

May 26, 1942.

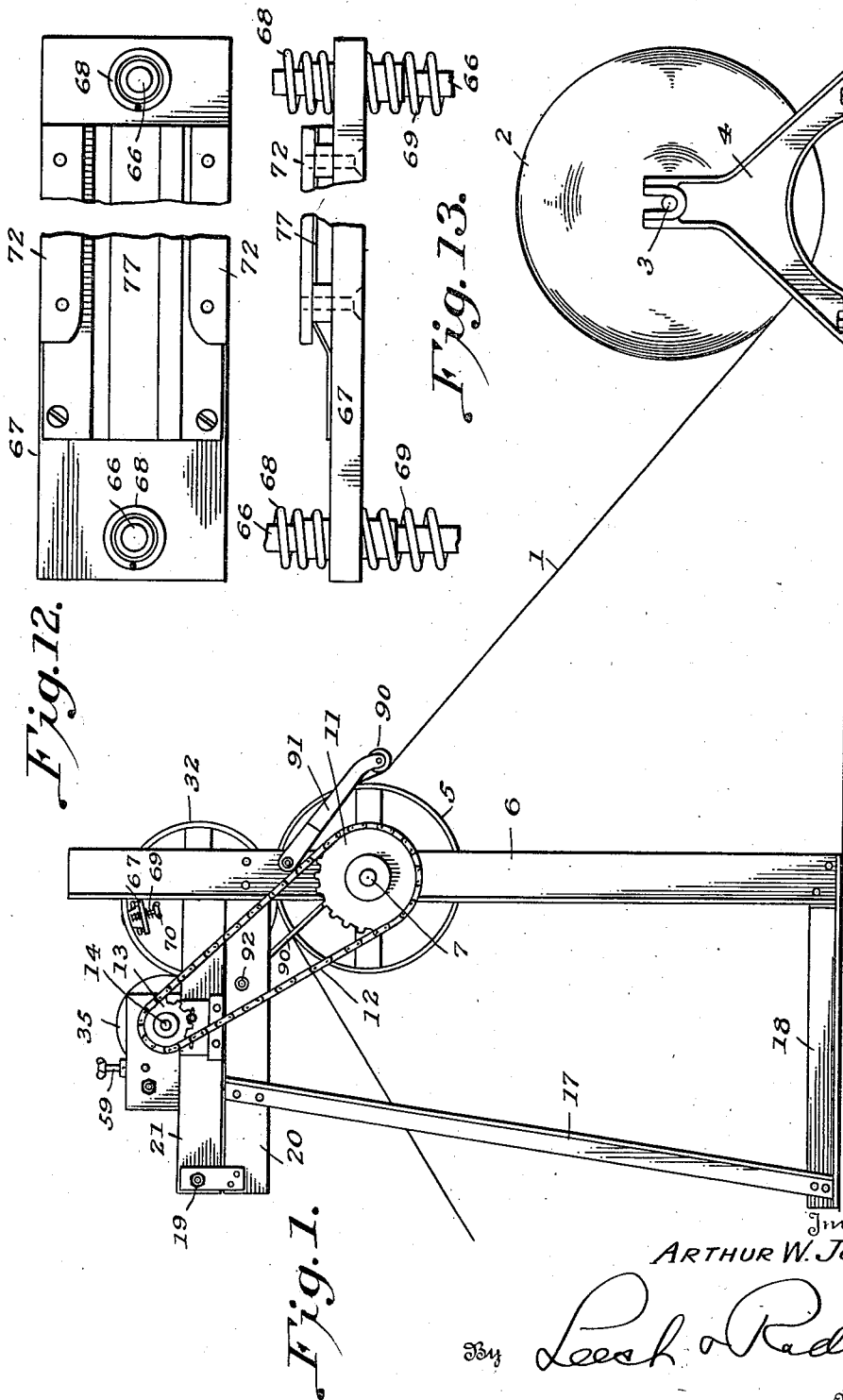
A. W. JORDAN

2,284,094

MACHINE FOR RECORDING DATA ON WALL PAPER

Filed Aug. 3, 1939

5 Sheets-Sheet 1



