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Raichart

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(54) **APPARATUS AND RELATED METHODS FOR EXTRACTING RESINS FROM CANNABIS**

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(51) **Int. Cl.**

- B07B 1/02** (2006.01)
- B07B 1/28** (2006.01)
- B07B 1/22** (2006.01)
- B07B 1/26** (2006.01)
- C09F 1/00** (2006.01)

(52) **U.S. Cl.**

CPC . **B07B 1/288** (2013.01); **B07B 1/22** (2013.01);
B07B 1/26 (2013.01); **C09F 1/00** (2013.01)

(58) **Field of Classification Search**

CPC B07B 1/02; B07B 1/12; B07B 1/28
USPC 209/350, 364, 369, 370-373, 409, 412
See application file for complete search history.

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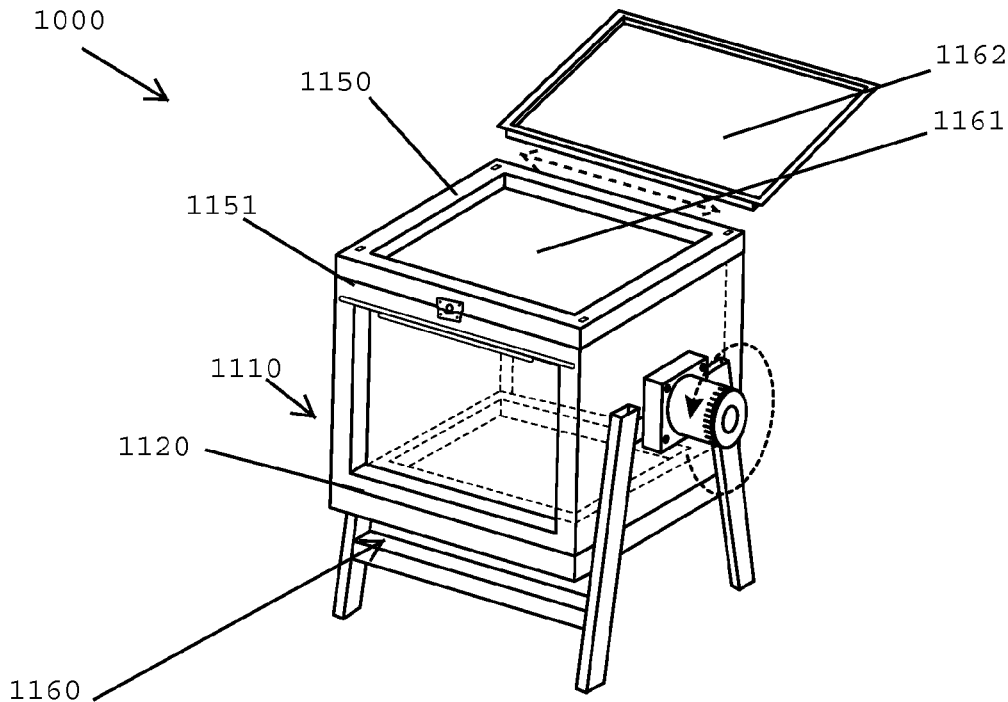
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(57) **ABSTRACT**

Disclosed may be an apparatus and related methods for simply and inexpensively extracting the psychoactive resins of cannabis skuff. Further disclosed may be apparatus and related methods of extracting cannabis resins without the drawbacks of heretoforknown apparatus. Yet still disclosed is apparatus and methods for using more of a harvested cannabis plant. In a preferred embodiment, the apparatus comprises: a tumble box with a door with a plurality of screened traps; and, a motor for rotating the box around an axis, and, shaking the tumble box along the axis. The more specific aspects of the disclosed apparatus are further described with reference to the drawings.

