

No. 706,801.

Patented Aug. 12, 1902.

C. CORRON.
APPARATUS FOR DYEING, &c.

(Application filed Feb. 16, 1901.)

(No Model.)

2 Sheets—Sheet 1.

FIG-1

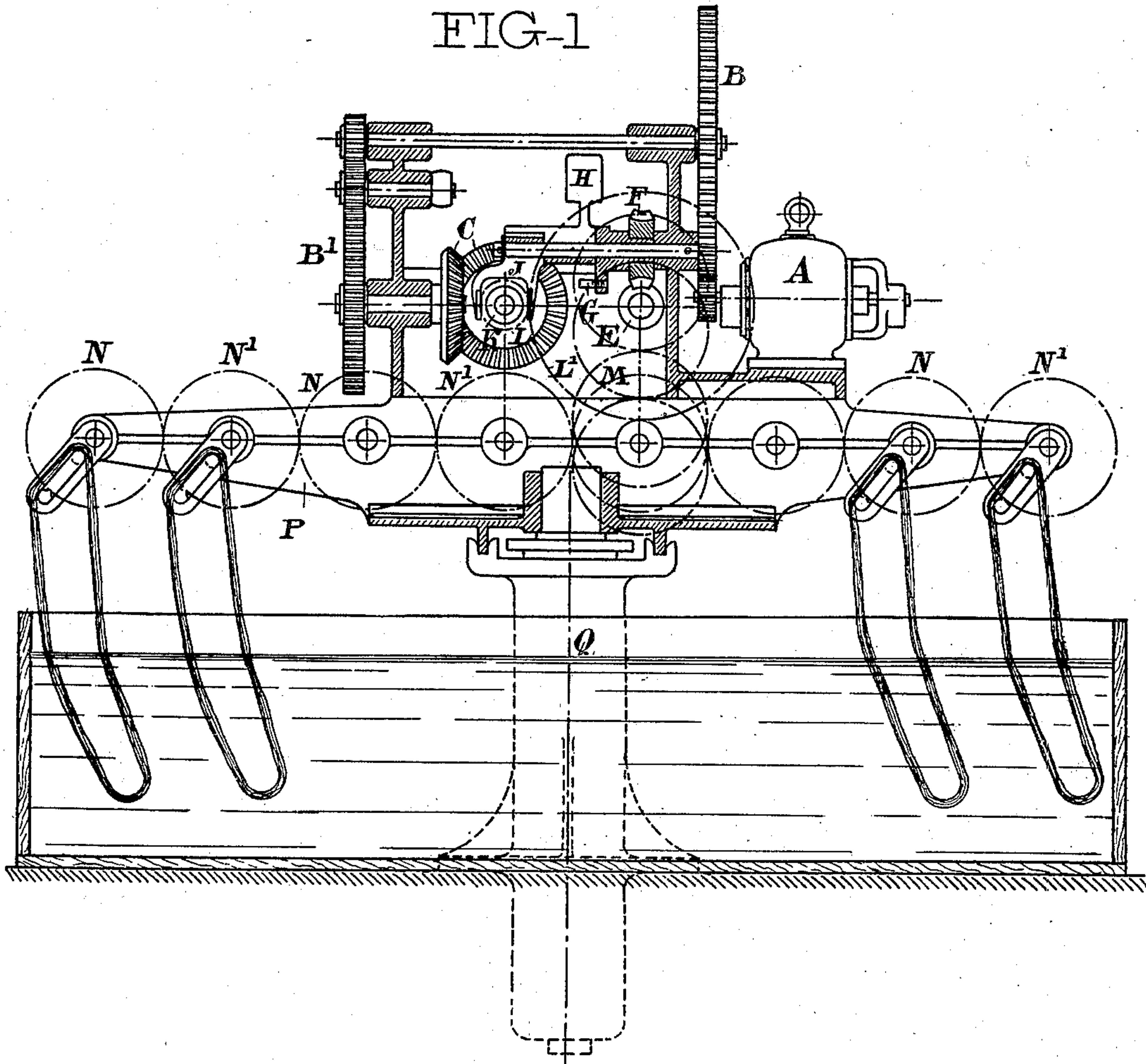
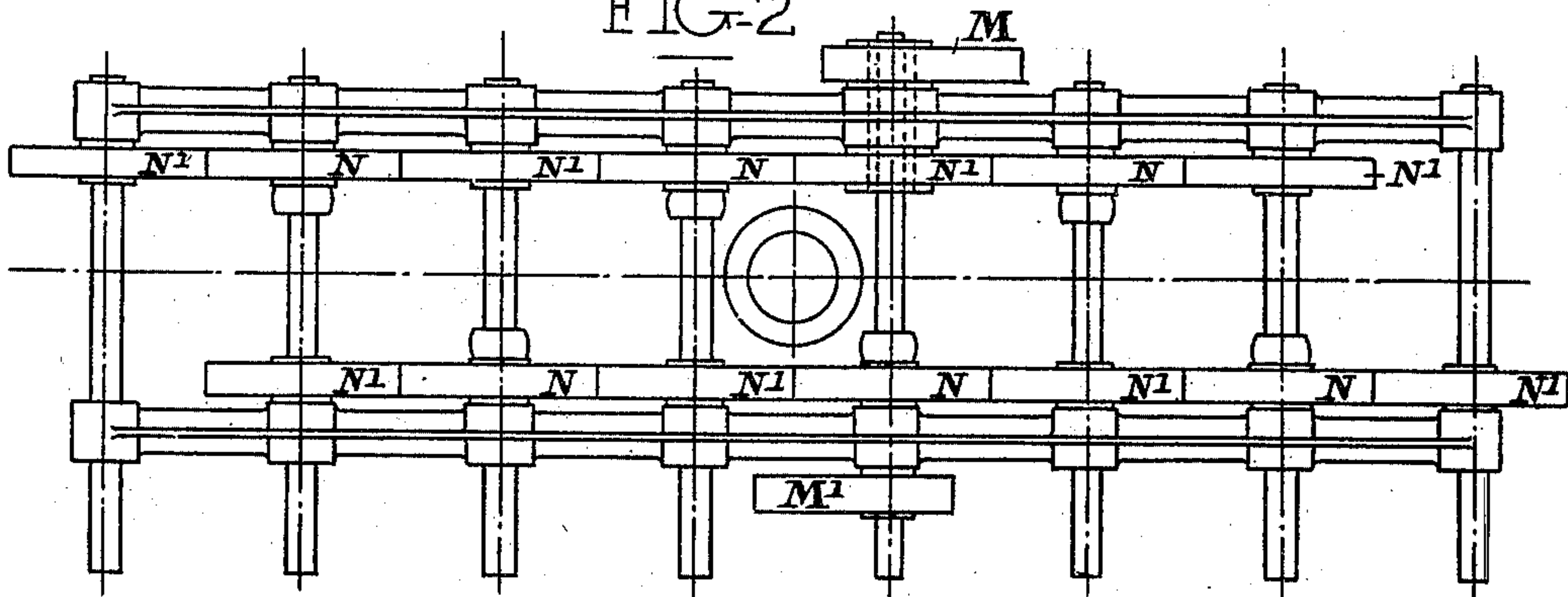


