

No. 743,554.

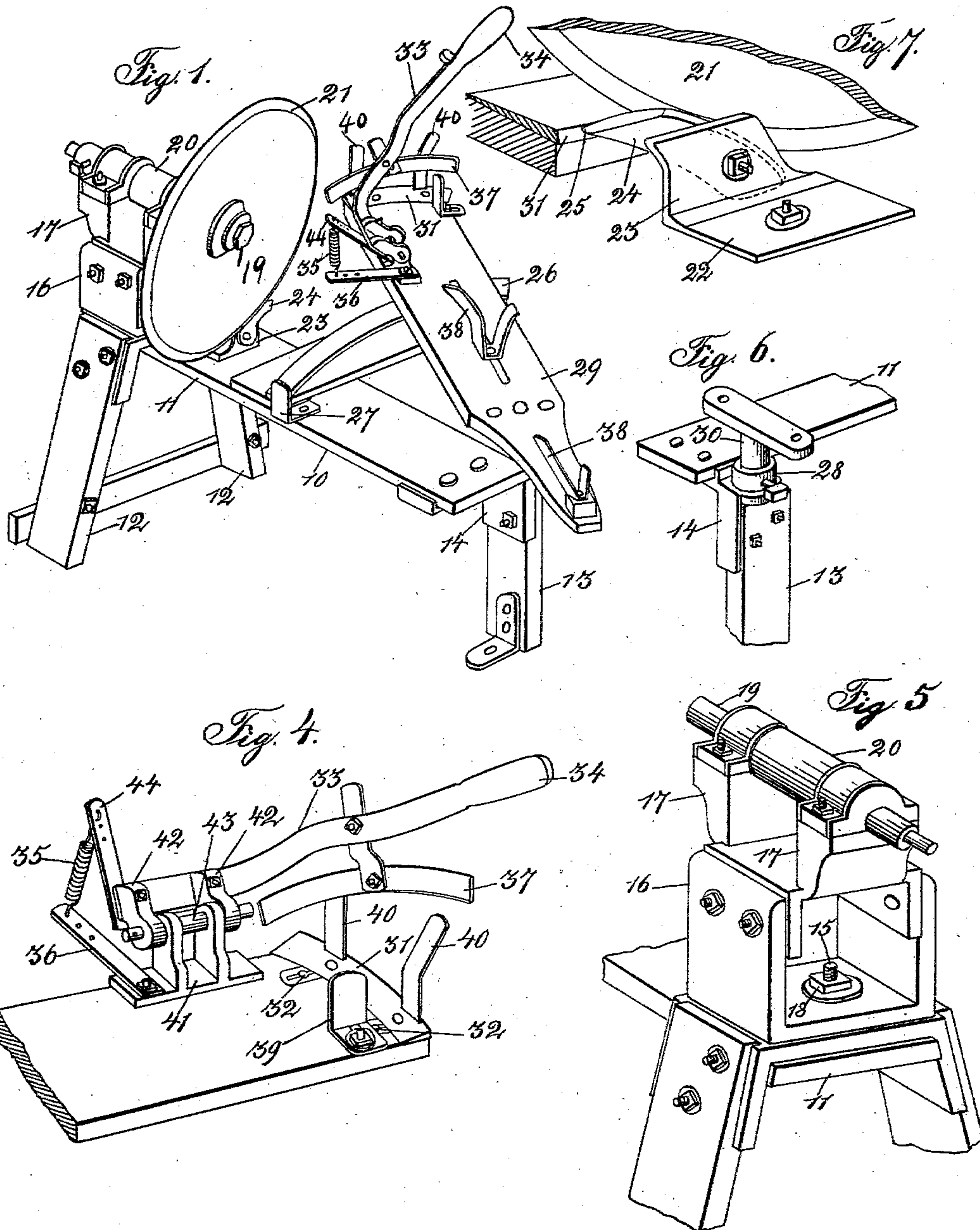
PATENTED NOV. 10, 1903.

L. PELTON.
BROOM TRIMMER.

APPLICATION FILED AUG. 28, 1902.

NO MODEL.