11 Claims, 4 Drawing Sheets



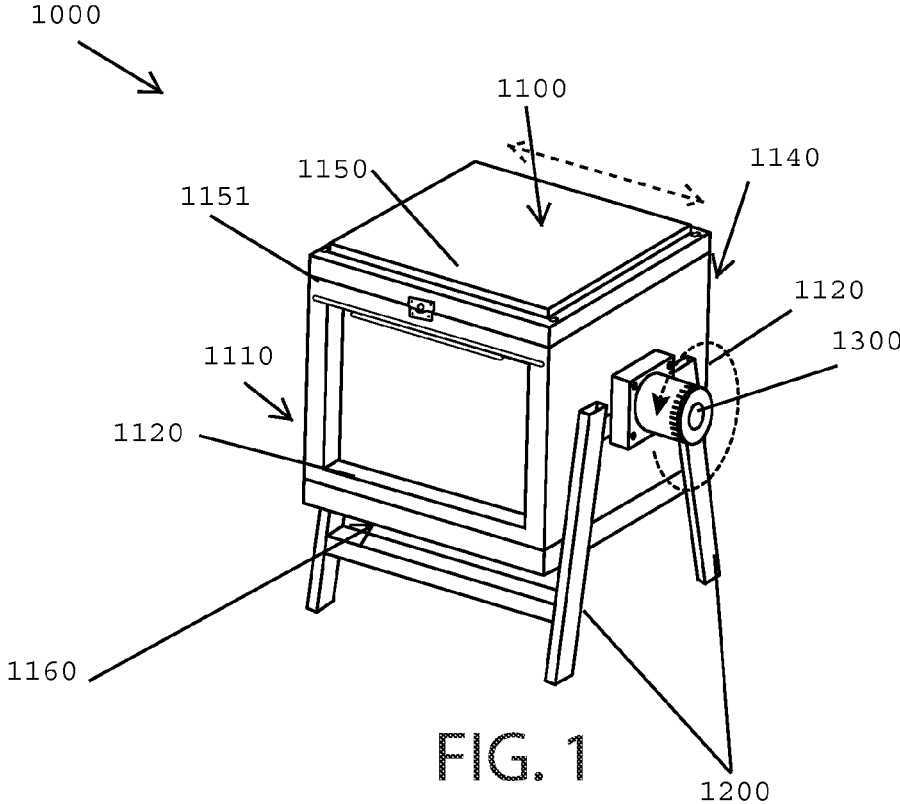


FIG. 1

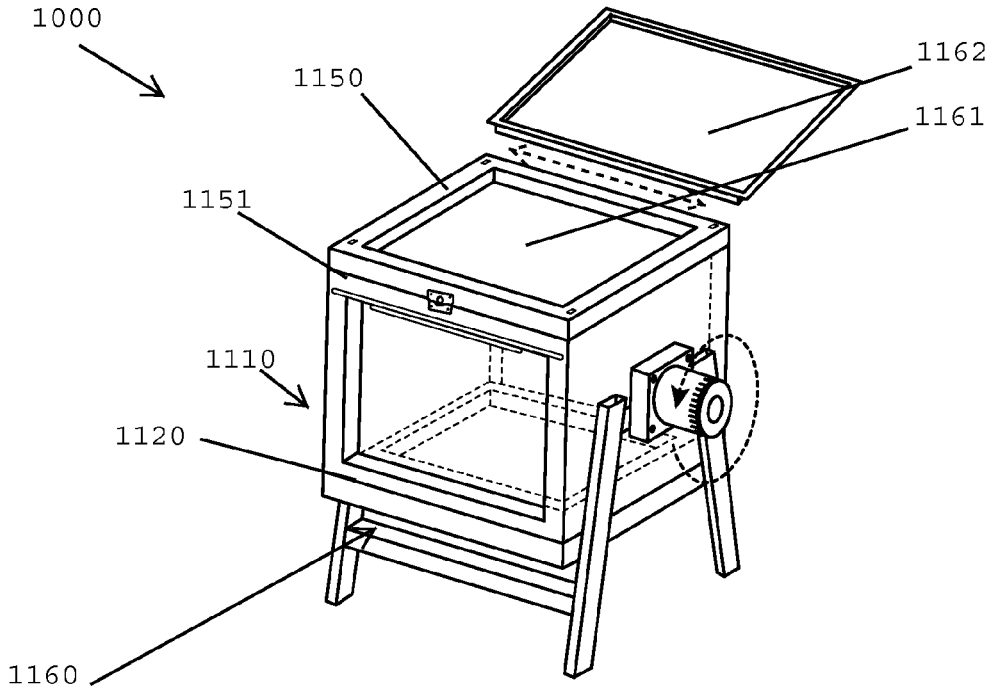


FIG. 2

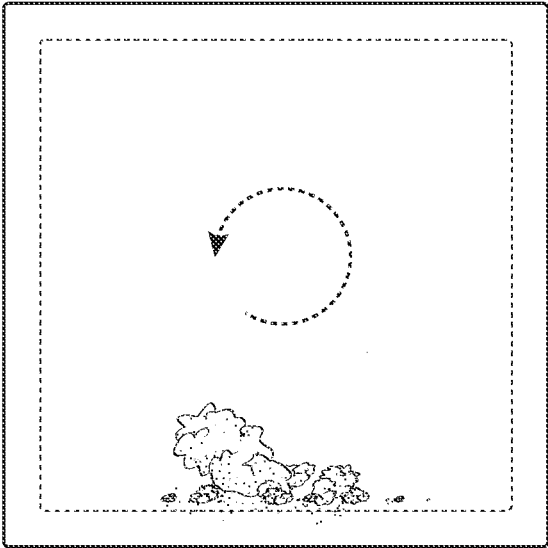


FIG. 3A