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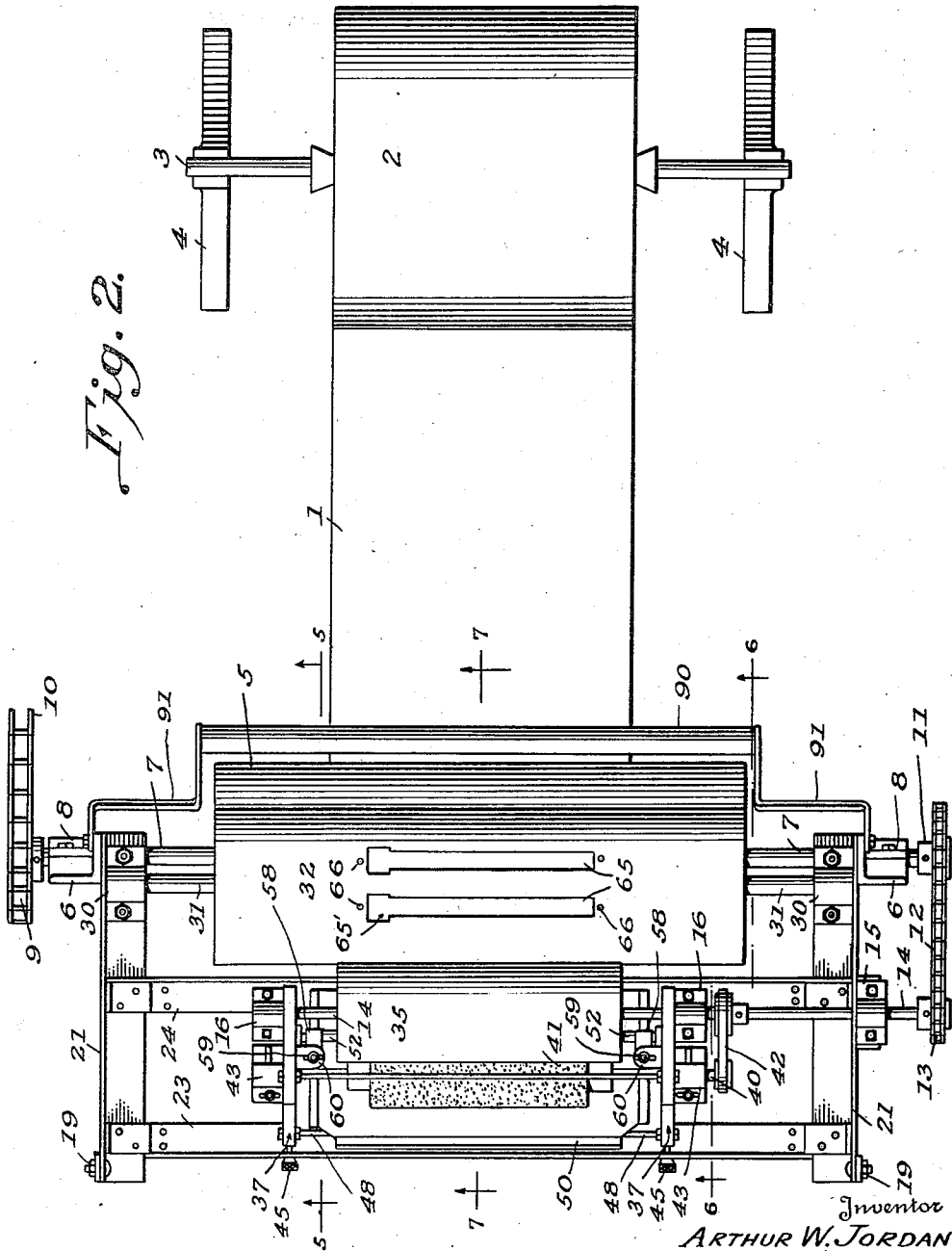
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5 Sheets-Sheet 3