2 SHEETS—SHEET 1.



Witnesses:
Henry Manger.
L. H. Orwig.

Inventor: Leander Pelton.
by Orrig & Lane Atty

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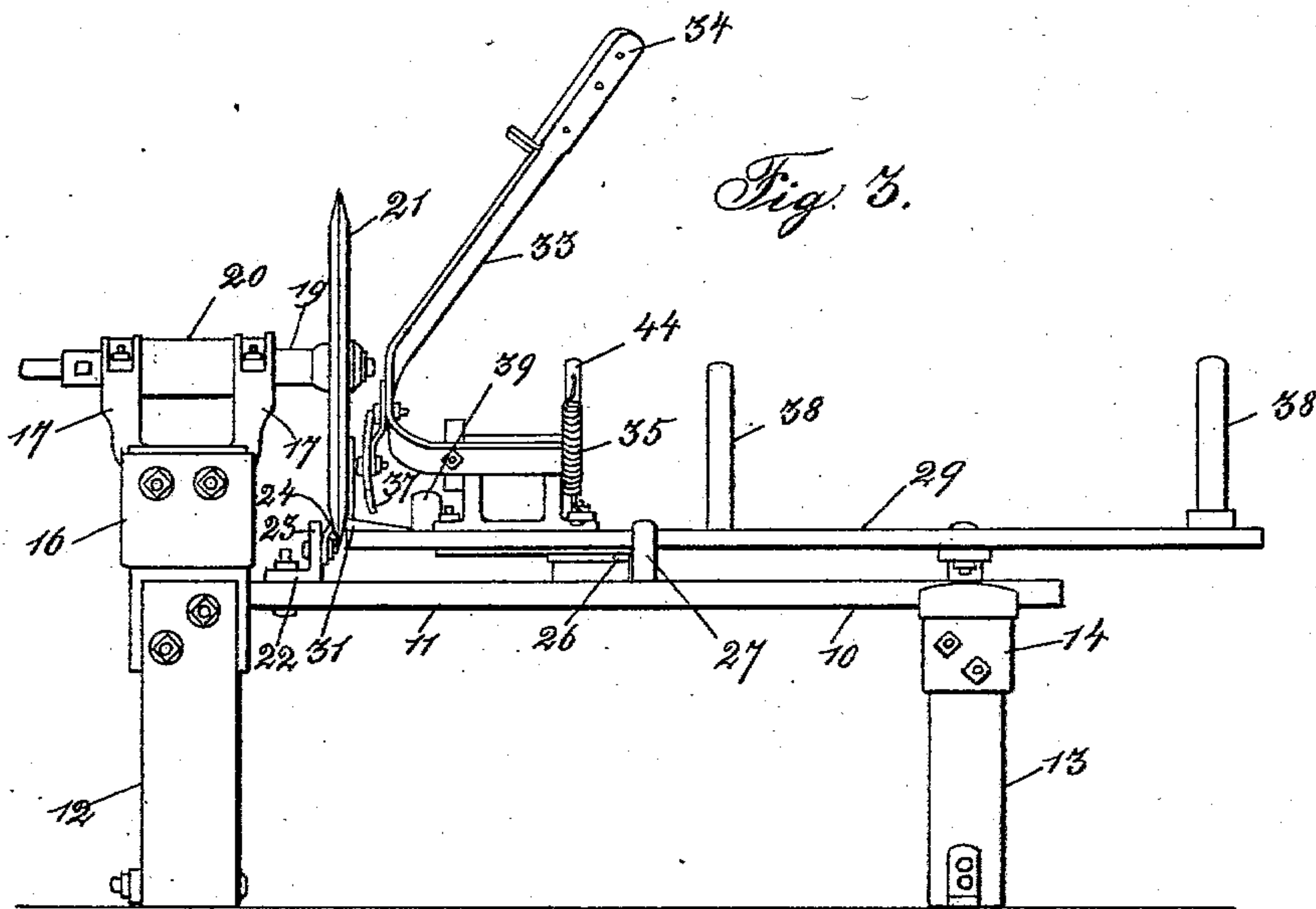
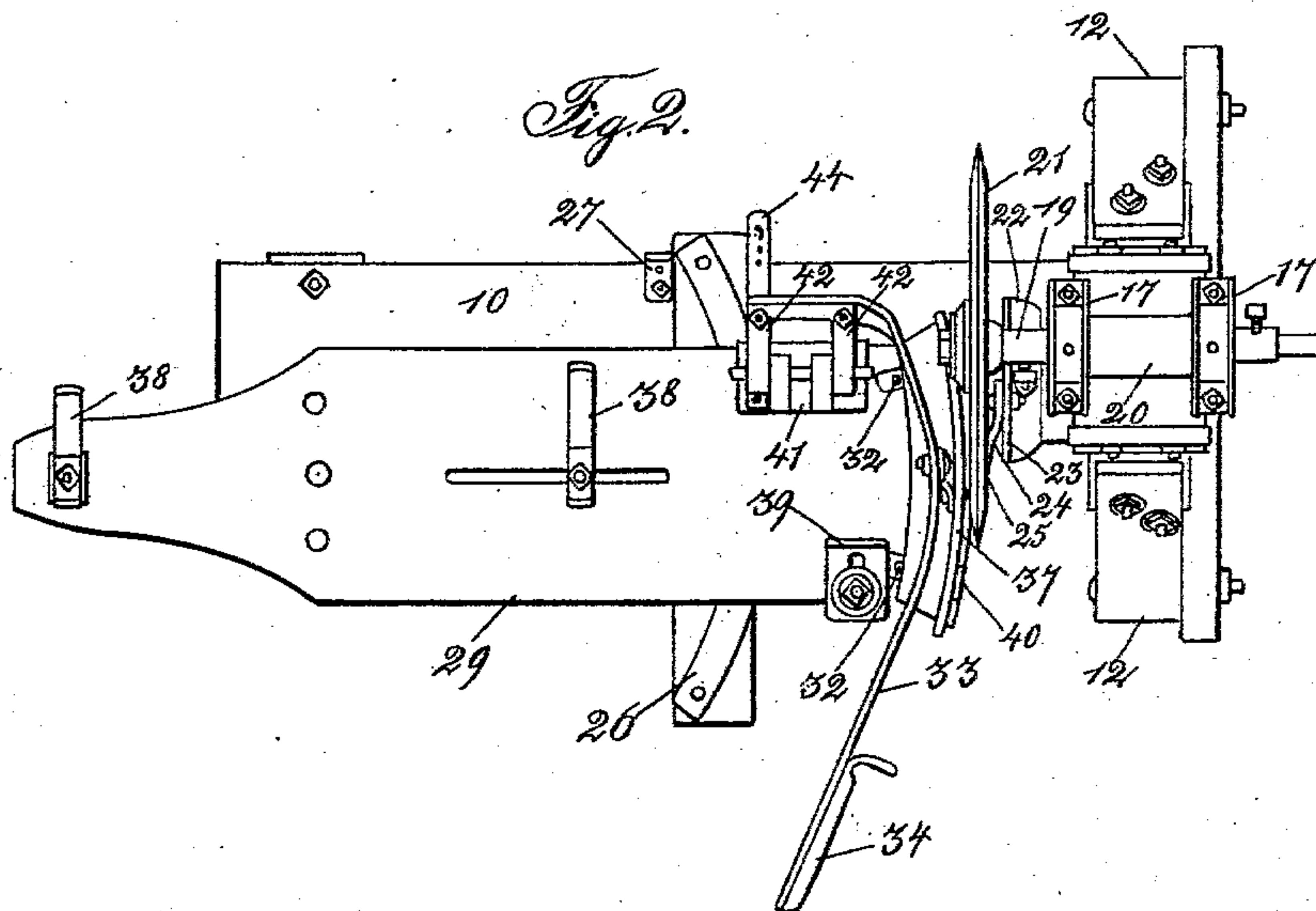
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Witnesses: *Henry Manger*
L. H. C. C. C. } Inventor: *Leander Pelton.*
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UNITED STATES PATENT OFFICE.

LEANDER PELTON, OF DES MOINES, IOWA.

BROOM-TRIMMER.

