

June 17, 1930.

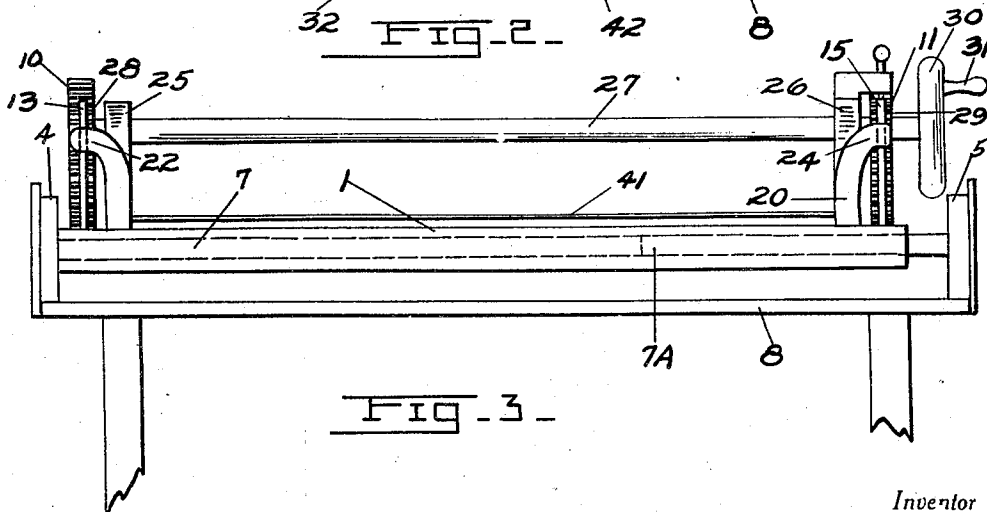
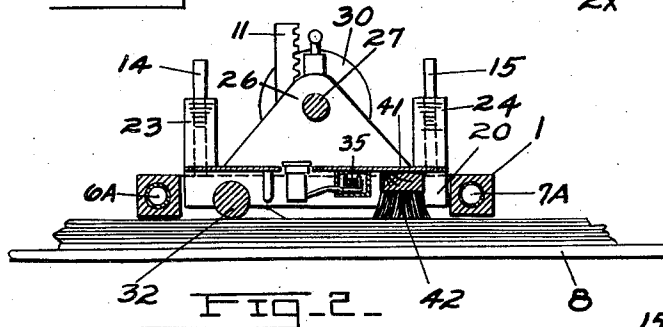
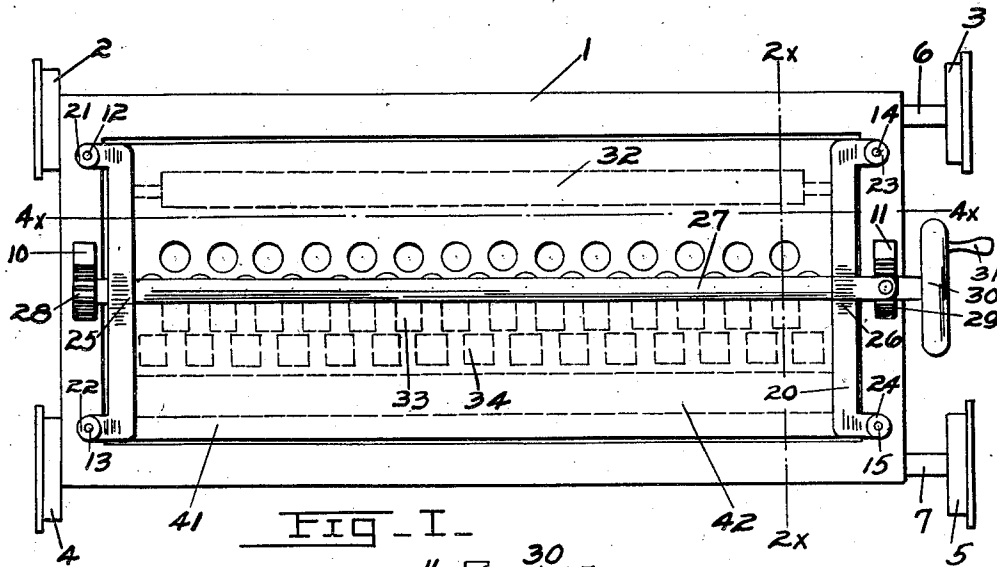
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1,763,734

APPARATUS FOR MARKING PATTERNS ON CLOTH

Filed May 28, 1929

2 Sheets-Sheet 1



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June 17, 1930.

