(No Model.) 2 Sheets—Sheet 1.

W. D. CRAGIN.

MACHINE FOR MAKING OIL CLOTH.

No. 589,497. Patented Sept. 7, 1897.

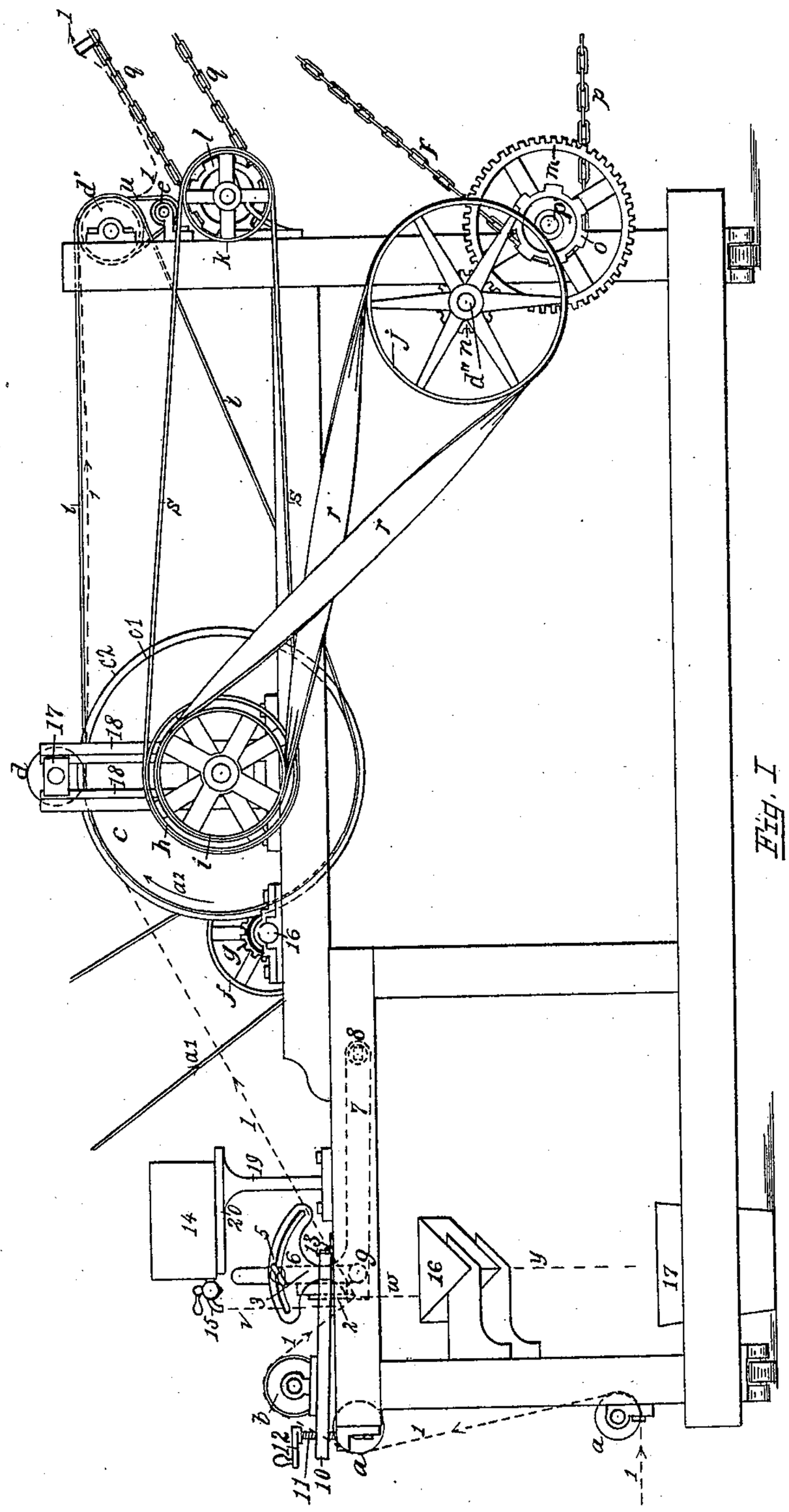

Fig. 1.

