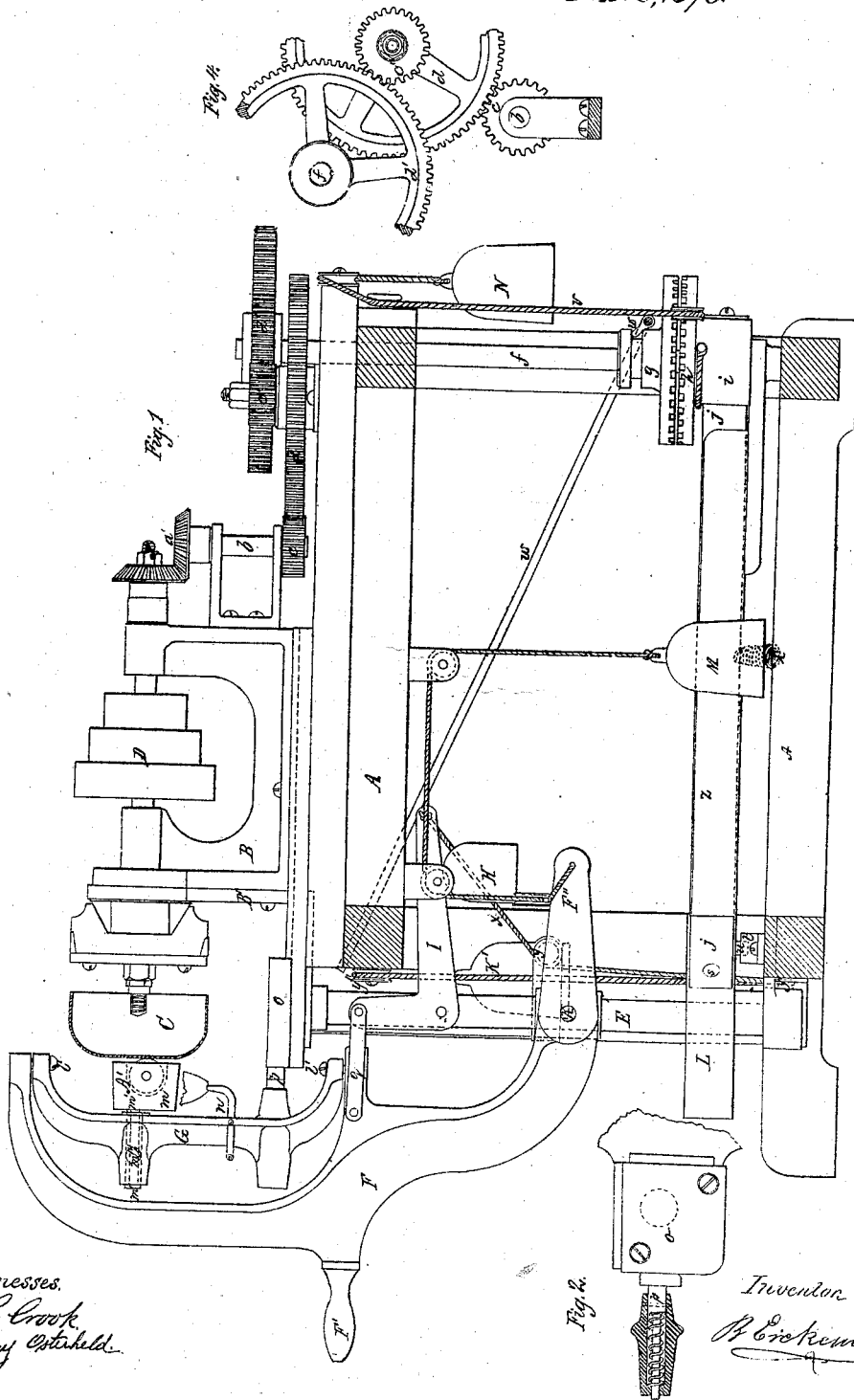


R. Eickemeyer: *Street, 2. Streets.*

Hat Finishing.

N^o 99,544.

Patented Feb. 8, 1870.



Witnesses.
C. Crook
Henry Estabell.