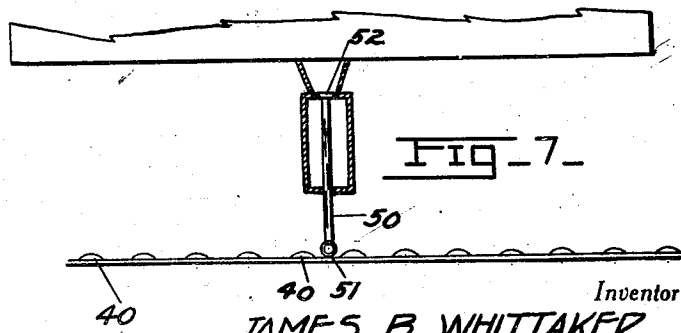
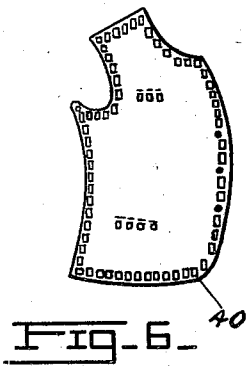
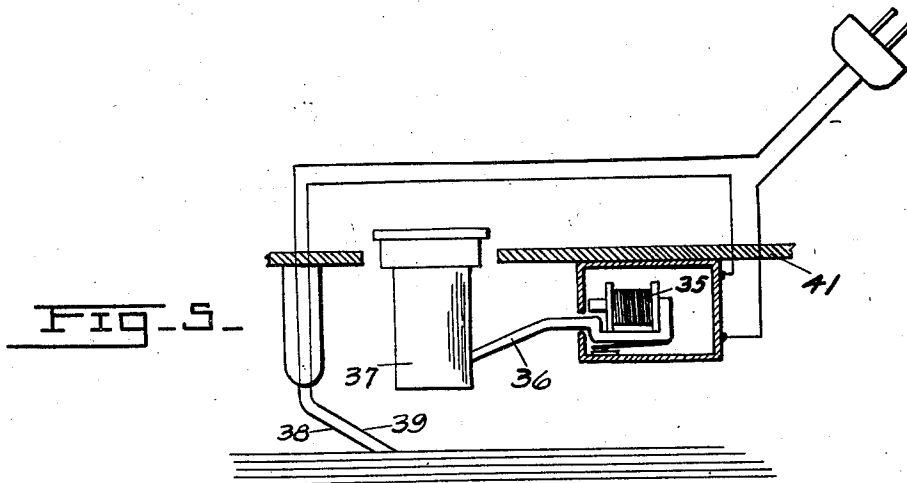
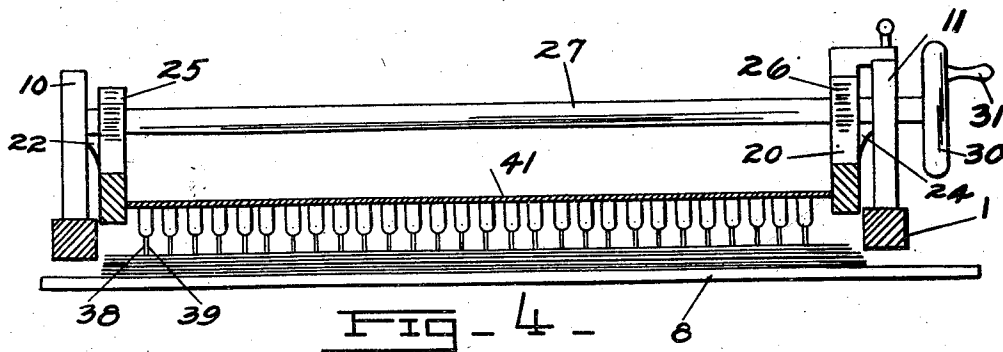
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APPARATUS FOR MARKING PATTERNS ON CLOTH

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2 Sheets-Sheet 2



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APPARATUS FOR MARKING PATTERNS ON CLOTH

Application filed May 28, 1929. Serial No. 366,723.

