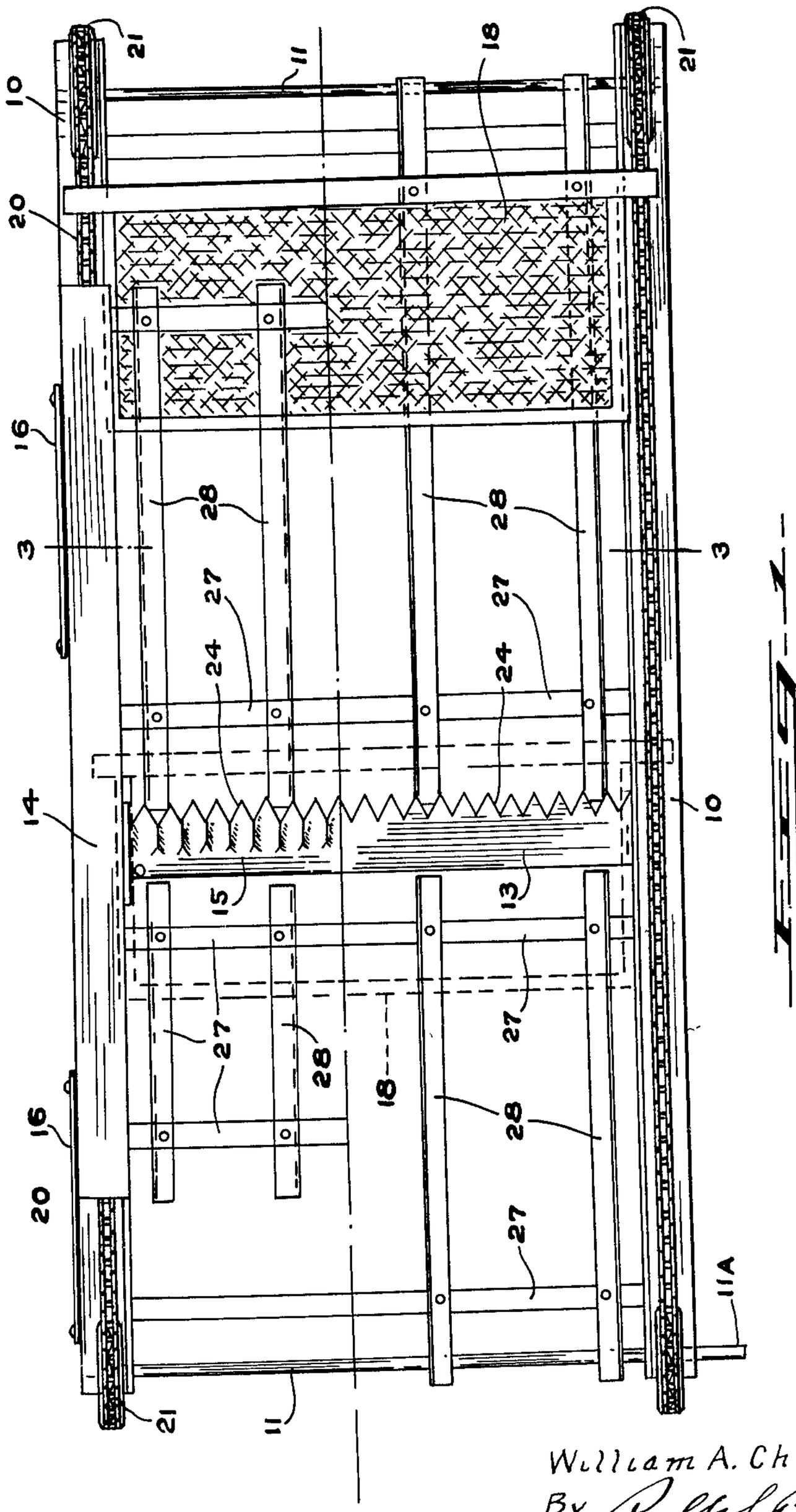
Feb. 19, 1935. W. A. CHRYSLER 1,992,058

HONEYCOMB DECAPPING MACHINE

Filed Feb. 15, 1933 3 Sheets-Sheet 1