FIG-2



Witnesses
O. H. Tagle
L. Douville.

Inventor
César Corron
by Niedermeyer & Fairbanks
ATTORNEYS.

C. CORRON.
APPARATUS FOR DYEING, &c.

(Application filed Feb. 16, 1901.)

(No Model.)

2 Sheets—Sheet 2.

FIG-3

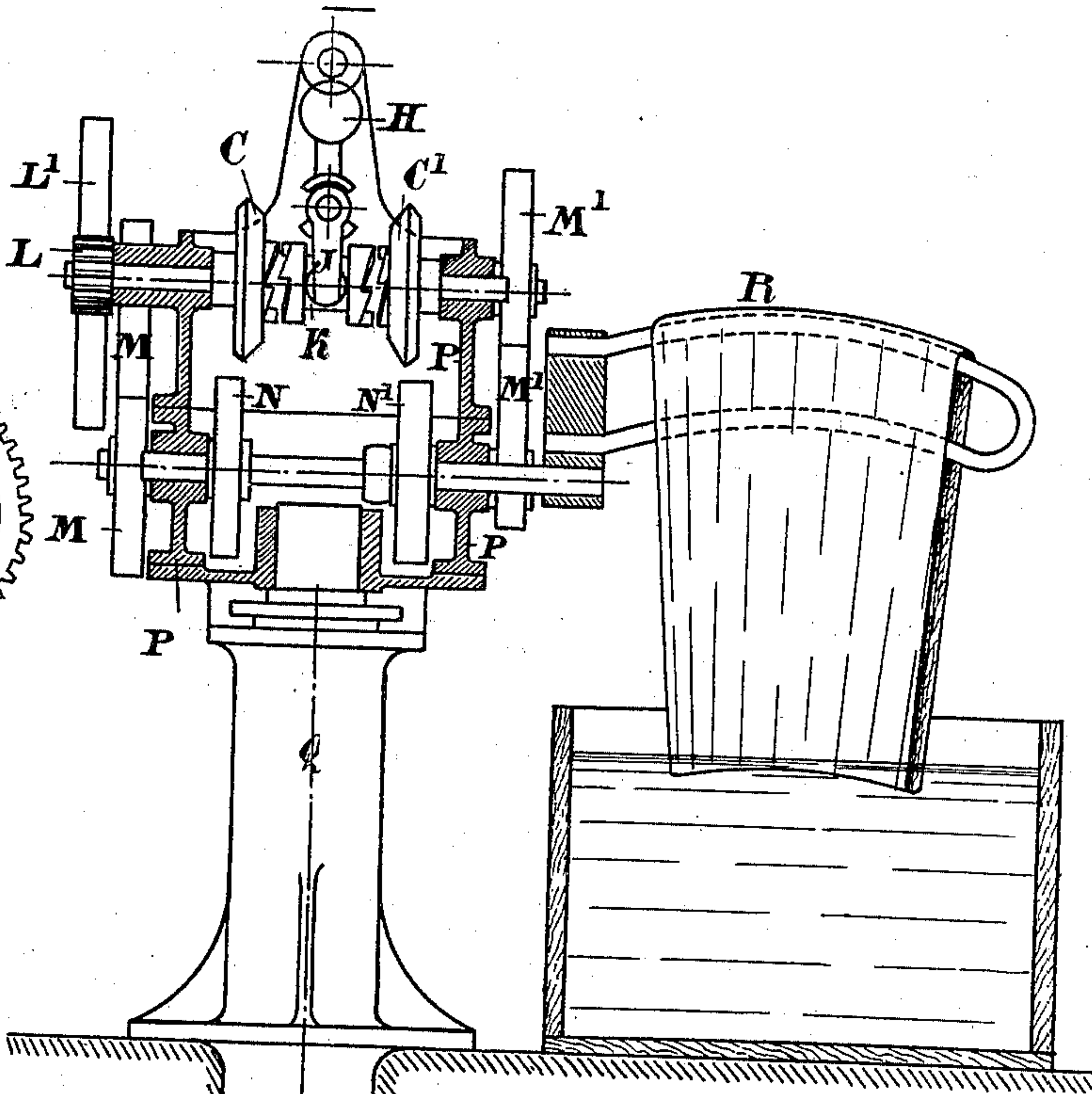


