

[54] **CLIPPING DEVICE FOR FRUIT STEMS AND THE LIKE**

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[58] Field of Search **30/291, 298, 232**

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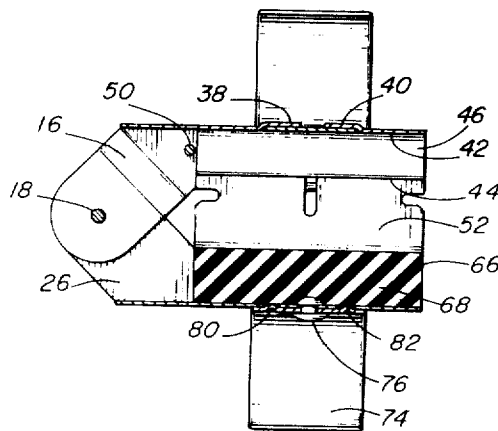
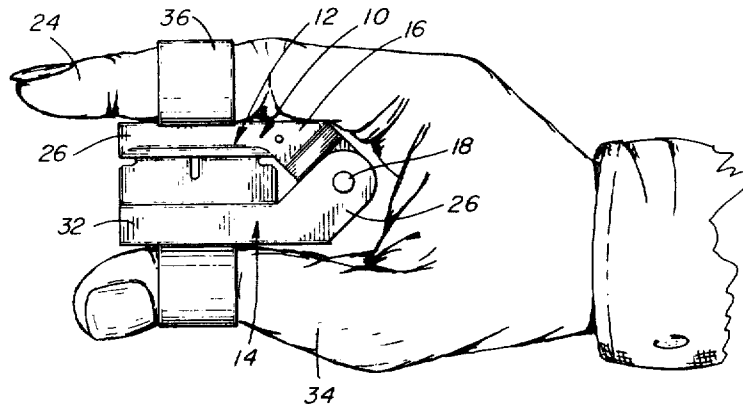
[57] **ABSTRACT**

A device for clipping the stems of fruit and the like comprising a pair of longitudinally extending arms pivotally connected together at one end portion for relative swinging movement toward and away from each other. Intermediate and opposite end portions of the arms are spaced laterally from each other and each arm has a generally laterally outwardly projecting partially circular member mounted thereon. The partially circular members respectively receive a thumb and forefinger of an operator's hand for manual manipulation. One arm has a slot open at an outer end and adapted to receive the body portion of a single edge razor blade. The other arm has a slot open at an outer end and adapted to slidably receive an elastomeric backup member.

[56] **References Cited**
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6 Claims, 4 Drawing Figures