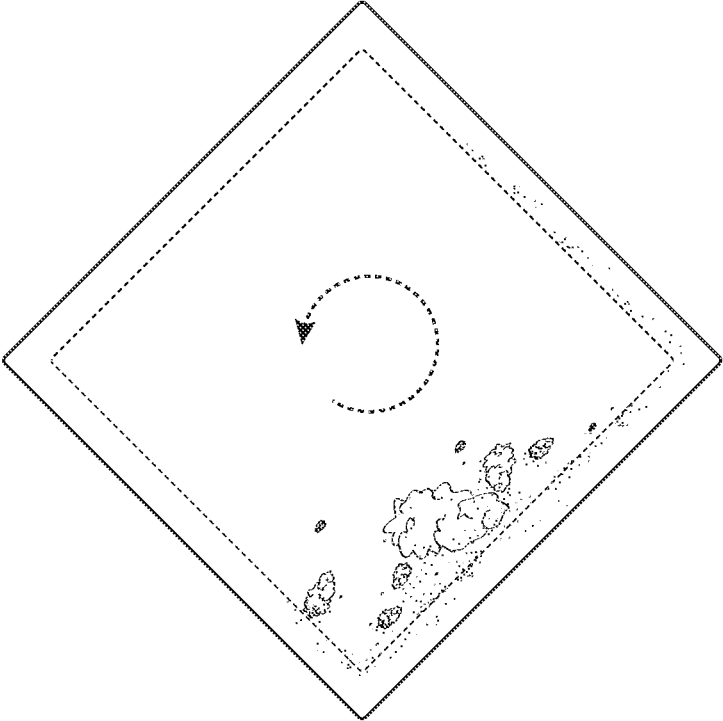


FIG. 3B

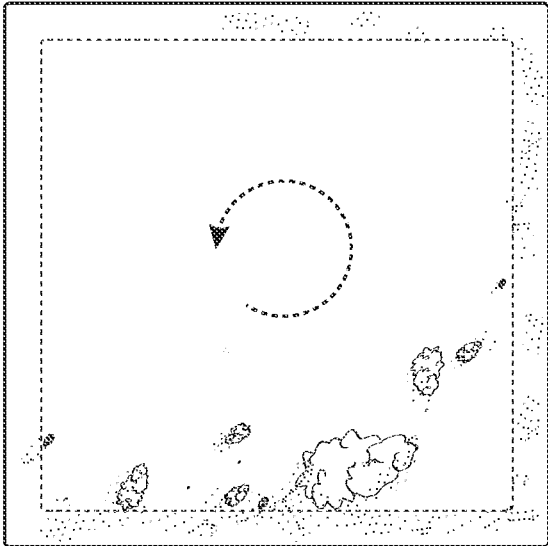


FIG. 3C

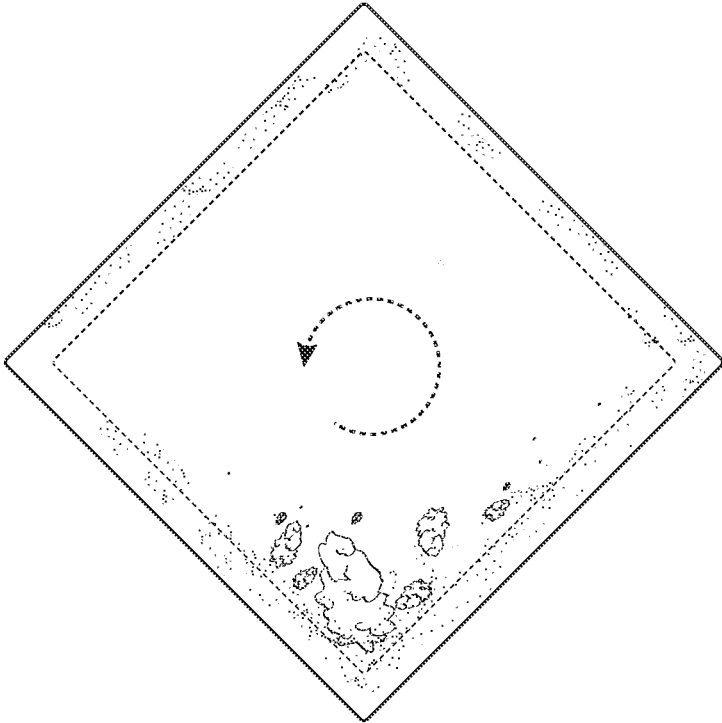


FIG. 3D

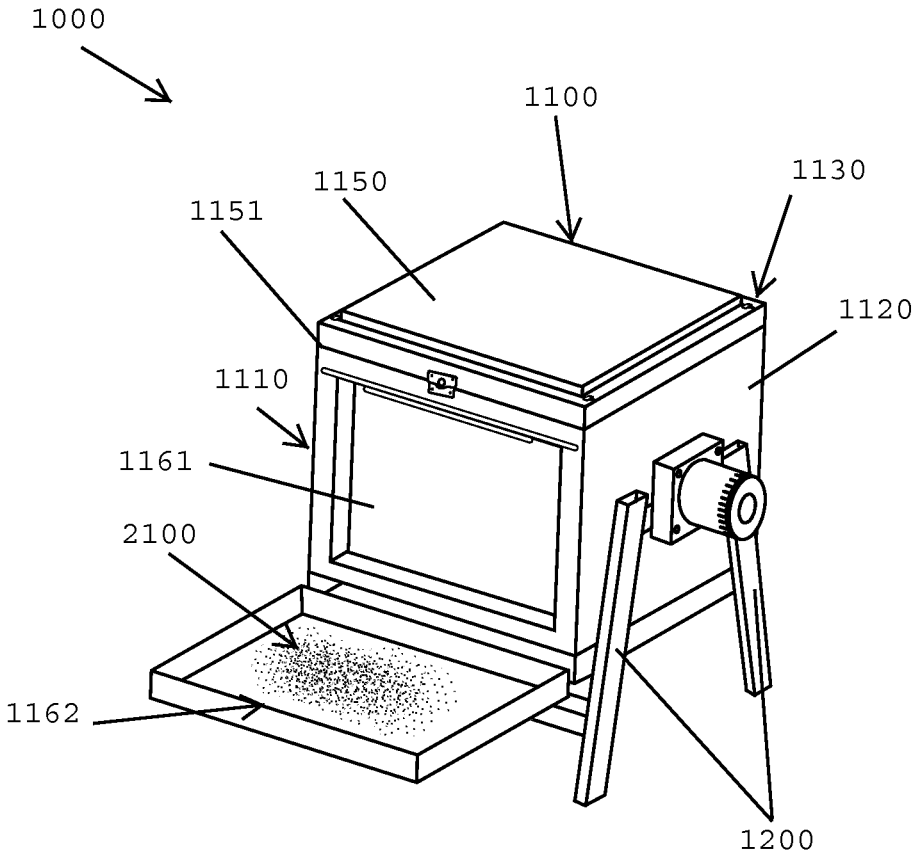


FIG. 4

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APPARATUS AND RELATED METHODS FOR EXTRACTING RESINS FROM CANNABIS

CROSS-REFERENCE TO RELATED APPLICATIONS

Not applicable.

STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT

Not applicable.

BACKGROUND OF THE INVENTION

1. Field of the Invention

This specification describes subject matter in the field of apparatus and related methods for extracting resins from cannabis.

2. Background of the Invention

Hashish, or “hash,” is a consumable compress of purified psychoactive resins from a cannabis plant. The highest concentration of these resins is found in the buds of the plant, which are typically smoked and consumed for recreational or medicinal uses via inhalation. This said, around ten percent of the resins are found in leaf and stems, collectively “skuff,” of the cannabis plant and said skuff is ordinarily discarded due to its unpleasantness as a smoked or eaten consumable. With cannabis use becoming socially acceptable and being legalized at state levels, it comes as no surprise that many are desirous of extracting the psychoactive resins from cannabis skuff so that the same may be recreationally or medicinally consumed.

Many ways exist for extracting the psychoactive cannabis resins. One popular method is known as flat screening. Flat screening is typically accomplished by manually rubbing skuff over a fine steel or silk screen placed over a mirror or glass. After contacting the skuff with the screen, the resins pass through the screen mesh for collection on the mirror or glass while the skuff remains on the screen. While flat screening is easily accomplished, the quality and amount of resins collected is dependent on the skill of the screener. As a result, flat screening frequently results in hash with contaminants or impurities.

Drum machines are another known way of extracting the psychoactive resins from cannabis plants. Basically, drum machines are comprised of a screen cylinder wherein skuff is placed in the screen cylinder while it is turned on its axis. As the screen cylinder turns, the resins fall through the mesh of the screen cylinder into a collection area. While drum machines may be automated, there may still be a certain level of skill required for extracting highly concentrated resins. Also, drum machines turn the skuff over the screen, rather than rubbing, so that more time is required to extract the resins by turning than by flat screening.

In view of the foregoing, a need exists for apparatus and related methods of extracting the psychoactive resins from cannabis skuff. More specifically, a need exists for apparatus and related methods of improved flat screening or drumming machines for removing resins from cannabis plants.

SUMMARY OF THE INVENTION

With the aforementioned need in mind, it is an object of this description to disclose a device for simply and inexpensively extracting the psychoactive resins of cannabis skuff. It is further an objective to disclose apparatus and related methods

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of extracting cannabis resins without the drawbacks of heretoforknown apparatus. Yet still, it is an objective to disclose apparatus and related methods of extracting cannabis resins so that more of a cannabis plant can be used for recreational or medicinal purposes. In a preferred embodiment, the apparatus comprises:

- (1) a tumble box with a plurality of screened traps; and,
- (2) a motor for
 - a. rotating the box around an axis, or,
 - b. shaking the tumble box along the axis.

In one mode of operation, skuff may be provided to within the tumble box, the motor may be energized so that the box rotates or shakes, wherein rotating and shaking the box passes resins through the screen traps, and wherein the resins may be extracted via opening the screened traps. After extraction, the resins may be compressed into hash.