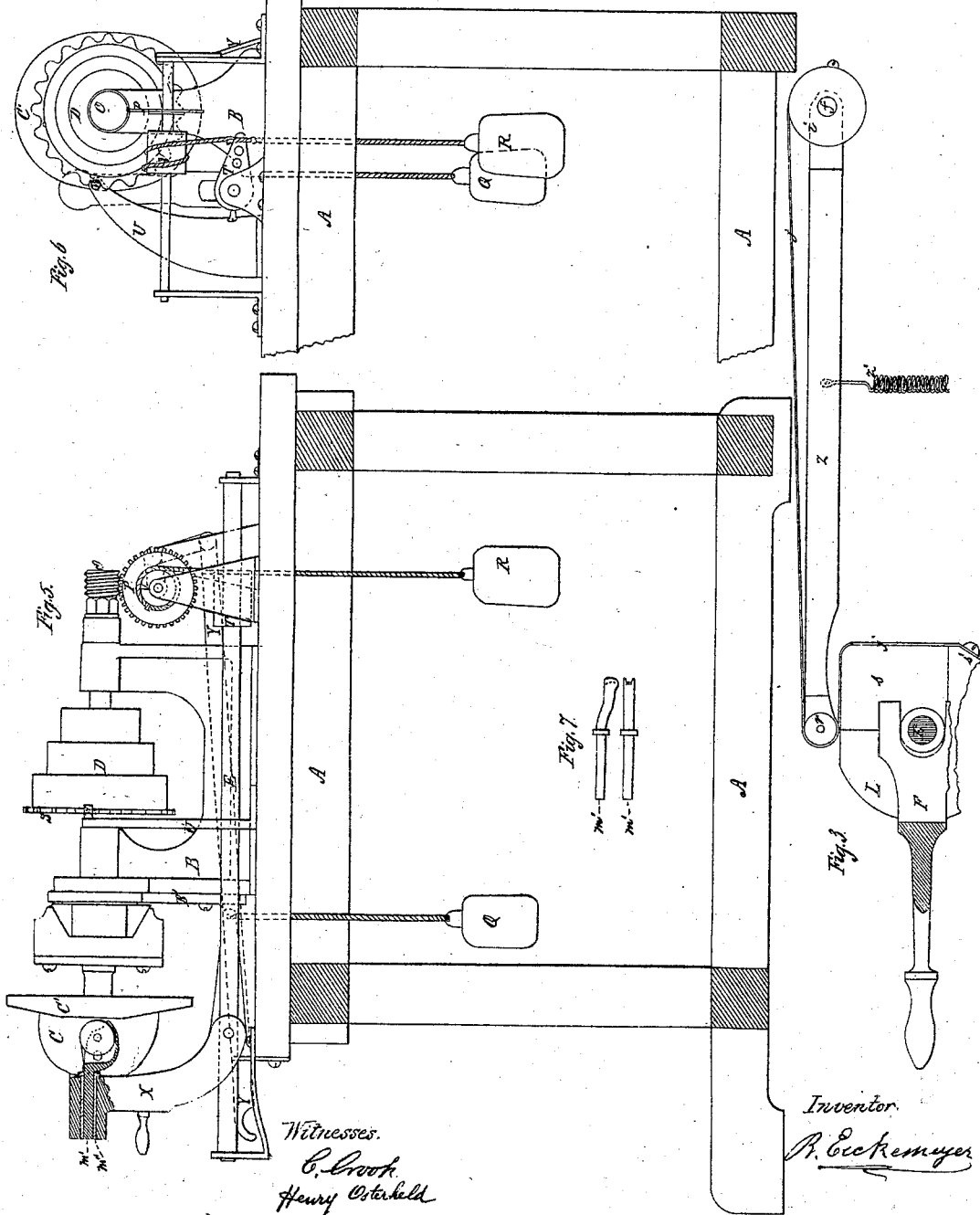
Fig. 2.
Inventor
R. Eickemeyer

R. Eickemeyer. *Sheet 2, 2 Sheets.*

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United States Patent Office.

RUDOLF EICKEMEYER, OF YONKERS, NEW YORK.

Letters Patent No. 99,544, dated February 8, 1870.

