Feb. 23, 1965 S. M. MOBERG 3,170,830

APPARATUS FOR APPLYING POULTRY TAGS

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Fig. 1.

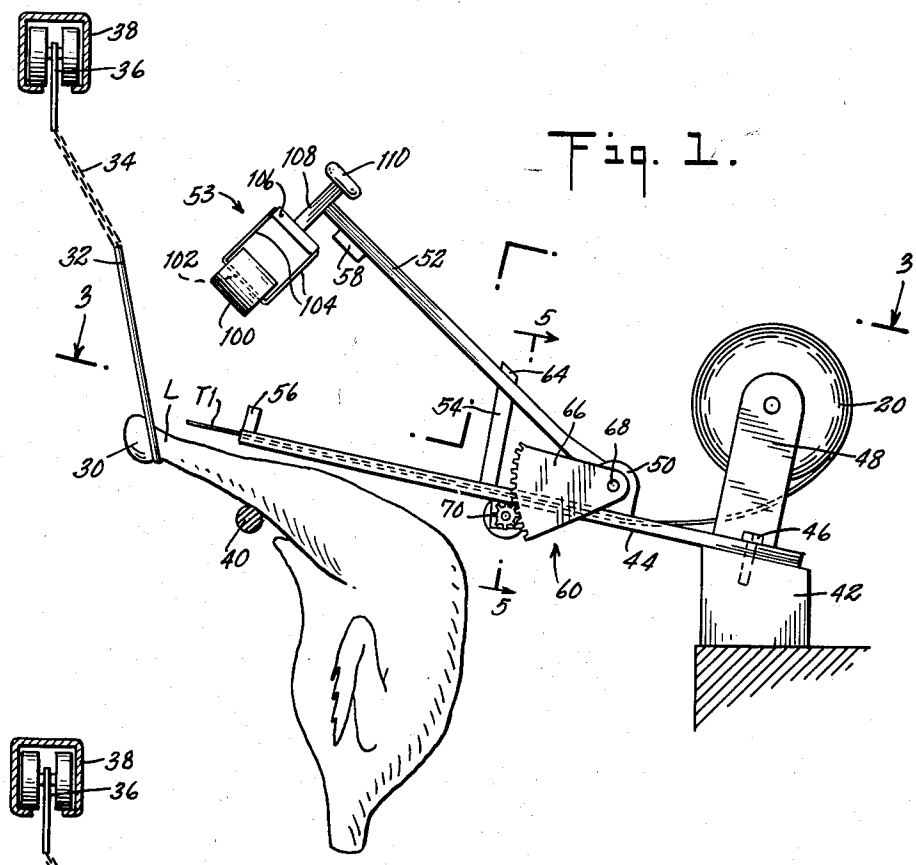
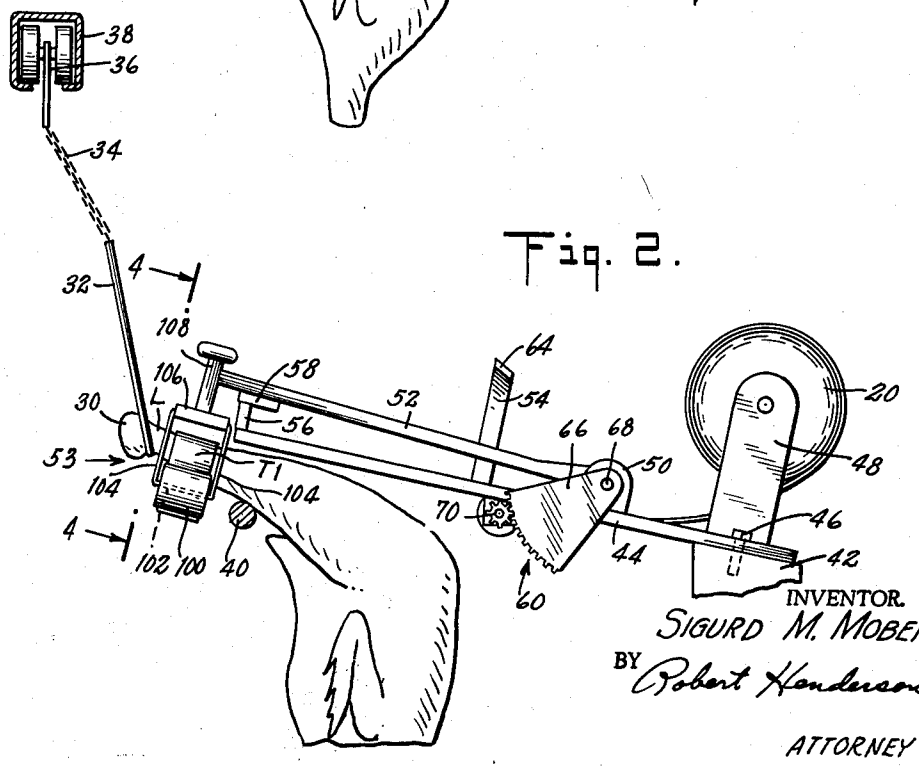


