Jan. 15, 1929. 1,699,337

A. WILLIAMS, JR

APPARATUS FOR MARKING SHEET MATERIAL

Filed June 23, 1927 2 Sheets-Sheet 1

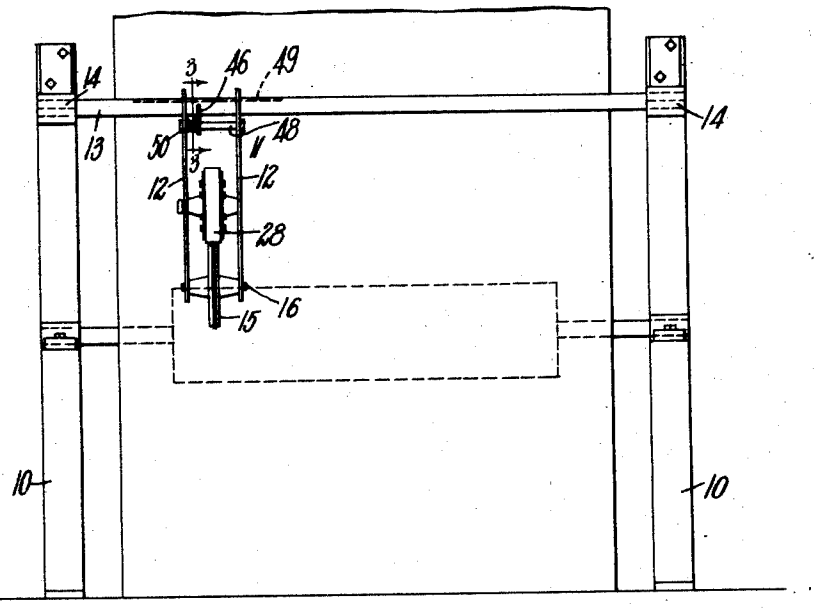


Fig. 1.

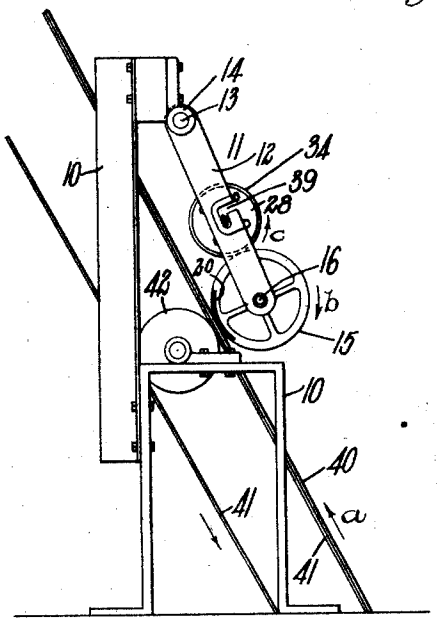


Fig. 2.

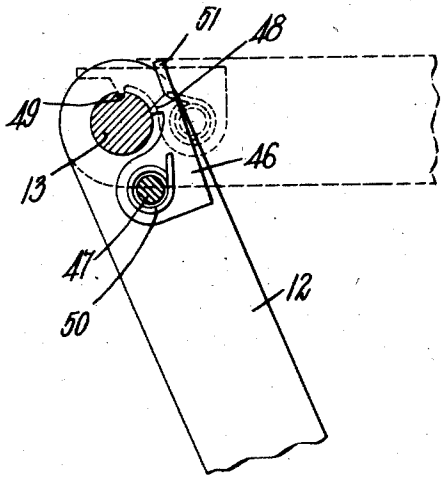


Fig. 3.

Inventor:
Archibald Williams Jr.
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A. WILLIAMS, JR