FIG-6

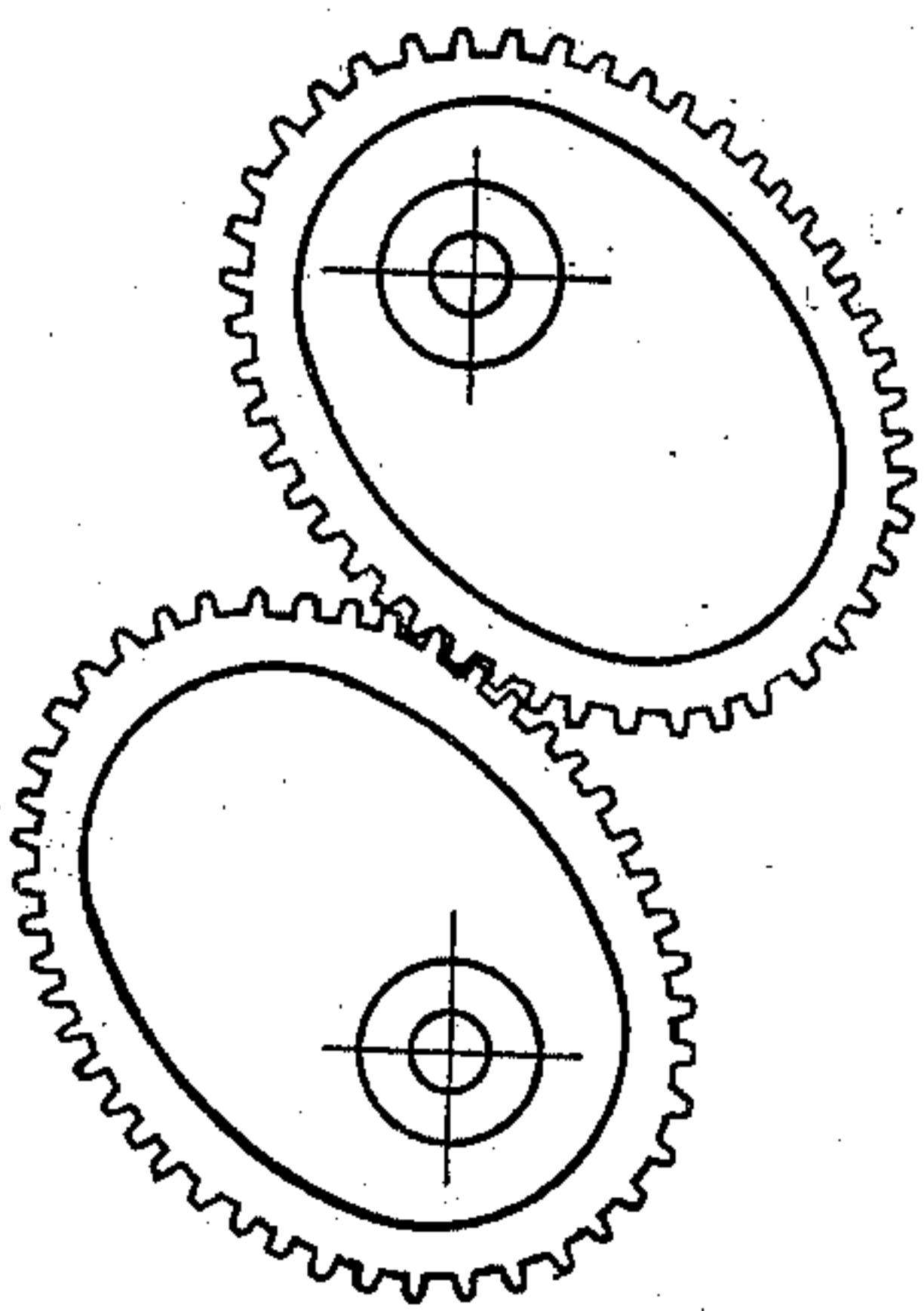


FIG-5

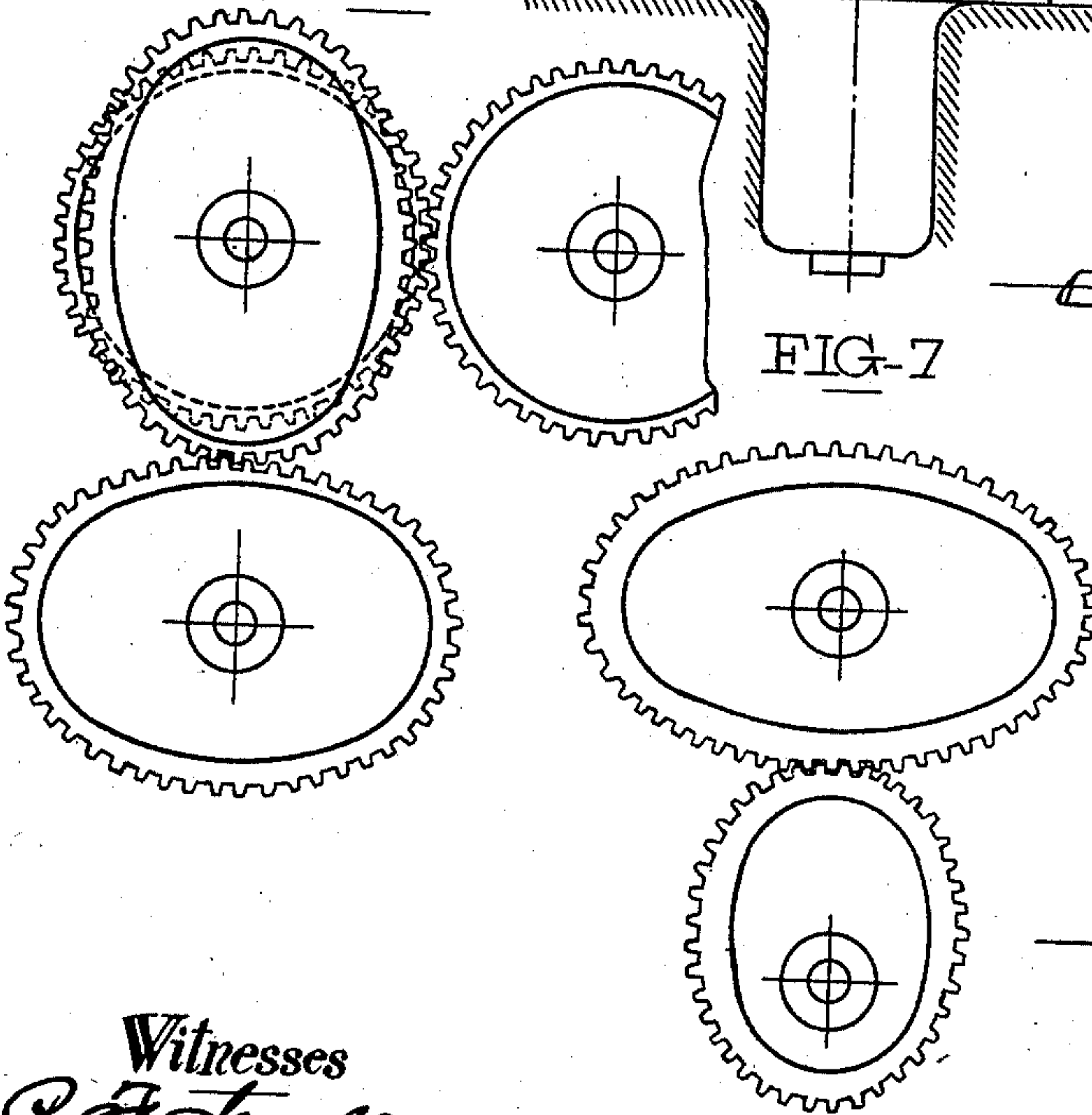


FIG-4

