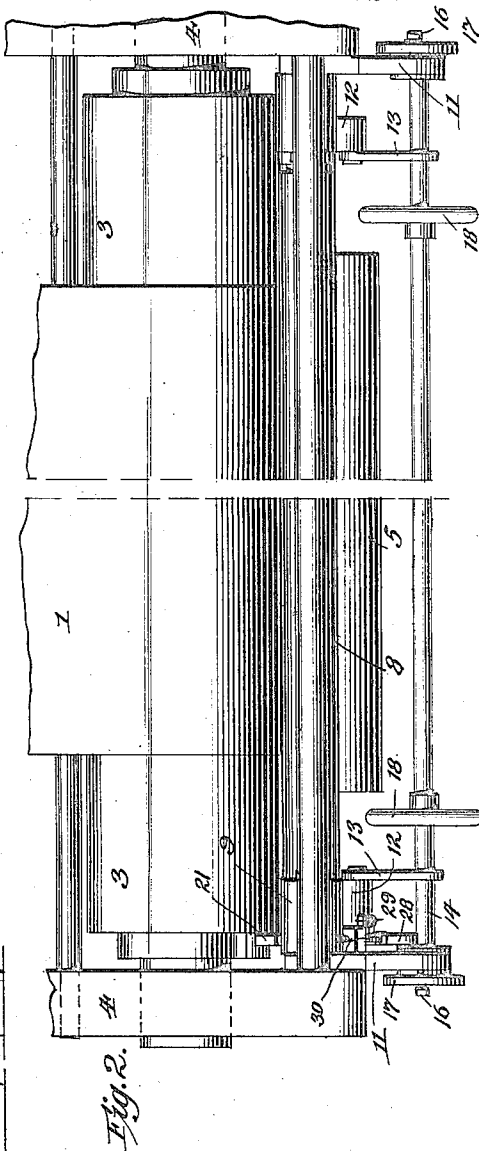
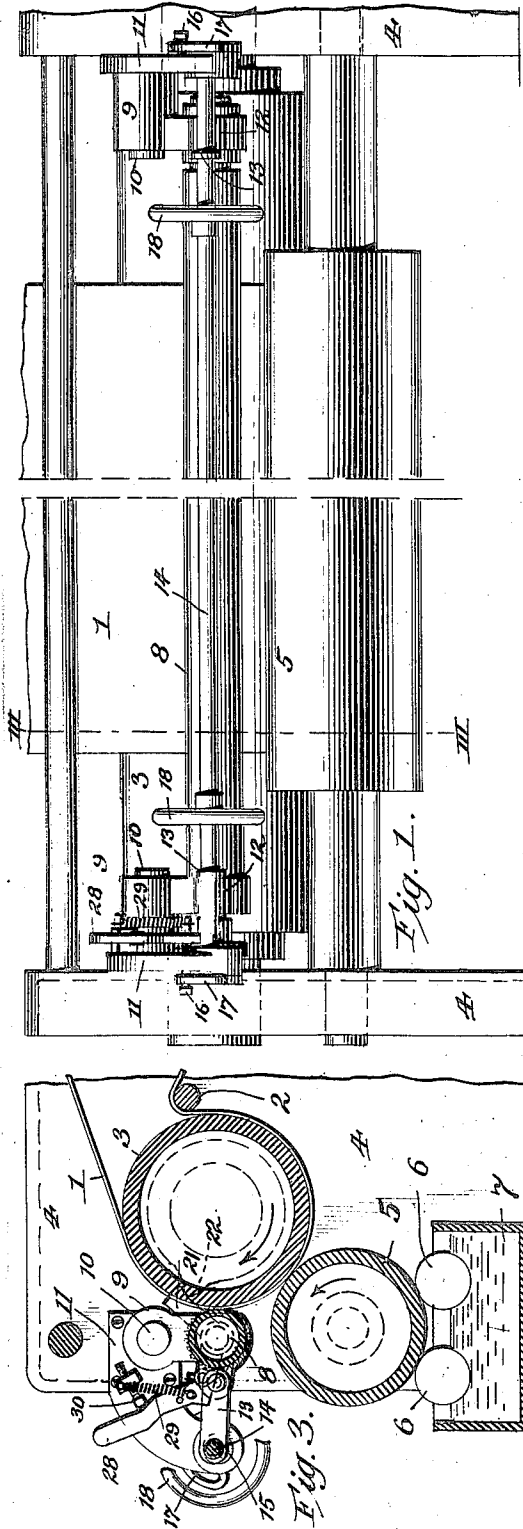


1,302,352.