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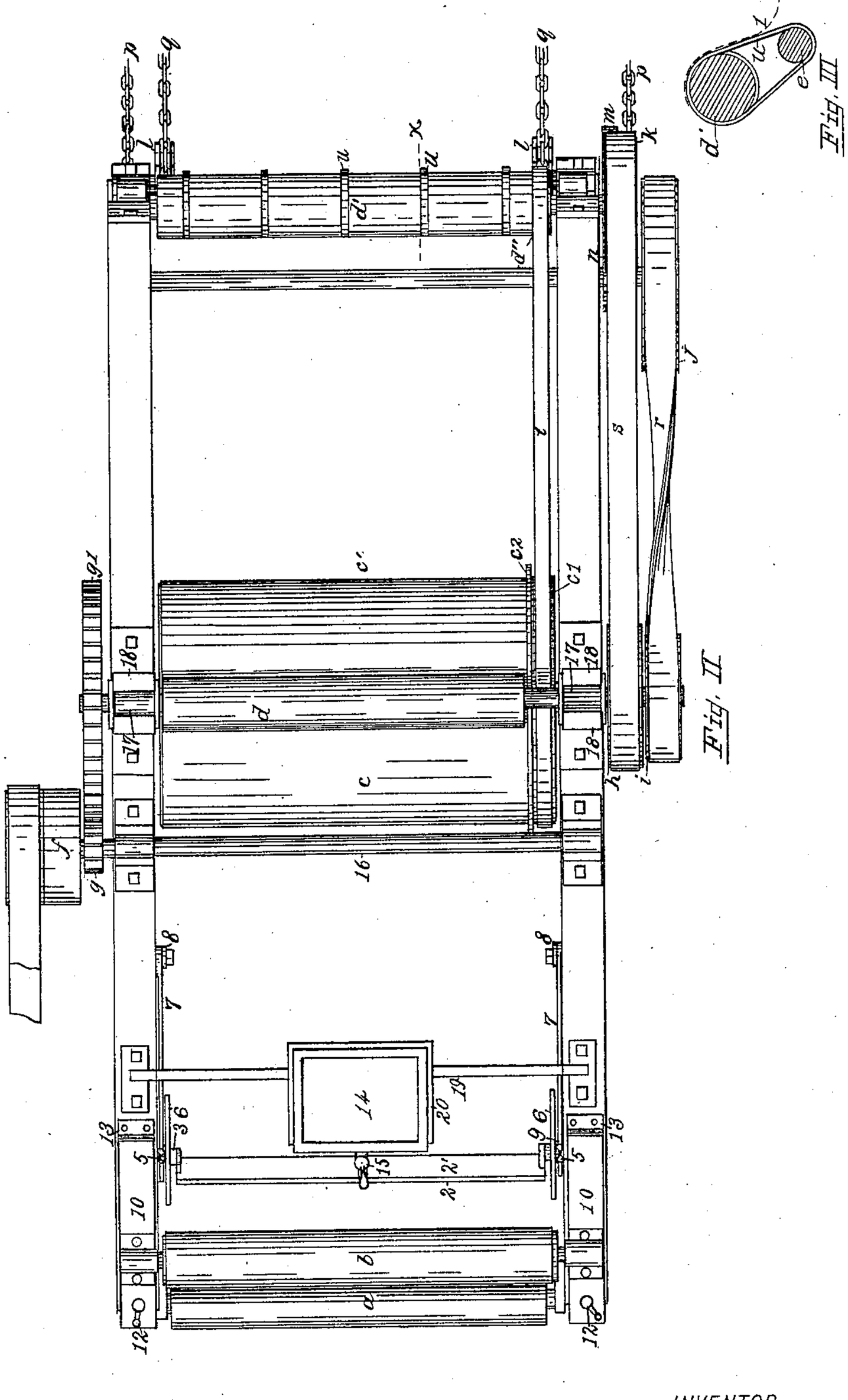

Fig. III

Fig. II

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WILLIAM D. CRAGIN, OF NEW YORK, N. Y., ASSIGNOR TO GEORGE S. BRACHER, OF RAHWAY, NEW JERSEY.