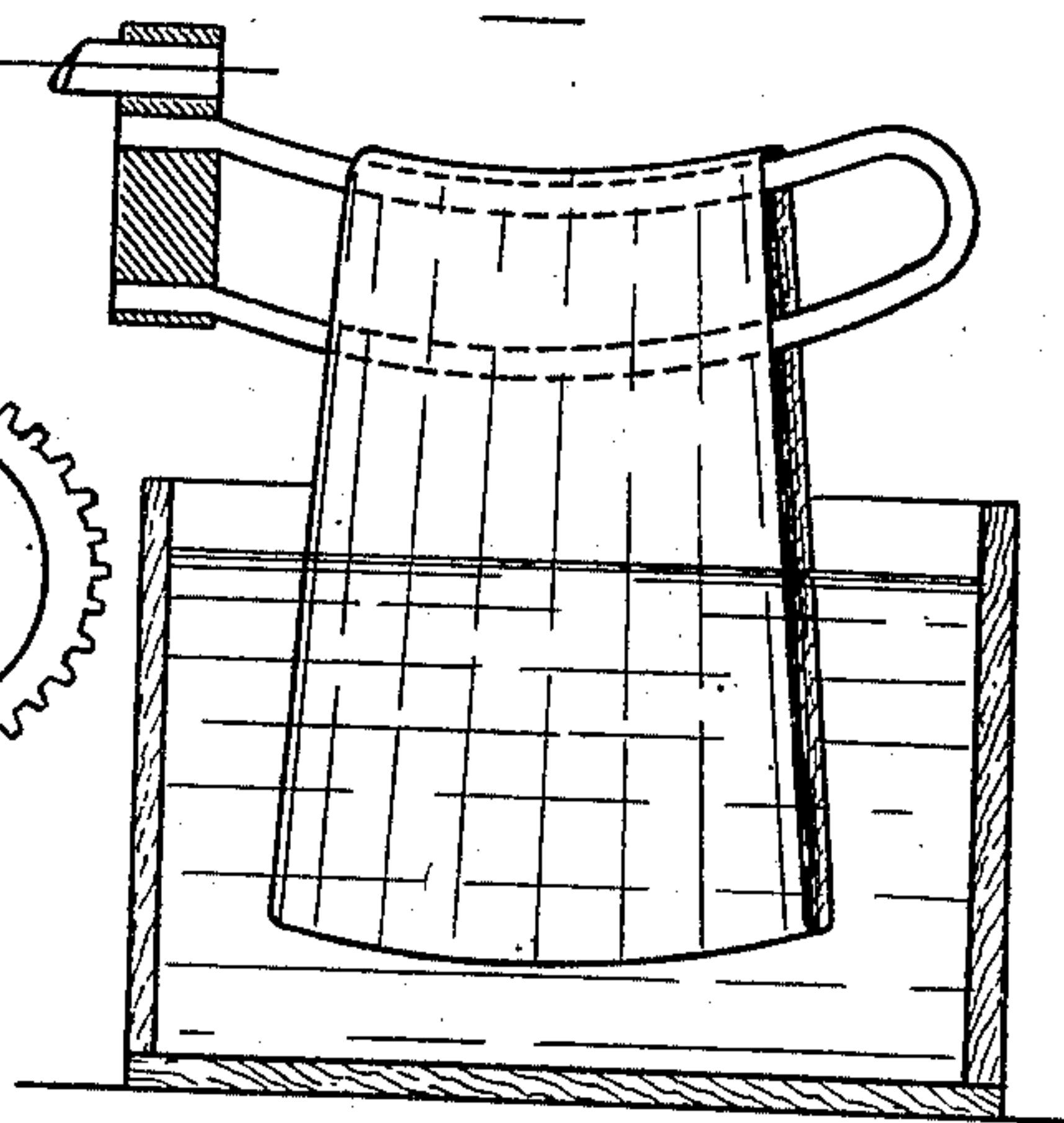


FIG-7

Witnesses
P. F. Tragle.
L. Rouville

Inventor
César Corron
By Niedersheim & Laubauke.
Attorneys.

