

F. M. BALDWIN.
OIL CLOTH CUTTING MACHINE.
APPLICATION FILED AUG. 25, 1919.

1,352,240.

Patented Sept. 7, 1920.

3 SHEETS—SHEET 1.

Fig. 1.

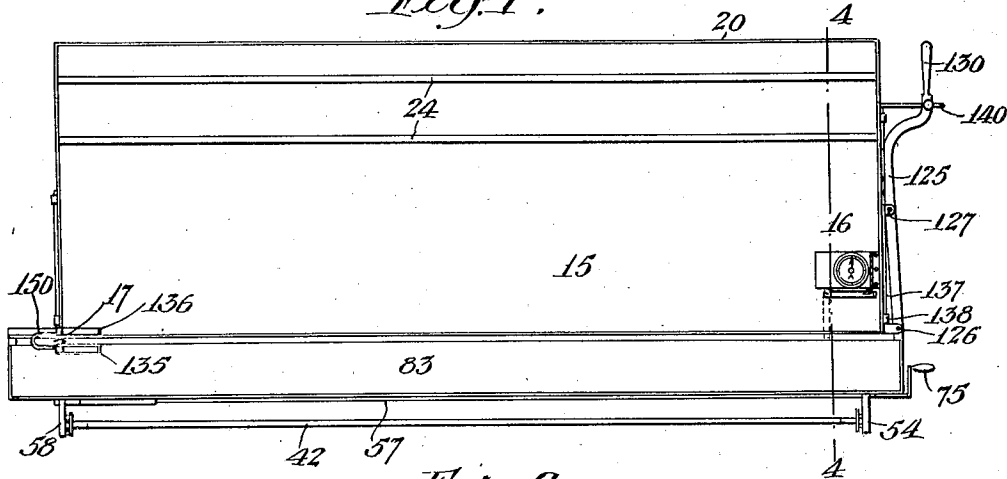


Fig. 2.

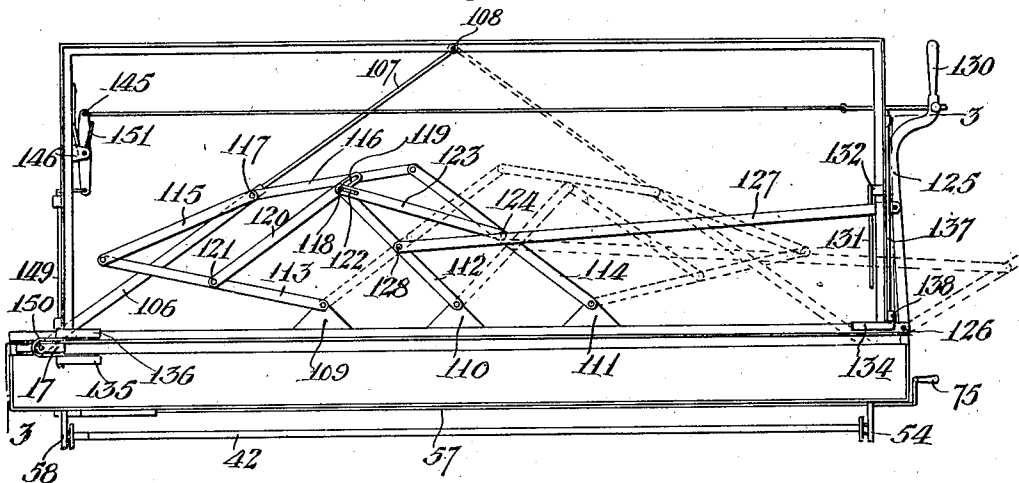
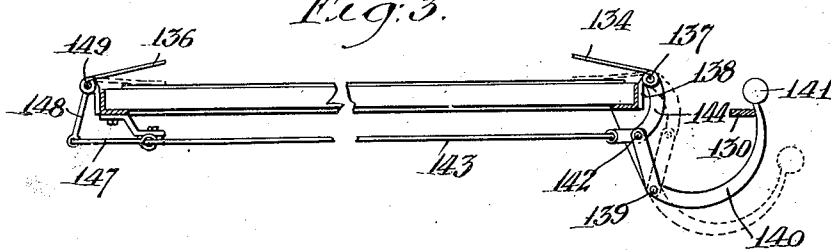


Fig. 3.



