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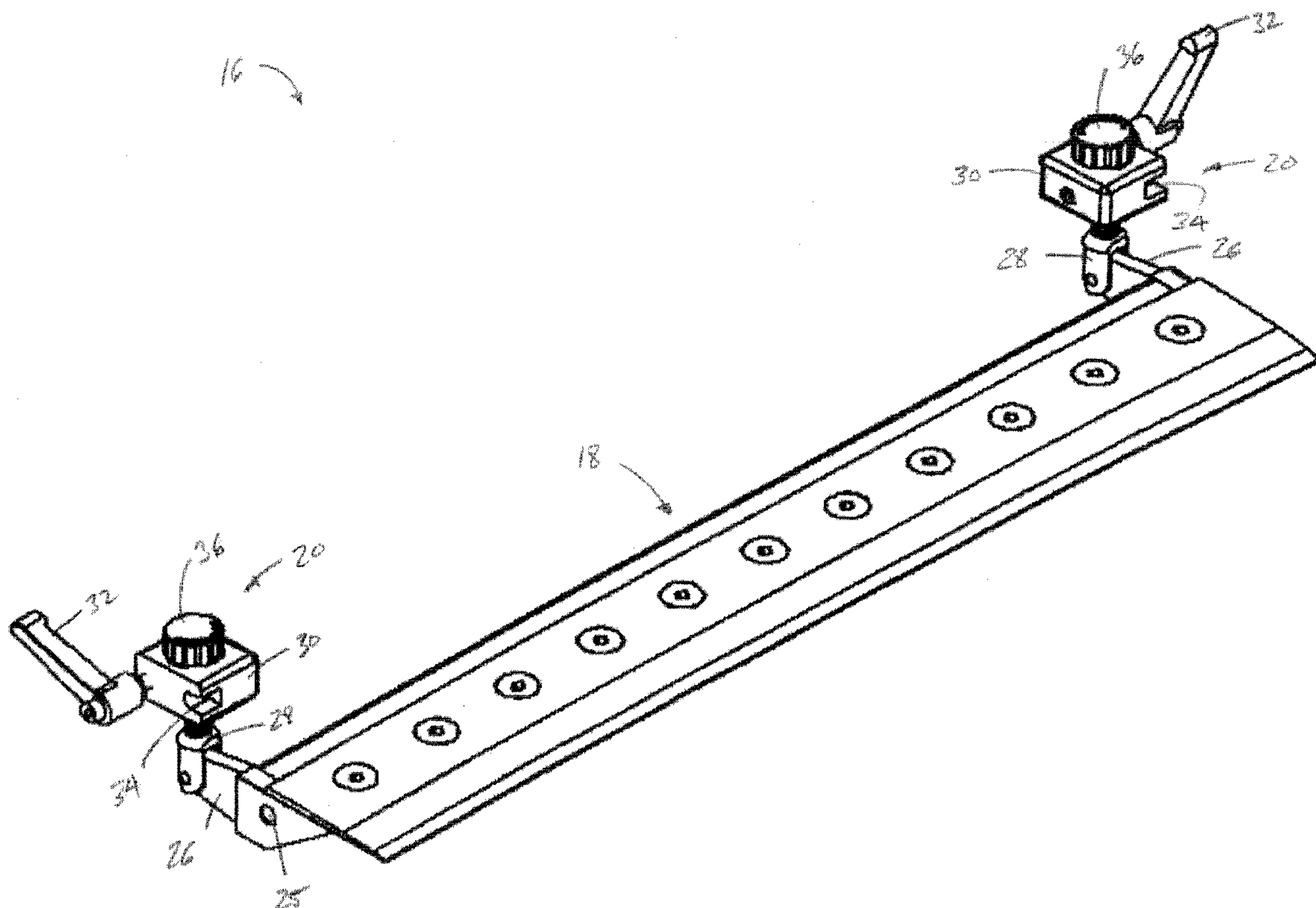
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(54) **Titre : MECANISME DE LAME POUR DISPOSITIF DE COUPE DE MATIERE VEGETALE**

(54) **Title: BLADE MECHANISM FOR A PLANT MATERIAL TRIMMING DEVICE**



(57) **Abrégé/Abstract:**

A removable blade mechanism for a plant material trimming device. The blade mechanism includes a blade bar connectable to the plant material trimming device and a tool-less adjustable locking device connectable to the blade bar and to the plant material trimming device to lock the blade bar to the plant material trimming device.

ABSTRACT

5 A removable blade mechanism for a plant material trimming device. The blade mechanism includes a blade bar connectable to the plant material trimming device and a tool-less adjustable locking device connectable to the blade bar and to the plant material trimming device to lock the blade bar to the plant material trimming device.

TITLE OF THE INVENTION**BLADE MECHANISM FOR A PLANT MATERIAL TRIMMING DEVICE**

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FIELD OF THE INVENTION

The invention relates to the field of plant trimming devices, and in particular, to a blade mechanism for a plant material trimming device.