SPECIFICATION forming part of Letters Patent No. 743,554, dated November 10, 1903.

Application filed August 28, 1902. Serial No. 121,407. (No model.)

To all whom it may concern:

Be it known that I, LEANDER PELTON, a citizen of the United States, residing at Des Moines, in the county of Polk and State of Iowa, have invented a certain new and useful Broom-Trimmer, of which the following is a specification.

The objects of my invention are to provide a simple, durable, and inexpensive mechanism for trimming off the ends of brooms after they have been sewed which can be readily and easily attached by means of a belt to the driving-shaft in a broom-factory and which is operated by means of the power used for the other machinery commonly used in broom-factories; further, to provide a device for trimming broom-corn or other material which can be easily and readily moved from place to place without being taken apart.

A further object is to provide a device for trimming brooms in which there is proper mechanism for holding the broom firmly in position relative to the knife, so that the broom-corn can be evenly trimmed.

A further object is to provide a device which will cut the broom-corn smoothly throughout the entire width of the broom and which will not permit a single fiber of the broom-corn to escape being cut.

A further object is to provide means for adjusting the knife relative to the body of the machine and also to adjust the knives on the pivoted platform so that the cutting edges of the mechanism will be constantly in engagement with each other.

A further object is to provide a device in which there are three cutting edges in close proximity to each other.

A further object is to provide a platform which can be so swung on its pivot relative to the cutting-knife that the brush end of the broom can be cut on the circumference of a circle whose center is in the pivoted platform.

A further object is to provide adjustable means on the pivoted platform whereby any desirable size of broom can be held on this platform.

A further object is to provide a broom-trimmer which can be readily taken apart and compactly put together for the purpose of shipping when desired to do so.

My invention consists in certain details in the construction, arrangement, and combination of the various parts of the device whereby the objects contemplated are attained, as hereinafter more fully set forth, pointed out in my claims, and illustrated in the accompanying drawings, in which—

Figure 1 is a perspective of my complete device. Fig. 2 is a plan view of the same. Fig. 3 is a side elevation of the rear of my device. Fig. 4 shows in perspective the means for clamping the broom firmly to the platform and holding it in place relative to the platform. Fig. 5 is a perspective view of the adjustable support of the knife and shows the way in which this is attached to the standard of my machine. Fig. 6 is a perspective view of the pivotal support of the pivoted platform and the means whereby said platform is held in position relative to the standard on which it is mounted, and Fig. 7 is a detail perspective view of the edge of the knife with the top portion thereof broken away and shows the way in which the cutting edges of the cutting mechanism come together.

Referring to the accompanying drawings, I have used the reference-numeral 10 to indicate the standard of my device, said standard having the platform 11, the forward legs 12, and the rear leg 13 therein. The forward legs 12 are attached near the front end and to the sides of the platform 11. The rear leg 13 is preferably attached to the right-hand side of the platform, and near the rear end thereof the leg 13 is held firmly to the platform 11 by means of the angular metal connecting-piece 14. Pivotaly mounted at the front end of the platform 11 by means of the bolt 15 is the support 16, having the blocks 17 mounted at the top portion thereof. On the bolt 15 is the nut 18, so arranged that it can be adjusted to hold the support 16 firmly in position relative to the platform 11 in any desirable position. At the top of the block 17 I have rotatably mounted the knife-bearing shaft 19, having the belt-pulley 20 firmly attached to it. At the inner end of the knife-bearing shaft 19 the disk knife 21 is mounted. The shaft 19 is so arranged that it can be slid longitudinally of the part 20, and thus make the knife adjustable relative to said part 20, said knife having its outer portion beveled

from its cutting edge some distance inwardly toward the center of the knife for purposes hereinafter made clear. For the purpose of making the description perfectly clear it may be well to remark that the forward end of the device is at the end nearest which the knife is mounted. The knife 21 is of such size that it can rotate freely above the platform 11.

