

No. 773,563.

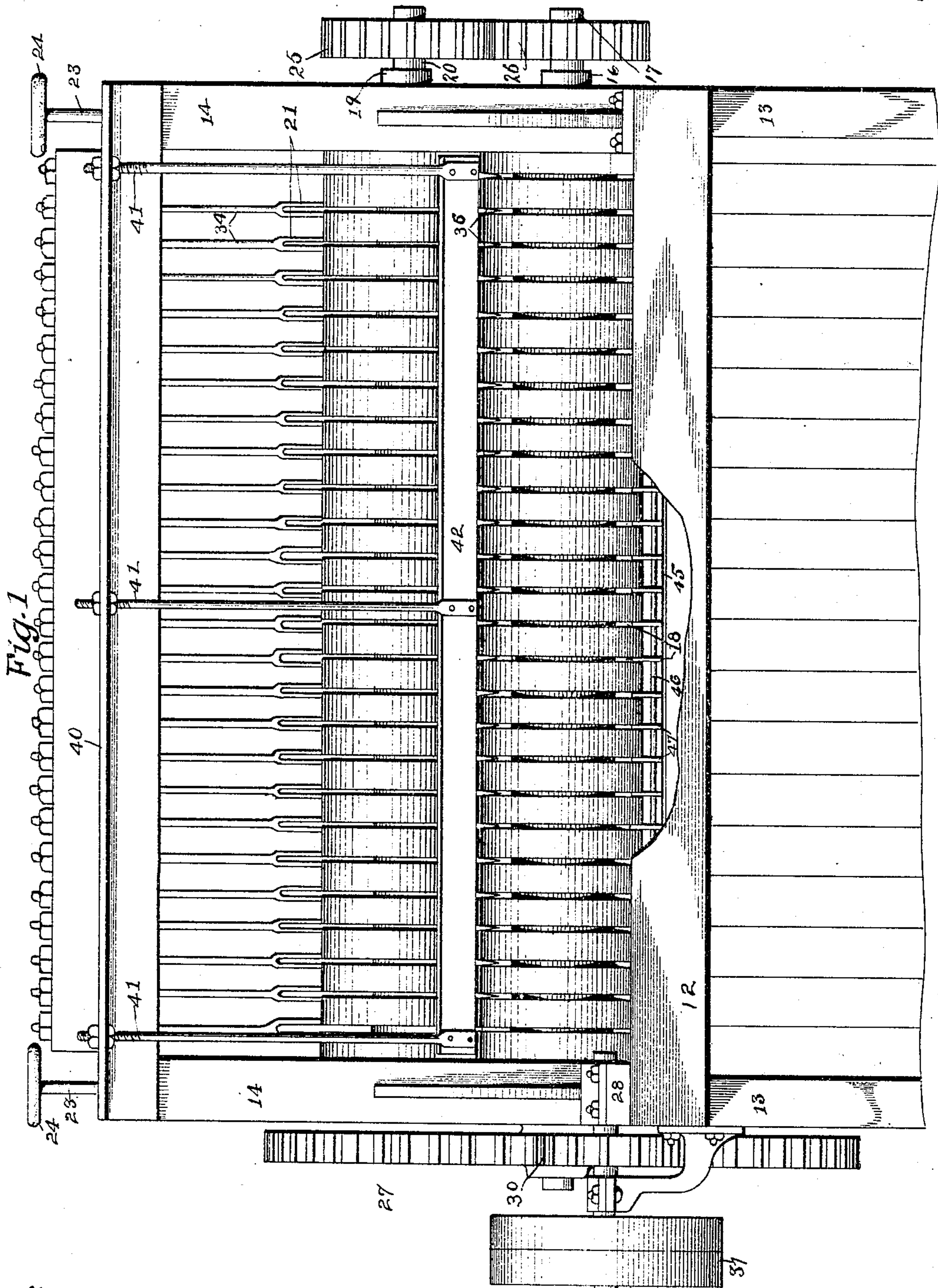
PATENTED NOV. 1, 1904.

G. E. GINN.
CUTTER.

APPLICATION FILED DEC. 3, 1903.

NO MODEL.