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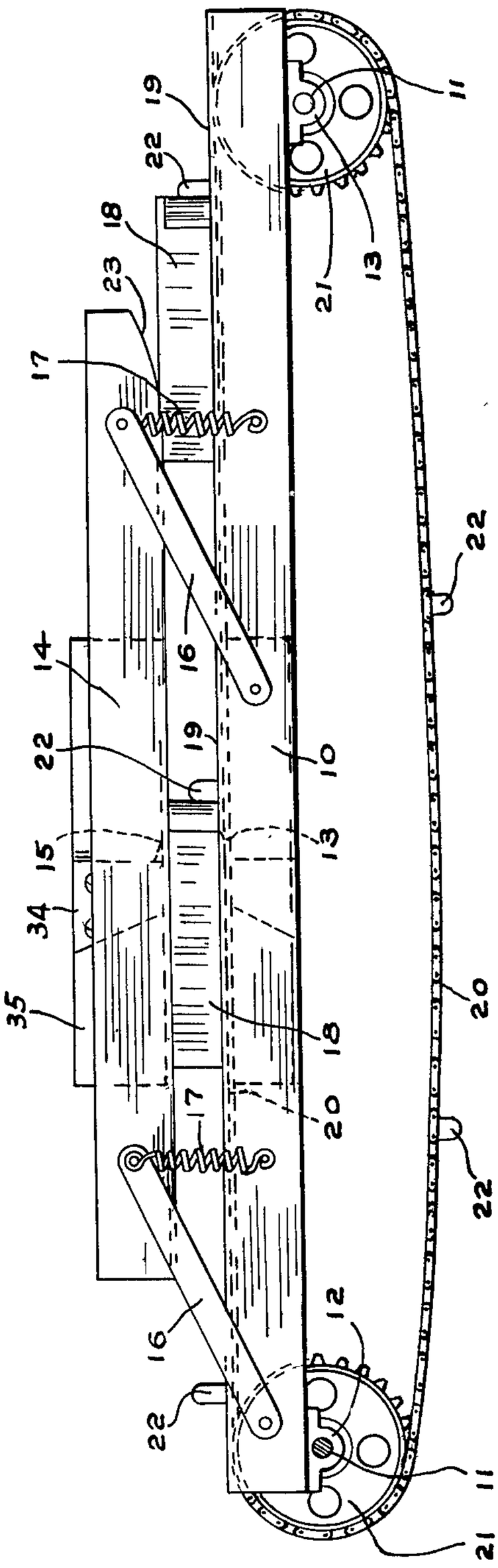
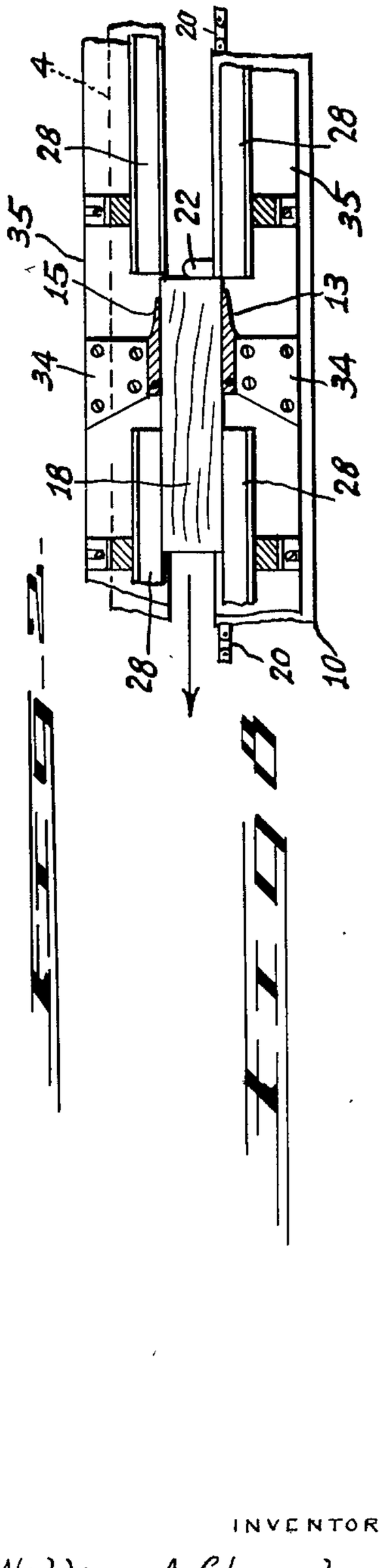
HONEYCOMB DECAPPING MACHINE

