

Feb. 17, 1953

F. E. MAXWELL
LINOLEUM COILING DRUM

2,628,789

Filed Sept. 21, 1949

2 SHEETS—SHEET 1

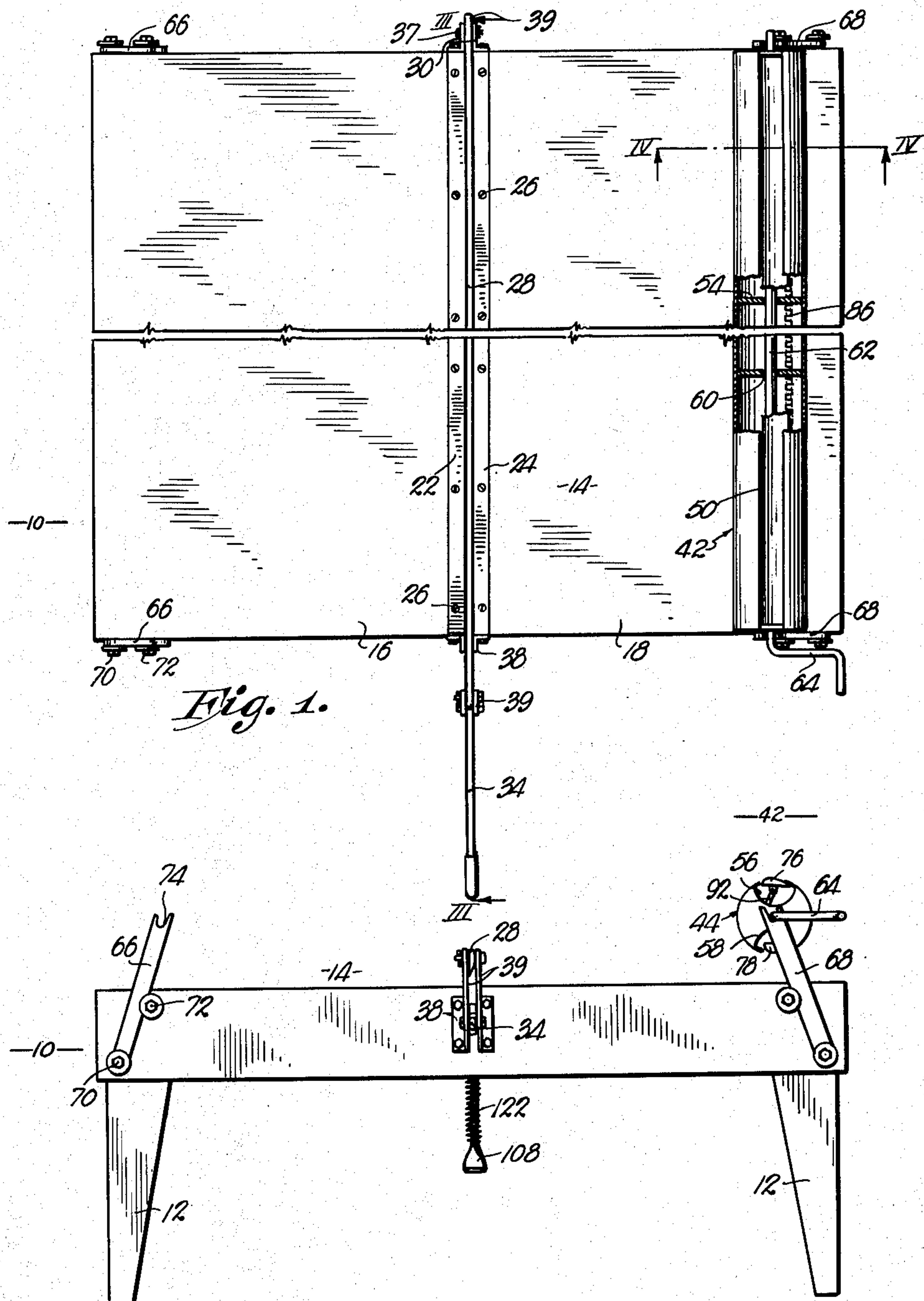


Fig. 2.