MACHINE FOR MAKING OIL-CLOTH.

SPECIFICATION forming part of Letters Patent No. 589,497, dated September 7, 1897.

Application filed November 20, 1894. Renewed February 20, 1897. Serial No. 624,487. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM D. CRAGIN, a citizen of the United States, and a resident of New York city, in the county of New York and State of New York, have invented a certain new and useful Machine for Making Oil-Cloth, of which the following is a specification.

My invention relates to the manufacture of oil-cloth of plain colors, and has for its object the production of a fine grade of hatter's glaze, hitherto unproduced by American industries. The object is obtained in part by the mixture of pigments, in part by sundry processes employed in the course of the manufacture, and very largely by the means for coating the goods set forth in the accompanying drawings and described in this specification, which I declare to be a full and accurate description of my invention, such as will enable others skilled in the art to which it appertains to make and use the same.

Figure 1 represents an elevation of my machine; Fig. 2, a plan of the machine, and Fig. 3 a detail of rollers and belts.

Referring to Fig. 1, it will be seen that the machine is constructed on a wooden frame, which is supported on rollers or casters that admit of the easy moving of the machine to the several "runs" in the factory into which the goods are delivered from the machine to dry. A broken line 1 represents the goods passing through the machine. Rollers *a a* serve as guiding and tension rollers. The roller *b* is covered with carding, so that it has a pulling action on the goods.

From the roller *b* the goods pass under a knife 2, thence over a drum *c*, from there to the roller *d*, and from the latter roller it is drawn by the belts *u* and passes upward with the chain *q*.

As the edges of the goods or cloth are not always of uniform length, the cloth will sometimes be stretched tight on one edge, while the other edge will be slack and will sag. To overcome this difficulty, I suspend the spreading-knife 2 as shown more clearly in Fig. 2. A steel blade 2 is attached to a stiff wooden piece 2′, and this is supported at each end by levers 3 3. These levers are pivoted at 9 9 to angle-levers 6 7 6 7, which are pivoted to the frame at points 8 8. The vertical parts 6 6 of said levers are provided with slots, through which studs in the levers 3 project and receive thumb-nuts 5 5. By this arrangement the knife may be set at any angle. The pivots 8 8 are not made to fit closely, so that the effect of this manner of suspending the knife is that it will rest upon the cloth and will automatically tilt sidewise and adjust itself to the varying slackness of the edges of the cloth.

The object of making the knife adjustable in its angular relation to the cloth is to regulate the quantity of material spread upon the cloth. If the blade has a thick edge slightly beveled in the direction of movement of the cloth, the nearer the blade approaches a vertical position the more the action approaches that of a thin-edged knife, so as the blade is dropped to an acute angle with the cloth the quantity of material spread on the cloth is increased. The adjustment of the blade sidewise is to adapt it to the sagging of the cloth, the cloth drooping often more on one side than the other, and the droop often shifting from one side to the other. By the method shown of suspending the knife it adapts itself to this varying tension of the cloth. To further provide for this slack in the edges of the cloth, as the tilting of the knife cannot be relied upon for an occasional excess of it, the roller *b* has its bearings on arms 10, that are hinged to the frame at 13 13. The outer ends of these arms are provided with adjusting-screws 11, which have handles 12. By means of these screws the attendant can quickly "tilt" the roller, taking out any excess of slackness, while the knife regulates slight differences with nicety.