2 SHEETS—SHEET 1.



Witnesses

C. E. Heagur
S. F. Christy

Inventor *G. E. Ginn*

By *Quig & Lane* attys

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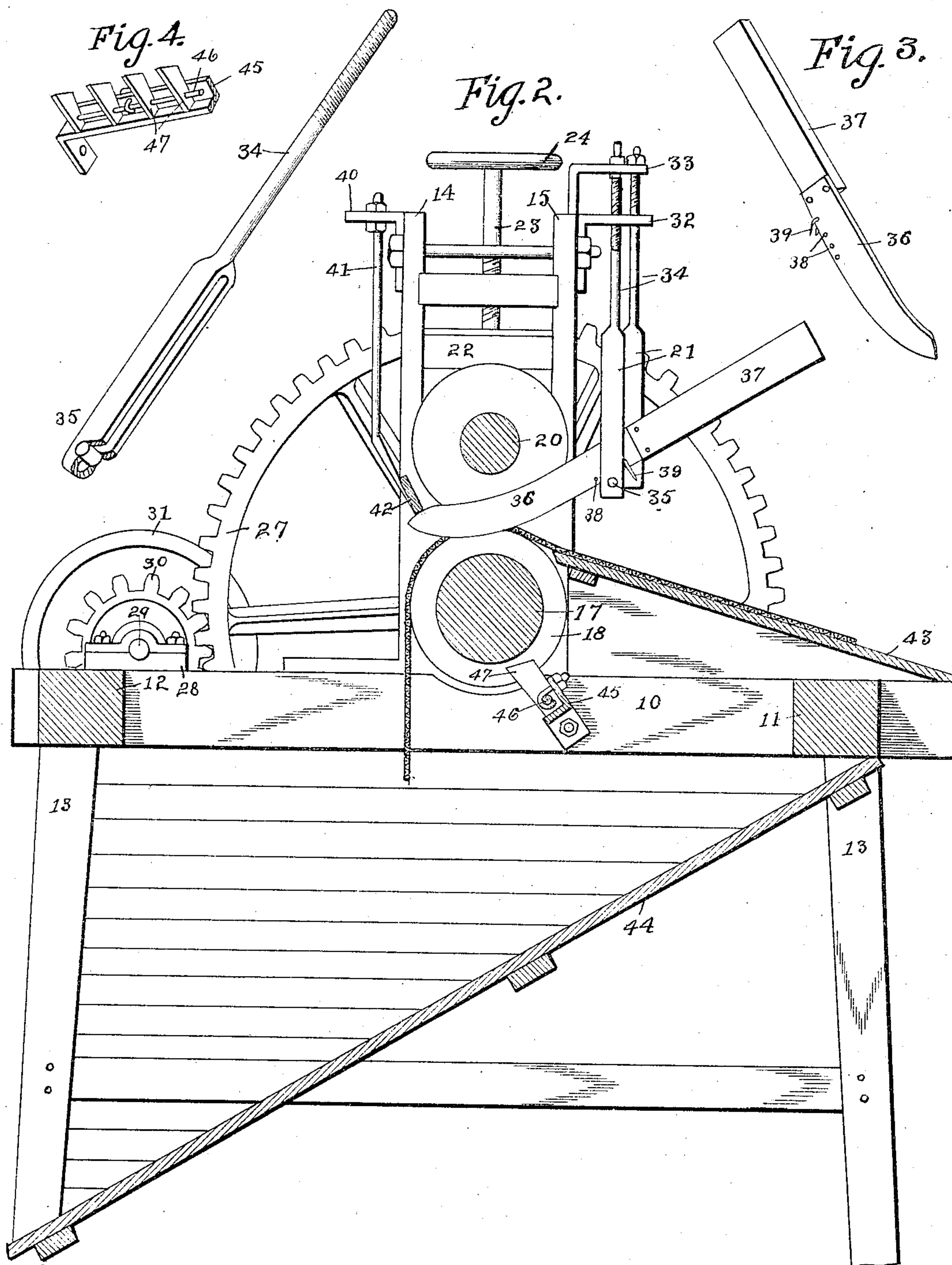
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UNITED STATES PATENT OFFICE.

GEORGE E. GINN, OF DES MOINES, IOWA.

CUTTER.

SPECIFICATION forming part of Letters Patent No. 773,563, dated November 1, 1904.

Application filed December 3, 1903. Serial No. 183,666. (No model.)

To all whom it may concern:

Be it known that I, GEORGE E. GINN, 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 Cutter, of which the following is a specification.