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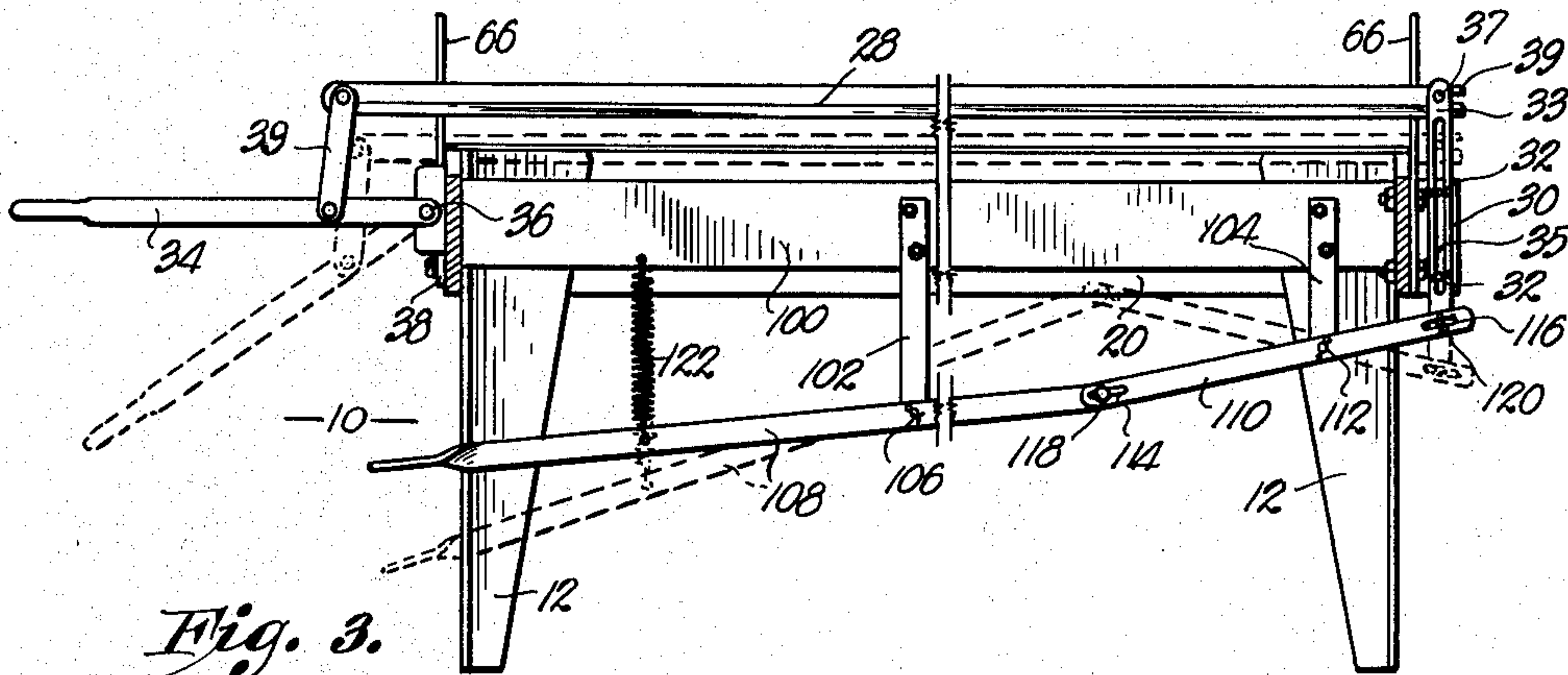


Fig. 3.