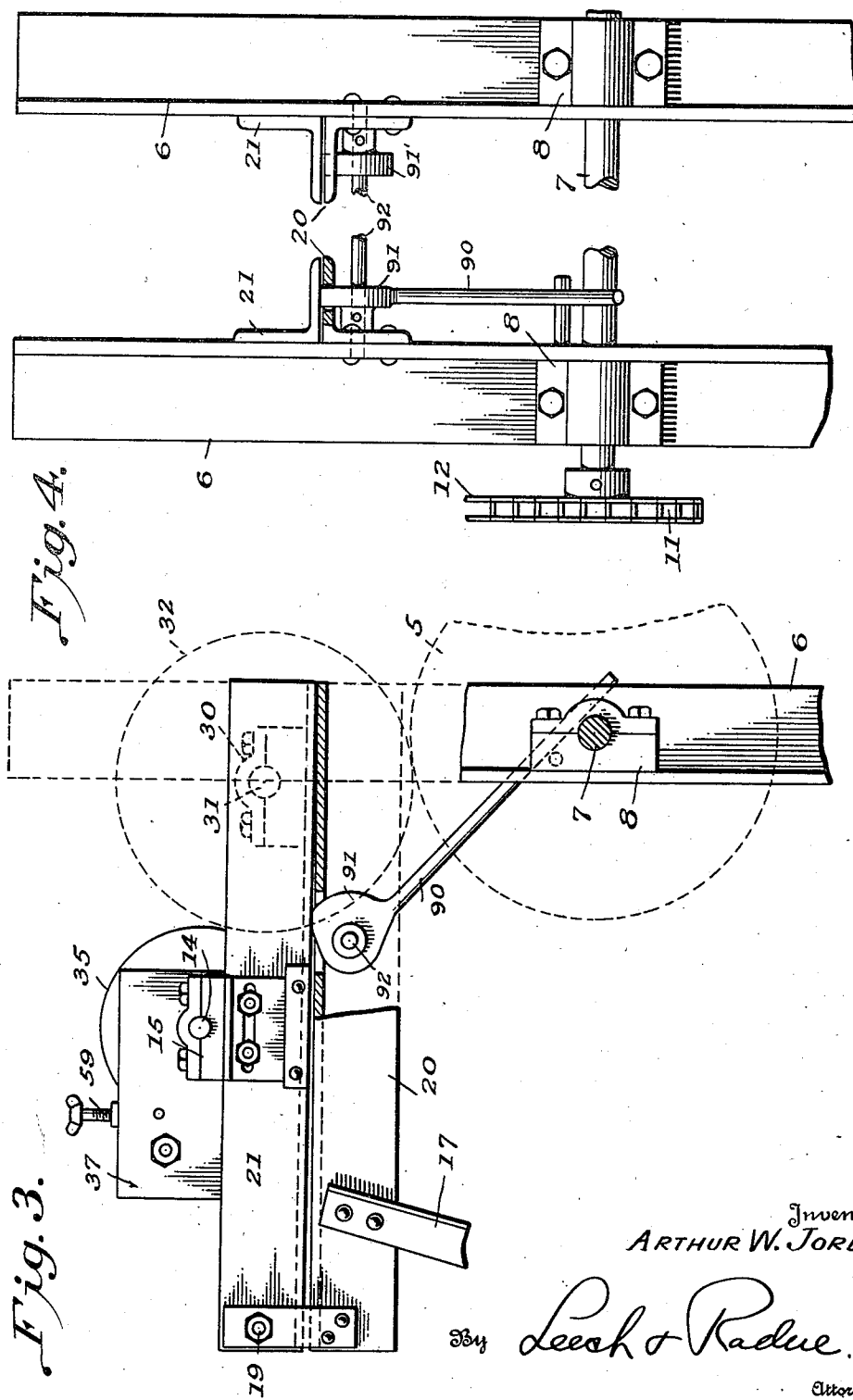


Fig. 3.

Fig. 4.

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Fig. 15.

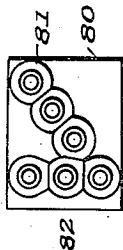


Fig. 16.

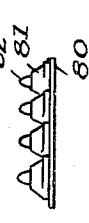


Fig. 18.

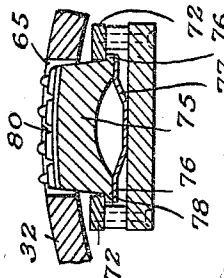


Fig. 17.

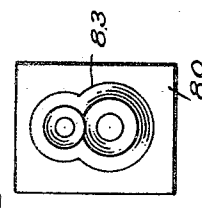
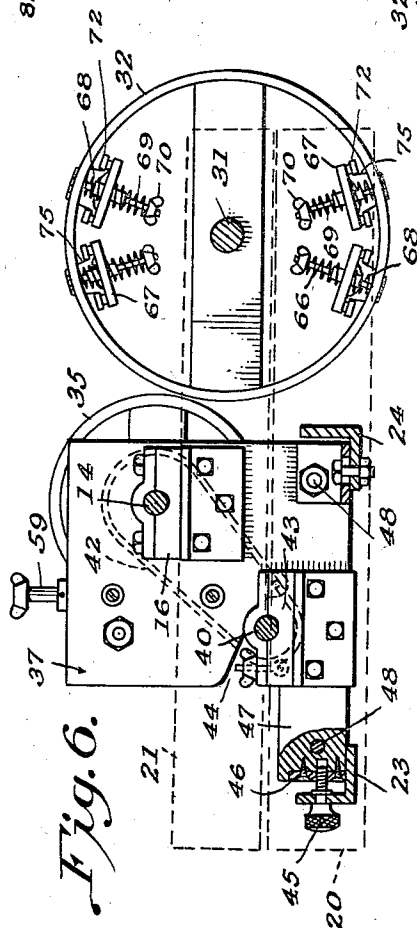