Fig. 2.



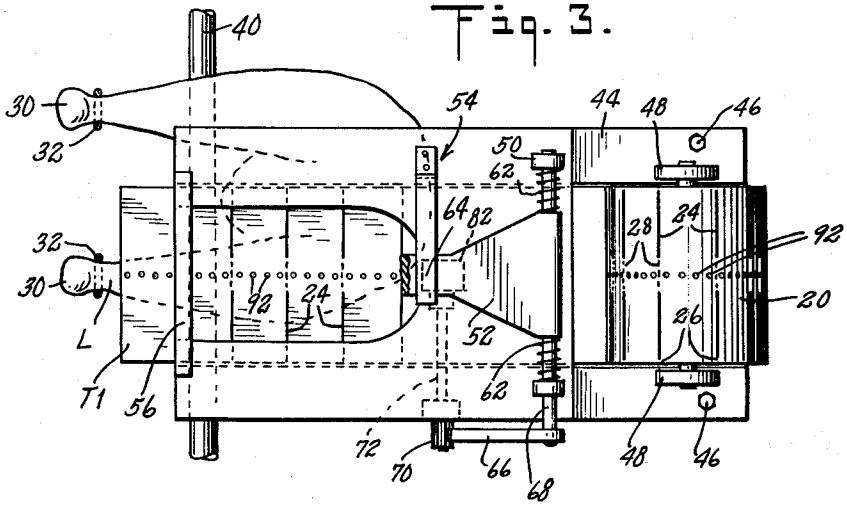
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Fig. 3.



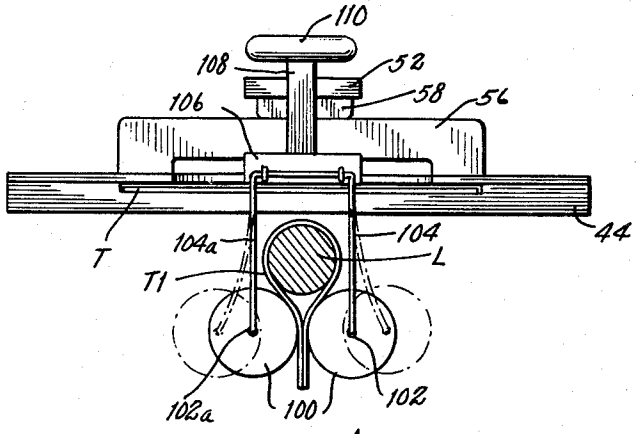


Fig. 4.

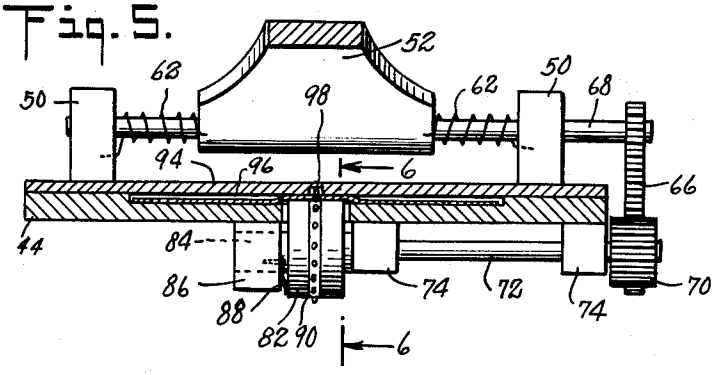
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Fig. 5.