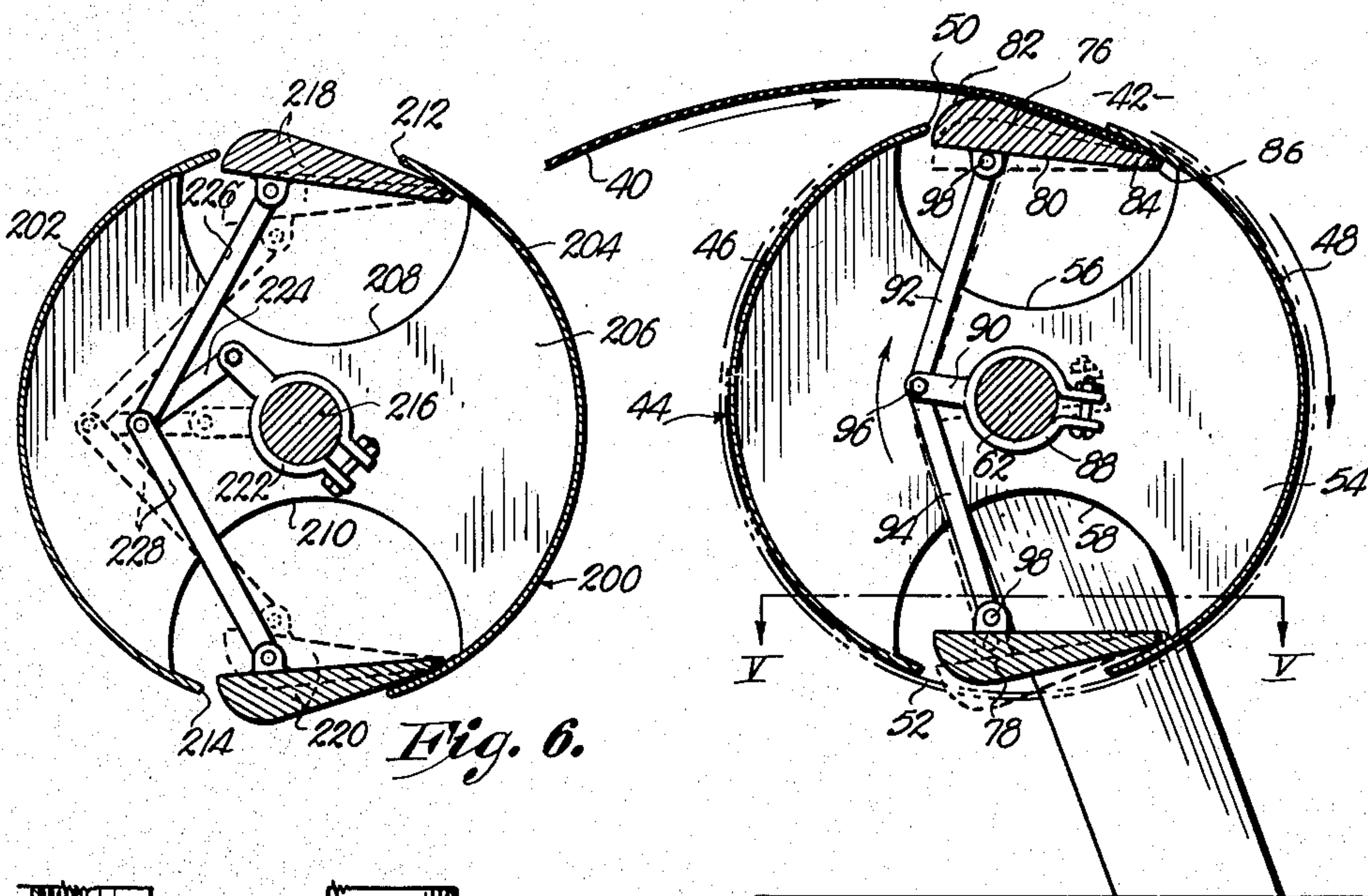


Fig. 6.

Fig. 4.