Patented Apr. 29, 1919.

2 SHEETS—SHEET 1.



Inventor
Harry M. French,

Doyle and Dowd,

Attorneys.

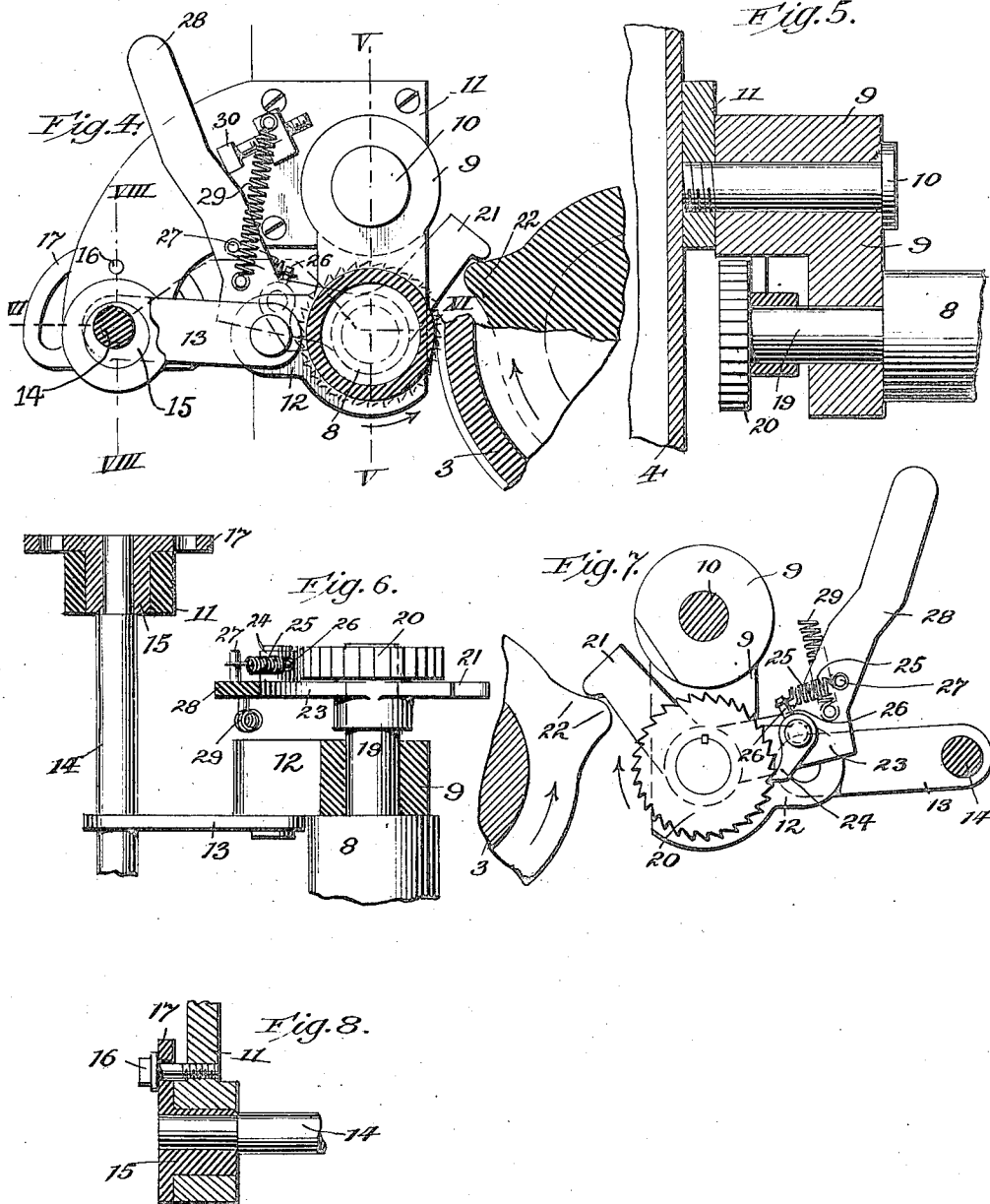
H. M. FRENCH.
COATING MACHINE.

APPLICATION FILED FEB. 1, 1919.

1,302,352.

Patented Apr. 29, 1919.

2 SHEETS—SHEET 2.



Inventor
Harry M. French,

By *Dodge and Sons,*

Attorneys.