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BACKGROUND OF THE INVENTION

Plant trimming devices have been in operation for some time. Generally, these devices incorporate a fixed blade mechanism for trimming away plant material rotated in an adjacent tumbler. Typically, these blade mechanisms include a blade bar which may be a unitary blade or may include a bed bar that holds a blade. As conventional blade mechanisms are fixed to plant trimming devices, cleaning plant trimming devices is labor intensive with a user having to contort oneself in order to get in between the tumbler and the blade mechanism. In other instances, in order to clean and maintain the blade, the entire plant trimming device has to be dismantled with appropriate tools in order to remove the blade mechanism from the device. Finally, with conventional blade mechanisms, fine tuning its contact with the tumbler requires appropriate tools, making it time consuming to use. Accordingly, a need exists for a blade mechanism that can

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be easily removed and adjusted without the need for tools. Other objects of the invention will be apparent from the description that follows.

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SUMMARY OF THE INVENTION

According to the present invention there is provided a removable blade mechanism for a plant material trimming device. The blade mechanism includes a blade bar connectable to the plant material trimming device and a tool-less adjustable locking device connectable to the blade bar and to the plant material trimming device to lock the blade bar to the plant material trimming device.

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The blade bar may be a single blade or may include a bed bar and a blade connectable to the bed bar.

The blade bar may be slidably and/or pivotably connectable to the plant trimming device. When pivotably connected, the tool-less adjustable locking device is operational to lock and adjust the angle of the blade bar relative to the plant trimming device.

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The tool-less adjustable locking device may simply be a clamp, bungee cord or other like device. In the preferred embodiment, the locking device includes a first arm connectable to the blade bar and a second arm connectable to the first arm. A tightening block is connectable (may be threadedly) to the second arm and is also connectable to the plant trimming device to lock the blade bar in place. The first arm may be pivotably connectable to the blade bar. Additionally, the second arm may also be pivotably connectable to the first arm.

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Other aspects of the invention will be appreciated by reference to the detailed description of the preferred embodiment and to the claims that follow.

BRIEF DESCRIPTION OF THE DRAWINGS

The preferred embodiment of the invention will be described by reference to the drawings thereof in which:

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Fig. 1 is a perspective view of a plant material trimming device;

Fig. 2 is a partial internal perspective view of the plant material trimming device of Fig 1.;

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Fig. 3 is a perspective view a blade mechanism for the plant material trimming device of Fig 1.;

Fig. 4 is perspective view of an alternative embodiment of a blade bar of Fig. 3;

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Fig. 5 is a perspective view of a blade used in conjunction with the blade bar of Fig. 4; and

Fig. 6 is an isolation perspective view of the area 6 of Fig 1.

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DESCRIPTION OF THE PREFERRED EMBODIMENT OF THE INVENTION

25 Referring to Fig. 1, a plant material trimming device **10** is depicted. The device **10** includes a tumbler **12** residing inside of the device. Plant material that requires trimming is inserted into a hopper **14** which then feeds the plant material into the tumbler **12**. A removable blade mechanism **16** is situated inside of the device **10** and adjacent the tumbler **12**. As the plant material is tumbled in the
30 tumbler **12**, the blade mechanism **16** cuts the plant material in a scissor-like

fashion as the plant material is exposed between the blade mechanism and tumbler walls.

Referring to Figs. 2 and 3 the blade mechanism **16** includes a blade bar **18**
5 connectable to a wall **11** of the plant material trimming device **10** and a tool-less adjustable locking device **20** connectable to the blade bar at either ends of the blade bar. The tool-less adjustable locking device **20** is also connectable to the wall **11** of the plant material trimming device **10** to lock the blade bar **18** to the plant material trimming device. The blade bar **18** may be a single unitary blade
10 or may, as illustrated in Figs. 4 and 5, include a bed bar **22** with a longitudinally slit **23** for receiving a separate blade **24** connectable to the bed bar through conventional means.

Referring back to Figs. 2 and 3, the blade bar **18** may either be slidably and/or
15 pivotably connectable to the plant trimming device **10**. As best illustrated in Fig. 3, corresponding pivot holes **25** on either side of the blade bar **18** are operable to receive a pin from the plant trimming device **10**. As those skilled in the art will appreciate, a slotted hole may be used instead of a standard hole to allow the bed bar **18** to slidably and pivotably connect to the plant trimming device **10**.
20 When pivotably connected, the tool-less adjustable locking device **20** is operational to lock and adjust the angle of the blade bar **18** relative to the plant trimming device **10**.