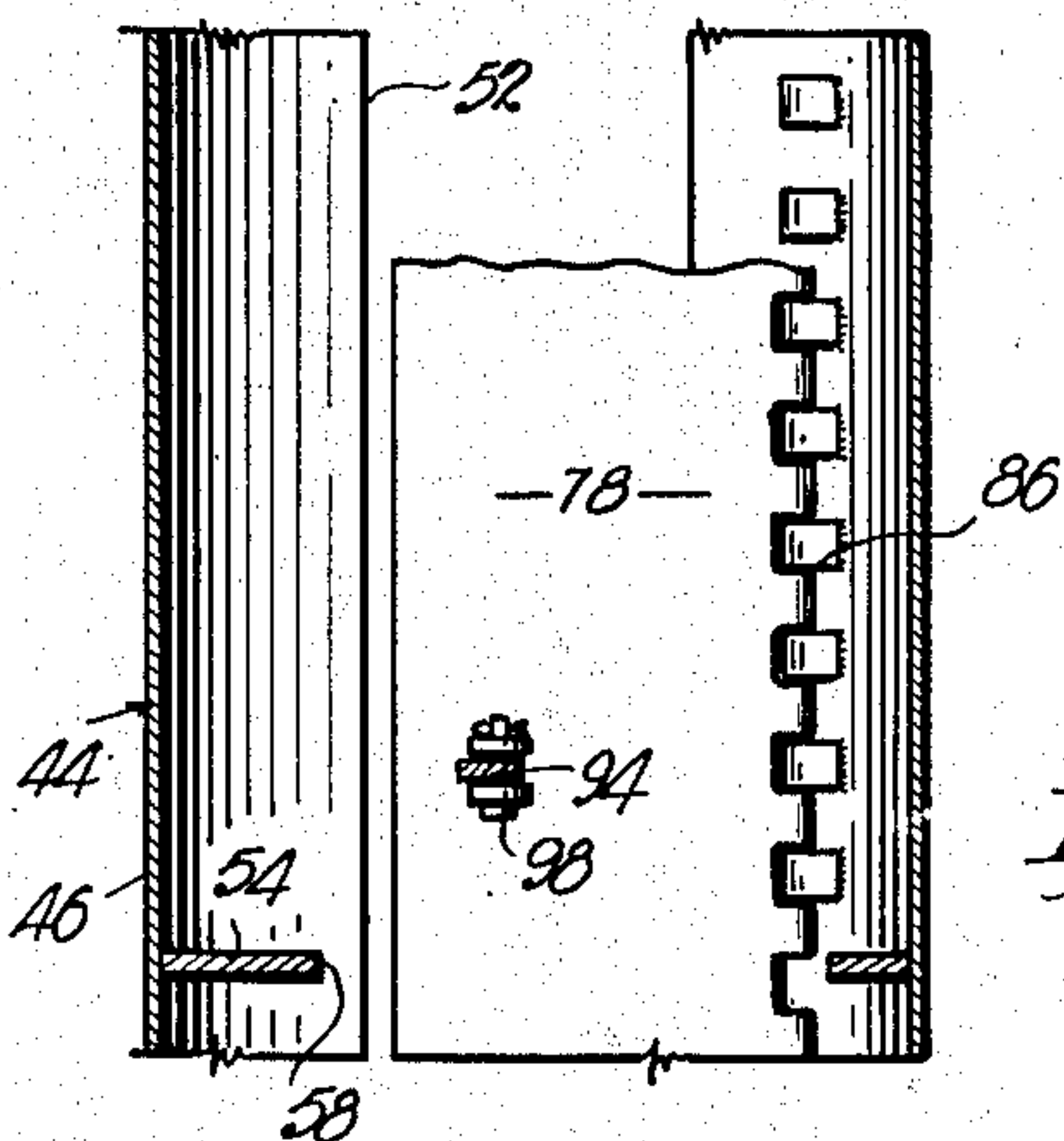


Fig. 5.

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LINOLEUM COILING DRUM

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2 Claims. (Cl. 242—74)

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This invention relates to assemblies for handling sheet material and rendering it possible to more easily cut the same into desired predetermined lengths and to coil the cut portion into a neat roll in confined spaces and in an efficient and rapid manner.

Those who have had experience handling sheet material, particularly linoleum, rugs and the like, are well aware of the fact that the cutting operation thereof and the coiling of the same into a roll for later use for storage or for transportation, is a somewhat difficult task because of the bulkiness of the sheet material itself. Linoleum must be handled carefully to prevent tearing and other damage thereto and in the absence of mechanism to facilitate the cutting and rolling action, a tremendous task is presented.

Another important object of this invention is to provide an elongated drum for receiving and coiling a length of sheet material thereabout, the drum being rotatably mounted and provided with a specially formed clamp that releasably holds the sheet material to the drum when the coiling action takes place.

A further object of the present invention is to provide a drum having a rotatable shaft, the shaft and the drum being relatively rotatable and the shaft in turn being provided with a clamp disposed adjacent the outermost surface of the drum for movement to and from a position grasping the sheet material to be rolled as the shaft is rotated relative to the drum.

A still further object of this invention is to provide a sheet rolling assembly having a hollow drum provided with at least one opening therein and a clamping member swingably mounted within the opening, there being linkage interconnecting such clamping member with the drum shaft for movement of the clamp to and from an operative position as the shaft is rotated relative to the drum.

Other more minor objects will be made clear or become apparent as the following specification progresses, reference being had to the accompanying drawings, wherein:

Fig. 1 is a top plan view of a linoleum measuring and cutting table made in accordance with my present invention, parts being broken away and in section to reveal details of construction.