Fig. 6.

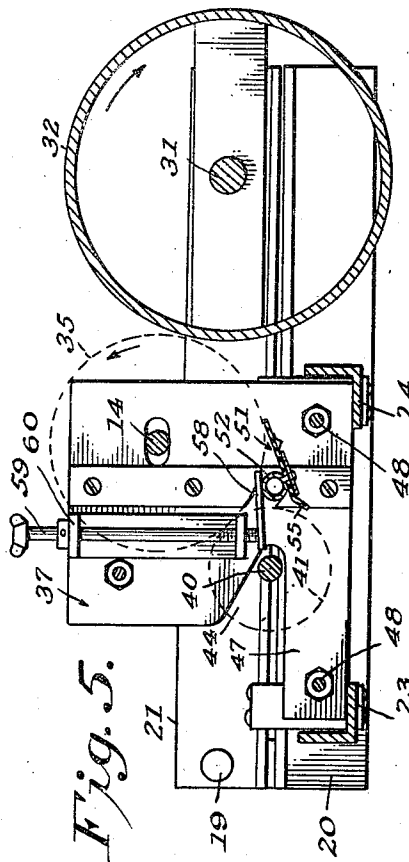
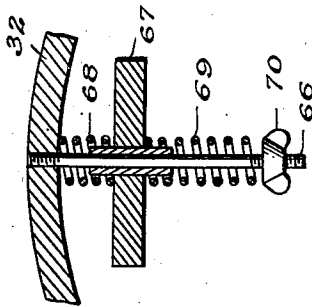


Fig. 5.

Fig. 14.



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Fig. 8.

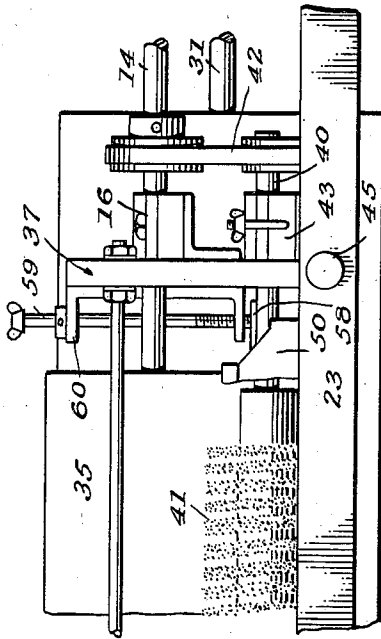


Fig. 9.