Adjustably attached to the platform and in front of the knife and slightly to the right hand thereof I have mounted the angular metal support, having the bottom portion 22 and the upright portion 23 integral with the body portion and substantially at right angles to it, said upright portion extending outwardly from the portion 22. On the rear face of the upright portion 23 of the angular support I have adjustably mounted the metal plate 24, having the cutting edge 25 at the upper rear portion thereof. This plate is so arranged that the cutting edge thereof will be substantially parallel with the top of the platform 11 and is designed to engage the forward beveled portion of the disk knife 21 and have its cutting edge at one point of its length in contact with the side of the cutting edge of the disk knife 21. This metal plate is adjustably attached to the upright portion of the support 23, so that it can be kept constantly in engagement with the cutting edge of the disk knife 21, and it is made detachable from the upright 23, so that it can be removed and the cutting edge thereof sharpened at the pleasure of the operator. This plate 24 extends from its point of attachment toward the right-hand side of the platform 11 and a slight distance upwardly from the upright 23. It is also made, preferably, of spring metal, so that its cutting edge will be constantly kept in engagement with the beveled portion and cutting edge of the disk knife.

To the rear of the knife at substantially the middle of the platform 11 and to the top portion thereof I have firmly attached the segmental track 26, whose center is immediately above the leg 13 of my standard. Immediately at the rear of the segmental track 26 and to the left-hand side of the platform 11 I have provided the metal stop 27, the upright in said stop projecting a slight distance above the upper portion of the segmental track 26. This stop 26 is designed to limit the movement of the pivoted platform, hereinafter described.

Mounted on top of the portion of the angular metal connecting-piece 14, which is above the post 13, I have mounted the collar 28 integral with said connecting-piece. I have provided a pivoted platform 29, which is designed to be moved in a plane substantially with the plane of the platform 11, and it is designed to be moved above said platform. On the under surface of the pivoted platform and near its rear end I have mounted the supporting-lug 30, said lug being designed to rotate freely in the collar 28. This lug is mounted midway between the

edges of the pivoted platform. The forward end of the pivoted platform is cut in the arc of a circle whose center is in the median line of the pivoted platform. Adjustably attached to the upper surface of the pivoted platform and near its extreme forward end is the segmental plate 31, having a cutting edge in the same vertical plane as the forward end of the pivoted platform 29. This segmental plate 31 is held adjustably in place by means of the bolts 32. The distance between the forward end of the pivoted platform and the pivotal point in said platform is practically the same distance as the pivotal point of the platform and the cutting edge of the metal plate 24, so that the pivoted platform can be moved in a horizontal plane on its pivot, and the cutting edge of the plate 31 will be in the same plane as the cutting edge of the plate 24. The cutting edge of the plate 31 will rest against the rear beveled portion of the knife 21 and in engagement with the cutting edge of the disk knife 21, so that when this platform 29 is moved in a horizontal plane the cutting edge of the plate 31 and the cutting edge of the plate 24 and the cutting edge of the knife 21 will come together very nearly, and one of the beveled edges of the knife 21 will be in engagement with the cutting edge of the knife 24 and the other beveled edge of the knife 21 will be in engagement with the cutting edge of the plate 31 and will remain in that position throughout the movement of the pivoted platform from the time the forward end of the plate 31 is in engagement with the beveled portion of the knife 21 until the platform engages the stop 27, which is designed to limit its horizontal movement.

Pivotaly mounted on the upper surface of the pivoted platform 29 and near one edge thereof is the retaining-lever 33, having a handle 34 at one end and a spring 35 attached to its other end, said spring being also attached to a brace 36, which brace is in turn attached to the top of the pivoted platform 29 and adjacent to the point of attachment of the lever 33. This spring is designed to keep the lever in the raised position until it is pushed downwardly toward the upper surface of the pivoted platform 29 by the operator when he grasps the handle 34. Attached to the retaining-lever 33 is the pivotally-mounted curved bar 37, said bar being of substantially the same curve as the forward end of the pivoted platform 29. This curved bar 37 is thus pivoted so that as the operator places a broom on top of the platform 29 and moves the lever 34 downwardly against the upper surface of the broom which is on the pivoted platform 29 and the curved arm will adjust itself to their regularities in the thickness of the broom when the operator places the handle downwardly toward the pivoted platform, and by this means the broom will be held firmly in position against the upper surface of the platform 29 throughout its entire width,