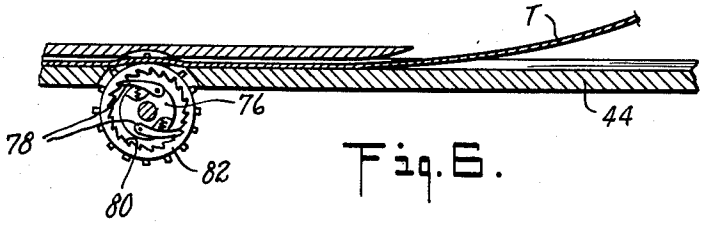


Fig. 6.

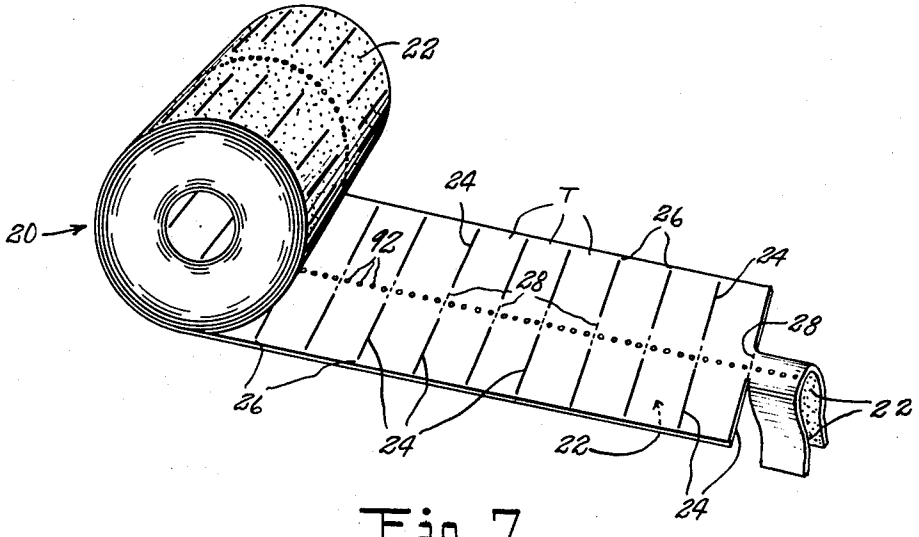


Fig. 7.

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APPARATUS FOR APPLYING POULTRY TAGS

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Filed Jan. 19, 1962, Ser. No. 167,295
6 Claims. (Cl. 156—489)

This invention relates to an improved tag suitable for rapid application to a piece of poultry and to a method and means for applying such a tag. For convenience, reference hereinafter to a "chicken" shall be understood to refer to any piece of poultry.

The tags referred to have usually been employed to display, on a chicken, the name, trade-mark and/or limited desired display or advertising matter of a chicken processor customarily printed on the tag. Sometimes, government inspection of the processing plant is indicated upon the tag.

Such tags heretofore have commonly been made of a piece of sheet metal which is clipped onto the chicken or of cardboard which is either tied to the chicken by a string or is provided with a metal clip by which it is fastened to the chicken. One very serious drawback of all prior tags has been that hand application has been the only practicable way to fasten them upon the chicken; always a relatively costly procedure. Apparently, the difficulty of avoiding such hand application has stemmed from the fact that chickens being processed and ready for application of a tag thereto have little or no firm area which would permit satisfactory cooperation between the chicken and a tag-applying machine. This problem of mechanically applying tags to chickens has defied solution for many years.

An important object of this invention is to provide an arrangement for tagging chickens mechanically.

Another important object is the provision of an improved form of tag which may be applied mechanically to a chicken but which, under some emergency conditions, may be applied by hand.