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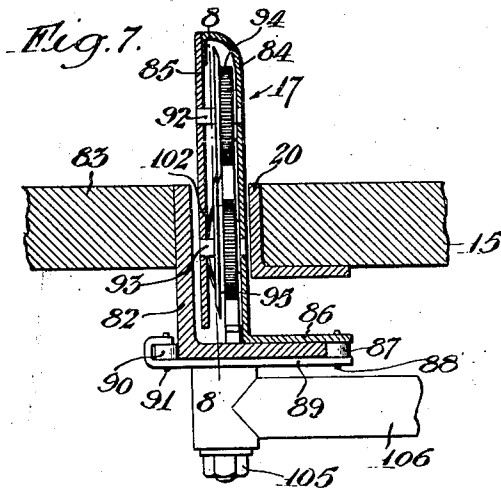
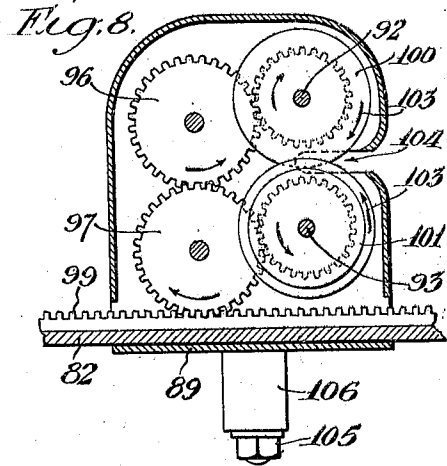
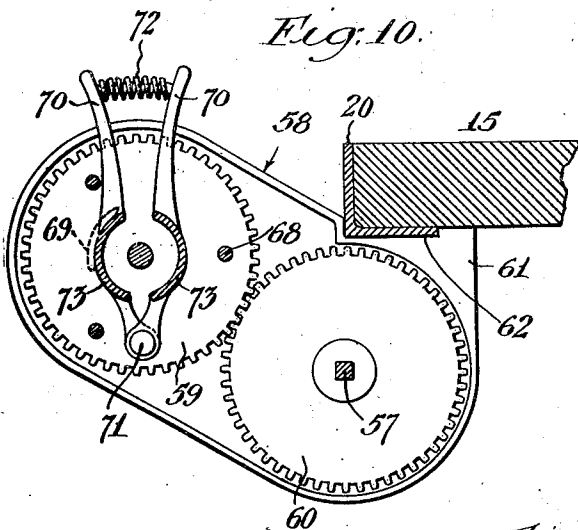
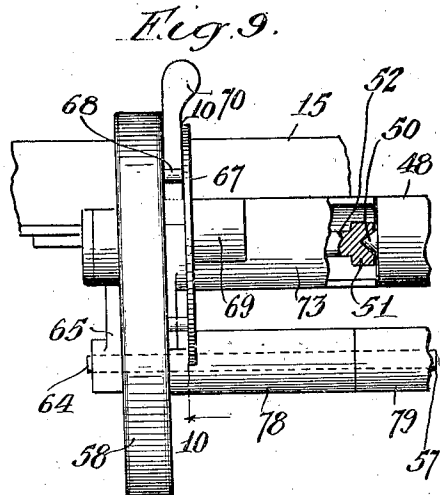
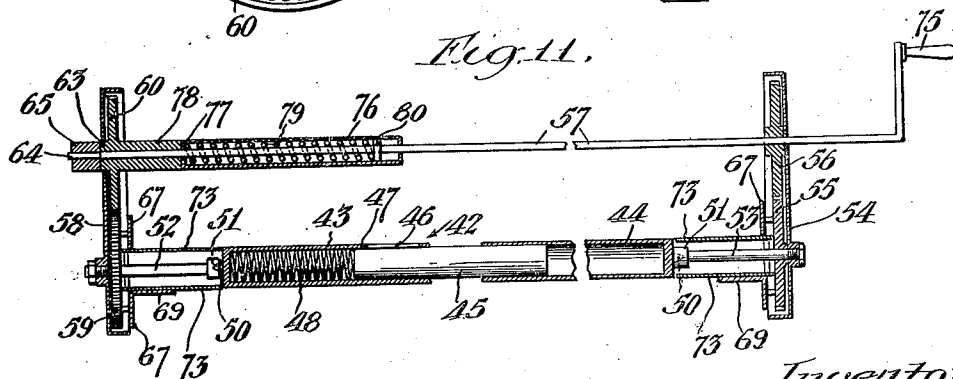
3 SHEETS—SHEET 2.