APPARATUS FOR MARKING SHEET MATERIAL

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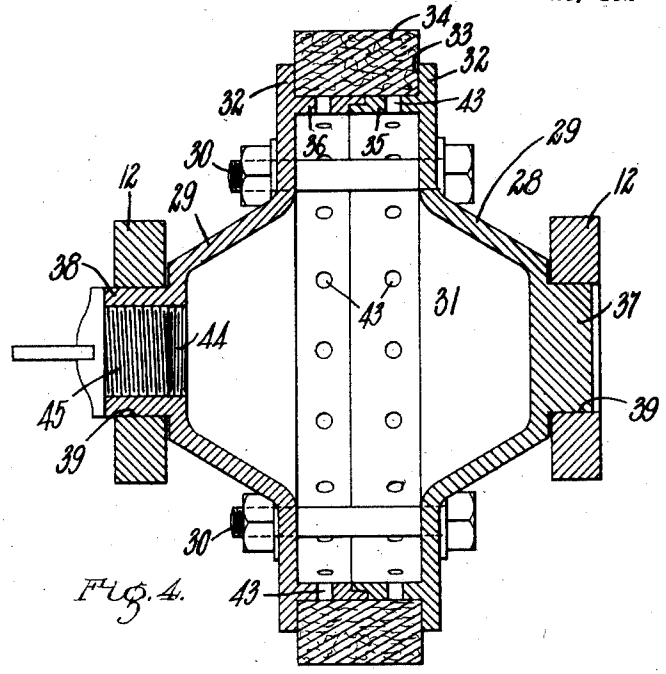


Fig. 4.

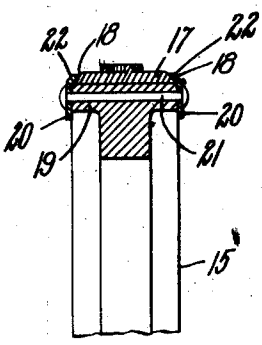


Fig. 6.

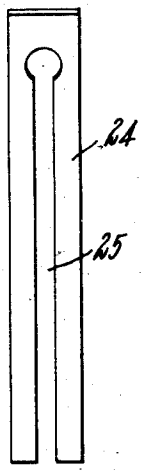


Fig. 8.

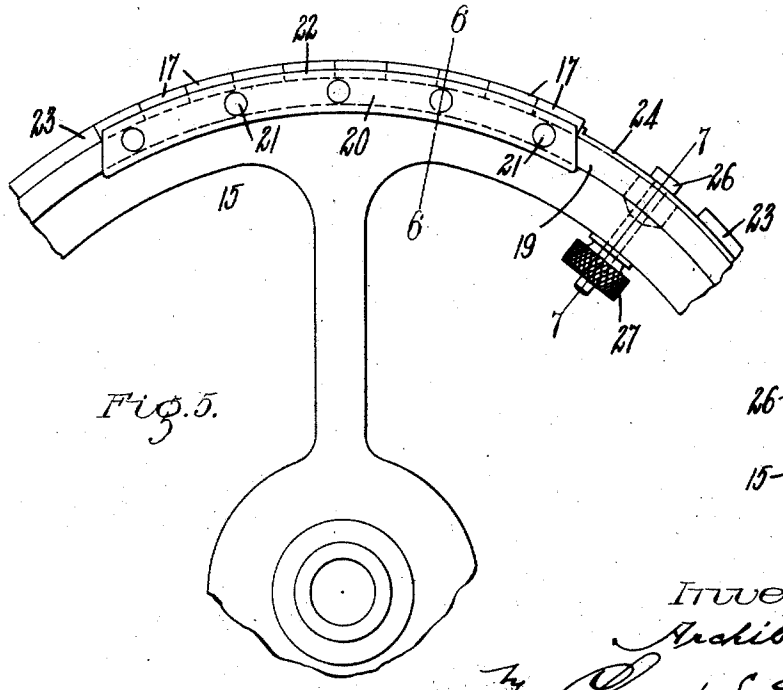


Fig. 5.

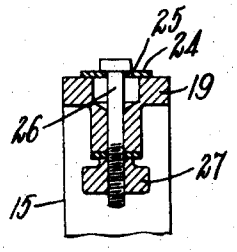


Fig. 7.

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Patented Jan. 15, 1929. 1,699,337

UNITED STATES PATENT OFFICE.

ARCHIBALD WILLIAMS, JR., OF WATERTOWN, MASSACHUSETTS, ASSIGNOR TO HOOD RUBBER COMPANY, OF WATERTOWN, MASSACHUSETTS, A CORPORATION OF MASSACHUSETTS.

APPARATUS FOR MARKING SHEET MATERIAL.

Application filed June 23, 1927. Serial No. 200,867.

This invention relates to an apparatus for marking sheet material. The apparatus is particularly adapted for use in connection with the marking of sheet rubber. In the manufacture of sheet rubber there are many different compounds employed and many different gages of material, and it is therefore desirable, as the sheet rubber comes from the calender, to mark it at that time with its proper gage number and compound.