The object of this invention is to provide a new and improved apparatus and method for marking cloth to correspond with patterns before cutting the cloth for the purpose of making it up into clothing, or for other purposes.

Another object of the invention is to cause the cloth to be marked mechanically around a large number of patterns laid thereon regardless of their size or shape and number, the marking taking place over the whole width of the cloth as the apparatus advances from one end of the web of cloth to the other.

Another object is to confine the operation of the apparatus as near as possible to the edge of each of the patterns and the cloth immediately adjacent thereto.

Another object of the invention is to provide a plurality of marking devices in one or more rows extending the full width of the cloth and cause the operation of selected ones of said marking devices by contacts placed along the edges of the patterns.

Another object of the invention is to cause the edge of the pattern to cooperate with the marking device and cause the marking device to operate only along the edge of the pattern.

These and other objects of the invention will be illustrated in the drawings, described in the specification and pointed out in the claims at the end thereof.

In the drawings:

Figure 1 is a top plan view of my improved marking apparatus.

Figure 2 is a vertical section on the line 2*-2* of Fig. 1.

Figure 3 is an end elevation of the marking apparatus.

Figure 4 is a vertical section on the line 4*, 4* of Fig. 1.

Figure 5 is an enlarged detail sectional view of one of the marking units, and the electrical circuit for operating it.

Figure 6 is a plan view of one of the patterns to be used in connection with the marking apparatus.

Figure 7 is a modification of the marking unit in which compressed air is used to blow the powder on the cloth.

In the drawings like reference numerals indicate like parts.

In the drawings reference numeral 1 indicates a rectangular frame having an open center which frame is supported on the flanged rollers 2, 3, 4 and 5 which rollers are carried on the shafts 6 and 7 which are supported on the rectangular frame 1. The shafts 6 and 7 are in three sections so that one of the sections indicated at 7A can move in and out. The rollers 2, 3, 4 and 5 are adapted to support the apparatus on a table so that the apparatus can be moved along the table. The rollers and their flanges make contact with the edge of the table and the rollers 3 and 5 are adapted to move in and out with the section of the shaft so that all four of the rollers can follow the two opposite edges of the table rather closely regardless of whether the edges of the table are strictly parallel or not. These rollers support the frame 1 high enough above the table so as to give a clearance between the table and the frame for a large number of thicknesses of cloth, it being desirable to provide for as many as 15 or more double thicknesses of cloth at a time.

It will be understood that the cutter lays out most of the cloth on the table in the factory for cutting in double thicknesses so as to provide for the right and left portions of the garment. It is also the practice to lay a large number of double thicknesses of cloth one on top of another, the ordinary practice being to lay from 1 to 15 double thicknesses in position on the table so that all these thicknesses can be cut through in a single operation. It is also the practice to mark only the top layer of cloth. The cutter will follow the markings on the top layer of cloth and cut through all the layers to correspond. The rollers, 2, 3, 4 and 5 must therefore be of sufficient diameter to hold the frame 1 above the table 8 so as to afford ample clearance between the cloth that is lying on the table and the frame 1, so that the frame 1 can travel over the cloth and the patterns laid thereon.

On the frame 1 is mounted two upright racks 10 and 11 and on each side of these

racks is provided the posts 12, 13, 14 and 15. Mounted on the frame 1 which for convenience will be called the stationary frame, is provided the auxiliary or moving frame 20. This frame is rectangular in shape and is considerably smaller than the frame 1. On each end it is provided with bosses 21, 22, 23 and 24 which are perforated and are adapted to engage with and slide on the posts 12, 13, 14 and 15 for the purpose of guiding the auxiliary frame as it moves up and down on the stationary frame. The auxiliary frame is also provided with bearing blocks 25 and 26 on each end thereof in which is mounted to rotate a shaft 27, which shaft carries the pinions 28 and 29 that are adapted to engage with the stationary racks 10 and 11. These pinions 28 and 29 are keyed to the shaft 27 so that by turning the shaft the auxiliary frame may be raised or lowered. A hand wheel 30 and handle 31 are provided on the end of the shaft by which the shaft may be conveniently turned for the purpose of raising and lowering.