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3 SHEETS—SHEET 3.



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UNITED STATES PATENT OFFICE.

FREDERICK M. BALDWIN, OF LOS ANGELES, CALIFORNIA.

OIL-CLOTH-CUTTING MACHINE.

1,352,240.

Specification of Letters Patent.

Patented Sept. 7, 1920.

Application filed August 25, 1919. Serial No. 320,044.

To all whom it may concern:

Be it known that I, FREDERICK M. BALDWIN, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented a new and useful Oil-Cloth-Cutting Machine, of which the following is a specification.

My invention relates to oil cloth cutting machines, being more particularly a table upon which oil cloth and articles of similar characteristics, such as paper, cloth and the like, may be cut into desired lengths, and one of the principal objects of my invention is to produce a machine of the character described, of simple form and construction in which the oil cloth may be placed upon a table in a roll and pulled out on the table to the required length, such length being indicated by an indicator for that purpose, and the oil cloth cut as desired.

Other objects and advantages will appear hereinafter from the following specification.

Referring to the drawings, which are for illustrative purposes only,

Figure 1 is a plan view of a machine embodying a form of my invention.

Fig. 2 is a plan view similar to Fig. 1, a portion of the table top being removed to show the mechanism underneath the same.

Fig. 3 is an enlarged vertical sectional view on line 3—3 of Fig. 2.

Fig. 4 is an enlarged vertical cross-sectional view on line 4—4, Fig. 1.

Fig. 5 is an enlarged plan view of the measuring device.

Fig. 6 is a face view of the measuring device.

Fig. 7 is an enlarged vertical sectional view through a portion of the table and the cutter.

Fig. 8 is a vertical sectional view on line 8—8, Fig. 7.

Fig. 9 is a face view partly in section of one end of the supporting mechanism for the winding roller.

Fig. 10 is a vertical sectional view on line 10—10, Fig. 9.

Fig. 11 is a sectional plan view on a reduced scale of the winding mechanism, and

Fig. 12 is a vertical sectional view of a modified form of the cutting device.

As shown generally in Fig. 4, 15 designates the table, 16 the measuring device, 17 the cutter and 18 the winding mechanism.

The table comprises an angle iron frame 20

supported on suitable legs 21, such legs having cross-bars 22 and braces 23 for strengthening the same. Supported in the angle iron 20 is the table top 23 across which extends two cleats 24 between which is placed the roll 25 of oil cloth or similar material to be measured and cut, such cleats 24 preventing the roll 25 from leaving the table during the measuring and cutting operation.

The roll 25 being placed upon the table, the end of the roll is pulled forwardly over the table, one edge being engaged by the measuring device and the free end of the roll being engaged by a clamping device on the winding mechanism.

The measuring device comprises a box which forms a housing for any well known form of counting mechanism, such box having a dial 27 on its upper face marked in feet or yards as desired, an indicating arrow 28 being operated by the counting mechanism as the oil cloth is moved under the measuring device. One edge of the oil cloth indicated at 30 passes under a roller 31 mounted in the box 26 and connected to the counting mechanism, being engaged between such roller and smaller rollers 32 mounted in the table top. The oil cloth passing between such rollers rotates the roller 31 which imparts movement to the arrow 28 through the counting mechanism thereby indicating the amount of oil cloth pulled under the roller 31.