The objects of my invention are to provide a machine for cutting carpet into very narrow strips as it is passed between the rollers of my device and, further, to provide cutting-blades which can be easily placed in position relative to the machine or removed from it.

A further object is to provide a device of this class which can be operated by hand or by power and rollers in which are so arranged that they will draw the carpet forwardly between them and against the cutting edges of the knives whose blades extend between the rollers.

A further object is to provide advancing-rollers so arranged with a series of grooves in their peripheries that the blade of a knife can be inserted in these grooves and that as the carpet is advanced it will be drawn against the cutting edges of the series of knives.

A further and material object is to provide a cleaner for each groove in the series of grooves which are capable of horizontal adjustment.

A further object is to provide a series of cutting-blades so arranged that their point of contact with the carpet advanced between the rollers can be changed at the pleasure of the operator.

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 rear elevation of the complete machine. Fig. 2 is a cross-sectional view of the machine. Fig. 3 is a detail view of one of the cutting-blades. Fig. 4 shows in detail the number of the cleaning-blades and shows the way in which they are mounted.

Referring to the accompanying drawings, it will be seen that I have provided a frame

comprising the end portions 10, the front side portions 11, and the rear side portion 12, connecting the ends 10. At each corner of the frame is a leg 13, designed to support the sides and ends of the frame. Extending upwardly from each end of the frame are two upright posts 14 and 15. Mounted between each of the posts 14 and 15 is a bearing 16, immediately above the frame of the machine. Extending longitudinally of the frame and having each end thereof mounted in the bearing 16 is a roller 17, having a series of grooves 18 in its periphery.

Slidingly mounted above the bearing 16 and between each pair of posts 14 and 15 is the bearing 19, and in these bearings 19 the roller 20 is rotatably mounted, said roller having a series of grooves 21 in its periphery corresponding to the grooves 18 in the periphery of the roller 17, and when the rollers 17 and 20 are in position—that is, the roller 20 is above the roller 17—the groove 21 and the grooves 18 will be in line with each other, so that a series of grooves is formed between the body of the roller 17 and the body of the roller 20. Mounted above each of the bearings 19 is a piece of rubber 22 or other springing substance, which is normally held in position by means of the screw-threaded shaft 23, which is designed to be operated by the wheel 24, mounted on its upper end. There is a screw-threaded shaft 23 at each end of the frame; and these shafts are so arranged that the upper roller 20 will be maintained in position relative to the lower roller 17 as the rollers are rotated, so that the upper roller can be moved upwardly very slightly and downwardly very slightly to admit a piece of carpet of greater or less thickness between the rollers at the pleasure of the operator.

Mounted on one end of the shaft 20 is a gear-wheel 25. Mounted on the corresponding end of the roller 17 and in mesh with the gear-wheel 25 is a gear-wheel 26, so arranged that as the roller 17 is rotated the roller 20 will be correspondingly rotated. Mounted on the opposite end of the roller 17 from that upon which the gear-wheel 26 is mounted is a large gear-wheel 27, which is outside of the end 10 of the frame which is nearest it. Near the

side 12 of the frame and mounted above the frame is a boxing 28, in which the shaft 29 is rotatably mounted, having the gear-wheel 30 mounted on it and in mesh with the large gear-wheel 27. Mounted on the outer end of the shaft 29 is the driving-wheel 31, which is designed to be driven in the ordinary way to drive the operative parts of the device.

Connecting the upper portion of the two posts 15 and extending longitudinally of the frame are the metal plates 32 and 33. Standing in a vertical position and attached to these blades is a series of forked knife-supports 34, there being one of these knife-supports 34 for each of the grooves in the rollers, and there is one of these knife-supports behind each groove in the roller 20. Connecting the lower extremity of the forked portions of the knife-supports 34 is a pivot 35. I have provided a blade 36, having the weighted handle 37 thereon, the blade 36 being attached to one side of the handle 37. In the lower portion of the blade I have provided a series of holes 38, designed to admit a staple 39 or other retaining means. There are series of these knife-blades 36, and one of these blades is inserted between the forked portions of each of the knife-supports 34, and it extends forwardly into the grooves 18 and 21 immediately in front of these knife-supports. These knives are supported by means of the pivots 35, and they are prevented from slipping forwardly by the staples 39, which rest against the forked portions of the knife-supports 34. The weighted handle 37, which is attached at the rear of the knife-blade 36, is designed to normally force the forward end of the blade forwardly.