The tool-less adjustable locking device **20** may simply be a clamp, bungee cord
25 or other like device that is operable to connect to the plant trimming device **10**. In the preferred embodiment as illustrated in Figs. 2, 3 and 6, the locking device includes a first arm **26** connectable to the blade bar **18** and a second arm **28** connectable to the first arm. A tightening block **30** is connectable to the second arm **28** and is also connectable to the wall **11** of the plant trimming device **10** to
30 lock the blade bar **18** in place. The first arm **26** may be pivotably connectable to the blade bar **18**. Additionally, the second arm **28** may also be pivotably

connectable to the first arm **26**. To lock the bed bar **18** to the device **10**, the tool-less adjustable locking device **20** may include a locking handle **32**. The locking handle **32** may be threadedly connectable to the tightening block **30** through a hole in wall **11**. As those skilled in the art will appreciate, tightening block may be
5 configured to lock to wall **11** without handle **32** through other conventional devices. To facilitate alignment of the blade bar **18** inside of the device **10**, wall **11** may include a locating pin **33** for which slot **34** of the tightening block **30** may engage. Once the blade bar **18** is inserted into the device **10**, the second arm **28** is moved to engage the locating pin **33** and handle **32** is used to tighten the
10 tightening block **30** to the wall **11**. If it is desirable to adjust the angle of the blade bar **18** relative to the tumbler **12**, the second arm **28** may be threadedly connected to the tightening block **30**. Here, dial **36** may be used to lengthen or shorten the second arm **28** and thus pitch the blade bar **18** within the device **10**.

15 It will thus be seen that a new and novel blade mechanism for a plant material trimming device has been illustrated and described and it will be apparent to those skilled in the art that the preferred and alternative embodiments have been described in some detail but that certain modifications may be practiced without departing from the principles of the invention.

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CLAIMS

What is claimed is:

- 5 1. A plant material trimming device, the device comprising: two end walls supporting a rotatable perforated tumbler, a rotatable reel with helical blades, and a blade mechanism pivotably connected to the end walls of the device, the blade mechanism comprising:
- 10 i. a blade bar configured to cut plant material in cooperation with the helical blades when the device is in operation;
- ii. two hand-operated means for adjusting, unlocking and locking, positioned respectively at the ends of the blade bar, for unlocking and locking the blade mechanism from and to the end walls of the plant material trimming device, wherein each hand-operated means for
- 15 adjusting, unlocking and locking comprises:
- a. a first arm operatively associated with the blade bar; and
- b. a second arm, pivotably connected to the first arm, wherein the second arm can pivot downward when the blade mechanism is unlocked.
- 20 2. The plant material trimming device of claim 1, wherein the blade mechanism is pivotable about a pin in the end wall of the plant trimming device.
3. The plant material trimming device of claim 1, wherein each hand-operated means for adjusting, unlocking and locking comprises a tightening block

threadedly connected to the second arm and connectable to an end wall of the plant trimming device.

4. The plant material trimming device of claim 3, wherein each hand-
5 operated means for adjusting, unlocking and locking comprises a locking pin
which is inserted through a hole in the end wall of the plant trimming device and
is threadedly connectable with the tightening block.

5. The plant material trimming device of claim 4, wherein the locking pin is
10 operationally associated with a locking handle, to threadedly lock and unlock the
tightening block from and to the end wall of the plant trimming device.

6. The plant material trimming device of claim 3, wherein when the tightening
block is unlocked and the second arm is pivoted downwards, the blade bar can
15 pivot upwards away from the helical blades.

7. The plant material trimming device of claim 3, wherein the tightening block
is configured for adjusting the pitch of the blade bar relative to the helical blades
when the blade mechanism is locked to the end walls.

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8. A blade mechanism for a plant material trimming device, the device
comprising two end walls supporting a rotatable perforated tumbler, and a
rotatable reel with helical blades, the blade mechanism comprising:

- iii. a blade bar configured to cut plant material in cooperation with the helical blades when the device is in operation ;
 - iv. two hand-operated means for adjusting, unlocking and locking, positioned respectively at the ends of the blade bar, for unlocking and locking the blade mechanism from and to the end walls of the plant material trimming device, wherein each hand-operated means for adjusting, unlocking and locking comprises:
 - c. a first arm operatively associated with the blade bar; and
 - d. a second arm, pivotably connected to the first arm, wherein the second arm can pivot downward when the blade mechanism is unlocked,wherein the blade mechanism is pivotably connectable to the end walls of the device.
9. The blade mechanism of claim 7, wherein the blade mechanism is pivotably connectable to a pin in the end wall of the plant trimming device.
10. The blade mechanism of claim 7, wherein each hand-operated means for adjusting, unlocking and locking comprises a tightening block threadedly connected to the second arm and connectable to an end wall of the plant trimming device.

11. The blade mechanism of claim 10, wherein each hand-operated means for adjusting, unlocking and locking comprises a locking pin which is insertable through a hole in the end wall of the plant trimming device and is threadedly connectable to the tightening block.