and the handle of the broom being held firmly in place by means of the supports 38, which are also mounted in the upper surface of the pivoted platform and thus the broom will be prevented from moving from one side to the other of the pivoted platform, and as the operator moves the platform on its pivot the broom will also be moved with it. I have also provided an upright, which is adjustable, on the upper surface of the pivoted platform 29 and near the opposite edge of the said platform from the point of attachment of the retaining-lever 33. Said upright I have designated by the numeral 39, and it is designed to assist in retaining the broom more firmly in position on the pivoted platform. The retaining-supports 40 are designed for the same purpose and are attached near the front end of the pivoted platform.

As shown in Fig. 4 of the drawings, my retaining-lever is more specifically described as follows: To the upper surface of the pivoted platform and near the side which is designed to be away from the operator I have mounted a support 41, said support having two upright flanges thereon. To this support I have also mounted a brace 36, which extends away from the pivoted platform and substantially parallel with its upper surface. The retaining-lever 33 is pivotally mounted at its lower end, which is substantially at right angles to the body portion of the lever and to the support 41, by means of the supporting-lugs 42 and the pivotal rod 43. Attached near the extreme rear end of the lever is the brace 44, to which the spring 35 is attached at one end, said spring being also attached at its other end to the brace 36, as described above.

In practical use and assuming that the pivoted platform is in the position shown in Fig. 1 of the drawings the operator places the end of the broom which is to be trimmed between the retaining-supports 40 and on top of the pivoted platform 29, the handle being designed to rest in the adjustable supports 38. The operator then grasps the handle 34 of the retaining-lever 33 and presses it downwardly, so that the curved metal plate 37 rests against the upper surface of the broom. Then it will be seen by the above description that the broom will be held firmly in position on the pivoted platform. Then the operator moves the forward end of the pivoted platform in a direction toward the disk knives 21 by means of the handle 34, and as the forward end of the pivoted platform and the cutting edge of the plate 31 come in contact with the beveled portion of the disk knife 21, so that the cutting edge of the plate 31 engages the cutting edge of the disk knife 21, and as said cutting edge of said disk knife 21 is in engagement with the cutting edge of the plate 24 on the opposite side of said disk knife from where the cutting edge of the plate 31, the three cutting edges of the three knives 21, 24, and 31 are in close proximity to each other at the point where

these knives come closely together. The disk knife, which is rotating rapidly, will engage the broom-corn of the broom which is upon the pivoted platform 29, and as the forward end of the pivoted platform is moved constantly toward the disk knife the broom-corn will be trimmed off evenly by means of these three cutting edges coming together at the same point. It will readily be seen that the knife will not become dulled at all, as it is rotated on account of the beveled edge of the disk knife 31 fitting into the triangular opening between the cutting edges of the plates 31 and 24. The rubbing of the plates 31 and 24 will tend to sharpen the disk knife and the cutting edges of the plates 31 and 24. When the platform has moved to its limit of movement away from the operator, which limit of movement is determined by the stop 27, the platform is drawn toward the operator on its pivot, and as soon as the handle has been released the retaining-lever will be elevated by the spring 35 and the broom can be readily removed from the upper surface of the pivoted platform. The operation can be easily repeated.

The device, it will be seen, can be easily taken apart by removing a few nuts from the bolts.

Any size of broom of course can be cut by my mechanism, owing to adjustable features of it. The important feature, however, of my device is the way in which the three cutting edges are constantly together at the same point, and I provide a device which will prevent any single fiber of broom-corn being drawn downwardly relative to the cutting edge of the plate 31 when the knife is rotated. By means of the knife being arranged in this manner the operator can cut the broom evenly and smoothly.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States therefor, is—

1. The combination with a standard, of a knife mounted near said standard, a pivoted platform mounted on said standard, the forward end of which is designed to coact with the said knife, for the purposes stated.

2. In a device of the class described, the combination with a knife, of a pivoted platform having a cutting edge at the forward end thereof to engage the cutting edge of said knife when moved on its pivot, means for holding a broom on said pivoted platform and means for swinging said platform on its pivot, for the purposes stated.