In marking rubber, it is necessary to use a fluid which contains a pigment and solvent which will remain permanently upon the rubber when once printed thereon and will not injure the material. It is also desirable in certain cases to print the gage and the quality in more than one place laterally of the sheet of rubber as well as longitudinally so that when the sheet is cut into strips the gage and compound will be indicated on each of the strips.

It has been found that a marking fluid, consisting as hereinbefore set forth of a pigment and a solvent commingled, which is practicable for marking rubber sheeting, will, if left quiescent for any appreciable length of time, separate into its different ingredients, namely, into the pigment and the solvent, and the solvent will not make any visible mark upon the sheet rubber. It is, therefore, very necessary that the marking fluid should be constantly agitated, and it is the object of this invention to provide an apparatus which will not only print the numbers and letters upon the sheet rubber to indicate the gage and quality, but also the apparatus must be so constructed as to constantly agitate the marking fluid when the same is being used.

It is further the object of this invention to construct the apparatus in such a manner that the printing device may be lifted out of contact with the sheet material and automatically held out of contact as long as may be desired.

The invention consists in the apparatus for marking sheet material hereinafter described in the specification and particularly in the combination of elements set forth in the claims.

Referring to the drawings:

Figure 1 is an end elevation of an apparatus for marking sheet material embodying my invention.

Fig. 2 is a side elevation of the same.

Fig. 3 is an enlarged sectional elevation taken on the line 3—3, of Fig. 1.

Fig. 4 is a sectional elevation of the inking roll.

Fig. 5 is a side elevation of the type carrier, broken away.

Fig. 6 is a detail sectional elevation taken on the line 6—6, of Fig. 5.

Fig. 7 is a detail sectional elevation taken on line 7—7, Fig. 5.

Fig. 8 is a plan of a segmental clamp plate.

Like numerals refer to like parts throughout the several views of the drawings.

In the drawings, 10, 10 are side frames, upon which are pivotally mounted a rocker frame 11 comprising a pair of side bars 12 spaced apart and mounted to rock at their upper ends upon a shaft 13 which is fastened at its opposite ends in brackets 14 on the side frames 10. A rotary type carrier wheel 15 is mounted to rotate upon a stationary shaft 16 which is fastened at its opposite ends to the side bars 12 of the rocker frame 11.

Type plates 17 are mounted upon a portion of the periphery of the type carrier 15. These type plates are bevelled at their opposite ends at 18 (Fig. 6) and are held upon the rim 19 of the type carrier by plates 20 which are fastened by bolts 21 to opposite sides of the rim 19 and have their upper edges bent inwardly at 22 to embrace the bevelled ends of the type 17. These plates 20 thus position the type laterally of the rim, while circumferentially of the rim, the type plates 17 are positioned by one end of a segmental flange 23 which constitutes a printing member and is adapted to print an elongated line between adjacent series of impressions of the type. The series of type 17 are positioned at one end of said series, therefore, by the segmental flange 23 and at the opposite end they are positioned by a segmental plate 24 which is slotted at 25 to receive a clamp bolt 26 which extends through the rim 19 and is clamped thereto by means of a nut 27.

It will be seen by this construction that any desired number of type plates can be positioned upon the rim 19 of the type car-

rier and changed as may be desired by loosening the nut 27 and sliding the plate 24 backwardly on the rim until they can be removed and changed in arrangement as desired.

The inking roll 28 illustrated in enlarged detail in Fig. 4 consists of a pair of oppositely disposed hollow members 29 fastened together by bolts 30, which extend through a chamber 31 in the inking roll and form baffles which perform the function of agitating and thoroughly stirring the marking fluid as the inking roll is rotated in the operation of the apparatus. The hollow members 29 constitute truncated cones and are provided with circumferential flanges 32 which are spaced apart to form an annular groove 33 in which a ring of absorbent material 34 is positioned. Circumferential flanges 35 and 36 on the members 29 abut against each other and form one wall of the chamber 31. A portion of the hollow members 29 constitute truncated cones, and hubs 37 and 38 constituting trunnions on the outer ends of said truncated cones project into bayonet slots 39 in the side bars 12 of the rocker frame 11, so that the inking roll 28, due to the downwardly inclined position of the rocker frame 11, rests with its peripheral ring 34 in contact with the faces of the type and of the segmental flange 23 as the type carrier is rotated by contact with the rubber sheeting 40 which is carried upwardly in the direction of the arrow *a* from the calender rolls by an apron 41.