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12. The blade mechanism of claim 11, wherein the locking pin is operationally associated with a locking handle to threadedly unlock and lock the tightening block from and to the end wall of the plant trimming device when the locking pin is inserted through the hole and threadedly connected to the tightening block.

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13. The blade mechanism of claim 10, wherein the tightening block is configured for adjusting the pitch of the blade bar relative to the helical blades when the blade mechanism is locked to the end walls.

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14. The blade mechanism of claim 10, wherein the tightening block is configured for engaging a locating pin in the end wall of the plant trimming device.

15. The blade mechanism of claim 10, wherein the blade bar is a blade.

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16. The blade mechanism of claim 10, wherein the blade bar comprises a bed bar and a blade connectable to the bed bar.

17. The blade mechanism of claim 10, wherein the blade mechanism is also slidably connectable to the end walls of the plant trimming device.

18. The blade mechanism of claim 10, wherein the first arm of each of the
5 hand-operated means for adjusting, unlocking and locking is pivotably connectable to an end wall of the plant trimming device.

19. The blade mechanism of claim 10, wherein the first arm is pivotably connected to the blade bar.

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20. The blade mechanism of claim 10, wherein the blade bar is pivotably connectable to the end walls of the plant trimming device.

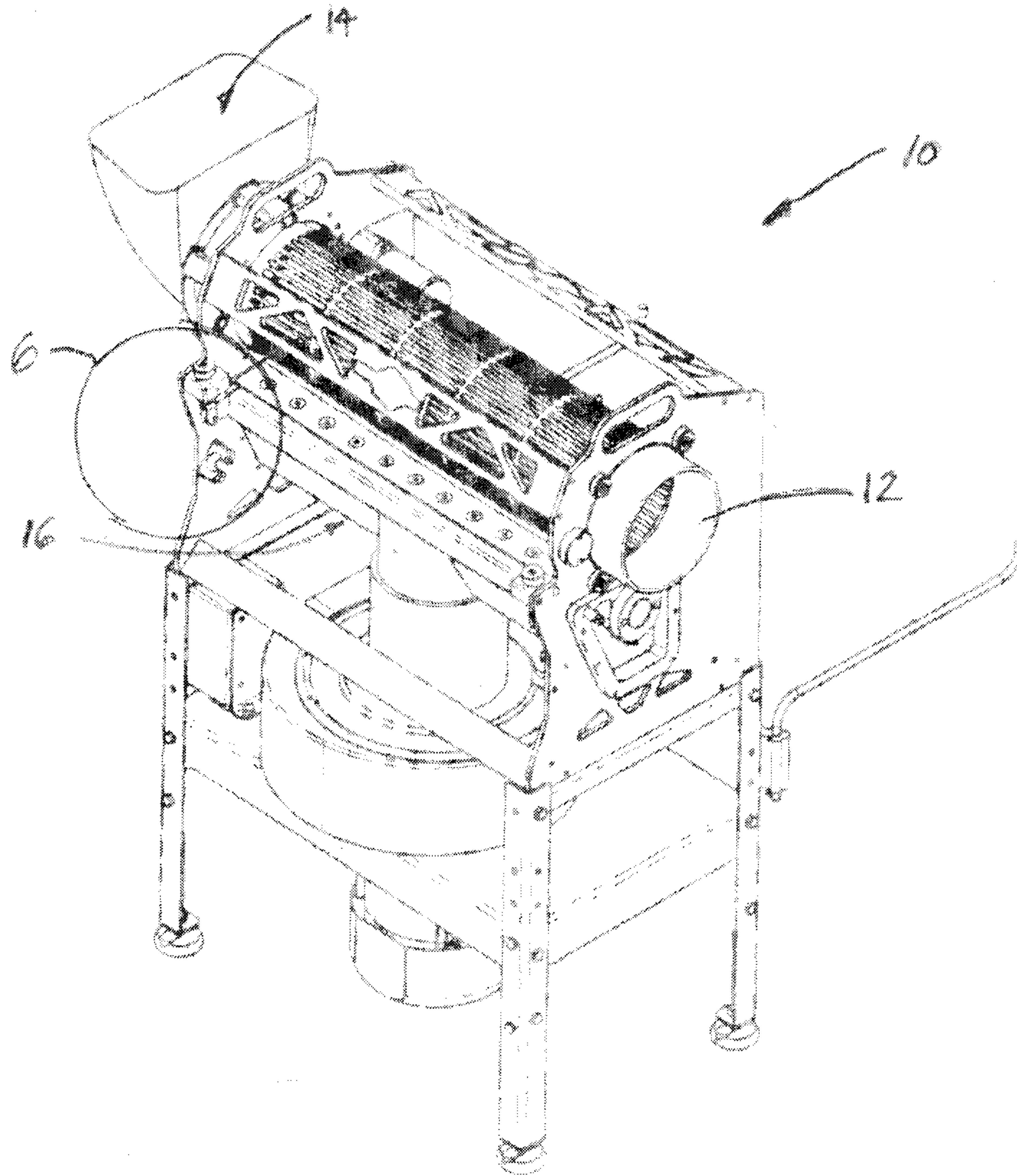
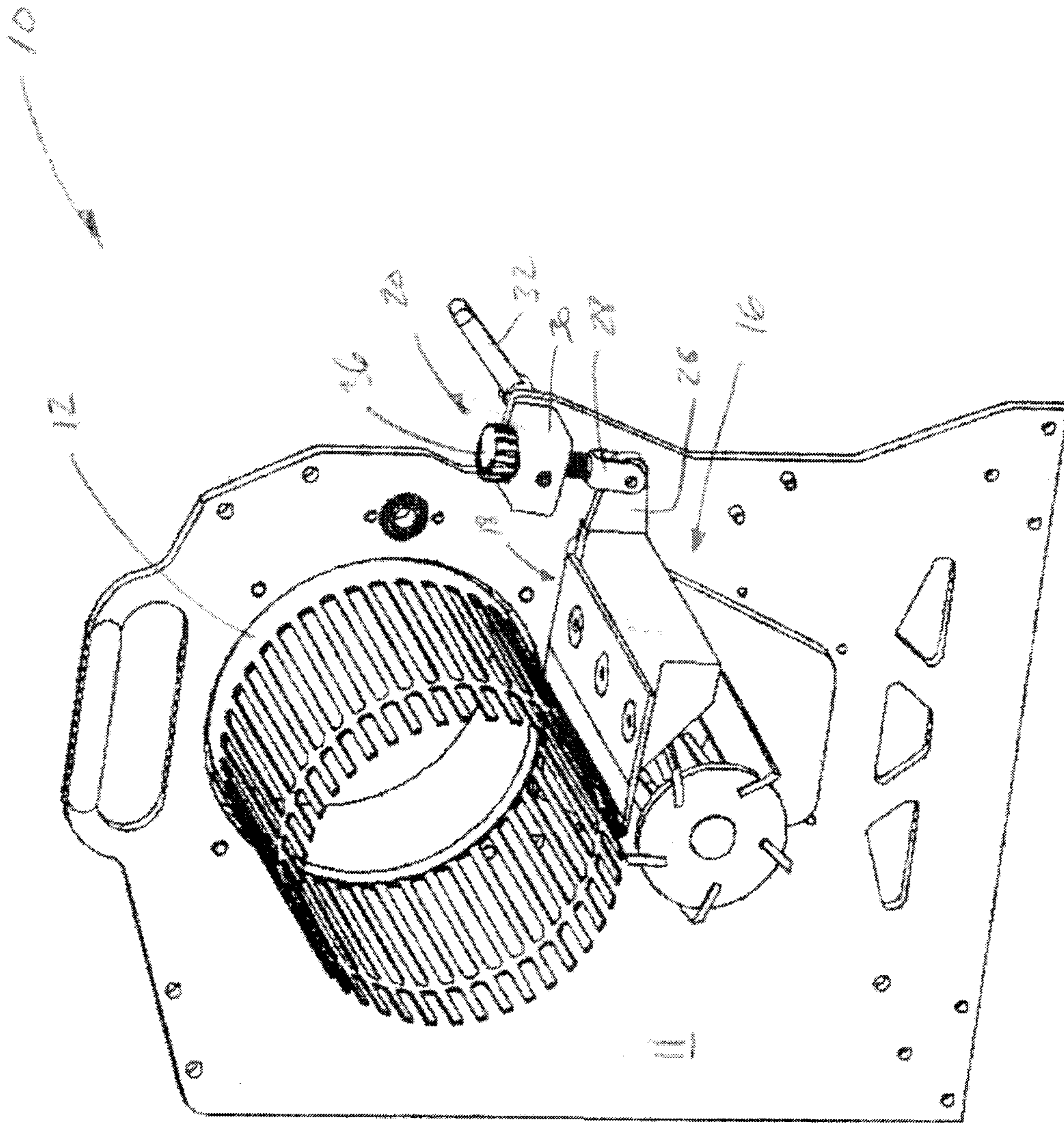
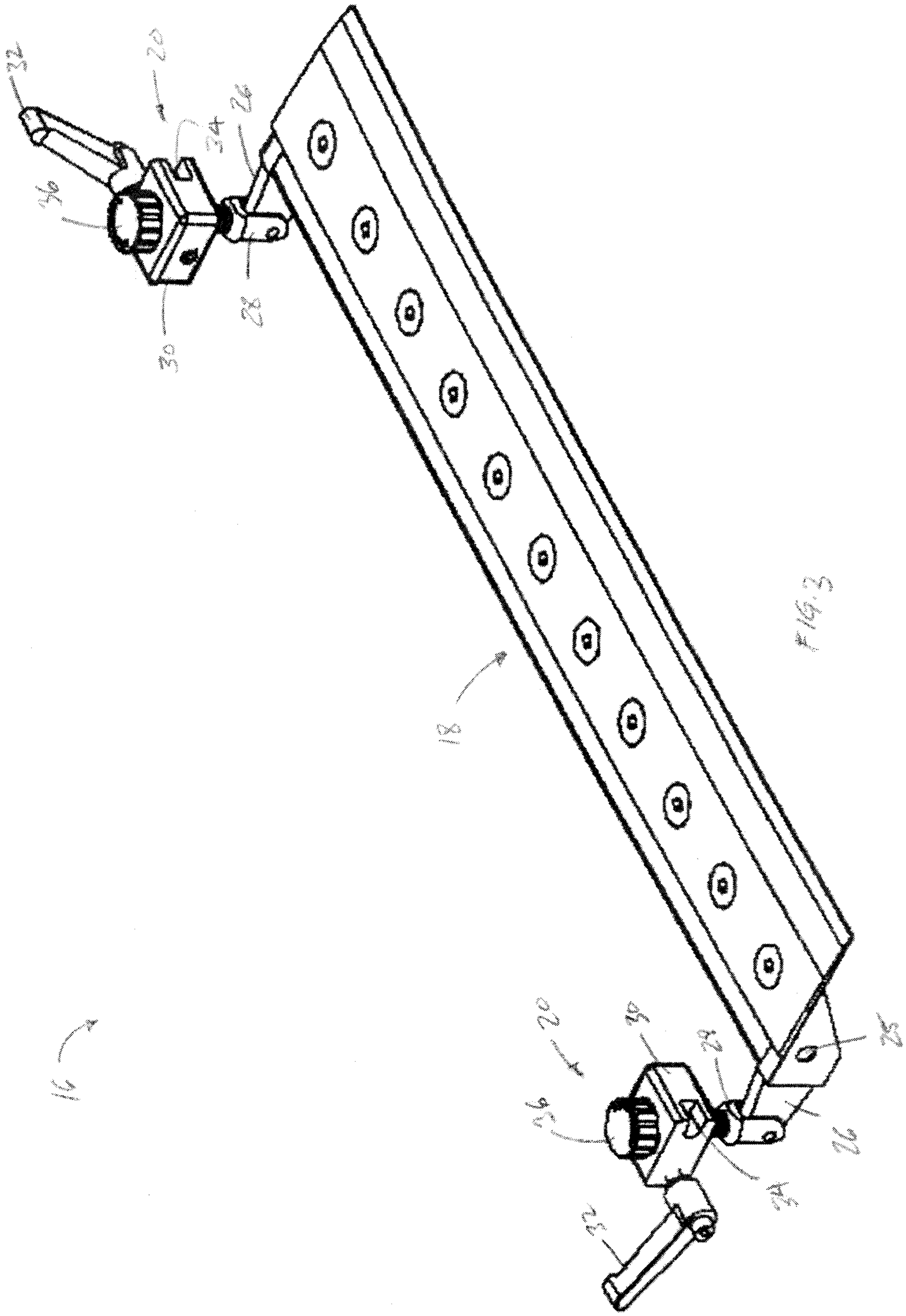