Fig. 2 is a side elevational view thereof.

Fig. 3 is a substantially central, transverse, cross-sectional view taken on line III—III of Fig. 1 looking in the direction of the arrows.

Fig. 4 is an enlarged transverse, cross-sectional view taken on line IV—IV of Fig. 1.

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Fig. 5 is an enlarged fragmentary, detailed, cross-sectional view taken on line V—V of Fig. 4; and

Fig. 6 is a transverse, cross-sectional view similar to that shown in Fig. 4 but illustrating a modified form of drum assembly.

In Figs. 1, 2 and 3 of the drawings, there is illustrated a table broadly designated by the numeral 10, which may take any form desired differing from that chosen for illustration.

Table 10 is provided with a plurality of legs 12 supporting a top 14 that constitutes a pair of substantially identical sections 16 and 18. A continuous, down-turned flange 20, depending from the top 14 and connected with the legs 12, serves as additional supporting means and as supports for certain of the parts hereinafter to be described.

The proximal edges of the sections 16 and 18 of top 14 are spaced apart and the uppermost marginal edges adjacent such space are provided with metallic cutting plates or strips 22 and 24, respectively. The proximal longitudinal edges of strips 22 and 24 are, likewise, spaced apart, and such strips are held in place upon the top 14 through the medium of a plurality of screws or the like 26.

An elongated cutter blade 28 has its lowermost longitudinal edge sharpened and extends transversely across the top 14 for movement to and from a position between the proximal edges of strips 22 and 24. Flange 20 carries an upstanding bracket 30 adjacent one end of the strips 22 and 24 that has a pair of spaced, transverse pintles 32 for slidably receiving a vertical bar 33 having a slot 35 therein. Bar 33 is disposed between the legs of bracket 30, and the pintles 32 pass through slot 35. The uppermost end of bar 33 is provided with a pin 37 for receiving bifurcated end 39 of the cutter blade 28. The opposite end of blade 28 extends beyond the proximal edge of the table 10 and is swung to and from the operative position in a manner illustrated by dotted lines in Fig. 3 through the medium of a handle 34 pivotally secured as at 36 to an upstanding bracket 38 on the flange 20 in opposed relationship to bracket 30.

A short link 39 pivotally interconnects the handle 34 intermediate the ends of the latter and the proximal end of the cutter blade 28.

A coiling assembly for linoleum 40 or like sheet material, is broadly designated by the numeral 42. Assembly 42 includes an elongated drum 44 that in turn constitutes a pair of spaced-apart, elongated sections that are substantially identical and arcuate in cross-section. Such sections are

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designated by the numerals 46 and 48 respectively. Accordingly, a pair of diametrically opposed, elongated slots 50 and 52 are formed in drum 44 and extend longitudinally the entire length thereof.

The two link sections 46 and 48 are held together by a plurality of spaced transverse partitions 54 that are rigidly secured to the innermost faces of sections 46 and 48 by welding or other suitable fastening means. Each partition or reinforcing member 54 is provided with a pair of diametrically opposed, semi-circular notches 56 and 58 that register with the periphery of the disc-like partitions 54. As is clear in Fig. 4 of the drawing, the notch 56 registers with the slot 50 and likewise notch 58 is in direct registering relationship with the opposed slot 52. Each partition 54 is also provided with a centrally disposed opening 60 for loosely receiving an elongated shaft 62 that extends entirely through the drum 44 and projects therebeyond at each end of the latter. One of the projected ends of the shaft 62 is in turn provided with a manually operable crank 64.

The coiling assembly 42 is supported by the table 10 in spaced relationship above the top 14 thereof at either side of the cutter blade 28 as desired by two pairs of opposed up-standing arms 66 and 68. The four arms 66 and 68 are identical and have one end thereof pivotally secured as at 76 to the flange 20 of table 10 and are supported in an inclined position as shown in Fig. 2 by a stop 72 on flange 20.

The uppermost end of each arm 66 or 68 is notched as at 74 for receiving the projected ends of the shaft 62. It is thus seen that with shaft 62 resting loosely in the notches 74, the same may be rotated freely through manipulation of crank 64 and it is further seen that the drum 44 may be rotated relative to the shaft 62.