Extending longitudinally of the frame and connecting the upper extremities of the posts 14 is a metal plate 40. Extending downwardly from this metal plate 40 are the supports 41. Attached at the lower end of these supports 41 is a bar 42, against which the forward ends of the knife-blades 36 are designed to rest and be prevented from being forced upwardly beyond a certain point by the weighted handles 37.

Mounted above the frame and extending from the front side of it which is adjacent to the front side 11 and extending to a point slightly between the front sides of the rollers 17 and 20 is an inclined platform 43, upon which the carpet is to be placed and moved forwardly to a position where the rollers take hold of it and advance the carpet. Extending from the under portion of the side 11 of the frame to the lower portion of the legs on the opposite side of said frame is a second inclined platform 44, upon which the carpet which has been cut falls, and the narrow strips are carried off to a position at the rear of the machine.

Mounted in the end portions 10 and extending longitudinally of the frame is an angular metal strip. Attached to and between the side

portions of said strip is a rod 46, upon which a series of cleaner-blades 47 is mounted. There is one of these cleaner-blades 47 for each of the grooves 18 in the rollers 17, and these blades are so arranged that as the carpet is cut into small strips and dirt and other foreign substances are forced to the grooves 18, the cleaner-blades 47 will keep these grooves free from this substance, and thus keep the roller 17 always in condition for use.

In practical operation and assuming that the parts are assembled as above described, the operator places the piece of carpet which is to be cut into narrow strips on the platform 43 and moves it forwardly to a position where the rollers 20 and 17 causes it to be drawn forwardly. Inasmuch as these rollers are rotated in opposite directions as these rollers draw the piece of carpet forwardly the cutting edges of the knife-blade 36 will engage the carpet and cause it to be severed into narrow strips, there being a constant drawing force to move the carpet forwardly against the cutting edges of said blades, inasmuch as the rollers are being constantly rotated while the device is in operation by means of the drive-wheel 31 and its connections. On account of the way in which the knives are constructed and the manner in which they are mounted if one knife becomes dull this knife can be easily removed and another one put in to replace it or the entire set of knives may be removed and replaced by other knives without taking the machine apart or doing anything to the machine except to withdraw the knives and put the others in their places. On account of my peculiar arrangement and construction of knives the liability of the knives being dulled is reduced to a minimum, inasmuch as the cutting edges of the knives do not engage anything except the material which is to be cut. In connection with the use of my device it may be said that the drive-wheel 31 may be operated by hand or driven from a power-machine.

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

1. In a device of the class described, a frame, a pair of rollers extending longitudinally of the frame, having a series of grooves in each of them, two metal plates extending longitudinally above the frame and at the rear of said rollers, a series of forked knife-supports depending from said plates, having their lower forked ends immediately behind said rollers, a series of knives mounted in the lower forked ends of said forked knife-supports, having their forward cutting edges between said rollers, a weighted handle forming the rear ends of said knives, a pivot at the lower forked ends of each of the knife-supports, designed to support the knives, a detachable retaining device extending through each of the knives and designed to engage the rear of the knife

forked supports to prevent the knives from being thrown forwardly when the rollers are in operation.

2. In a device of the class described, a frame, 5 two rollers extending longitudinally of the frame, having a series of grooves encircling them, forked knife-supports mounted behind said rollers and above said frame, a pivotally and detachably mounted knife in each of the 10 forked knife-supports, designed to enter the grooves in said rollers, for the purposes stated.

3. In a device of the class described, a frame, 15 two rollers extending longitudinally of the frame, having a series of grooves encircling them, forked knife-supports mounted behind said rollers and above said frame, a pivotally and detachably mounted knife in each of the 20 grooves in said rollers, and a weighted handle at the rear end of each of said knives and behind their pivotal points, for the purposes stated.

4. In a device of the class described, a frame, 25 two rollers extending longitudinally of the frame, having a series of grooves encircling them, forked knife-supports mounted behind said rollers and above said frame, a pivotally and detachably mounted knife in each of the 30 forked knife-supports, designed to enter the grooves in said rollers, a bar extending longitudinally of the frame and in front of said rollers designed to limit the upward movement of the forward end of each of said knives.