UNITED STATES PATENT OFFICE.

HARRY M. FRENCH, OF NORWOOD, MASSACHUSETTS.

COATING-MACHINE.

1,302,352.

Specification of Letters Patent. Patented Apr. 29, 1919.

Application filed February 1, 1919. Serial No. 274,464.

To all whom it may concern:

Be it known that I, HARRY M. FRENCH, a citizen of the United States, residing at Norwood, in the county of Norfolk and State of Massachusetts, have invented certain new and useful Improvements in Coating-Machines, of which the following is a specification.

This invention pertains to coating machines and has to do more particularly with that class wherein a coating layer or film of paint is applied to a continuous strip or web of fabric, such, for instance, as a sheet of felt employed as floor covering or the like.

It is essential to the production of a commercial article that the paint should be applied evenly and without streaks or stripes, and the present invention has for its object the production of a mechanism automatic in its operation which will effect the even distribution of the paint to the surface of the web or sheet.

The structure is illustrated in the annexed drawings, wherein:

Figure 1 is a front elevation of the mechanism, the paint reservoir being omitted;

Fig. 2 a top plan view thereof;

Fig. 3 a transverse vertical sectional view on the line III—III of Fig. 1;

Fig. 4 a similar view on an enlarged scale;

Fig. 5 a vertical sectional view on the line V—V of Fig. 4;

Fig. 6 a horizontal view on the line VI—VI of Fig. 4;

Fig. 7 an elevation of the ratchet mechanism and allied parts; and

Fig. 8 a detail section on the line VIII—VIII of Fig. 4.

The web to be coated is designated by the numeral 1. It passes over a guide roller 2 to and about a feed roll or drum 3, said roller and drum being supported in suitable standards or frames 4, 4. The sheet is drawn forward about the drum 3 by suitable means (not shown) and paint or other coating material is applied thereto by a roller 5 to which paint is constantly supplied by suitable means, as, for instance, feed rollers 6 which are immersed in the paint present in a feed trough or reservoir 7, Fig. 3.

Where paint is the substance applied to the web or sheet 1 by the doctor roller 5, the paint on the sheet after it passes out of contact with said roller, will present a more or less streaky or ridged effect and to smooth

or evenly spread the paint I employ a doctor roller 8. Said roller is suspended by and has its bearings in two links or arms 9 pendulously supported from machine screws 10 which take into brackets 11 secured to the inner faces of the main supporting frames or standards 4. Each of the arms 9 is provided with an outward extension 12 at its lower end to which is pivotally attached a link or radius bar 13 and extending through each of the bars at their outer ends and secured thereto is a shaft 14. The ends of said shaft find their bearing and support in eccentric bushings 15 mounted in the lower outwardly extending portions of the brackets 11. The bushings may be shifted in their bearings and the shaft 14 thrown toward or receded from the doctor or spreading roll 8, the bushings being fastened in their adjusted position by bolts 16 which pass through slotted extensions or flanges 17 formed on the bushings and into the brackets 11. Shaft 14 is provided with hand wheels 18 and by turning the shaft thereof the roll 8 may be forced toward or removed from the web or sheet 1 through links 13 and extensions 12, which in effect form toggles. The degree of pressure exerted by the roll 8 upon the sheet 1, or more specifically upon the coating of paint carried thereby, may be readily determined by the adjustment of the eccentric bearings 15, and by merely imparting a partial rotation to the shaft the roll 8 may be quickly withdrawn from operative position and as expeditiously advanced to such position. Roller 8 normally remains stationary, that is it has no continuous rotary movement, but inasmuch as paint skins and other extraneous substances will from time to time collect upon the roller, it is found desirable to partially rotate the roller periodically so as to effect a clearing thereof and preventing streaking which would otherwise occur. To this end the axle of the shaft is prolonged at one end, as at 19, Figs. 5 and 6, beyond the link or hanger 9 and a ratchet wheel 20 is secured thereto. A bell crank lever is fulcrumed upon said extension 19, one arm coöperating with a cam 22 rotatable with drum or roll 3, while the opposite end 23, see more particularly Fig. 7, carries a pawl 24 which coöperates with the ratchet wheel 20. The pawl is held in operative relation with wheel 20 by a spring 25, one end of which is attached to a pin 26 carried by the

pawl, while the opposite end is secured to a pin 27 carried by an upwardly extending handle or lever 28 formed as an extension of the arm 23 of the bell crank lever. A spring 29 acts to draw said arm 23 upwardly and to hold arm 21 in active relation to cam 22. An adjustable stop screw 30 coöperates with handle 28.

