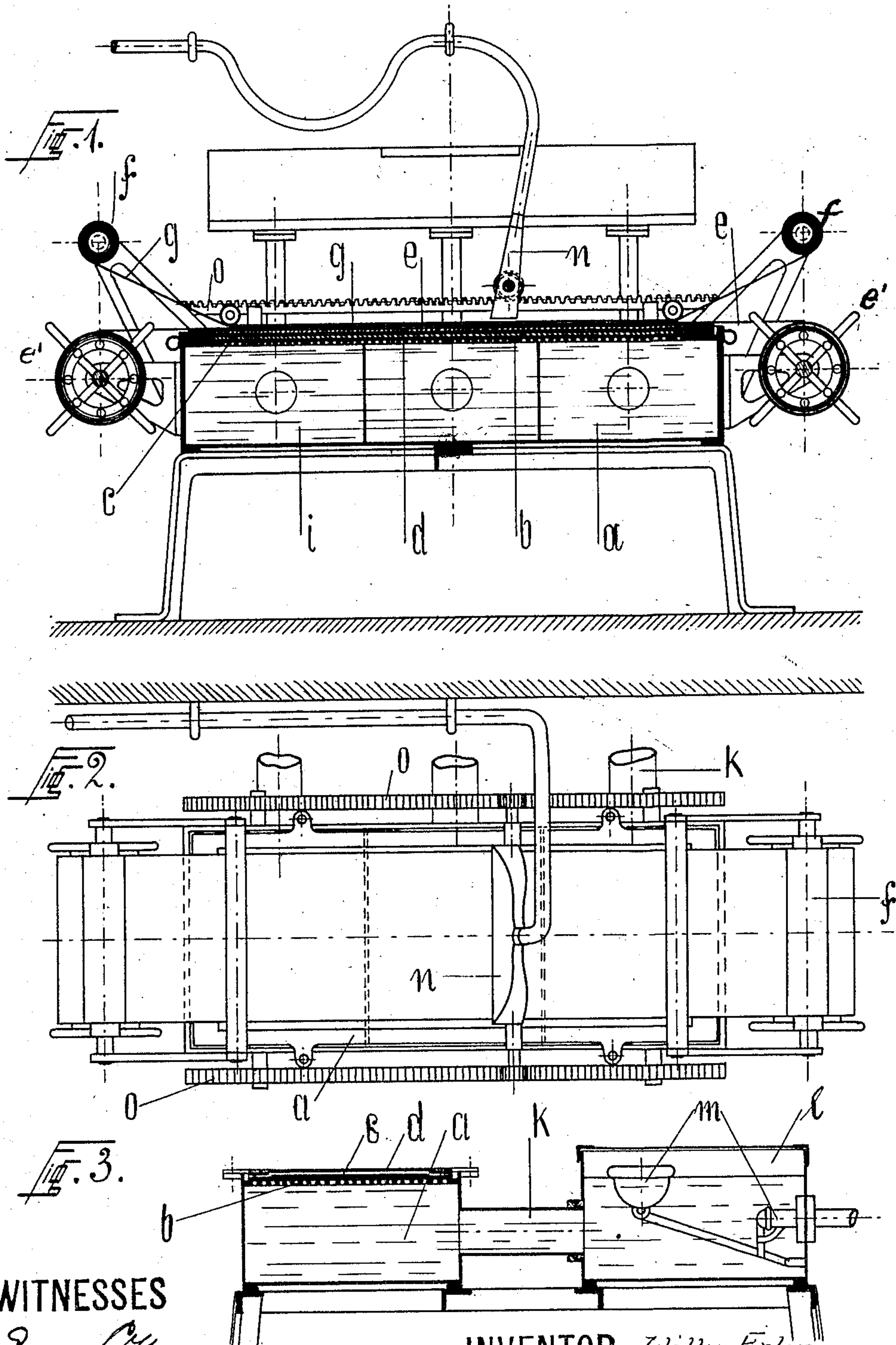


W. ERLER.  
DYEING MACHINE.

APPLICATION FILED JUNE 28, 1907.

913,274.

Patented Feb. 23, 1909.



WITNESSES

*Georg Otto*  
*Paul Künzel*

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*by Paul S. Schilling, attorney*



# UNITED STATES PATENT OFFICE.

WILLY ERLER, OF MÜNCHENBERNSDORF, GERMANY.

## DYEING-MACHINE.

No. 913,274.

Specification of Letters Patent.

Patented Feb. 23, 1909.

Application filed June 28, 1907. Serial No. 381,347.

*To all whom it may concern:*

Be it known that I, WILLY ERLER, a subject of the German Emperor, and residing at Münchenbernsdorf, German Empire, have invented certain new and useful Improvements in Dyeing-Machines, of which the following is a specification.