BRIEF DESCRIPTION OF THE FIGURES

The manner in which these objectives and other desirable characteristics can be obtained is explained in the following description and attached figures in which:

FIG. 1 is a perspective view the apparatus **1000**;

FIG. 2 is a perspective view the apparatus **1000** of FIG. 1 with an open door **1151**;

FIG. 3A is a cross section of the tumble box **1100** of the apparatus **1000** shown in FIGS. 1 and 2;

FIG. 3B is another cross section of the tumble box **1100** of the apparatus **1000** shown in FIGS. 1 and 2;

FIG. 3C is yet another cross section of the tumble box **1100** of the apparatus **1000** shown in FIGS. 1 and 2;

FIG. 3D is yet still and another cross section of the tumble box **1100** of the apparatus **1000** shown in FIGS. 1 and 2;

FIG. 4 is a perspective view of the apparatus **1000** with the screen trap **1160** opened; and,

It is to be noted, however, that the appended figures illustrate only typical embodiments of the disclosed apparatus and methods, and therefore, are not to be considered limiting of their scope, for the disclosed apparatus and methodologies may admit to other equally effective embodiments that will be appreciated by those reasonably skilled in the relevant arts. Also, figures are not necessarily made to scale.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Disclosed may be an apparatus and related methods for simply and inexpensively extracting the psychoactive resins of cannabis skuff. Further disclosed may be apparatus and related methods of extracting cannabis resins without the drawbacks of heretoforknown apparatus. In a preferred embodiment, the apparatus comprises: a tumble box with a door plus a plurality of screened traps; and a motor for (i) rotating the box around an axis, and (ii) shaking the tumble box along the axis. The more specific aspects of the disclosed apparatus are further described with reference to the drawings.

FIG. 1 illustrates a perspective view of an apparatus **1000**. As shown in FIG. 1, the apparatus is defined by: (1) a tumble box **1100**; (2) a support stand **1200**; and (3) a motor **1300**. The tumble box **1100** is preferably defined by a box with six orthogonal sides, namely: a left side **1110**, a right side **1120**, a front side **1130**, a back side **1140**, a top side **1150**, and a bottom side **1160**. The left and right sides **1110**, **1120** of the tumble box **1000** feature an axis that is mounted on the support stand **1200**, which may be in the form of an A-frame. The axis on the left side **1110** rises in a bushing/bearing in the

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support stand **1200**. The shaft on the right sides **1120** has a gear on and also rides in a bushing/bearing in the support stand **1200**. Still referring to FIG. 1, a motor **1300** is mounted to support stand **1200**. The drive shaft of the motor has a gear on it that meshes with the gear on the box's **1100** the axis of rotation on the right side **1120**. Suitably, the motor **1300** may be for spinning (at between twenty and forty revolutions per minute) or shaking the tumble box **1100** in the manner depicted by arrows in broken lines. In other words, an apparatus may be configured to spin, rotate, or spin and rotate. In one embodiment, the motor is designed to run on several power sources, including but not limited to a standard alternate current power source or a solar panel with a direct current inverter. The motor **1300** may be manually operated or a timer may suitably be provided to the motor to control the amount of time that the machine rotates.

FIG. 2 is another perspective of the apparatus **1000** depicted in FIG. 1. Referring to FIG. 2, the top side **1150** of the tumble box **1100** is preferably hinged so as to provide a door **1151** to the inside of the tumble box **1100**. Suitably, the hinged door **1151** may be latched so that the same may be kept closed during operation of the apparatus **1000**. In an alternate embodiment (not shown) the door may feature a door that snaps into place rather than one that is hinged. As shown in broken lines, the inside of the tumble box **1100** is preferably hollow. The front, bottom, back, and top sides of the tumble box **1100** are all defined by a screen trap **1160**, which components are comprised a steel or silk screen (preferably in the xx micron to yy micron range) on the inside walls **1161** of the tumble box **1110**, and collection pans on the outside wall **1162** of the tumble box **1100**. The collection pans **1162** preferably attach to the outside walls of the tumble box **1100** via releasable clips. In one embodiment, the tumble box **1000** and its components are constructed of wood, metal or plastic.