A roll 42 rotatably mounted upon the frame 10 is positioned adjacent to the rotary type carrier 15 on the opposite face of the belt therefrom, this roll 42 being an idler and constituting a support for the apron 41 and the material 40 thereon during the printing operation. The slots 39 enable the inking roll 28 to move upwardly and downwardly as the occasion may require, in order that perfect contact of the felt ring 34 with the type face may be insured. The ring 34 is provided with marking fluid from the interior of the inking roll 28 through orifices 43 in the flanges 35 and 36. Marking fluid is introduced into the interior of the inking roll 29 through an orifice 44 which is closed by a screw-threaded plug 45.

When it is desired to throw out of action the printing apparatus hereinbefore described, it may be done by means of a latch 46 which is pivoted upon a rod 47 fastened to the side bars 12 of the rocker frame 11. This latch is provided with a tooth 48 which is adapted to enter a groove 49 in the shaft 13 when the parts are in the positions shown in dotted lines, Fig. 3. A torsional spring 50, one end of which is fast to the latch 46 and the other to one of the side frames 12, holds the tooth 48 in the slot 49 and when it is desired to throw the apparatus into operation, this latch is lifted by means of a thumb piece 51 out of the slot 49 and the rocker frame is then allowed to assume the downwardly inclined position illustrated in Fig. 2, with the type carrier roll 15 in contact with the material 40 on the belt 41.

The operation of the device hereinbefore described is as follows:—The apron 41 with the material 40 thereon moves from the calender rolls upwardly in the direction of the arrow *a*, between the roll 42 and the type carrier 15, causing the type carrier to rotate in the direction of the arrow *b*. As the faces of the type and of the flange 23 contact with the material 40, the numbers and letters are printed upon the surface thereof. The type carrier being rotated by frictional contact also rotates the inking roll 28 in the direction of the arrow *c*, Fig. 2. The marking fluid in the inking roll 29 is kept constantly agitated by the passage therethrough of the bolts 30 and by the rotation of the inking roll, so that the pigment does not separate from the solvent but the ingredients of the marking fluid are constantly commingled.

In the drawings, Fig. 1, a single embodiment of my invention is illustrated, but if desired a plurality of the pivotally mounted frames with their respective type carriers and inking rolls may be mounted on the shaft 13, so that when it is desired to print a plurality of series of numerals and letters on the sheet material it may be done. The occasion for printing a plurality of series of numerals and letters on the sheet material arises when it is desired to slit the material into a plurality of strips, in which case each of the strips would have the numerals and letters printed thereon, indicating the gage and quality of the material.

I claim:

1. An inking roll for a printing apparatus having, in combination, a pair of oppositely disposed hollow members fastened together and forming a chamber adapted to contain marking fluid, circumferential flanges on the peripheries of said hollow members, spaced apart and forming an annular groove, a ring of absorbent material positioned in said annular groove and connected by orifices with said chamber, and bolts extending transversely of said roll, through said chamber and constituting baffles to agitate said marking fluid when the roll is rotated.

2. An inking roll for a printing apparatus having, in combination, a pair of oppositely disposed hollow members, fastened together and forming a chamber adapted to contain marking fluid, a trunnion on each of said hollow members, circumferential flanges on said hollow members, spaced apart and forming an annular groove, a ring of absorbent material positioned in said annular groove and connected by orifices with said chamber, and bolts extending transversely of said

roll, through said chamber, and constituting baffles to agitate said marking fluid when the roll is rotated.

3. An inking roll for a printing apparatus having, in combination, a pair of oppositely disposed hollow truncated cones fastened together and forming a chamber adapted to contain marking fluid, circumferential flanges on the peripheries of said hollow truncated cones, spaced apart and forming an annular groove, a ring of absorbent material positioned in said annular groove and connected by orifices with said chamber, and bolts extending transversely of said roll, through said chamber and constituting baffles to agitate said marking fluid when the roll is rotated.

In testimony whereof I have hereunto set my hand.

ARCHIBALD WILLIAMS, JR.