Another important object is the provision of an improved method for applying such a tag to a chicken and of apparatus capable of being used to mechanically apply such a tag to a chicken.

Another important object is the provision of such a mechanically applicable tag which cannot be reused in any practicable manner.

The foregoing objects are accomplished by use of the present invention, the essentials of which are included in the accompanying non-limitative drawings.

In the drawings:

FIGURE 1 is a side elevational view of a chicken, and apparatus according to this invention for applying a tag to the chicken; the parts of the apparatus being positioned as before such application of the tag.

FIG. 2 is similar to FIG. 1 but shows the apparatus parts positioned as at the time of application of the tag.

FIG. 3 is a top view, partly in horizontal section substantially on the irregular line 3—3 of FIG. 1.

FIG. 4 is a view, in section at a leg of the chicken, showing details of an arrangement for wrapping a tag around said leg and pressing adhesive-coated, end portions of the tag together; the section being substantially on the line 4—4 of FIG. 2.

FIG. 5 is a somewhat enlarged sectional view, substantially on the line 5—5 of FIG. 1, showing some details of a mechanism for feeding or advancing a strip of tags in the machine.

FIG. 6 is a sectional view substantially on the line 6—6 of FIG. 5, showing further details of said tag-advancing mechanism.

FIG. 7 is a perspective view of a roll of tags according to one tag-type within this invention.

Referring to the drawings, a series of attached tags T of paper, preferably of high wet strength, or other suitable sheet material (referred to hereinafter for convenience merely as paper), are made up in a supply roll 20. The under surface of the paper, which is the inner surface when the tag is applied to a chicken, is coated as at 22, with an adhesive which, after application to the paper, preferably adheres to itself but not, to any material extent, to anything else.

The web of paper in the roll 20 is cut transversely at plural, evenly spaced points to define a series of similar tags T, the cuts as at 24, toward opposite sides of the web being completely through the paper. These cuts 24 may extend not quite to the opposite edges of the paper web, leaving small attachments 26 at said edges between the tags as illustrated in FIG. 7. Alterantively, the cuts 24 may extend completely to said edges. The cuts 24 are connected by suitable lines of weakness 28 such as perforations, separate short cuts or equivalent weakening means.

It is conventional practice, in chicken-processing plants, for each chicken in a processing line to be hung by its lower leg joints 30 in stiff wire hangers 32 which, by chains 34, are suspended from suitably spaced trolleys 36 which run within a suitably supported inverted-channel rail 38 to carry the suspended chickens successively to the various processing or dressing stations.

At or near the end of the processing line may be provided a tag-applying station where a suitably supported horizontal guide rod 40 is rigidly mounted at such position, at a level below the hangers 32, that as the line of chickens moves along, the guide rod engages and guides each chicken rightwardly from a vertically dependent position to an offset, depending position as indicated in FIGS. 1 and 2. Then, the guide rod causes the chickens to move in parallelism with the rail 38 while the tags are applied thereto as hereinafter explained.

The illustrated apparatus is disposed adjacent to the guide rod 40, being mounted in any suitable manner as by a standard 42 fixed to a floor surface (not shown). The apparatus comprises a base plate 44 fixed to said standard by screws 46. Fixed upon the base plate are a roll holder 48 for supporting the roll 20 of tags, lugs 50 for pivotally supporting an arm 52 on the free end of which is a tag-applying assembly 53, a rigid, upright stop arm 54 for limiting the upward movement of the arm 52, and a stop 56 which coacts with an abutment portion 58 on said arm to limit the latter's downward movement. Also, a tag-feeding mechanism 60 is associated with said base plate and said arm.

Torque springs 62 serve to hold the arm 52 yieldably in its uppermost position at which it is stopped by a projection 64 at the upper end of upright 54.

The tag-feeding mechanism comprises a segmental gear 66 which is keyed upon one end of a shaft 68 to which the arm 52, likewise, is keyed. The gear 66 meshes with a pinion 70 keyed on the outer end of a shaft 72, rotatably borne in lugs 74 on the underside of base plate 44. On the inner end of the shaft 72 is keyed a wheel 76 on which are pivoted spring-pressed pawls 78 in one-way driving engagement with an inner toothed ratchet 80 of a tag-feeding wheel 82 which has an integral stub shaft 84 freely rotatable within a bearing block 86 fixed to the underside of the base plate 44.