On the auxiliary frame is also provided a long roller 32 which is adapted to press on the cloth and the patterns over which the apparatus travels so that the cloth and patterns will be held firmly in place during the marking operation.

On the auxiliary frame I provide two rows of marking units 33 and 34 in each of which rows a plurality of units is placed, the units of one row being staggered with reference to the units of the other row. As shown in Figure 1 there are 14 units in one row and 15 units in the other row although it will be understood that these units may be increased or decreased in number as experience may prove to be necessary, it being understood that the cutting table is ordinarily about 36" wide and the double thickness of the cloth is ordinarily 27" to 30" wide and the apparatus would ordinarily be designed with reference to these dimensions.

In Figure 5 I have shown on a large scale the details of one of these marking units which marking unit is also shown on a smaller scale in Figure 2.

In Figure 6 I have shown one of the patterns that is used for marking the cloth for cutting the pattern. It will be understood, however, that a large number of patterns will be laid on the cloth similar to those shown in Figure 2 of my prior Patent 1,552,788, and these patterns will be laid on the cloth in such arrangement as to best utilize the cloth. My apparatus would then be moved over all these patterns in one continuous movement so that the outline of the edge and other details of each pattern would be marked on the top layer of cloth by my apparatus.

Each pattern is provided on its edge and at all other places where it is necessary to mark the cloth with a metallic conductor.

It is not practical ordinarily to put this metallic conductor on the edge of the pattern in one continuous piece, although that may be done if so desired. I provide preferably a number of small plates which are fastened to the pattern at or near the edge thereof and these places may be ordinary staples such as are driven through several thicknesses of paper by the ordinary hand stapling presses that are used in offices for the purpose of fastening several sheets of paper together. These plates form a metallic edge that is sufficient for all practical purposes in my invention.

As shown in Figures 2 and 5 I provide an electromagnet 35 such as is used for vibrating the hammer of an ordinary call bell or buzzer. This magnet is used for vibrating an arm 36 on the end of which is provided a cup 37 in which is placed a dusting or marking powder that is to be dusted on the cloth. This powder is preferably composed of dry clay and chalk finely pulverized. By the vibration of the arm 36 the cup 37 is agitated and the powder therein is sifted through a fine screen or cloth onto the cloth that is to be marked.

If all the units of both rows were in constant operation as the marking apparatus moves from one end of the table to the other, this dusting powder would be spread both on the patterns and on the cloth exposed between the patterns alike and a large amount of the dusting powder would be wasted. The apparatus can be operated in this way if so desired, but I prefer to operate each cup only where it is carried over the edge of the patterns and leave the cups idle at all other times, and this is secured in the following manner.

As shown in Figure 6, the edge of the pattern is provided with a series of contact plates and each of the units 33 and 34 is provided with a pair of contacts 38 and 39 which make contact with these plates as the apparatus is moved along the table, and as each of the contacts 38 and 39 makes contact with one of the plates 40 shown in Figure 6, the circuit is closed thereby and the vibrator is caused to oscillate shaking the cup that is associated in the same unit with the pair of contacts 38 and 39. This secures the operation of that particular unit only and the deposit of the dusting powder from the cup of that unit on the cloth along the edge of the pattern, and at the various perforations in the pattern, which perforations indicate pocket openings, buttonholes, notches, etc.

All the units 33 and 34 are arranged electrically in parallel with a common source of electric energy, but only those units will be operated whose contacts 38 and 39 come into contact with the plate 40 so as to close the circuit causing the shaking of the cup and the depositing of the dusting powder. It will be understood that the electromagnet 35

is in series with the contacts 38 and 39 in each unit, and all the units are arranged in parallel in the wiring of the apparatus.

On the auxiliary frame is provided a cross bar 41 on which is supported a brush 42 which brushes over the powder and spreads it on the cloth and even rubs it in to some extent so that when the operation of the apparatus is completed and the patterns are removed from the cloth, the edge of each pattern will appear clearly marked on the cloth by the dusting powder that has been deposited thereon by each of the units.