A pair of elongated clamping members 76 and 78 respectively, of identical character are provided for slots 50 and 52 respectively. The elongated clamps 76 and 78 are each provided with a flat, innermost face 80 and a transversely arcuate uppermost face 82, faces 80 and 82 converging into a relatively thin marginal edge portion 84 that is disposed in direct underlying relationship to the marginal edge of drum section 48 adjacent slot 50 or 52, as the case may be. Such edges 84 of the clamps 76 and 78 are swingably secured to the drum section 48 through the medium of any suitable hinge, broadly designated by the numeral 86. It is preferable that the hinge 86 extend the entire length of the clamps 76 or 78 and the drum section 48.

The shaft 62 is provided with a number of brackets 88 rigidly secured thereto and in spaced relationship throughout the length thereof. Each bracket 88 has a laterally extending arm 90 that is radial with respect to the shaft 62 and arm 90 is in turn joined to both clamps 76 and 78 by links 92 and 94 respectively.

One end of the links 92 and 94 is pivotally secured as at 96 to the arm 90 and the opposite outermost ends of links 92 and 94 are pivotally secured to the corresponding clamps 76 and 78 as at 98. The marginal edges of the sections 46 and 48 adjacent the slots 50 and 52 are preferably reinforced to prevent bending when placed in use and to more rigidly support the clamps 76 and 78 at hinges 86.

A horizontal brace 100 underlying the table top 14 has a pair of depending arms 102 and 104, the former pivotally receiving as at 106 an elongated lever 108. A link 110 is pivotally secured

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to the arm 104 as at 112. Link 110 is provided with slots 114 and 116 adjacent each end respectively thereof for receiving pivot pins 118 and 120.

Pin 118 serves to connect lever 108 and link 110, while pin 120 joins arms 33 with link 110. A spring 122 holds the lever 108 biased toward the uppermost end of its path of travel, said spring interconnecting brace 100 and lever 108.

Assuming the assembly 42 to be in operative position within the arms 68 as illustrated in Figs. 1 and 2 of the drawings, the operation is as follows:

The strip of linoleum 40 is laid upon the section 16 of top 14 and threaded below the cutter blade 28 when the latter is in the raised position shown by full lines in Fig. 3. That end of the linoleum 40 adjacent the assembly 42 is thereupon laid upon the uppermost clamp 76 and extended into underlying relationship with respect to the marginal edge of section 48 adjacent the hinges 86 for clamp 76. The operator thereupon grasps the crank 64 and rotates shaft 62 relative to drum 44 to move the clamp 76 outwardly and to thereby grip or pinch the end of linoleum strip 40 in place between a portion of the uppermost arcuate face of clamp 76 and the drum section 48, all as illustrated in Fig. 4. Such relative rotation between the shaft 62 and the drum 44 will, also, move the clamp 78 inwardly to the full-line position shown in Fig. 4. After the strip 40 has been thus secured to the drum 44, continued rotation of the shaft 62 will cause rotation of the entire drum 44, and the strip of material 40 will be pulled along the table top 14 below cutter blade 28 and will be coiled about the drum 44.

As soon as the desired amount of linoleum 40 is coiled upon the assembly 42, the operator steps upon the lever 108 to cause downward movement of end 39 of cutter blade 28. Such action commences the severance of linoleum 40, whereupon the operator grasps handle 34 to swing cutter blade 28 downwardly and to complete the transverse cutting thereof.

Through use of the lever 108 and its associated parts, it is possible to normally dispose the entire blade 28 above table 14 where the linoleum can be easily inserted below cutter blade 28 for attachment to the assembly 42.

When it is desired to remove the roll of linoleum from the drum 44, the operator merely removes the entire assembly 42 from the supporting arms 68, rotates the shaft 62 slightly in a counter-clockwise direction with respect to the drum 44, thereby pulling the clamp 76 to a position for releasing the inner end of the linoleum 40. The operator may thereupon grasp crank 64 and draw drum 44 from the roll.

It is seen that when the assembly 42 is used in connection with the supports 68, the direction of rotation of drum 44 during the coiling operation is as indicated by the arrow in Fig. 4. If the operator is in a position where it is more desirable to utilize the supporting arms 66 for receiving assembly 42, then the rotation of the shaft 62 relative to the drum 44 and the rotation of drum 44 itself is anti-clockwise. When so used, clamp 78 is used in lieu of clamp 76, and the operation is identical to that just above enumerated.