An arch-piece 19, having a central platform 20, supports the color-tank 14. This tank is provided with a spigot 15. Fig. 1 shows how the color is applied. Running from the spigot it falls on the cloth in front of the knife 2. Here it gathers in a quantity and is caused by the knife to spread to the edges of the cloth. That which is not carried under the knife flows over the edges of the cloth, falling into a trough 16, which is suspended with one end lower than the other. From the trough this surplus material runs into a receptacle 17. Broken lines *v*, *w*, and *y* show the course of

the flowing color. From the knife the cloth passes to drum *c*. This drum is driven from the main shaft 16 by means of the gearing *g g'*, Fig. 2. From the spindle of this roller and from the end of the drum the rest of the machine is driven. A metallic roller *d* puts pressure on the cloth and draws it forward to this point, and in first coating the cloth the roller *d* presses the color into the meshes and to some extent into the fiber of the cloth. The two rollers *c* and *d* have their bearings in the standards 18 18, the bearings 17 of the roller *d* admitting of the said roller adapting itself to the surface of the drum *c*, so that the two are always in uniform adjustment with reference to each other. From the drum *c* the cloth passes to the roller *d'*. To impart the same peripheral speed to the two rollers, a belt is passed from one end of the roller or drum *c* over the end of the roller *d'*, as shown. A flange c^2 on the drum *c* keeps the belt to its place.

In putting the preliminary coatings on the cloth, the cloth is inclined to stick to and be wound around the roller *d'*. To obviate this, a small roller *e* is placed below the roller *d'*, and several belts are passed from one to the other, as in Fig. 1. Roller *d'* is provided with grooves for the belts, so that the faces of the belts cannot rise above the face of the roller *d'*. Fig. 3 is a cross-section through these rollers at line *x*, Fig. 1, and shows the groove in roller *d'*.

From the shaft of the drum *c* a belt *s* over pulley *k* drives a shaft carrying chain-wheels *l l*, operating chains *q q*, commonly employed for delivering the cloth for suspension in the runs. As the cloth passes over the roller *d'* the belts *u* separate it therefrom, and the moving chains draw the goods from the belts, as shown. Another pulley *i* on the shaft of the drum *c* drives a pulley *j* on shaft *d''*. This shaft carries a pinion *n*, which drives wheel *m* on shaft *p'*. Sprocket-wheels *o o* on said shaft move the chains *p*, which carry the goods into the runs for drying. These chain devices are not claimed as new except in their attachment to this machine.

The operation of the machine is as follows: The driving-belt running in the direction of the arrow *a'* will propel the drum *c* in the direction of the arrow a^2. This will cause the cloth (indicated by the broken line 1) to move toward the chain end of the machine, being drawn as far as the drum by the pressure upon it of the roller *d* and carried beyond the drum by the roller *d'* and chains *q*, the cloth receiving its coating of color as it passes under the knife 2, as already described. By the adjustability of the knife and roller *b* I am able to produce a character of goods not heretofore produced in this country.

So long as I adhere to the principles of my invention I claim the right to vary the construction of the machine from that herein shown.

What I claim, and desire to secure by Letters Patent, is—

The combination in an oil-cloth machine of the following features: tension-rollers *a*, *a*, adjustable roller *b*, automatically-adjustable knife 2, color-tank 14, cloth-forcing drum *c* and automatically-adjustable roller *d*, roller *d'*, belts *u*, roller *e* and chains *q*, for separating the cloth from said roller *d'*, the chains *q* also elevating the cloth to the "run-chains," and the run-chain mechanism driven by belt *r* and pulley *i*, all combined to operate substantially as herein shown and described.

Signed at Peekskill, in the county of Westchester and State of New York, this 18th day of October, A. D. 1894.

WILLIAM D. CRAGIN.

Witnesses:
ROBERT S. ALLEN,
A. CRAGIN, Jr.