Suitable means are provided to suppress rotation of the tag-feeding wheel except as the latter is actuated by the pawls 78; such means being illustrated as a finger spring 88 fixed at one end to the bearing block 86 with its other end in frictional engagement with the adjacent side of the tag-feeding wheel.

The tag-feeding wheel 82 is fitted with a toothed ring 90, or the latter may be integrally formed on said wheel; the teeth of this ring projecting, at the top of said wheel, into perforations 92 formed in a longitudinally extending series in the paper web of which the tags T are formed. The teeth of ring 90 preferably extend completely through said performations while the paper web is held down by a plate 94 fixed upon base plate 44. Said plates form, between them a guide slot 96 through which the paper web of the roll 20 moves toward the forward end of the base plate during operation of the device. A recess 98 may be provided in the underside of plate 94 into which the teeth at the top of the ring 90 may protrude.

The gears, ratchet and ring 90 are so proportioned and arranged that, during downward movement of the arm 52, the wheel 76 turns idly within the tag-feeding wheel 82 while upward movement of said arm causes the pawls 78 to turn the wheel 82 counterclockwisely (as viewed in FIG. 6), thereby pushing the paper web forwardly to the extent of the width of one tag. The perforations 92 are located similarly on each tag, thereby enabling accurate advancing of one tag at a time to tag-applying position.

The tag-applying assembly 53, as illustrated, comprises a pair of rollers 100, preferably of rubber, mounted for free rotation upon parallel portions 102, 102*a* of a spring-wire roller carrier. The portions 102, 102*a*, respectively, interconnect the lower ends of pairs 104, 104*a* of spring members, the upper ends of which are suitably fixed to a mounting block 106. This block is rigidly integrated with the free end of arm 52 by a cross-member 108 on the upper end of which is formed a pushing knob 110 which may be covered with suitable soft cushioning material if desired. The spring members 104, 104*a* are normally stressed toward each other so that, except during application of a tag as hereinafter described, the rollers 104 are in fairly firm engagement, but may move apart as indicated in broken lines in FIG. 4.

In operation, a chicken, depending from the conveyor hangers 32, is moved by the conveyor to a tag-applying station where guide rod 40 engages the chicken's legs, whereupon the chicken assumes an offset depending attitude, as in FIGS. 1 and 2, and is slid along the rod 40 below the base plate 44 of the tag-applying apparatus. In this situation, the hangers 32, the rod 40 and the weight of the chicken serve to maintain the chicken's legs quite firmly in a well-defined position as illustrated.

When the chicken arrives at a point on the rod 40 at which one of its legs is substantially in alignment with the rollers 100, operation of the tag-applying apparatus is effected. At the start of such operation, the arm 52 is in its uppermost position and a single tag T1, still connected to the paper web, protrudes beyond the free end of the base plate 44 in a position in which it transversely and quite closely overlies the portion of the chicken's leg to which it is to be applied. The actual operation of the apparatus consists merely in manually pushing downwardly on knob 110 until, upon the arm 52 reaching its lowermost position with its abutment portion 58 in engagement with stop 56, the knob is released, permitting the torque springs 62 to swing the arm 52 back to its uppermost position.

During the downward movement of the arm 52 (there being no forward movement of the paper web at this time), the rollers 100 engage the protruding tag T1 at or near opposite ends of the one line of weakness 28 which still connects it to the next succeeding tag.

The downward movement of the rollers 100 pushes the tag T1 downwardly, tearing it away from the next tag along the line of weakness 28 and at the edge attachments 26 (if the latter are provided). At about the same time the center of the tag T1 presses against the leg whereafter the spring members 104, 104*a* are spread apart by the chicken's leg to permit them to roll transversely about the leg with the tag pressed thereagainst.