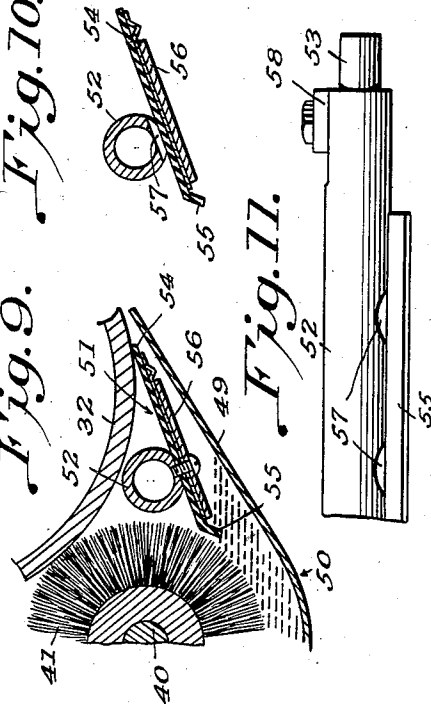
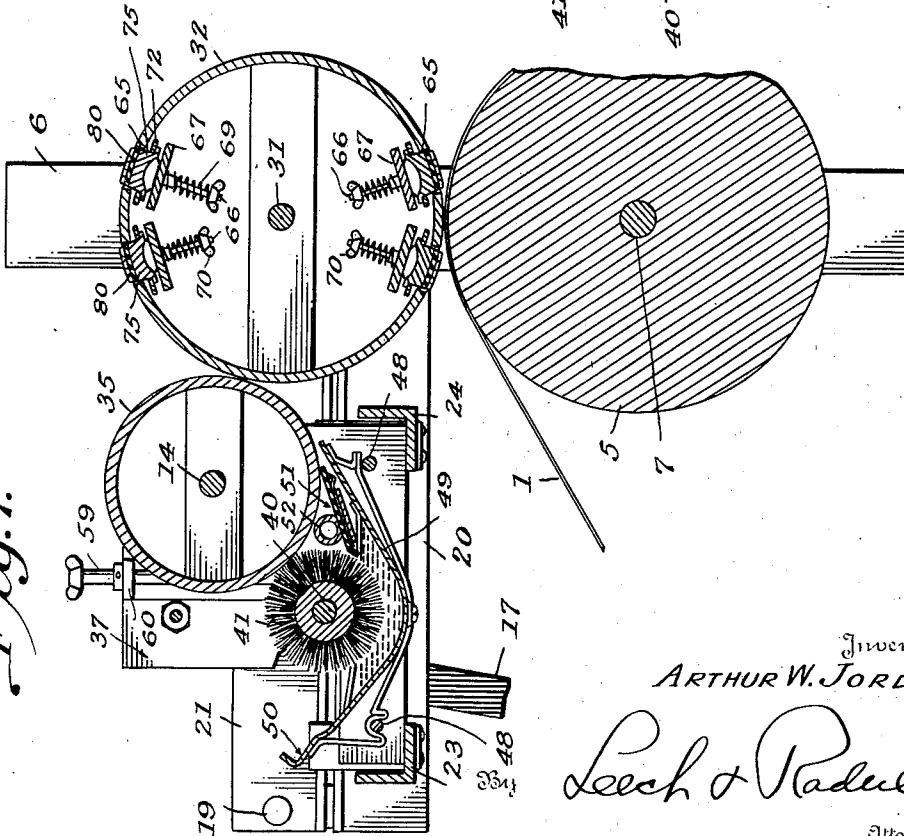


Fig. 7.



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## UNITED STATES PATENT OFFICE

2,284,094

MACHINE FOR RECORDING DATA ON  
WALLPAPERArthur W. Jordan, Washington, D. C., assignor to  
Shade Control, Inc., a corporation of Delaware

Application August 3, 1939, Serial No. 238,233

9 Claims. (Cl. 101—219)

This invention relates to a machine for recording identifying data on the normally unprinted surface of decorative wall paper before any ground coat or design has been placed thereon for the purpose of positively identifying the paper by reel number, design shade, color or stock used.

The method of impressing the desired data on the paper stock may be in conformity with the teaching disclosed in my co-pending application filed February 4, 1939, Serial Number 254,709, entitled, "Method of identification." However, the present apparatus is not to be construed to be limited to this process as the apparatus is capable of broader application.

In printing wall paper, it is well known that the same batch of color will give different shades or hues where it is impressed on more than one reel of stock, as differences in the stock itself give variations or changes which show up to marked disadvantage when placed side by side on flat surfaces. With the present invention data positively identifying the paper stock as coming from a particular reel of raw stock is possible, and insures the manufacturer, the jobber, the paper hanger and the trade in general when applying the finished paper to a flat surface that the rolls have been printed from the same reel of stock.

Formerly an identifying run number was applied to the selvage edge of the paper and usually this was trimmed off at the shop or wholesale house prior to being received in the hands of the paper hanger. Consequently, the identification marks were lost or destroyed, while surplus paper utilizing this invention on being returned to stock will have the identification data thereon.

While the machine which forms the basis of the present invention is applicable for applying any desired indicia on the back of decorative papers at definite intervals from the beginning to the end of the roll, it is particularly useful in applying fugitive or non-fugitive colors in a manner which will either be completely obliterated by the application of paste to the paper or to permit the paste to cover the indicia without permitting it to penetrate through the front surface.

The manner and means of applying the indicia is of great importance to insure that suitable markings will be made without smearing the color used and in such a manner that the numbers, letters or other characters will dry instantaneously. Briefly stated, the indicia is placed on the paper by means of a plurality of resilient

points formed on wedge shaped base members and assembled in the form of letters or numerals so that only the tips of the characters are inked and thereafter contact and press against the paper which enlarges the spot or point of color many times through pressure exerted on the wedge shaped base to flow the color over a large area.