FIG. 1



F 169, 2



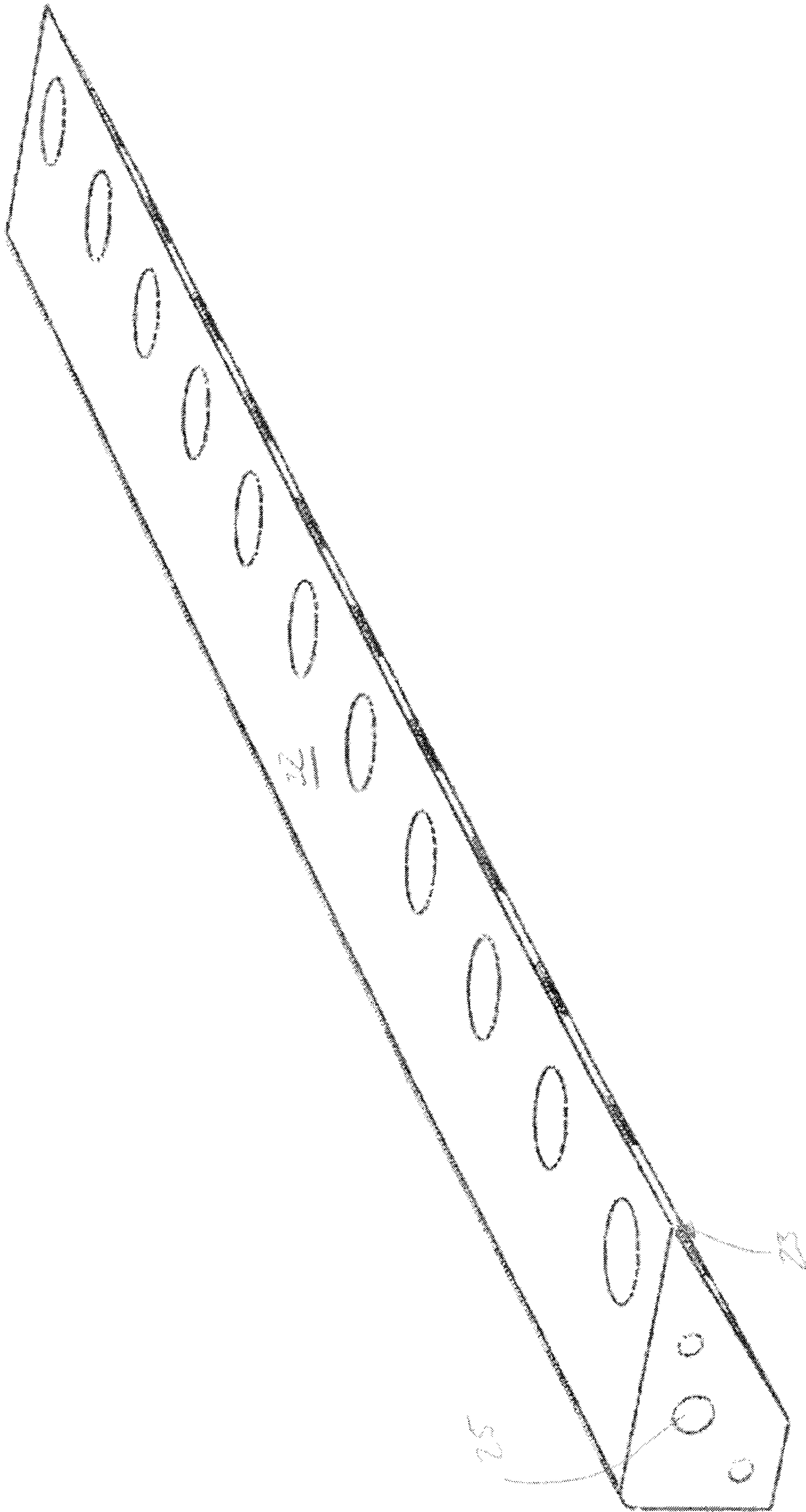


FIG. A