The box 26 is hinged as indicated at 33 to any suitable support or to the table and is provided with a stud 34 on one side thereof which is engaged by a loop 35 formed in one end of a rod 36, such rod being connected to the short end 37 of a stop 38 pivoted at 39 to the table top, such stop 38 having a toe 40 formed upon the outer end of the same. The oil cloth to be measured and cut is passed over the rollers 32, the box 26 having been moved into the dotted line position shown in Fig. 6, which movement of the box swings the stop 38 into the dotted line position shown in Fig. 5, the toe 40 of the stop extending forwardly on the table to approximately the line upon which the oil cloth is finally cut, or in other words, into the path of the cutters hereinafter described. The free end of the oil cloth is pulled forwardly over the rollers 32 until it strikes the toe 40 of the stop 38 when in the dotted line position shown in Fig.

5, whereupon the box 26 is moved down to full line position with the roller 31 in engagement with the face of the oil cloth, such moving down of the box bringing the stop 38 back into the position shown in full lines in Fig. 5 out of the path of the cloth. The oil cloth is then drawn forwardly over the table and the free end clamped to the winding means as hereinafter described.

This winding means consists of a roller 42 which consists of two hollow end pieces 43 and 44 and a solid roller 45 which extends into the open ends of the end pieces 43 and 44, the end piece 43 being slotted as indicated at 46 and the roller 45 having a pin 47 thereon which extends into the slot 46. Behind the end of the roller 45 in the end piece 43 is a coiled spring 48 which elastically holds the roller 45 in the end piece 44, but allowing for the length of the roller 42 to be varied. The end pieces 43 and 44 are each provided with a spur 50 received in sockets 51 on the ends of shafts 52 and 53. The shaft 53 is mounted in a housing 54, this shaft being provided with a gear 55 which meshes with a gear 56 on a shaft 57, the housing 54 being secured to the table in any suitable manner. The shaft 52 is mounted in a housing 58 and is also provided with a gear 59 which meshes with a gear 60 on the shaft 57, such shaft 57 being square in cross-section for the purposes hereinafter described, and the gear 60 being slidably mounted upon the square portion of the shaft 57. The housing 58 is provided with an extension 61 having a recess 62 cut therein to receive the lower portion of the front angle iron 20 of the table, being arranged so that the housing will slide thereon and prevent the housing from tilting out of position on the hub 63 of the gear 60 which forms a support for the housing.

One end 64 of the shaft 57 is rounded and is mounted in a bracket 65 secured to the table in any suitable manner. On the inner side of the gear 55 and the gear 59 is mounted a circular plate 67, such circular plate being supported on the respective gears by means of pins 68 and each plate 67 having an extension 69 thereon which forms the fixed member of the clamping device. The movable members of the clamping device comprise two arms 70 pivotally mounted on a pin 71 to the gears 55 and 59, such arms being elastically held apart by means of a coiled spring 72 placed between the upper ends of the same. The arms 70 are provided with half round lugs 73 which extend forwardly to receive the end of the oil cloth thereon, the end of the oil cloth being passed between the lugs 73 and the extension 69 when the arms 70 are in collapsed position due to pressure exerted on the arms by the fingers of the operator.

When such pressure is removed the arms assume the position shown in Fig. 10 in which position the lug 73 on one arm engages the end of the oil cloth between such lug 73 and the fixed extension or clamping member 69. After the oil cloth is so attached the oil cloth is drawn forward by the operation of a handle 75 mounted on the end of the shaft 57. The shaft 57 has a hollow housing 76 formed thereon, one end 77 of which abuts against the end of a hub 78 formed on the gear 60. The housing 76 has a coiled spring 79 therein, one end of which abuts against the end of the housing and the other end against a flange 80 formed on the shaft 57, such spring tending to hold the housing 58 against the bracket 65.