It is, also, apparent that the assembly 42 is capable of many changes and modifications. In this respect, the length of the drum 44 will determine whether or not the single, elongated clamps 76 and 78 are used or a number of spaced-apart clamps in lieu thereof. The length of the shaft 62 and of the drum 44 will, also, determine the

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number of assemblies 88—90—92—94 that are needed.

It is noted in Fig. 4 that outward movement of the clamp 78, when it is desired to release clamp 76, is limited by the coiled material 48 on assembly 42, and while sufficient space has been provided to permit such removal of the roll, Fig. 6 shows how such problem may even more effectively be met.

A drum 200 is made precisely as above described with respect to drum 44. A pair of arcuate, elongated sections 202 and 204 are held apart by partitions, one being shown in Fig. 6 and designated as 206. These partitions are provided with notches 208 and 210, registering with slots 212 and 214 respectively of drum 200.

Partitions 206 rotatably receive a shaft 216, having a crank on one end thereof (not shown) and one or more pairs of clamps 218 and 220 are hingedly joined to the section 204.

A bracket 222 has a short link 224 pivoted thereto and pivotally receiving the proximal ends of links 226 and 228. The opposite ends of links 226 and 228 are pivotally joined to clamps 218 and 220 respectively.

It is seen that the clamping action of members 218 and 220 is the same as above described with respect to assembly 42. However, when shaft 216 is rotated with respect to drum 204 in one direction to move link 224 from the full line position to the dotted line position shown in Fig. 6, both clamps 218 and 220 will move outwardly though but one of the clamps is actually used to hold the sheet material. Shaft 216 may then be rotated in either direction to withdraw clamps 218 and 220.

The inoperative clamp will prevent tight rolling of the material on the drum 204 and when the clamps are simultaneously released, drum 204 can easily be withdrawn from the coiled material.

Having thus described the invention, what is claimed as new and desired to be secured by Letters Patent is:

1. A linoleum rolling assembly comprising an elongated drum having a slot therein; an elongated, rotatable shaft on the longitudinal axis of the drum and secured thereto for rotation with respect to the drum; a clamp normally disposed in the drum, said drum having a marginal edge adjacent the slot thereof partially overlapping the clamp, said clamp being secured to the drum therewithin adjacent said marginal edge for swinging movement toward and away from said shaft, said clamp being disposed for movement through said slot beyond the outermost surface

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of the drum when the clamp is swung away from the shaft toward the outermost end of its path of travel toward said marginal edge; and means interconnecting the clamp and the shaft for swinging the clamp toward said outermost end of its path of travel when the shaft is rotated in one direction relative to the drum, whereby to grip one end of said linoleum between the clamp and said marginal edge during rolling and to render the roll of linoleum readily removable from the drum upon swinging of the clamp toward said shaft.

2. A linoleum rolling assembly comprising an elongated drum having a slot therein; an elongated, rotatable shaft on the longitudinal axis of the drum and secured thereto for rotation with respect to the drum; an elongated clamp normally disposed in the drum, said drum having a marginal edge adjacent the slot thereof partially overlapping the clamp; a hinge along one longitudinal edge of the clamp, securing the clamp to the innermost face of the drum adjacent said marginal edge for swinging movement toward and away from said shaft, said clamp being disposed for movement through said slot beyond the outermost surface of the drum when the clamp is swung away from the shaft toward the outermost end of its path of travel toward said marginal edge; a link pivotally secured to the clamp adjacent the opposite longitudinal edge thereof; and means pivotally coupling the link with said shaft for swinging the clamp toward said outermost end of its path of travel when the shaft is rotated in one direction relative to the drum, whereby to grip one end of said linoleum between the clamp and said marginal edge during rolling and to render the roll of linoleum readily removable from the drum upon swinging of the clamp toward said shaft.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
222,148	Miner et al.	Dec. 2, 1879
1,296,392	Hoffman	Mar. 4, 1919
1,515,728	Clark	Nov. 18, 1924
2,059,242	Jung	Nov. 3, 1936
2,163,868	Christie	June 27, 1939
2,191,826	Bath	Feb. 27, 1940
2,321,146	Jones	June 8, 1943
2,372,500	Knowles et al.	Mar. 27, 1945