In operation as the web is carried forward about roll or drum 3, paint is applied to the outer face thereof by roller 5 and the coated web then passes in contact with the finishing or spreading roll 8, which, as above noted, smooths out the paint so that the web as it leaves the roll 3, has an even and continuous coating thereon. Once for each revolution of the drum, assuming there is but one cam 22 employed, the bell crank lever will be rocked and as a consequence roll 8 through the pawl and ratchet mechanism will be turned the distance of one or more teeth, depending, of course, upon the amplitude of movement imparted to the bell crank. Such partial or step-by-step rotation will carry any extraneous matter upwardly away from the line of contact between the roller and the advancing web, and if carried over on the roller such matter may be readily removed. The roller may also be rotated through manipulation of handle 28, if for any reason it becomes desirable so to do, as when first starting up the machine, or when streaking occurs just after the roller has been shifted by the cam.

While I have referred to paint as the substance to be applied to the web, it is, of course, conceivable that the structure may be employed in connection with the application of coatings of various kinds.

What is claimed is:—

1. In a machine for applying a coating to a web of material, the combination of means for advancing the web; means for applying a coating to one surface thereof; means for smoothing said applied surface; and means for periodically shifting said smoothing means.

2. In a machine for applying a coating to a web of material, the combination of means for supporting and advancing a web; means for applying a coating to one face thereof; a normally immovable member acting upon the coating after it is applied to smooth the same; and means for periodically moving said smoothing means.

3. In a machine for applying a coating to a web of material, the combination of means for advancing a web of material to be coated; means for applying a coating to one face thereof; a roller located adjacent the path of travel of the web and adapted to contact the coated surface and to smooth the coating, said roller being normally stationary; and means for periodically moving said roller about its axis.

4. In a machine for applying a coating to a web of material, the combination of a drum or roller about which the web to be coated is passed; a coating roll coacting with the first roll to apply a coating to the web as it passes between the same; a finishing roll located adjacent the face of the web beyond the applying roll, said finishing roll being normally stationary; and means for periodically rotating said finishing roll.

5. In a machine for applying a coating to a web of material, the combination of a drum or roller about which the web to be coated is passed; means for applying a coating to the outer face of the web; a pendulously supported roller located adjacent the drum and bearing upon the coated surface of the fabric; means for holding said roller in its adjusted position with reference to the coated surface; and means for periodically rotating said roller step-by-step.

6. In a machine for applying a coating to a web of material, the combination of a drum about which the material to be coated is passed; means for applying a coating to the outer face thereof; a roller adjustably supported adjacent the drum and adapted to bear against the coating applied to the web; and a pawl and ratchet mechanism adapted to impart step-by-step motion to said roller.

7. In a machine for applying a coating to a web of material, the combination of a drum about which the web to be coated is passed; means for applying a coating to the outer face of the web; a roller located adjacent the drum and adapted to bear upon the coated surface; a pawl and ratchet mechanism associated with said roller; a cam rotatable with the drum; and means interposed between said cam and the pawl for operating the latter and imparting a step-by-step motion to the roller.

8. In a machine for applying a coating to a web of material, the combination of a drum about which the material to be coated is passed; means for applying a coating to the face of the material; a pair of pendulously supported links; a roller carried by said links; means for holding the roller in its adjusted position with reference to the coated surface; a ratchet carried by the roller; an elbow lever; a pawl carried by the lever and coöperating with the ratchet; and a cam rotatable with the drum and coöperating with the opposite end of the elbow lever to rock the same and thereby cause the pawl to advance the ratchet and the roller step-by-step.

9. In a machine for applying a coating to a web of material, the combination of a drum about which the material to be coated is passed; means for applying a coating to the face of the material; a pair of pendulously supported links; a roller carried by

said links; means for holding the roller in its adjusted position with reference to the coated surface; a ratchet carried by the roller; an elbow lever; a pawl carried by the lever and cooperating with the ratchet; a cam rotatable with the drum and cooperating with the opposite end of the elbow lever to rock the same and thereby cause the pawl

to advance the ratchet and the roller step-by-step; and a hand lever formed as an extension of the elbow lever whereby the roller may be operated independently of the action of the cam. 10

In testimony whereof I have signed my name to this specification.

HARRY M. FRENCH.