My invention relates to improvements in machines for dyeing warps and yarns of all kinds, woven fabrics, and various other materials, such for instance as felt and paper, by means of a vacuum apparatus.

My invention is illustrated in the accompanying drawings, in which—

Figure 1 is a longitudinal section through a machine constructed according to this invention. Fig. 2 is a fragmentary plan of Fig. 1. Fig. 3 is a cross section through the dye-beck and vats.

The machine consists of a dye-beck *a*, which may be divided into a suitable number of compartments. At the top of the beck is a metal sieve *b*, over which there is placed a felt blanket *c*. Above the blanket are disposed the patterns *d* corresponding to the designs to be printed upon or imparted to the yarn or other material *e*. On the patterns *d* there is laid the previously beamed material to be dyed or printed, said material being supported at its ends by being wound upon rollers *e'*, by the turning of which such material may be drawn along after each operation in order to expose another part to the action of the dyeing apparatus. Above this material there is arranged an apron *g*, which is wound upon rollers *f*, and may be adjusted to bring different parts in position over the material by turning the rollers. The supply of liquor in the beck *a* is kept constant by the beck being connected by pipes *k* with tanks *l*, the inlet to which is controlled by a float valve *m*.

*n* is a vacuum apparatus of any suitable description, whose suction-mouth is above the apron *g*. The suction-head *n* is shown in the drawings as being supported by means of pinions meshing with two lateral racks *o* extending lengthwise of the material to be treated, so that by turning the pinions they will travel and carry the suction-head along the racks from end to end.

The beck *a* is shown as being divided into a plurality of compartments by means of partitions extending up to the blanket, so that several dyes may be employed; but all the compartments might by means of open-

ings through the partitions communicate if only a single dye-bath is required.

The operation of the machine is as follows:—The dye is kept at a constant level by the automatic float valve *m*, so that it contacts with the felt blanketing *c*. After disposing the patterns *d*, the material to be dyed is drawn into position over the table constituted by blanket and patterns and then stopped. Above the material is the apron *g* and after it is properly adjusted to position, the suction apparatus *n* is moved from one end of the table to the other. The dye is thus rapidly sucked through felt, openings in the patterns, and material. Fixing is done in the usual manner.

I have found anilin dyes to be the best suited for use in my improved process. The latter is particularly adapted for rapidly and intensely dyeing or printing warps for carpets and other materials with bright designs.

Having thus described my invention, what I claim is—

1. In a dyeing machine the combination with a dye-beck, of means for supporting a pattern above the same in position to receive and support the material to be treated, an apron above the material, means for adjusting the apron in position over the material, a suction apparatus above the apron and means for causing the suction apparatus to travel over the apron and the material and draw the dye through the pattern into the material, substantially as described.

2. In a dyeing machine the combination with a dye-beck of means for supporting a pattern above the same in position to receive and support the material to be treated, lateral racks along the edge of the dye-beck, a suction apparatus above the dye-beck, and pinions carried by the suction apparatus resting upon and meshing with the racks thereby supporting the suction apparatus above the dye-beck and permitting it to be moved thereover, substantially as described.

3. In a dyeing machine, the combination of a dye-beck, a blanket supported at the top thereof in position to be saturated with the dye, a pattern lying upon the blanket and supporting the material to be treated, and a suction apparatus supported above the material in position to draw the dye through the blanket and pattern into the material, substantially as described.

4. In a dyeing machine, the combination of a dye-beck, a blanket supported at the top



thereof in position to be saturated with the dye, a pattern lying upon the blanket and supporting the material to be treated, an apron above the material, and a suction apparatus supported above the apron in position to draw the dye through the blanket and pattern and into the material, substantially as described.

5. In a dyeing machine, the combination of a dye-beck, means for keeping the same full of dye, a sieve at the top and immersed in the dye, a blanket resting on the sieve, a pattern resting on the blanket and arranged to support the material to be treated, an apron above the material, and a suction apparatus above the apron in position to draw the dye from the blanket through the pattern and into the material.

6. In a dyeing machine, the combination

of a dye-beck, partitions dividing the same into compartments, a sieve cover for each compartment, a blanket lying upon the sieve covers, a pattern lying upon the blanket and adapted to support the material to be treated, an apron above the material, a suction apparatus above the apron, and means for causing the suction apparatus to travel over the apron and the material while it is drawing the dye through the pattern and into the material, substantially as described.

In testimony, that I claim the foregoing as my invention, I have signed my name in presence of two subscribing witnesses.

WILLY ERLER.

Witnesses:

SOUTHARD P. WARNER,  
RUDOLPH FRICKE.