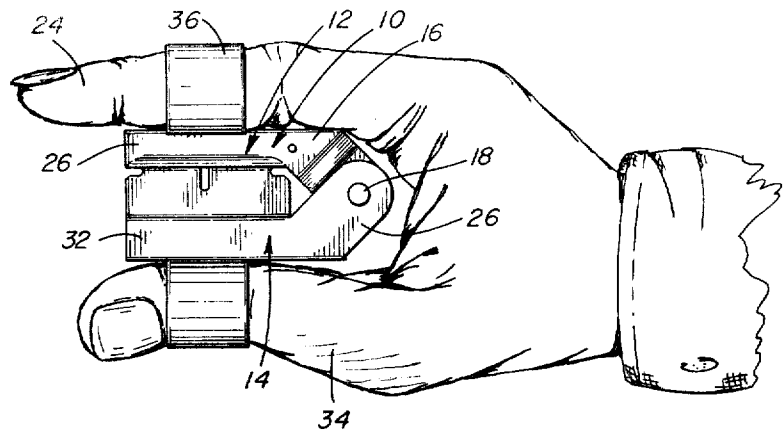


Fig. 1

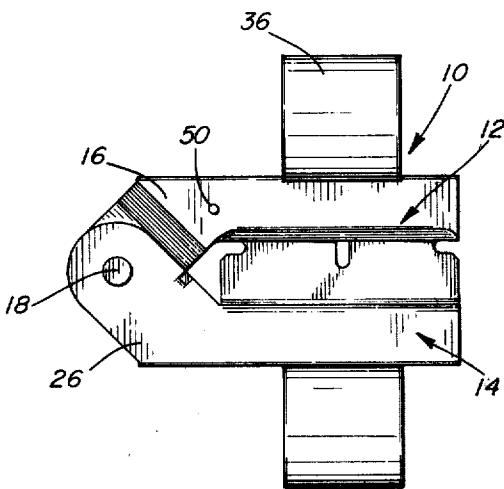


Fig. 2

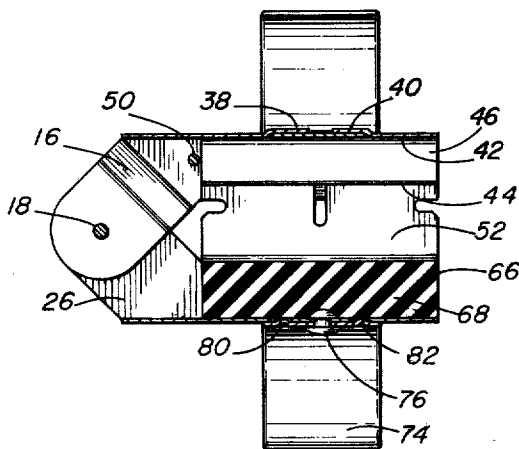


Fig. 4

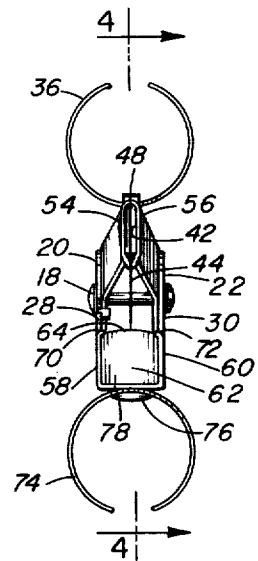


Fig. 3

CLIPPING DEVICE FOR FRUIT STEMS AND THE LIKE

BACKGROUND OF THE INVENTION

Various clippers of the general type under consideration are found in the prior art but such devices have not attained commercial success. Unnecessary complexity of construction entailing economic disadvantage in manufacture and in use have characterized the devices.

SUMMARY OF THE INVENTION

It is the general object of the present invention to provide a clipper for fruit stems and the like wherein a desirably simple and straightforward construction is employed for manufacture at economic advantage, and wherein provision is made for the ready removal and replacement of both a cutting blade and a backup member therefor.

DESCRIPTION OF THE DRAWINGS

FIG. 1 of the drawings is a side elevation of the clipping device of the present invention in a closed position and mounted on the hand of an operator between thumb and forefinger.

FIG. 2 is a side elevation of the clipping device removed from the hand of the operator.

FIG. 3 is a front end view of the device.

FIG. 4 is an intermediate vertical sectional view taken generally as indicated at 4-4 in FIG. 3.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring particularly to FIGS. 1 and 2, it will be observed that a clipping device indicated generally at 10 comprises a pair of longitudinally extending arms pivotally connected together at one end portion for relative generally lateral swinging movement toward and away from each other. As shown, the pair of arms comprises upper and lower arms 12 and 14 which are of similar construction and each of which comprises first and second angularly related portions. The first portion of the upper arm 12 is disposed rearwardly at 16 and thus a pivotal connection with the lower arm 14 by means of a pivot pin or rivet 18. The portion 16 of the arm 12 includes left and right hand side members spaced apart and provided with aligned openings for receiving the pivot pin or rivet 18. The portion 16 of the arm, disposed rearwardly or adjacent the base of a forefinger 24 of the hand of an operator, is formed integrally with a front or second portion 26 of the arm which extends horizontally in the closed position of the clipping device.

Similarly, the lower arm 14 has a rear portion 26 which comprises spaced side walls or members 28, 30 provided with aligned openings for receiving the pin or rivet 18 thus pivotally connecting the two arms. The portion 26 extends angularly downwardly and leftwardly in FIG. 1 and is formed integrally with a portion 32 which comprises a second or front portion of the arm and which extends horizontally. As will be apparent, the rear portions of the arms 16, 26 form a "V" configuration opening leftwardly or forwardly with the pivotal connection 18 at the apex of the V. The front portions of the arms 26, 32 extend horizontally and in parallelism with the clipping device in a closed position

as illustrated. Further, the portion 26 resides adjacent the base of the thumb 34 of an operator of the device.

The front portion 26 of the upper arm 12 has a partially circular member 36 mounted thereon and projecting laterally outwardly therefrom and, as illustrated, the said member receives the forefinger of the hand of an operator of the device. The member 36 may vary in form but is shown in the form of a partially circular sheet metal element having a degree of resilience. That is, the member may be formed of sheet metal having sufficient spring characteristic to provide for ease of entry of the forefinger and for retention of the forefinger therein with the member in a slightly flexed condition. Attachment of the member to the upper arm may take various forms but as presently preferred, a pair of ears or tangs 38, 40 are formed at an upper or outer portion of the arm. The said ears or tangs may project laterally outwardly when formed and may thereafter be bent downwardly and about an inner portion of the member 36 whereby to fix the latter on the arm in a desired position of assembly.

Further and with regard particularly to the forward portion 26 of the arm 12, it will be observed that a slot is provided at 42 and extends longitudinally with an opening at 44 which faces laterally inwardly. Still further, an opening 46 in the slot 42 faces longitudinally outwardly or forwardly with respect to the pivotal connection of the arms. The slot 42 is so formed and dimensioned as to receive the body portion 48 of a single edge razor blade therewithin. That is, the body portion of the razor blade may be entered from the forward end of the arm through the longitudinal opening 46 and slidably positioned within the slot 42 as illustrated. Preferably, a small dimple 50 is provided to serve as an abutment or stop to limit movement of the razor blade to position the same properly within its slot. With the body 48 of the razor blade disposed in the slot its blade 52 projects laterally inwardly for clipping action on inward swinging movement of the arms 12-14.