It will also be understood that instead of the vibrating units the dusting powder might be applied by blowing it on with an air blast in which case the contacts 38 and 39 would be used for opening and closing an electrically operated valve, which valve would control the blast of air, or the valve may be opened mechanically by the contacts on the pattern. I have shown such a device in Figure 7 in which the stem 50 passes through the cup. It is provided with a roller 51 on the bottom of it. It has a valve 52 near the top which is lifted by the stem as it passes over the contacts 40 and this admits compressed air to the cup which blows the powder on the cloth.

I claim:

1. In an apparatus for marking cloth, the combination of a frame adapted to travel over the cloth, a row of marking devices on said frame, patterns on the cloth having means on the edge thereof to cause the marking devices to deposit marking material on the cloth as they pass over the edge of the patterns, while the rest of the marking devices remain idle.

2. In an apparatus for marking cloth, the combination of a frame adapted to travel over the cloth, a row of marking devices on said frame, patterns on the cloth having means on the edge thereof to cause said marking devices to vibrate and deposit marking material on the cloth along the edge of the pattern as they pass over the edge of the pattern, while the rest of the marking devices remain idle.

3. In an apparatus for marking cloth, the combination of a main frame adapted to travel on a table, flanged rollers thereon adapted to rest on the table and engage the edges thereof, an auxiliary frame adapted to be raised and lowered on the main frame, said frame being adapted to travel over cloth laid on the table and patterns laid on the cloth, a row of electromagnetic vibrators mounted on said auxiliary frame, patterns on the cloth having electrical conductor plates on the edges thereof, contacts on the auxiliary frame moving with the vibrators, said contacts making contact with the plates on the edges of the patterns and closing the circuit through the vibrators, causing the vibrators to vi-

brate and deposit marking material on the cloth along the edge of the patterns, while the rest of the marking devices remain idle.

4. In an apparatus for marking cloth, the combination of a frame adapted to travel over the cloth, a row of marking devices on said frame moving therewith, patterns on the cloth having stationary means on the edges thereof to cause said marking devices to operate and place marking material on the cloth along the edges of the pattern as the marking devices pass over the edges of the pattern.

5. In an apparatus for marking cloth, the combination of a frame adapted to travel over the cloth, a row of marking devices on said frame moving therewith, patterns on the cloth having stationary means on the edges of the patterns cooperating with said marking devices whereby the marking devices are selectively operated by said stationary means to mark the cloth along the edges of the patterns.

6. In an apparatus for marking cloth, the combination of a frame adapted to travel over the cloth, a row of marking devices on said frame, patterns on the cloth having means on the edge thereof to cause said marking devices to vibrate and deposit marking material on the cloth along the edge of the pattern as they pass over the edge of the pattern, while the rest of the marking devices remain idle, means for raising or lowering said frame and fixing the elevation thereof to correspond with the thickness of the cloth under the frame.

7. In an apparatus for marking cloth, the combination of a main frame adapted to travel on a table, flanged rollers thereon adapted to rest on the table and engage the edges thereof, and hold the main frame above the cloth on the table, an auxiliary frame adapted to be raised or lowered on the main frame, a shaft on the main frame, pinions keyed thereto, a rack on each side of the auxiliary frame engaging with said pinion whereby on the turning of the shaft and pinion the racks and auxiliary frame are raised and lowered, a row of marking devices on said auxiliary frame, patterns on the cloth on the table, having means on the edges thereof adapted to cause said marking devices to operate to mark the cloth along the edges of the pattern as the marking devices pass over the edges of the patterns while the rest of the marking devices remain idle.

8. In an apparatus for marking cloth, the combination of a main frame adapted to travel on a table, flanged rollers thereon adapted to rest on the table and engage the edges thereof, and hold the main frame above the cloth on the table, an auxiliary frame adapted to be raised or lowered on the main frame, a shaft on the main frame, pinions keyed thereto, a rack on each side of the aux-

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adapted to cause said marking devices to op-
erate to mark the cloth along the edges of
the pattern as the marking devices pass over
10 the edges of the patterns while the rest of
the marking devices remain idle, a roller on
said auxiliary frame on one side of said row
of marking devices to hold the pattern and
cloth down and a brush on the other side of
15 said marking devices to rub the marking ma-
terial over and into the cloth.

In testimony whereof I affix my signature.

JAMES B. WHITTAKER.

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