Briefly stated, the salient features of the machine for accomplishing these purposes includes a reel of stock which is unwound and fed between upper and lower rollers, the lower roller being positively driven and the contact between the rollers pulls or feeds the paper therebetween. The upper roller is provided with longitudinally detachable sliding characters, as before described, and has means comprising a cam lever for raising the upper roller when stock is to be inserted between the upper and lower rollers in changing, reeling or after breakage.

A smaller longitudinal roller driven from the lower feed roller is adjustably positioned to contact the resilient type on the upper roller as it revolves. Ink or color is applied to the smaller inking roller by means of a driven brush which revolves in a color trough. The brush is slowly rotated in the opposite direction from rotation of the inking roller and does not contact the surface of the inking roller, the space between the ends of the bristles of the brush and the inking roller being taken up by the thickness of the color film.

A resilient rubber strip or scraper having overflow openings is secured to a rod lying spaced and parallel to the inking roller for the purpose of spreading or filming the color. The brush is shorter than the inking roller, although the scraper films the color over the whole distance of the roller. The brush and the inking roller and the scraper are all adjustable so that a micrometer variation may be secured.

In the drawings:

Fig. 1 is a side elevation of the wall paper marking machine;

Fig. 2 is a top plan view thereof;

Fig. 3 is an enlarged detail showing the raising means for the printing and color rolls;

Fig. 4 is an end view of the machine supporting frame and top pivoted frame raising mechanism;

Fig. 5 is a vertical longitudinal sectional view of the upper portion of the machine taken on line 5—5 of Fig. 2;

Fig. 6 is a vertical longitudinal view of the

upper portion of the machine taken on line 6—6 of Fig. 2;

Fig. 7 is a vertical cross section of the impression roll, color roll, color supply and lower feed roll taken on line 1—7 of Fig. 2;

Fig. 8 is a fragmental front view of the right hand side of color roll and color feed mechanism;

Fig. 9 is a fragmental vertical cross section of the color roll and color feed mechanism;

Fig. 10 is a cross section detail of the color spreader;

Fig. 11 is a fragmental front plan view of a portion of the color spreader;

Fig. 12 is a foreshortened view of the indicia holding means;

Fig. 13 is a side elevation of the impression unit holding means;

Fig. 14 is a fragmental vertical section through the impression roll;

Figs. 15, 16, and 17 are details of impression units per se; and

Fig. 18 is a vertical cross section through the impression roll showing the impression unit in position.

A web 1 of suitable wall paper stock is unwound from the reel 2 supported by axle 3 in side brackets 4 and fed over horizontal feed roller 5 journaled between vertical side frames 6. The side frames 6 are spaced apart and between them the roller 5 is mounted on a horizontal axle 7 and supported in suitable bearings 8 bolted to the side frames.

At one end of the shaft or axle 7 is a sprocket 9 driven by chain 10 connected to a suitable source of power (not shown). The opposite end of the shaft is also provided with sprocket 11 and chain 12 for driving sprocket 13 secured to the end of shaft 14 mounted in bearings 15 and 16. Outwardly extending parallel side frames 20 secured by vertical braces 17 affixed to base bars 18 are joined to the bottom of the vertical frame members 6 for supporting the forward portion of the machine.

Pivottally secured above the outer ends of the side frames 20 are parallel angle irons or frames 21, which are joined to the bottom frames by pivots 19. The rear ends of the upper frames 21 are not fastened to the lower side frames 20 but rest thereupon by the weight of the upper side bars and associated mechanism which will be hereinafter described in detail. Transverse spaced angle members or braces 23 and 24 join the opposite upper side frames 21 and these members form a supporting means for certain of the mechanism.

Mounted adjacent the rear free ends of the upper side frames 21 are side bearings 30 in which is mounted an axle 31 carrying an impression or printing roller 32. A color or inking roll 35 is mounted adjacent and parallel to the impression roller 32 and is carried on axle 14 supported in side journals 16 fastened to vertical side plates 37 rigidly secured between the transverse brace members 23 and 24.

As shown in Figs. 5 and 6, these vertical side plates 37 extend from adjacent the bottom of the side rails 20 and upwardly therefrom to approximately the height of the impression roller 32. The shaft 14 of the color roller passes outwardly through the right hand plate and extends beyond the side frame 21 by means of an extension axle 14 on which the sprocket 13 is mounted, which, as before described, is engaged by the chain 12 driven by sprocket 11. Thus

the color roll 35 is constantly driven by the positively driven feed roll 5 and always rotates therewith.