Filed Feb. 15, 1933 3 Sheets-Sheet 2





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HONEYCOMB DECAPPING MACHINE

Filed Feb. 15, 1933 3 Sheets-Sheet 3

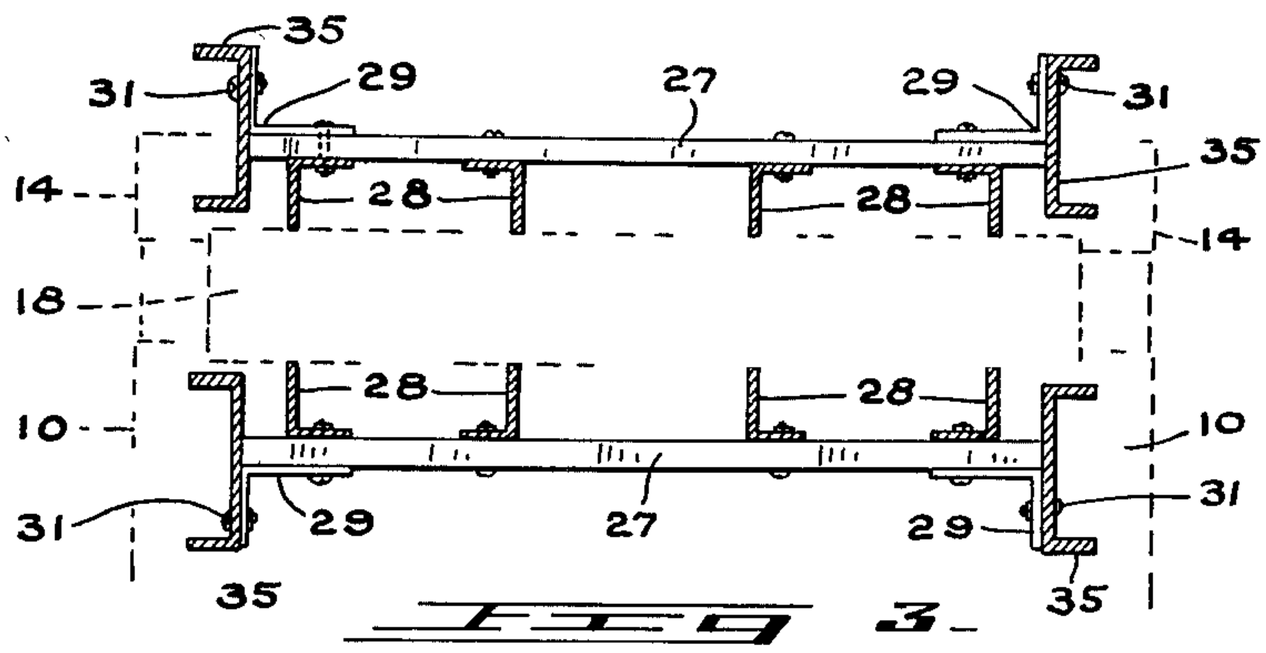

Fig 3

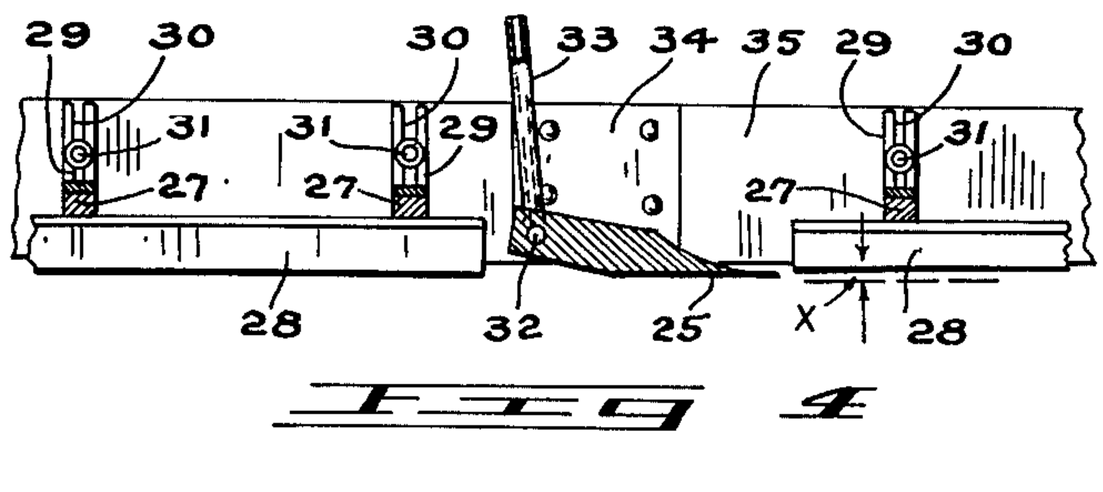

Fig 4

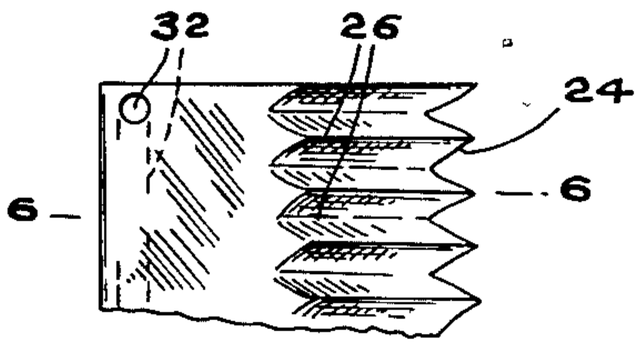

Fig 5

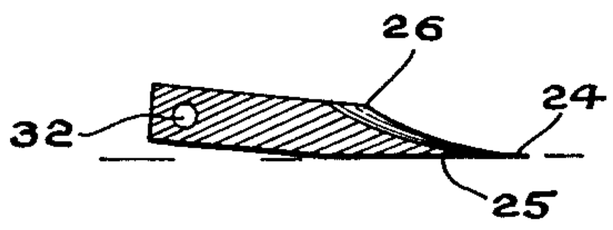

Fig 6

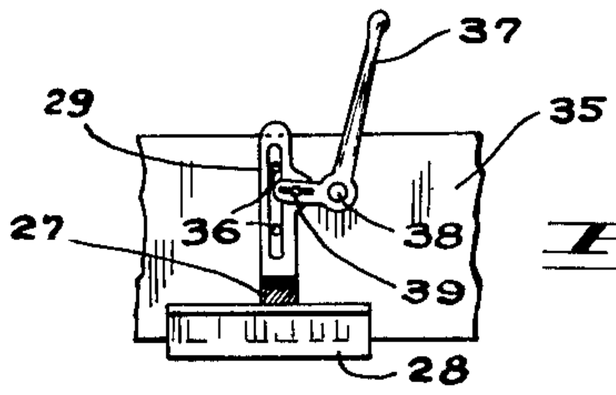

Fig 7

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UNITED STATES PATENT OFFICE

1,992,058

HONEY COMB DECAPPING MACHINE

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Application February 15, 1933, Serial No. 656,931
In Canada February 19, 1932

4 Claims. (Cl. 6—12)

This invention relates to improvements in a honey comb decapping machine. Its primary object being to provide a device for the purpose of removing the covering of wax, or the cap from a frame of honey incorporating therewith a heated knife.

A further object is to provide such a device for the aforesaid purpose whereby the object in view may be accomplished with the minimum amount of handling, the frames being carried to and from the knives by means of an endless chain conveyor.

A still further object is to provide an improved knife for the purpose set forth and means for adjusting the same.

With these and other objects in view that may appear while the description proceeds the invention consists in the novel construction and arrangement of parts as hereinafter more specifically set forth, claimed and shown in the accompanying drawings forming a part of this present application and in which:—

Fig. 1 is a plan view of my improved machine showing half of the movable frame removed to show the knife, frame, etc.

Fig. 2 is a side elevation of the same.

Fig. 3 is a sectional view on the line 3—3 of Fig. 1, with the frame shown in dotted lines.

Fig. 4 is a partial sectional elevation showing the knife adjusting means.

Fig. 5 is a partial plan view of the improved knife.

Fig. 6 is a section on the line 6—6 of Fig. 5.

Fig. 7 is a detailed view showing a modified form of knife adjusting means.

Fig. 8 is a fragmentary longitudinal section showing the relationship between the knives and honey comb.

Referring more in detail to the drawings in which similar reference characters designate corresponding parts throughout the several views, it will be seen the invention comprises a frame 10, having shafts 11 rotatably mounted in the bearings 12 secured thereto, and a cutting knife 13 adjustably mounted transversely of the frame 10. A movable frame 14 is positioned above the frame 10 and centrally disposed thereto, an upper knife 15 being adjustably mounted transversely of the said movable frame 14. This frame 14 is kept parallel to the main frame by means of the arms 16 pivoted to the two frames 10 and 14, coil springs 17 being provided to apply sufficient pressure on the upper frame thereby holding the knife 15 in position when in operation.