As set forth above, the disclosed apparatus may be used to extract resins from cannabis or other plants. FIGS. 3A through 3D illustrate how said resin extraction is accomplished. Referring first to FIG. 3A, which is a cross section of the tumble box **1100** shown in FIGS. 1 and 2, a load of skuff **2000** may be deposited within the tumble box via the door **1151**. Suitably, skuff **2000** should be provided in the amount of one-quarter of the volume of the box **1100**. As shown, the skuff comprises resin **2100** and waste product **2200**. Without more, few resin nodules pass through the screens **1161** of the screen traps **1160**. Referring now to FIG. 3B, which is a quarter turn of the cross-section tumble box **1100** in view of FIG. 3A, rotation of the box causes movement of the resin **2100** whereby some of the resin **2100** is dislocated from the waste product **2200** and passes through the screens in to one of the screen traps **1160**. It should be noted that in addition to the tumble box being rotated, the tumble box is also being shaken from left to right side. Suitably, the shaking of the tumble box **1100** results in a rubbing action of the screen against the skuff so that more of the resins **2100** are dislocated and provided to the steel traps. FIGS. 3C and 3D illustrate further quarter turns of the tumble box and a corresponding increase in collected resin. In one embodiment, a timer is set so that the box **1100** runs for one to two hours.

In one mode of operation, skuff may be provided to within the tumble box **1100**, the motor **1300** may be energized so that the box rotates or shakes, wherein rotating and shaking the box **1100** passes resins through the screen traps **1160**, and wherein the resins may be extracted via opening the screened traps **1160**. FIG. 4 illustrates an other perspective of the tumble box **1100** with screen trap **1160** of the front side **1120** opened to reveal collected resin **2100** and the screen **1161** on the front side **1120** of the tumble box **1100**. As shown, the

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figure depicts extraction of any collected resin from the tumble box **1100**. In one embodiment, the collection pan **1162** of the screen trap **1160** is snap-fit over the screen **1161** of any of the front, back, top or bottom walls. After a sufficient amount of resin **2100** is collected in the screen traps, the screen traps **1160** may suitably be opened by unsnapping the collection pan **1162** and gathering any resin disposed therein. Preferably, screen traps **1160** are opened while occupying a bottom, front, or back position so that collected resin will not be lost during opening of the screen traps **1160**. Once the resins have been collected, the skuff **2000** can be put through a second cycle, but much less resin will be collected. After the second cycle the skuff can be extracted from the box and replaced with new skuff.

Once a sufficient amount of resin has been collected hash may be produced via compressing the collected resin. In one embodiment, the resin is placed in a vessel and pressure is applied with a vise or hydraulic press. Once compressed, a brick of hash may result.

The disclosed apparatus may be constructed of any suitable materials and methodologies known for resin collectors. It should be noted that FIGS. 1 through 4 and the associated description are of illustrative importance only. In other words, the depiction and descriptions of the present disclosure should not be construed as limiting of the subject matter in this application. Additional modifications may become apparent to one skilled in the art after reading this disclosure. It should be noted that although this disclosure is made with reference to collecting resin from cannabis plant resins, the apparatus and related methods may be used for collecting any resins of any plants.

I claim:

1. An apparatus for collecting resins from plants comprising:
 - a tumble box defined by six orthogonal sides;
 - a first screen trap defined in a first wall of the box;
 - a second screen trap defined in a second wall of the box;
 - and,
 - a motor for spinning the tumble box.
2. The apparatus of claim 1 wherein left and right sides of the tumble box are rotatably secured to an A-frame by placement of an axis of the tumble box in bushings.
3. The apparatus of claim 2 wherein the motor is secured to the A-frame and a drive shaft of the motor is coupled to the axis.
4. The apparatus of claim 1 wherein the screen trap is further defined by a collection pan on the outside of the box.
5. The apparatus of claim 1 wherein the motor is further configured to shake the tumblebox.
6. A method of extracting resin from a plant comprising the steps of:
 - placing skuff in a tumble box defined by six orthogonal sides, a first screen trap defined in a first wall of the box, and a second screen trap defined in a second wall of the box; and,
 - turning the tumble box with a motor.
7. The method of claim 6 wherein the screen trap is further defined a collection pan on the outside of the box.
8. The method of claim 6 wherein the tumble box is defined by at least four screen traps.
9. The method of claim 6 wherein the step of rotating the tumble box is at a revolution per minute in the range of twenty to forty.
10. The method of claim 6 wherein the step of rotating the tumble box lasts for a time in the range of one to two hours.

11. The method of claim 6 further comprising the step of shaking the tumble box.

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