MACHINE FOR EMBOSSING HATS.

The Schedule referred to in these Letters Patent and making part of the same

To all whom it may concern:

Be it known that I, RUDOLF EICKEMEYER, of Yonkers, in the county of Westchester, and State of New York, have invented certain new and useful Improvements in Machinery for Finishing Hats; and I do hereby declare that the following is a full and correct description thereof, reference being had to the accompanying drawings, and to the letters of reference thereon.

The nature of my invention consists in combining, with a rotating hat-block or brim-board, which is rotated either by an eccentric or concentric lathe, an embossing-tool, held, guided, and moved in the required path by the machine, so as to impress spirally a pattern or figure of waving or plain lines upon the crown and brim of a hat, in a regular manner, substantially as hereinafter described.

I will first describe that part of the machinery designed for embossing or impressing a spiral figure upon the tip and side crown of the hat, illustrated by figs. 1, 2, 3, and 4, of the drawings.

Figure 1 is a vertical section of said part of the machine.

Figure 2, a detached plan view of pattern-guide and spring-pressing foot for guiding the embossing-roller.

Figure 3, a detached plan view of part of the mechanism for giving motion to the swinging frame which carries the embossing-tool.

Figure 4, a detached plan view of gearing, shown in fig. 1.

A is a frame or table, which supports the lathe-head B of a common oval lathe, to which the hat-block O is secured in the usual manner.

D is the cone-pulley, for driving the lathe-spindle.

The embossing-tool I prefer to use is a roller or wheel A', of suitable width for the lines to be embossed. The face of the roller may be smooth or have a small figure cut upon it, or may be scalloped or made in any way desired, so as to impress a figure in lines upon a hat placed upon the hat-block, by rolling on the hat, in consequence of the motion of the hat-block. Rubbing-tools may, however, be used like those shown in Figure 7.

The embossing-tool or roller is mounted in suitable bearings upon a short spindle, *m'*, which plays in a sleeve, *m''*, adjusted by a screw, *m'''*, and supported and carried by a small upright swinging frame, G, which swings on pivots *l* within a larger upright swinging frame, F, which latter is pivoted at K upon the vertical spindle E, so that it is moved around the hat-block by the oscillation of the spindle E, and moves toward and from the hat-block, upon the pivot K being drawn toward the hat-block by the pressure of a weight, K', which acts upon the swinging frame F through the bell-crank I, and links *q* being connected to the bell-crank I by a cord, X, running over pulleys *y* *y*¹ *y*², as shown

in the drawings, the arrangement being such as to give less pressure of the embossing-roller at parts of the hat where the motion is the slowest.

A stationary guide-plate or pattern, O, shown detached in fig. 2, made with a curvature corresponding to the curve of the hat-crown, guides the embossing-roller by means of the spring-pressing foot *p*, which having a flat surface acting upon the guide-plate O, holds the swinging frame G in position to present the face of the embossing-tool properly to the different parts of the crown of the hat.

The embossing-roller is partly enclosed in a roller-house, *m*, heated by a gas-flame, *n*. The lower part of the roller-house may contain color, if it is desired to use color, in which case a scraper must be used upon the embossing-roller.

The weight of the swinging frame F is balanced by a weight, H, attached to the bell-crank I.

In order to produce a regular spiral figure upon the hat by the embossing-roller, it is necessary to vary the speed of the motion of the swinging frame, as it oscillates from the centre of the tip to the base of the side crown of the hat, because the hats vary in outline from the arc of a circle. This is accomplished as follows:

Upon the lower part of the spindle E, which carries the swinging frame F, is placed a hub, L, to which is attached a pattern-cam or block, *s*, of the required shape to give the irregular speed necessary for the particular hat-shape operated upon; the motion being imparted by a strap, *j*, attached at one end to the hub L, and which, passing around the pattern-cam or block *s*, is attached at the other end to a barrel, *i*, loose upon a vertical shaft, *f*, and connected therewith by a coupling-clutch, *g* *h*, controlled by a clutch-shipper, W.

A lever, Z, which is pivoted upon the shaft *f*, extends horizontally forward to the pattern-cam *s*, and carries a guide-pulley, *r*, to keep the strap *j* to the face of the pattern-cam.