3. In a device of the class described, the combination with a pivoted platform, of a segmental track beneath said platform, means for holding the broom-corn in a broom firmly relative to the forward edge of said platform and for moving said platform on its pivot, and a knife designed to coact with the forward end of said pivoted platform, for the purposes stated.

4. In a device of the class described, the

combination with a standard, of a knife having a beveled edge thereon, of a metal plate having a cutting edge thereon, said plate being mounted above said standard and the cutting edge of said plate resting against one side of the beveled portion of said knife and in engagement with the cutting edge thereof, a pivoted platform having a plate at its forward end, a cutting edge at the upper forward surface of said platform, a pivot attached to said standard for supporting the pivoted platform, said mechanism being so arranged that as the pivoted platform is moved on its pivot to said knife the cutting edge of the plate on said pivoted platform will engage the cutting edge of the plate attached to said support and also engage the cutting edge of said knife, for the purposes stated.

5. In a device of the class described, a standard, a pivoted platform mounted near one edge of the standard, and a segmental plate having a cutting edge thereon adjustably attached to the front end of said pivoted platform, for the purposes stated.

6. In a device of the class described, a standard, a pivoted platform mounted near one edge of the standard, a segmental plate having a cutting edge thereon adjustably attached to the front end of said pivoted platform, and means for retaining a broom attached to said pivoted platform.

7. In a device of the class described, a standard, a pivoted platform mounted near one edge of the standard, a segmental plate having a cutting edge thereon adjustably attached to the front end of said pivoted platform, means for retaining a broom attached to said pivoted platform, and means for holding the fibers in said broom firmly against the cutting edge of said segmental plate, for the purposes stated.

8. In a device of the class described, a standard, a pivoted platform mounted near one edge of the standard, a segmental plate having a cutting edge thereon adjustably attached to the front end of said pivoted platform, means for retaining a broom attached to said pivoted platform, means for holding the fibers in said broom firmly against the cutting edge of said segmental plate, a disk knife rotatably and adjustably mounted near the forward end of said plate when the plate is in engagement with the disk knife.

9. In a device of the class described, the combination of a knife having beveled edges thereon, two metal plates mounted near said knife, cutting edges on said metal plates engaging each other throughout a portion of their length and engaging the beveled edges of said knife, and a standard supporting the knife and the metal plates, for the purposes stated.

10. In a device of the class described, a cutting mechanism having three cutting edges coacting with each other when in operation, for the purposes stated.

11. In a device of the class described, the combination of a standard, an angular support mounted on said standard, a metal plate mounted on said angular support, a cutting edge on the upper portion of said metal plate, and a knife designed to coact with the cutting edge of said metal plate, for the purposes stated.

12. In a device of the class described, a standard, a pivoted platform mounted near one edge of the standard, a segmental plate having a cutting edge thereon adjustably attached to the front end of said pivoted platform, means for retaining a broom attached to said pivoted platform, means for holding the fibers on said broom firmly against the cutting edge of said segmental plate, a disk knife rotatably mounted above said standard and near the forward end of said segmental plate when the segmental plate is in engagement with said knife, and a metal plate having a cutting edge in engagement with said disk knife and above the standard adjacent to said knife, for the purposes stated.

13. In a device of the class described, the combination of a platform, a lever pivotally mounted at one side of the platform and extending over it, a bar pivotally connected with said pivoted lever and between the lever and the platform, said bar being designed to engage the upper surface of the platform when the lever is moved on its pivot toward the platform.

14. In a device of the class described, the combination of a pivoted platform, a lever pivotally attached to one side of the platform and extending over it, a curved bar pivotally connected with the central portion of said lever, said curved bar being designed to engage the object on the platform and beneath the lever when the lever is swung on its pivot toward the upper surface of the platform.

15. In a device of the class described, the combination of a platform, a lever pivotally mounted at one side of the platform and extending over it, a bar pivotally connected with said pivoted lever and between the lever and the platform, said bar being designed to engage the upper surface of the platform when the lever is moved on its pivot toward the platform and means for supporting the lever above the platform.

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Witnesses:

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