Also carried between the spaced plates 37 is a horizontal shaft 40 on which is secured a brush 41 rotated by belt drive 42 from driven shaft 14. The shaft 40 of the brush 41 is carried in separable side bearings 43 and, as shown in Fig. 6, the shaft 40 in passing through the vertical side plates 37 does not contact the plates but is freely suspended in the cut-away portions 44 so that longitudinal adjustment of the side bearings 43 may be secured through thumb nut and screw 45 passing through the front brace 23; with the thumb screws 45 engaging screw plates 46 and side bars 47 which extend outwardly from the plates 37.

A pair of transverse rods 48 are secured between the side plates 37 and in raised position above the braces 23 and 24 for the purpose of carrying the curved bottom 49 of color trough 50. This trough extends beneath the brush 41 and is dished in such a manner that its greatest depth is below the vertical plane of the brush shaft 40.

As shown in Fig. 7, the color trough extends beyond the vertical axis of the color roller 35 to form a drip baffle for any excess color which might be carried around the roll. A transverse color filming device or scraper 51 is also pivotally supported in the spaced side plates 37 and comprises a tubular supporting rod 52 having extension removable stub ends 53, which rest within openings in the side plates. The device includes a flexible or resilient blade or scraper 54 whose outer edge is in contact with the lower periphery of the color roller with its opposite end 55 downturned and extending rearwardly into the material in the color trough.

To insure the proper positioning of the blade or scraper a longitudinal metal or fiber plate 56 extends across the length of the blade and is screwed through the resilient blade 54 to the tubular supporting rod 52. This plate permits the proper flexing of the edge of blade 54 in contact with the roller and gives support to the blade throughout the entire length of the color filmer.

To permit excess color removed from the color roll 32 to flow back into the color bath, a plurality of slots or openings 57 are provided throughout the length of the tube 52 and these slots lie between the tube and the wiper so that excess color drains through them back into the color trough. The degree of contact of the wiper blade against the color roller is readily adjusted by means of horizontal side plates or lever members 58 fastened to the upper side of the rod 52 and bearing against vertical adjustable bolts 59 carried in U-shaped brackets 60 fastened to the inside of the vertical side members 37.

The component parts of the impression or printing roll 32 form one of the salient features of this invention. By referring to the several figures of the drawings, particularly Figs. 7, 12, 13, and 18, it will be observed that the periphery of the roller 32 is provided with a desired number of longitudinal cut-out portions or slots 65 having enlarged end openings 65'. Screwed interiorly on the impression roll beyond the ends of the slots 65 are bolts 66 over which are mounted metal plates 67 which extend throughout the length of the slots with the ends of the plates resiliently mounted or floating on the bolts through the medium of coil springs 68 and

69. The spring 63 lies between the inner periphery of the roller 32 and the top of plates 67, while the lower spring 69 is positioned between the bottom of the plates 67 and the wing nut 70 screw-threaded to the end of the bolt 66. This construction allows precision adjustment of resilient type through elongated slots in the impression roller to obtain the desired pressure causing desired flow of resilient members and color.

A pair of bars or slightly elevated side rails or guides 72 are secured to the upper side edges of the plates 67 for the purpose of retaining the interchangeable impression blocks 75. These blocks are slightly tapered from top to bottom with their offset lower edges 76 thinned to engage the under surfaces of the parallel spaced side rails 72. The blocks are held in firm frictional engagement with the undersides of the side rails through the medium of longitudinal spring plates 77 having upturned longitudinal edges 78 while being readily inserted or removed from the impression cylinder 32 by slight downward pressure upon the type or character to overcome spring tensions in type stick and allow removal of the characters from the type stick or the addition of type to type stick.

Adhesively or otherwise attached to the top of each block 75 is a resilient printing or impression member which may take the form shown in Figs. 15 and 17 of the drawings. In each instance a resilient base plate 80 made of rubber or other suitable material is formed with a plurality of upstanding cone or wedge-like base portions 81 having integral reduced diameter, pointed ends 82. A symbol, letter or number is made up of a plurality of the cone or wedge-like portions arranged in a suitable design. The modified form of impression member shown in Fig. 17 has an upstanding resilient edge or wedge formation 83 so that a more fully formed letter or design is impressed.