Motion is communicated to the shaft *f* from the lathe-spindle, by bevel-wheels *a* *a'*, shaft *b*, pinion *c*, spur-wheel *d*, pinion *c'*, and spur-wheel *d'*.

A weight, N, is connected with the barrel *i*, upon the shaft *f*, by means of a cord, *r*, as shown in the drawings, for the purpose of moving back the swinging frame when the clutch-coupling is released.

In operating this machinery, the hat being placed upon the block, the operator seizes the handle F' of the swinging frame F, and adjusts the embossing-roller to the centre of the tip of the hat. The machinery being then set in action, the hat revolves, and the embossing-roller is guided by the machinery so as to impress upon the hat a regular spiral figure, of waved or plain lines, beginning at the centre of the tip, and terminating at the base of the crown; the pattern-plate

O regulating the pressure and presentation of the embossing-tool, and the pattern-cam *s* regulating the spiral of the figure to conform to the shape of the hat.

The swing-frame may be moved by hand to impress a spiral figure upon the tip and crown, but I prefer to use the mechanism described, as it is more accurate, and does not require so much skill and attention on the part of the operator.

I will now proceed to describe the machinery for embossing or impressing the brim with a spiral figure, by means of a rotating block or brim-board, and an embossing-roller or other embossing-tool. This part of the machinery is represented in figs. 5 and 6—

Figure 5 being a side elevation of the machine, partly in section, and

Figure 6, a rear elevation of the same, also partly in section.

Letter A represents a frame or table, which supports an oval turning-lathe, D, carrying the rotatory hat-block C and brim-board C'.

In this machine the embossing-roller is held against the brim-board by a swinging frame, X', pivoted to a rocking-shaft, E, a weight, Q, being attached by a cord to an arm of the swinging frame.

This swinging frame X' may be moved by hand to impress a spiral pattern upon the brim of the hat, but I prefer to move it by mechanism connected with the lathe-head, as follows:

A worm, *o*, upon the rear end of the lathe-spindle, gives motion to the worm-wheel P, which, in turn, gives motion to the barrel V, and through a cord to the lever T in the rock-shaft E, a weight, R, acting on the arm when the wheel is not in gear with the worm.

A shifter, Y, throws the worm-wheel in and out of gear with the worm.

When a hat has been placed upon the block C, so that the brim lies smooth upon the brim-board C', the shifter Y is moved and the worm-wheel put out of gear.

The swinging frame X' is then brought around, so as to place the embossing-roller upon the brim close to the side crown, when the worm-wheel P is put in gear

and the embossing-roller allowed to operate, gradually moving over the surface of the brim in spiral lines, impressing a spiral figure.

In case it is desired to impress a scalloped spiral figure upon the hat, the lathe-head may be set upon longitudinal pivot-bearings, and provided with a scalloped pattern-plate, *s*, attached to the cone D, and a pattern-roller, W, supported by a stationary bracket, U.

The lathe-head being pressed over by a spring, so as to keep the pattern-roller in contact with the pattern-plate, the result of the operation of the machine will be a scalloped spiral figure embossed upon the brim of the hat.

The machinery first described may be used for both crown and brim, by simply turning the swinging frame G at right angles when it gets to the brim, and gradually depressing the larger swinging frame F by means of the handle F', so that the embossing-roller will travel over the brim, but I prefer to use different machines for the two operations.

I claim—

1. In combination with a rotating hat-block, an embossing-tool or roller, held in a swinging frame or its equivalent, substantially as described, so as to be capable of impressing a figure in spiral lines upon a hat revolving with the hat-block, substantially as described.

2. In combination with the revolving hat-block, embossing-tool, and swing-frame, the guide O, and cam-guide *s*, whereby the position of the embossing-tool is regulated, and the regularity of the spiral figure upon the tip and crown of the hat insured, substantially as described.

3. In combination with the revolving brim-board and embossing-tool, the swing-frame and mechanism whereby it receives motion for guiding the embossing-tool, to impress a spiral figure upon the brim of a hat, substantially as described.

R. EICKEMEYER

Witnesses:

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HENRY OSTERHELD.