26A-26F, it should be apparent to a person skilled in the art that the invention can be utilised with fewer cage arms 26A-26F having such tabs.

The receiver 24 includes a shut-off valve for connecting and disconnecting the poultry feeder 18 to and from the pipe 22. The shut-off valve includes a shutter 19 reciprocally mounted underneath, and parallel to, the auger pipe 22. The shutter 19 extends through the receiver 27 via an aperture 21 and a similar aperture is located in the opposite side of the receiver 24 (not shown). The shutter 19 includes a feed access aperture 20.

The male excluder grill 29 is a unitary structure consisting of a collar 30, an intermediate surface 31, and a rim 32. The intermediate surface 31 is coupled to the rim 32 by a plurality of grill arms 31A-31L that define a plurality of reduced size
apertures for preventing male poultry from accessing the interior of the poultry feeder 18 as described below.

The poultry feeder 18 is decoupled from the distribution pipe 22 to engage or disengage the male excluder grill 29 from the poultry feeder 18. This is preferably facilitated by forming the receiver 24 into two releasably engagable parts.

The male excluder grill 29 shown in Fig. 3 is coupled to the cage 26 of the poultry feeder 29. The apertures defined by the plurality of grill arms 31A-31L are much smaller than the gaps defined by the plurality of cage arms 26A-26F (indicated by dashed lines), thereby preventing the heads of larger male poultry from accessing the interior of poultry feeder 18. In particular the grill arms 31A-31L overlie corresponding cage arms 26A-26F.

At least some of the cage arms 26A-26F are formed as the cage arm 26F shown in Fig. 4 in order to include an outwardly extending notched tab 36F or clip/catch mechanism. The outwardly extending notched tab 36F connects with an engaging ridge in the rim 32 of the feeder pan 25 to couple it to the cage 26. A notch 34 formed in the outward vertical edge, being substantially a curved indentation or cut-out, is provided in the outwardly extending tab 36F to releasably snap engage the rim 32 of male exclusion grill 31. As indicated in Fig. 4, the grill arm 31A overlies the cage arm 26F, and is engaged therewith by "snapping" the rim 32 of the male exclusion grill 29 into the notch 34 of the outwardly extending tab 36F. Thus, the male exclusion grill 29 and the cage 26 according to the preferred embodiment provide an improved poultry feeder 18 in which the male exclusion grill can be snapped onto, or otherwise fully attached and detached from, the poultry feeder 18.

The grill 29 is quickly and easily fully engaged with the cage 26. Since there may be upwards of 500 feeders 18 depending from a single auger pipe 22 this represents a substantial saving in time spent manipulating small components. There is some time lost in removing and replacing the feeder 18 from the pipe 22, however, overall there is a substantial saving.
The foregoing describes a specific embodiment of the present invention and modifications, obvious to those skilled in the art, can be made thereto without departing from the spirit and scope of the invention.
The claims defining the invention are as follows:

1. A poultry feeding apparatus comprising:
   a male exclusion grill comprising an annular collar having a plurality of curved arm members which extend to a rim of said male-exclusion grill;
   a cage coupled to a feeder pan, said cage comprising a plurality of curved arm members which extend over said feeder pan to a cage rim; and
   releasable interconnecting means to interconnect the rim of said grill and the rim of said cage.

2. The poultry feeding apparatus according to claim 1 wherein said releasable interconnecting means comprises:
   an outwardly extending tab formed in one or more cage arms wherein said tab comprises a notch adapted to receive a portion of said rim of said male exclusion grill.

3. The poultry feeding apparatus according to claims 1 or 2 wherein said cage comprises at least two notches for engaging said cage rim to a rim of said feeder pan.

4. The poultry feeding apparatus according to claims 2 or 3 wherein said releasable interconnecting means further comprises said rim of said grill being adapted to snappingly engage with said notch.

5. The poultry feeding apparatus according to anyone of claims 2 to 4 wherein said notch is formed in the outward vertical edge of said tab.

6. The poultry feeding apparatus according to claim 5 wherein said notch has a substantially semi-circular shape and the inner surface of said male exclusion grill is complementarily adapted for mating engagement with said notch to provide snap engagement therebetween.

7. A poultry feeding apparatus substantially as hereinbefore described with reference to Figs. 2 to 4 of the accompanying drawings.

DATED this Nineteenth Day of January 1996

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Patent Attorneys for the Applicant

SPRUSON & FERGUSON
The present invention provides a poultry feeding apparatus (18) comprising a male exclusion grill (29) comprising an annular collar (30) having a plurality of curved arm members (31A to 31L) which extend to a rim (32) of the male-exclusioned grill (29); a cage (26) coupled to a feeder pan (25), the cage (26) comprising a plurality of curved arm members (26A to 26F) which extend over the feeder pan (25) to a cage rim; and releasable interconnecting means (36F, 34) to interconnect the rim (32) of the grill (29) and the rim of the cage (26).
FIG. 4