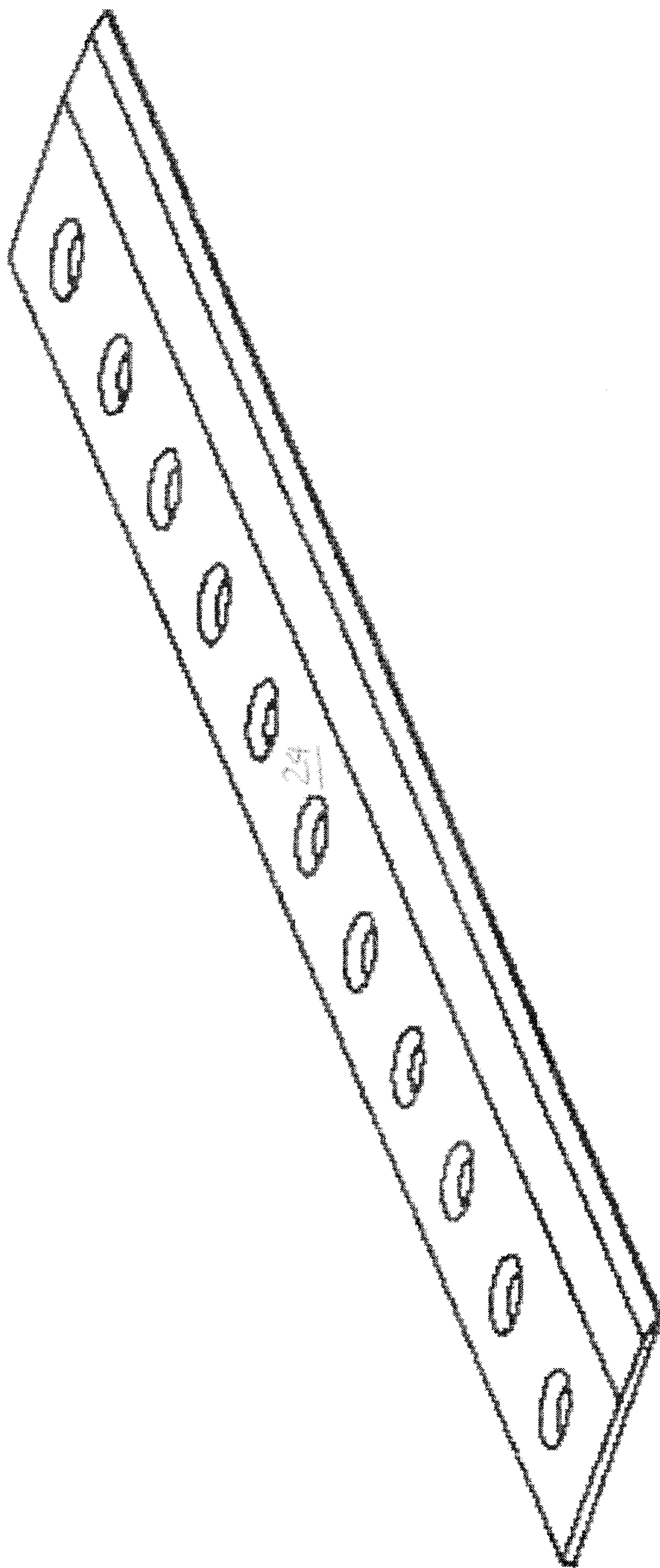


FIG. 5

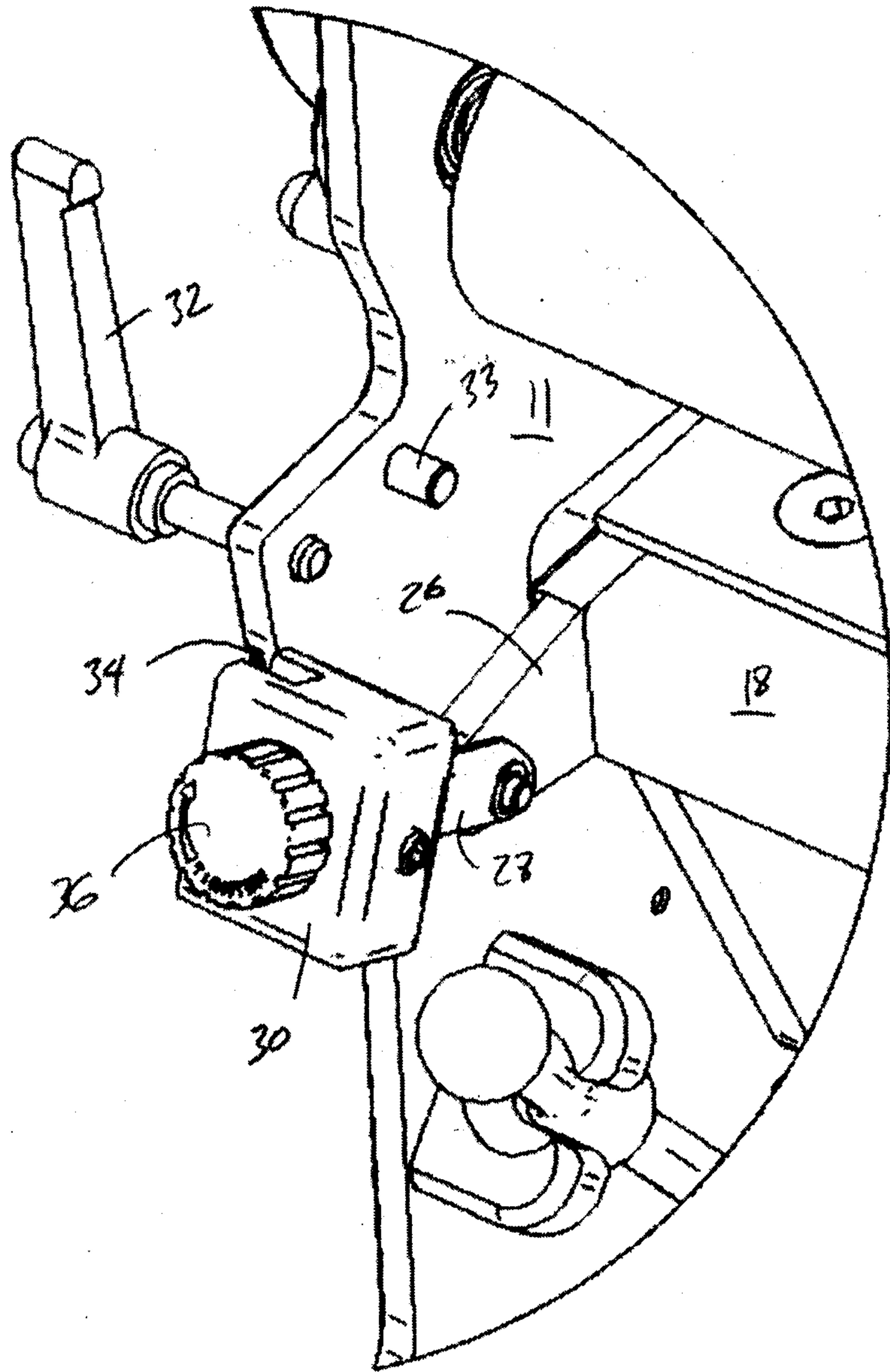


FIG. C