When cutting oil cloth of narrow width, however, the housing 58 may be moved toward the housing 55 by pushing the same upon the shaft 57 against the action of the spring 79, the telescoping construction of the roller 42 heretofore described permitting such inward movement, it being understood that when the housing 58 is moved inwardly and the narrow width of oil cloth attached to the clamping device that such clamping device holds the housing 58 in the inward position until the cutting operation is accomplished. The operator winds the oil cloth upon the roller 42 until the arrow 28 indicates upon the dial 27 the amount of oil cloth desired to be cut, whereupon the operation of the handle 75 is discontinued and the cutting operation accomplished.

This cutting operation is performed by a cutter generally indicated at 17, which travels across the front portion of the table between the angle iron 20 and a larger angle iron 82 which together form the knife carriage or cutter guide, such angle iron 82 also supporting the forward portion of the table indicated at 83. The knife carriage comprises a rear plate 84, a front plate 85 secured to the rear plate in any suitable manner, the rear plate having a rearwardly extending flange 86 upon which is mounted a roller 87, a shaft 88 being provided for this purpose, which extends through a bottom plate 89. A similar roller 90 is provided to engage the side of the guide 82, such roller 90 being mounted on a shaft 91 on the plate 89 as clearly shown in Fig. 7. Mounted in the plates 84 and 85 are shafts 92 and 93, the shaft 92 being above the face of the table and the shaft 93 being below the face of the same, such shafts having shoulders formed thereon and being riveted over the housing plates to hold the same together. The shaft 92 has a gear 94 freely mounted thereon and the shaft 93 has a gear 95 freely mounted thereon, which gears mesh respectively with gears 96 and 97 mounted in the carriage, the gear 97 meshing with a rack 99 which is secured to the guide 82.

Secured to the gear 94 is a circular cut-

ting disk 100 having a flat face which is overlapped by the flat face of a cutting disk 101 mounted on the gear 95, the disk 101 being elastically held against the face of the disk 100 by a disk spring 102 clearly shown in Fig. 7. It will be noticed that the cutting disks move in the direction of the arrows indicated at 103 in Fig. 8 and that the meeting point indicated at 104 of the cutter is slightly above the face of the table so that the oil cloth will be cut as the knife carriage is moved across the face of the table by the mechanism hereinafter described.

The mechanism for operating the knife carriage consists of a series of links, arms and levers so arranged that a great length of travel of the cutter is accomplished with the operating mechanism confined within a very compact area. Pivottally connected to the under side of the knife carriage by means of a bolt 105 is an outer telescoping member 106 arranged to receive an inner telescoping member 107 consisting of a rod, one end of which is freely slidable in the member 106 and the other end of which is pivottally mounted at 108 to the rear portion of the frame of the table. 109, 110 and 111 indicate brackets secured to the frame of the table, the bracket 110 having pivottally mounted thereon a primary or central arm 112. The brackets 109 and 111 have pivottally mounted thereon, respectively, secondary or side arms 113 and 114. The outer end of the secondary arm 113 is pivottally connected through the medium of a link 115 to the telescoping member 106 and the outer end of the arm 114 is pivottally connected to the telescoping member 106 by a link 116, the links 115 and 116 being both pivottally mounted upon a pin 117 mounted on the member 106. The outer end of the central or primary arm 112 is provided with a stud or bolt 118, which bolt passes through a slot 119 in a link 120, the other end of which is pivottally mounted at 121 on the side arm 113. The stud 118 also extends through a slot 122 formed in one end of a link 123, the other end of such link being pivottally connected at 124 to the arm 114.

125 designates an operation lever which is operated at the side of the table, being pivottally mounted to the table by means of a pin or stud 126. The operating lever 125 is connected by means of a connecting rod 127 with the central arm 112, such connection being made by means of a pin 128 mounted upon the arm 112 approximately centrally of its length. The operating lever 125 is provided with a handle 130 which is formed by bending one end of the operating lever outwardly as shown in Fig. 2. A support is provided for the connecting rod 127 which consists of a bar 131 one end of which is mounted upon the frame of the table by means of a clip 132.