The honey comb frames 18 are carried along the top 19 of the frame 10 by means of an endless chain 20 carried on sprockets 21 mounted on the shafts 11. At suitable intervals along the chain are lugs 22 which engage the honey comb frames 18 moving the same toward the knives. The chain mechanism may be operated by power or a hand crank may be attached to the extended end 11*a* of the shaft. As the honey comb frames are moved forward the curved lower edge 23 of the frame 14 comes into contact with the upper edge of the honey comb frame which causes the frame 14 to raise sufficiently to allow the said honey comb frame to pass on to the knives and out of the machine.

The cutting knives 13 and 15 are identical in construction and comprise a serrated cutting edge 24, the front portion of the lower surface of the top knife and the front portion of the upper surface of the bottom knife presenting a flat parallel surface 25 to the honey comb frames 18, the rear portion of the said knives being slightly inclined away from the frames. The opposite side of the knives are serrated along part of the surface in conformity with the cutting edge 24, the serrations being in the form of a concave curve both longitudinally and transverse of the knife as shown at 26 which adds to the effectiveness of the purpose of the knives The said knives are secured in position by means of angle brackets 34 which are bolted to the knives and to the knife frames 35.

The knife adjustment device comprises a knife frame 35 having cross members 27 and longitudinal members 28 secured thereto. The cross members are adjustably secured to the knife frames 35 by angle brackets 29 having elongated holes or slots 30 therein and a bolt 31. The longitudinal members 28 are intended to touch the surface of the wax in the honey comb frames while the knife is permitted to cut a predetermined depth below the surface as shown at X in Fig. 4. In the rear portion of the knife blade is a cavity 32 to permit a heating medium to be inserted therein. This may take the form of a small copper pipe 33 the same being connected to a steam generating system or an electrical heating element may be inserted therein properly insulated and connected to a source of power. It will be readily understood that heating the cutting knives will not only materially assist in the cutting operation but will also keep the wax from sticking or congealing on the blade and thus hindering the work.

In Fig. 7 is shown an alternative knife adjust-

ing means which comprises the angle bracket 29 slidably mounted on two guide pins 36 secured in the knife frame 35. A lever arm 37 pivotally mounted at 38 to the knife frame engages a pin 39 on the said bracket 29 thus when the lever arm is moved the device is raised or lowered as required

Thus it will be seen that as the honey comb frame is fed to the knives the wax is cut from both sides of the same so that the said frames are then ready to be placed in the honey extractor. The honeycomb frames 18 are placed on the endless chains 20 and carried along the frame 10 by the lugs 22, towards the upper and lower cutting knives 15 and 13. The honeycomb frame passes beneath the movable frame 14, which by reason of the springs 17 exerts a downward pressure on the honeycomb frame. The cutting knives are adjusted to cut a predetermined depth below the wax surfaces of the honeycomb and as the honeycomb passes between the knives the wax surfaces on both sides of the honeycomb are removed therefrom. The knives are heated by steam or otherwise to facilitate the knives in cutting the wax.

It is believed that the construction and advantages of the structure shown may be apparent from the foregoing paragraphs taken in conjunction with the accompanying drawings without further detailed description.

While the preferred embodiment of the invention has been disclosed it is understood that minor changes in the details of construction, combination and arrangement of co-operating parts may be resorted to within the scope of what is claimed without departing from the spirit of the invention.

I claim:—

1. In a honeycomb decapping machine of the type described, a frame, a cutting knife mounted thereon, an upper frame parallel to said frame and movable so as to always be in a plane parallel to said frame, a cutting knife mounted on said upper frame, and means for moving a honeycomb between said frames.

2. In a honeycomb decapping machine of the type described, a frame, a cutting knife mounted thereon, an upper frame parallel to said frame and movable so as to always be in a plane parallel to said frame, said upper frame having a cutting knife mounted therein, means for moving the honeycomb along the frame top and under the upper frame so that the said honeycomb will engage both of the said cutting knives.

3. In a honeycomb decapping machine of the type described, a lower frame, a cutting knife mounted transversely of said lower frame, an upper frame movable with respect to said lower frame, yieldable means for drawing said upper frame towards said lower frame, a cutting knife mounted transversely of said upper frame, and means for moving a honeycomb between the upper and lower frames into engagement with said cutting knives.

4. In a honeycomb decapping machine of the type described, a lower frame having a cutting knife extending transversely thereof, means for moving a honeycomb along said frame in the path of said cutting knife and means for exerting a downward pressure on said honeycomb.

WILLIAM ALBERT CHRYSLER.