In use only the ends of the vertically extending reduced diameter tips or wedge member 82 of the impression members are inked by a gentle wiping or "kissed" action with the color roller 35, and on contact with the wall paper stock being fed from the reel, the ink on the tips is first impressed and thereafter the whole letter is pressed or flowed so that a comparatively large diameter spot or impression is made which instantaneously dries and is non-smudgy. The inherent resiliency of the tips themselves and their base cone or wedge portions 81 permit this spreading or flowing action, and, as shown in Fig. 18, the impression members extend only just beyond the outer periphery of the impression cylinder, although this distance is adjustable by means of the wing bolts 66.

To insure that the web or stock 2 will be evenly fed through the machine and also that any slack will be automatically compensated for a web tensioning device is pivotally attached to the vertical side frames 6. The web tensioning means comprises a freely rotatable bar 90 secured at its ends to pivoted side frames 91, and is sufficiently heavy to at all times keep the proper tension on the paper web 1 so as to hold the web 1 in engagement with the lower positively driven roll 5. If the web collecting machine (not shown) permits any slack in the web beyond the roll 5 and this slack is rapidly taken up, the web tensioning device will in the meantime have dropped down against the cylinder 5 and as the material is fed between the rolls the bar 90 is raised be-

fore any pull occurs on the web between the bar and the reel 2 and thus the resultant snap or back lash is neutralized and the web prevented from breaking.

5 In initially threading the stock through the machine the operator raises handle 95 having an integral cam 96 thereon. The cam is pivoted on rod 97 mounted between the side frames 6 and also carries a second cam 97' to raise the entire 10 upper mechanism mounted on pivoted side frames 21.

What I claim is:

1. In a printing machine of the type having a support for a reel of paper stock, a pair of feed 15 rolls between which the said stock is drawn and wherein one of said rolls is positively driven, while the other of said rolls is rotated by frictional contact therewith, the combination therewith of resilient impression members having printing surfaces of generally conical cross-section secured to the said frictionally driven feed roll, a parallel color applying roll mounted adjacent the frictionally driven feed roll adapted to contact only the extreme outer end portions of the said printing surfaces, a driven brush lying 20 adjacent and parallel to said color applying roll and a color supply trough mounted beneath said brush.

2. A machine as described in claim 1, wherein the periphery of said brush is slightly spaced from the said color roll and rotates in a color bath contained in said trough and applies color directly to said color applying roll by centrifugal action without physical contact therewith.

3. A machine of the character described in claim 1, wherein the said positively driven feed roll is rigidly mounted in a fixed spaced side frame while the frictionally driven roll, color roll and driven brush are all mounted in a unitary 40 pivoted side frame.

4. A machine as described in claim 1, wherein the color roller is provided with a longitudinal flexible film forming scraper in constant contact therewith, and means for adjusting the degree of contact of said scraper, the said scraper comprising a horizontally pivoted rod to which a longitudinal plate is secured, a flexible scraper blade 45 mounted between the rod and plate, the said rod having a plurality of transverse slots in its periphery adjacent the said plate to permit surplus color to pass therethrough.

5. A machine as described in claim 1, wherein the positively driven feed roll is journaled in stationary side frames and the frictionally driven feed roll, color roll and color brush are supported on spaced parallel horizontal side frames adapted to be bodily raised, for the insertion of a web of paper stock between the feed rolls.

6. A machine as described in claim 1, wherein the said impression members are held in spring tensioned holders supported interiorly of the frictionally driven feed roll and normally protrude slightly beyond the outer periphery thereof with means for adjusting the height of said impression members with respect to the periphery of the roll.

7. A machine as described in claim 1, wherein the color roll scraper is affixed adjacent its longitudinal center to a rod, and extends upwardly against the periphery of the color roll and downwardly into the color trough, said rod having cutaway portions to permit excess color to return to the trough.

8. A machine as described in claim 1, wherein the printing members are resilient upstanding 75

elements having end portions of reduced area whereby the reduced areas of the elements are expanded in area by contact with the feed roll.

9. In a printing machine, a fixed horizontal base frame, a second horizontal frame lying parallel to and pivotally connected to said base frame, a pair of spaced vertical supports secured

to said base frame, a paper feed roll journaled between said spaced vertical supports; a printing roller and inking roller therefor mounted on said second pivoted frame and elevating means 5 carried on the fixed frame for raising said pivoted frame.

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