The above operating mechanism operates as follows:

By swinging the operating lever 125 from the full line position shown in Fig. 2 to the dotted line position the connecting rod 127 swings the primary arm 112 from the full to the dotted line position. Such movement of the primary arm pulls the link 120, and through the medium of such link operates the side arm 113 which in turn, through link 115, operates the member 106. The member 106 telescopes with the member 107 and moves into the dotted line position shown, thereby drawing the knife carriage across the table and cutting the oil cloth.

The knife carriage is returned by moving the operating lever back into the full line position shown, in which case the primary arm 112 operates link 123 which in turn operates the side arm 114, and through link 116 pushes member 106 back into the full line position ready for another cutting operation.

Means are provided also for holding down the oil cloth adjacent to the line of cutting, such means comprising a holding finger 134 at one end of the table and holding fingers 135 and 136 at the opposite end of the table. The finger 134 is mounted upon a shaft 137, the shaft 137 being supported in a bracket 138 on one side of the table. Mounted upon the bracket 138 by means of a stud or pin 139 is a locking arm 140, one end of which is curved outwardly and upwardly to the outside of the handle 130 of the operating lever, as shown in Fig. 3, such end being provided with a knob 141. The other end of the locking arm 140 is pivottally connected by means of a stud or pin 142 with one end of a rod 143 which rod 143 operates the fingers 135 and 136 through the mechanism hereinafter described.

The locking arm 140 operates the shaft 137 through the medium of a link 144 one end of which is secured to the shaft 137 and the other end of which is secured to the stud or pin 142. The rod 143 at its other end is connected to one end of a rocker arm 145, such rocker arm being pivottally mounted on a bracket 146 to one side of the table. The other end of the rocker arm 145 is connected by means of a link 147 with an arm 148 mounted upon a shaft 149, such shaft being journaled upon the frame of the machine and having mounted on one end thereof fingers 135 and 136, the shaft between such fingers being bent in U shape as indicated at 150 in Figs. 1 and 2 to allow for passage of the knife carriage between such fingers, it being understood that the fingers 135 and 136 press upon the oil cloth on each side of the cutting line. The locking arm 140 is arranged so that the operating lever 125 cannot be operated until the holding fingers 134, 135 and 136 are moved

into engagement with the oil cloth, the locking arm, when bringing the fingers to such engaging position, moving into the dotted line position shown in Fig. 3 thereby clearing the path of the handle of the operating lever 125. Elastic means are provided for holding the locking arm in the path of the handle of the operating lever, which consist of a spring 151 which operates upon the rocker arm 145 to place an elastic tension upon the same and transmit such elastic tension through the rod 143 to the locking arm.

The box 26 is preferably elastically held in lower position so that the roller frictionally engages the oil cloth. This is accomplished by mounting a leaf spring 155 on the end of the box 26 arranged to engage a rod 156 mounted on the table of the machine, such spring 155 swinging under the rod when the box is moved to upright position.

In the form of cutters shown in Fig. 12, two sets of cutters 158 and 159 are driven through the medium of gears 160, such gears being driven by the rack 99. With this form of cutting device the material may be cut by drawing the cutters in one direction in which one set of cutters perform the cutting operation after which the material may be drawn out and another length cut by moving the cutters in the opposite direction, cutting the material by the other cutters.

By using my machine in the manner above described it will be readily understood that oil cloth, paper or similar articles commonly handled in rolls may be readily cut and dispensed with accuracy and despatch. It is understood that the oil cloth after being wound upon the roller 42 may be easily removed therefrom by removing the roll from its supporting mechanism and the roll slipped out of the cloth wound thereon, it being understood that a wooden roller may be used in place of the collapsible roller shown and described, such wooden roller being of the type commonly used for shipping small quantities of oil cloth rolled thereon, in which case the roller would remain in the oil cloth.

The springs 48 and 79 have an additional function to that heretofore described, namely, when the fingers 70 are pressed together to release the oil cloth such springs acting respectively against the shaft 52 and housing 76 return the housing 58 to its original position.

While I have shown and described my invention as applicable to cutting oil cloth it is to be understood that I do not limit my invention to such use but it can be used for handling all flexible material whether cloth, paper or similar articles.