As the rollers 100 pass downwardly beyond the leg, they are moved together by the spring members 104, 104*a*; and continued downward movement of said rollers causes them to press the adhesive-covered inner end faces of the applied tag together in firmly adhering relationship. It is at this point that the operator releases the arm 52, permitting it to return to its uppermost position; the rollers, meanwhile, retracing their above-described movements.

During the return of the arm 52 to its uppermost position, the tag-feeding mechanism, in a manner already explained, advances the paper web to bring another tag into position for a next tag-applying operation.

It will be realized that the application of a tag is practically an instantaneous operation so that it may be accomplished while the conveyor is moving the chicken along the rod 40. However, the conveyor may be given an intermittent action, if desired, to afford a brief dwell in the chicken's movement during application of the tag. An alternative to such intermittent movement of the conveyor would be to have the tag-applying apparatus so mounted that it could move bodily for a short distance approximately apace with the moving chicken during application of the tag.

If desired, this apparatus may be made to operate automatically by suitable motor means for operating the arm 52 in timed relation to the arrival of a conveyed chicken at a tag-applying position.

It will be understood that the disclosed concepts may be utilized in various other ways without departing from this invention as set forth in the following claims.

I claim:

1. Apparatus for applying, to a chicken's leg, an elongate paper tag having an adhesive coating toward each of opposite ends of one face thereof, said apparatus comprising a pair of rotary rollers, a U-shaped roller carrier yieldably holding said rollers together in assembled parallel relationship, said rollers being yieldably separable to a sufficient extent to roll about opposite sides of a leg of a chicken to wrap the tag around the leg, and capable, thereafter, of again moving together to press together the coated face portions of said opposite ends; the sides of said roller carrier being sufficiently spaced apart to avoid material interference with the chicken leg upon said moving together of said rollers.

2. Apparatus for applying, to a supported, chicken's leg, an elongate paper tag having coherent opposite-end portions, said apparatus comprising a base plate disposed above said leg, tag-feeding means on said plate for moving such a tag to a projecting position directly above and transversely of the part of the leg to which it is to be applied, and tag-pressing means mounted on said plate for movement in line with the projected tag and the underlying portion of the leg; said latter means being adapted, upon downward movement thereof, to push the tag's said opposite-end portions downwardly and completely about said leg, and to urge them together into cohering engagement without material interference with said leg.

3. Apparatus according to claim 2, said tag-pressing means being adapted, upon upward movement thereof, to coact with said tag-feeding means for so projecting said tag.

4. Apparatus according to claim 2, said tag-feeding means comprising a tag-feeding wheel arranged to engage and feed a strip of tags forwardly toward said projecting position, said tag-pressing means including an arm pivoted to said base plate, and said apparatus including actuating means, operable by pivotal movement of said arm, and coacting with said tag-feeding wheel to turn the latter and thereby impart said forward feeding of said strip.

5. Apparatus according to claim 2, said tag-pressing means comprising an arm pivoted to said base plate and a pair of parallel rollers, toward the free end of said arm, adapted on downward movement of said arm to engage

and press a tag onto and about said leg and to press said opposite end portions of the tag together, said tag-feeding means comprising a unidirectionally rotatable feeding wheel coacting with a strip of tags on the plate to feed said strip forwardly, and a gear constrained to operate in response to pivotal movement of said arm and coacting with said wheel to operate the latter.

6. Apparatus according to claim 5, said feeding wheel having a pawl-and-ratchet assembly associated therewith to provide unidirectional rotation of the feeding wheel, and the apparatus including a gear train coacting with said arm to derive operation therefrom and coacting with said pawl-and-ratchet assembly to operate the latter and cause the mentioned unidirectional rotation of the feeding wheel.

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EARL M. BERBERT, *Primary Examiner.*

E. V. BENHAM, *Examiner.*

Dedication

3,170,830.—*Sigurd M. Moberg*, Pompton Plains, N.J. APPARATUS FOR APPLYING POULTRY TAGS. Patent dated Feb. 23, 1965. Dedication filed Feb. 9, 1972, by the assignee, *E. J. Brooks Company.*

Hereby dedicates to the Public the term thereof remaining after Oct. 1, 1970.

[*Official Gazette June 13, 1972.*]