5. In a device of the class described, a frame, 35 two rollers extending longitudinally of the frame, having a series of grooves encircling them, forked knife supports mounted behind said rollers and above said frame, a pivotally 40 and detachably mounted knife in each of the forked knife-supports, designed to enter the grooves in said rollers, a weighted handle at the rear end of each of said knives and behind their pivotal points, and a bar extending lon- 45 gitudinally of the frame and in front of said rollers, designed to limit the upward movement of the forward end of each of said knives.

6. In a device of the class described, a frame, 50 two rollers extending longitudinally of the frame, having a series of grooves encircling them, forked knife-supports mounted behind said rollers and above said frame, a pivotally and detachably mounted knife in each of the 55 forked knife-supports, designed to enter the grooves in said rollers, and a series of cleaner-blades entering each of the grooves in the lower of said rollers.

7. In a device of the class described, a frame, 60 two rollers extending longitudinally of the frame, having a series of grooves encircling them, forked knife-supports mounted behind said rollers and above said frame, a pivotally and detachably mounted knife in each of the 65 forked knife-supports, designed to enter the

grooves in said rollers, a weighted handle at the rear end of each of said knives and behind their pivotal points, and a series of cleaner-blades entering each of the grooves in the lower of said rollers. 70

8. In a device of the class described, a frame, two rollers extending longitudinally of the frame, having a series of grooves encircling them, forked knife-supports mounted behind said rollers and above said frame, a pivotally 75 and detachably mounted knife in each of the forked knife-supports, designed to enter the grooves in said rollers, a bar extending longitudinally of the frame and in front of said rollers designed to limit the upward move- 80 ment of the forward end of each of said knives, and a series of cleaner-blades entering each of the grooves in the lower of said rollers.

9. In a device of the class described, a frame, 85 two rollers extending longitudinally of the frame, having a series of grooves encircling them, forked knife-supports mounted behind said rollers and above said frame, a pivotally and detachably mounted knife in each of the 90 forked knife-supports, designed to enter the grooves in said rollers, a weighted handle at the rear end of each of said knives and behind their pivotal points, a bar extending longitudinally of the frame and in front of said roll- 95 ers, designed to limit the upward movement of the forward end of each of said knives, and a series of cleaner-blades entering each of the grooves in the lower of said rollers.

10. In a device of the class described, a frame, two rollers extending longitudinally of 100 the frame, having a series of grooves encircling them, forked knife-supports mounted behind said rollers and above said frame, a pivotally and detachably mounted knife in each of the forked knife-supports, designed to en- 105 ter the grooves in said rollers, a bar extending longitudinally of the frame and in front of said rollers, designed to limit the upward movement of the forward end of each of said knives, and an inclined platform leading from 110 the rear of the frame to a position adjacent to the meeting-point between said rollers.

11. In a device of the class described, a frame, two rollers extending longitudinally of the frame, having a series of grooves encir- 115 cing them, forked knife-supports mounted behind said rollers and above said frame, a pivotally and detachably mounted knife in each of the forked knife-supports, designed to enter the grooves in said rollers, a bar extend- 120 ing longitudinally of the frame and in front of said rollers, designed to limit the upward movement of the forward end of each of said knives, an inclined platform leading from the rear of the frame to a position adjacent to the 125 meeting-point between said rollers, and an inclined platform extending across the frame from the lower forward side thereof to the upper rear side beneath said rollers.

12. In a device of the class described, a 130

frame, a roller having a series of grooves therein extending longitudinally of the frame, a mating grooved roller extending longitudinally of the frame above said roller, means for
 5 adjusting the mating roller toward or away from the first-mentioned roller, a series of forked knife-supports at the rear of the rollers and above the frame, knives pivotally mounted in said forked knife-supports, a retaining
 10 device connected with the knife for limiting its forward movement, a weight forming the rear portion of each of said knives, a bar formed in front of said rollers and designed to limit the upward movement of the forward
 15 end of the end knife-blade, for the purposes stated.