I claim as my invention:—

1. A machine for cutting oil cloth and the like comprising a table having a top, means

on the top for retaining a roll of cloth thereon, a cutter arranged to travel across the table, means for holding the free end of said roll, and clamping fingers at the cutting line for holding the cloth to the table during the cutting operation.

2. A machine for cutting oil cloth and the like comprising a table having a top, means on the top for retaining a roll of cloth thereon, a cutter arranged to travel across the table, means for holding the free end of said roll, clamping fingers at the cutting line for holding the cloth to the table during the cutting operation, and means for preventing the operation of the cutter until the clamping means is in engagement with the cloth.

3. A machine for cutting oil cloth and the like comprising a table having a top, means on the top for retaining a roll of cloth thereon, a cutter arranged to travel across the table, and fingers for clamping the cloth to the table at the cutting line during the cutting operation.

4. A machine for cutting oil cloth and the like comprising a table having a top, means on the top for retaining a roll of cloth thereon, a cutter arranged to travel across the table, and means for clamping the cloth to the table during the cutting operation, said clamping means consisting of fingers arranged to engage the cloth on both sides of the cutting line.

5. A machine for cutting oil cloth and the like comprising a table having a top, a guide formed in said top extending across the table, means on the top for retaining a roll of cloth thereon, a carriage arranged to travel across the table in said guide, cutters on said carriage, means at one end of the table for engaging the free end of the cloth and forming a roll of such free end, and means for operating the cutters to sever the roll so formed from the body of the cloth.

6. A machine for cutting oil cloth and the like comprising a table having a guide formed in the top thereof, means on the table for retaining a roll of cloth thereon, a carriage arranged to travel across the table in said guide, a cutter mounted in said carriage, a roller removably mounted on one end of the table, means for securing the free end of the cloth to the roller, means for operating the roller to roll the cloth in said roller, and means for operating said cutter to sever the cloth on the roller from the body of the cloth.

7. A machine for cutting oil cloth and the like comprising a table having a cutter guide formed in the top thereof, means on the table for retaining a roll of cloth thereon, a carriage arranged to travel across the table in said guide, cutters on said carriage, a roller removably mounted on one end of the table, means for securing the free end of the cloth to the roller, means for operating the

roller to roll the cloth in said roller, means for operating said cutters to sever the cloth on the roller from the body of the cloth, and means for holding said cloth to the table during the cutting operation.

8. A machine for cutting oil cloth and the like comprising a table having a cutter guide formed in the top thereof, means on the table for retaining a roll of cloth thereon, a carriage arranged to travel across the table in said guide, cutter on said carriage, a roller removably mounted at one end of the table, means for securing the free end of the cloth to the roller, means for operating the roller to roll the cloth on said roller, means for indicating the amount of cloth on the roller, and means for operating said cutter to sever the cloth on the roller from the body of the cloth.

9. A machine for cutting oil cloth and the like, comprising a table having a top with a cutter guide formed therein, means on the top for retaining a roll of cloth thereon, a carriage arranged to travel across the table in said guide, cutters on said carriage, a roller detachably mounted at one end of the table, means for securing the free end of the cloth to the roller, means for operating the roller to roll the cloth on said roller, means for indicating the amount of cloth on the roller, and means for operating said cutter to sever the cloth on the roller from the body of the cloth, said indicating means consisting of a roller arranged to engage the cloth on the table at one side thereof, and means operated by the roller to indicate the amount of cloth passing under the roller.

10. A machine for cutting oil cloth and the like comprising a table having a top provided with a cutter guide extending across the table, a cutter arranged to travel in the guide means for holding a roll of cloth on the table, means for engaging the free end of the cloth to hold the cloth on the table in extended position in the path of the cutter, an extensible member pivotally mounted on the table at one end and pivotally connected to the cutter at the other end arranged to move the cutter across the table in the guide, and means for swinging said pivotally mounted member to operate the cutter.