In the presently preferred form, the arms are formed of the sheet metal and the slot 42 has opposite walls or members 54-56 which may be sprung slightly outwardly with the body portion 48 of a razor blade disposed therewithin. Thus, the razor blade is frictionally held between the said walls or members but may be readily removed and replaced through outward or forward sliding movement through the longitudinally exposed opening 46.

Referring now to the second or forward portion 32 of the lower arm 14, it will be observed that side walls or members 58, 60 thereof define a longitudinally extending slot 62. The slot 62 opens laterally inwardly at 64 and also has a longitudinally exposed opening 66. The latter opening is exposed outwardly or forwardly to provide for the slidable introduction of a resilient backup member 68 into the slot 62. That is, the member 68 may be moved from right to left in FIG. 4 whereby to enter the same within the slot 62 and to frictionally fix the member in its assembled position. The side walls 58, 60 and the member 68 are so dimensioned as to provide for the frictional retention of the member 68 within the slot and preferably narrow lips 70, 72 are provided to insure against lateral inward displacement of the resilient backup member 68.

The resilient backup member 68 may vary widely in form but preferably is of an elastomeric material such as HY-POLON. The hardness of the member prefera-

bly falls in the range of 60-70 Durometers. As will be apparent, the backup member may be readily positioned by slidable movement as shown and, when wear occurs at its upper or inner surface requiring replacement, the member may be removed by slidable movement in a rightward direction and replaced by a similar member.

The thumb 34 of the operator is received in a partially circular member 74 attached to the forward portion 32 of the lower arm 14 and the manner of attachment may of course vary. As shown, and as presently preferred, the member 74 has a small rivet 76 attaching the same to a lower wall 78 of the front portion of the arm. Suitable openings are provided in the partially circular member 74 and in the lower wall and, preferably, two small dimples are provided as at 80, 82 for engagement with the lower wall 78 of the arm and for frictional retention of the member 74 against unintended of accidental rotation about its rivet 76.

As will be apparent from the foregoing, the clipping device of the present invention can be constructed at economic advantage. Simple and straightforward stamping and forming operations can be conducted on the sheet metal parts and a conventional single edge razor blade can be employed as illustrated. The elastomeric member may be severed from longer sections and removal and replacement of each of the members subject to wear, i.e., the blade and its backup member is provided for with a high degree of ease and convenience. No sharpening of blades or other "downtime operation" is encountered when the clipping device is employed in the high production clipping of stems as in harvesting of oranges and other fruit. Thus, ease and convenience in use is provided for as well as manufacture in an efficient and economical manner.

I claim:

1. A device for clipping the stems of fruit and the like comprising:

- a. a pair of longitudinally extending arms pivotally connected together at one end portion for relative generally laterally swinging movement toward and away from each other, intermediate portions and end portions of said arms opposite said pivotal connection being spaced laterally from each other in all swinging positions thereof,
- b. a laterally outwardly projecting member on each of said arms which members are at least partially circular viewed longitudinally and which are adapted respectively to receive a thumb and forefinger of an operator's hand for manual manipulation, the pivotally connected end portions of the

arms being positioned between thumb and forefinger base portions,

- c. a single edge razor blade,
- d. one of said arms having a laterally inwardly open slot for receiving and frictionally holding a body portion of said single edge razor blade, the blade portion of the razor blade projecting laterally inwardly therefrom toward the other arm for manual clipping operation of a stem on inward swinging of the arms,
- e. and an elongated resilient backup member removably mounted on and along an inner portion of said other arm for engaging and supporting a stem as the latter is severed by said razor blade on manual inward swinging movement of the arms.

2. A device for clipping fruit stems and the like as set forth in claim 1 wherein said laterally inwardly open slot in said one arm is also open longitudinally outwardly at an end of said arm opposite said pivotal connection of said arms, said razor blade body being slidable longitudinally into said slot through said latter opening.

3. A device for clipping fruit stems and the like as set forth in claim 1 wherein said resilient backup member is formed of an elastomeric material.

4. A device for clipping fruit stems and the like as set forth in claim 1 wherein each of said arms has similar first and second angularly related portions, said first arm portions being disposed rearwardly and forming a forwardly open V configuration with said pivotal connection at the apex, and said second arm portions being disposed substantially in parallel relationship when said arms are swung to a closed position with the blade of said razor blade in engagement with said backup element.

5. A device for clipping fruit stems and the like as set forth in claim 1 wherein said other arm is provided with a laterally inwardly open slot which receives and frictionally holds said resilient backup member, said slot also being open longitudinally outwardly at an end of said arm opposite said pivotal connection of the arms, said backup member being slidable longitudinally through said latter opening into said slot.

6. A device for clipping fruit stems as set forth in claim 5 wherein said arms are constructed of formed sheet metal with said two slots each having longitudinally extending side walls which are sprung slightly outwardly whereby frictionally to hold said razor blade body portion and said resilient backup member respectively.

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