13. In a device of the class described, a frame, a roller having a series of grooves therein extending longitudinally of the frame, a
 20 mating grooved roller extending longitudinally of the frame above said roller, means for adjusting the mating roller toward or away from the first-mentioned roller, a series of forked knife-supports at the rear of the rollers and above the frame, knives pivotally mounted in said forked knife-supports, a retaining
 25 device connected with the knife for limiting its forward movement, a weight forming the rear portion of each of said knives, a bar formed in front of said rollers and designed to limit the upward movement of the forward
 30 end of the end knife-blade, and a series of cleaner-blades mounted beneath said rollers designed to enter the grooves in the lower
 35 roller.

14. In a device of the class described, a pair of rollers, each roller in said pair having a series of circular grooves extending around them, a series of forked knife-supports mounted
 40 behind said rollers, a pin at the lower end of each of said forked knife-supports, a knife designed to rest on said pins in such a way that the forward end of said blades will enter the grooves in said rollers, a staple passed
 45 through the lower central portion of the knife designed to rest against the rear of the forked knife-supports and prevent the knife from being drawn forwardly, each of said knives being so arranged that it can be removed from
 50 its support without removing any of its attachments.

15. In a device of the class described, a pivotally-mounted knife, means for limiting the upward movement of the forward end of said
 55 knife, a weight at the rear end of said knife, designed to normally hold the forward end of said knife in engagement with said means, a retaining device extending through said knife, so arranged that the knife can be removed
 60 from its pivotal position without removing the pivot or the retaining device.

16. In a device of the class described, a series of forked knife-supports, a pin in the lower end of each of said forked knife-sup-
 65 ports, a knife having its lower edge in engage-

ment with each of said pins, a retaining device extending through the lower portion of the blade of each of said knives, designed to engage the rear of each of said forked knife-supports to prevent the knives from being
 70 drawn forwardly and yet so arranged that each of the knives can be withdrawn from its support.

17. In a device of the class described, a series of forked knife-supports, a pin in the
 75 lower end of each of said forked knife-supports, a knife having its lower edge in engagement with each of said pins, a retaining device extending through the lower portion of the blade of each of said knives, designed to
 80 engage the rear of each of said forked knife-supports to prevent the knives from being drawn forwardly and yet so arranged that each of the knives can be withdrawn from its support, and a weight at the rear end of each of
 85 said knives designed to force the forward end of the knife upwardly when in position in the forked knife-supports, and means for limiting the upward movement of the forward ends of
 90 said knives.

18. In a device of the class described, a series of forked knife-supports, a pin in the lower end of each of said forked knife-supports, a knife having its lower edge in engagement with each of said pins, a retaining de-
 95 vice extending through the lower portion of the blade of each of said knives, designed to engage the rear of each of said forked knife-supports to prevent the knives from being drawn forwardly and yet so arranged that each
 100 of the knives can be withdrawn from its support, and means for drawing a fabric against the cutting edges of said knives, for the purposes stated.

19. In a device of the class described, a series of forked knife-supports, a pin in the lower end of each of said forked knife-supports, a knife having its lower edge in engagement with each of said pins, a retaining de-
 105 vice extending through the lower portion of the blade of each of said knives, designed to engage the rear of each of said forked knife-supports to prevent the knives from being drawn forwardly and yet so arranged that each
 110 of the knives can be withdrawn from its support, a weight at the rear end of each of said knives designed to force the forward end of the knife upwardly when in position in the forked knife-supports, means for limiting the
 115 upward movement of the forward ends of said knives, and means for drawing a fabric against the cutting edges of said knives, for the purposes stated.

20. In a device of the class described, a series of forked knife-supports, a pin extending
 125 through the lower end of each of said forked knife-supports, a knife resting against the pins in said forked knife-supports, each of said knives having a series of openings extending through the lower portion of the blade there-
 130

of, a staple designed to be placed in one of said openings in each of the knives for preventing the forward movement of the knives, means for drawing a fabric against the cutting edges 5 of said knives.

21. In a device of the class described, a series of forked knife-supports, a pin extending through the lower end of each of said forked knife-supports, a knife resting against the pins 10 in said forked knife-supports, each of said knives having a series of openings extending through the lower portion of the blade thereof, a staple designed to be placed in one of said

openings in each of the knives for preventing the forward movement of the knives; means 15 for drawing a fabric against the cutting edges of said knives, a weight at the rear end of each of said knives for forcing the forward ends of the knives upwardly, and means for limiting the upward movement of the forward ends of 20 said knives.

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Witnesses:

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W. R. LANE.