11. A machine for cutting oil cloth and the like comprising a table having a top provided with a cutter guide extending across the table, means for holding a roll of cloth on the table, means for engaging the free end of the cloth to hold the cloth on the table in extended position in the path of the cutter, a member pivotally mounted on the table arranged to move the cutter across the table in the guide, and means for swinging said pivotally mounted member to operate the cutter, said means for swinging the pivotally mounted member consisting of an op-

erating lever, a primary arm, a connecting rod between the primary arm and the operating lever, secondary arms, links connecting the primary arm to the secondary arms, and links connecting the secondary arms to the pivotally mounted members.

12. A machine for cutting oil cloth and the like comprising a table having a top provided with a cutter guide extending across the table, means for holding a roll of cloth on the table, means for engaging the free end of the cloth to hold the cloth on the table in extended position in the path of the cutter, a member pivotally mounted on the table arranged to move the cutter across the table in the guide, and means for swinging said pivotally mounted member to operate the cutter, said pivotally mounted member being arranged to shorten its length during the swinging movement.

13. A machine for cutting oil cloth and the like comprising a table having a top provided with a cutter guide extending across the table, means for holding a roll of cloth on the table, means for engaging the free end of the cloth to hold the cloth on the table in extended position in the path of the cutter, a member pivotally mounted on the table arranged to move the cutter across the table in the guide, means for swinging said pivotally mounted member to operate the cutter, said means for swinging the pivotally mounted member consisting of an operating lever, a primary arm, a connecting rod between the primary arm and the operating lever, secondary arms, links connecting the primary arm to the secondary arms, and links connecting the secondary arms to the pivotally mounted members, means for clamping the cloth during the cutting operation, and operating means for said clamping means arranged to engage said operating lever while the clamping means is in inoperative position and to release said operating lever when the clamping means is in engagement with the cloth.

14. A machine for cutting oil cloth and the like comprising a table having a top provided with a cutter guide extending across the table, means for holding a roll of cloth on the table, means for engaging the free end of the cloth to hold the cloth on the table in extended position in the path of the cutter, a member pivotally mounted on the table arranged to move the cutter across the table in the guide, and means for swinging said pivotally mounted member to operate the cutter, said pivotally mounted member consisting of telescoping members.

15. A machine for cutting oil cloth and the like comprising a table having a cutter guide therein, a cutter carriage arranged to travel in said guide, a rack mounted on the table, cutter disks in said carriage, and gears oper-

ated by said rack arranged to drive said disks.

16. A machine for cutting oil cloth and the like comprising a table having a cutter guide therein, a cutter carriage arranged to travel in said guide, a rack mounted on the table, cutter disks in said carriage, gears operated by said rack arranged to drive said disks, and means for holding the cloth on the table during the cutting operation.

17. A machine for cutting oil cloth and the like comprising a table having a cutter guide therein, a cutter carriage in said guide, a rack mounted on the table, cutter disks in said carriage, gears operated by said rack arranged to drive said disks, and means for holding the cloth on the table during the cutting operation, said holding means consisting of fingers arranged to engage the edges of the cloth adjacent the cutter guide.

18. A machine for cutting oil cloth and the like comprising a table having a cutter guide therein, a cutter carriage in said guide, a rack mounted on the table, cutter disks in said carriage, gears operated by said rack

arranged to drive said disks, and means for holding the cloth on the table during the cutting operation, said holding means consisting of fingers arranged to engage the edges of the cloth adjacent the cutter guide, and operating means for said fingers arranged to prevent operation of the carriage while the fingers are in inoperative position.

19. A machine for dispensing oil cloth and the like comprising a table, a cutter arranged to travel across the table, means for retaining a roll of cloth on the table, a stop extending into the path of the cutter arranged to engage the free end of the cloth, and a measuring device arranged to indicate the length of cloth extending beyond the path of the cutter, said measuring device being connected to said stop and arranged to move said stop out of the path of the cloth during the measuring operation.

In testimony whereof, I have hereunto set my hand at Los Angeles, California, this 19th day of August, 1919.

FREDERICK M. BALDWIN.