UNITED STATES PATENT OFFICE.

CÉCAR CORRON, OF LYONS, FRANCE.

APPARATUS FOR DYEING, &c.

SPECIFICATION forming part of Letters Patent No. 706,801, dated August 12, 1902.

Application filed February 16, 1901. Serial No. 47,543. (No model.)

To all whom it may concern:

Be it known that I, CÉCAR CORRON, Chevalier de la Legion d'Honneur, a citizen of the Republic of France, residing at 8 Rue Tronchet, Lyons, in the Republic of France, have invented certain new and useful Improvements Relating to Apparatus for Dyeing and Washing Yarn and the Like, of which the following is a specification.

10 This invention relates to apparatus for dyeing and washing yarn and the like in the form of skeins, and more especially to improvements in the operating mechanism carrying the skeins and that for manipulating the
15 threads during the course of the operation; and the object is to provide a superior treatment of the material. In machines as heretofore constructed for this purpose the skein-carriers have imparted to them an alternate
20 ascending and descending motion in such a manner as to cause the skeins to be dipped in and out of the bath while at the same time communicating a certain relative displacement. In some forms of machines heretofore
25 employed the skein-carriers are mounted eccentrically. This treatment may, however, be rendered more superior, expeditious, and effective by combining with the movements of displacement further motions, whereby the
30 manipulations ordinarily performed by hand are effected mechanically while obtaining all the advantages of handwork.

Referring to the accompanying drawings, Figure 1 is a front elevation of an improved
35 machine embodying my invention. Fig. 2 shows a plan of the same, the operating-gear shown in Fig. 1 being omitted. Fig. 3 is a vertical section of the same machine, showing part of the operating-gear of Fig. 1. Fig. 4
40 shows the skein-carrier mounted eccentrically and turned for one hundred and eighty degrees with reference to its position shown in Fig. 3. Lastly, Figs. 5, 6, and 7 show various modified forms of operating-gear for the
45 skein-carriers.

Referring to the general views of the improved machine, Figs. 1, 2, and 3, A is a dynamo, which, through the intervention of the spur-gears B and B' for reducing the speed,
50 actuates the miter-wheels C C' for reversing the direction of motion. The automatic re-

versing of the working is effected by means of a worm E, which operates a helicoidal wheel F, keyed to a sleeve carrying a tappet G. During the working of the machine the
55 said tappet moves the counterpoise H, which by means of the fork J causes the clutch K to be moved to one or other side, so as to engage with the one or the other miter-wheel C or C', and thus reverses the motion of the
60 machine. The gears L L' transmit motion in both directions to double elliptic or eccentric gear-wheels, such as M M', or one of those shown in Figs. 5, 6, and 7, and then to a series of circular gear-wheels N, keyed direct
65 to the spindles of the skein carriers or holders R. The improved arrangement in this type of machine of elliptic or eccentric gears for controlling the motion of the skein-carriers which already move eccentrically has
70 for its object to impart to the said skein-carriers in lieu of a uniform eccentric rotation, as heretofore, different successive speeds in a single eccentric rotation, so as to obtain at the period of maximum speed—which period
75 corresponds to that of the retirement of the skeins from the bath—the “stroke of the whip,” which is indispensable for producing the rapid assimilation of the dyestuff upon the yarn.
80

Referring to the double set of elliptic or eccentric wheels M M' and the circular gear-wheels N and N' shown, their object is to obtain in both directions of working an accelerated passage of the skein-carriers always at
85 the time when their eccentric portion is lowered and retarded movement in the inverse position.

All the parts of this machine are mounted upon a frame P, which is supported upon a
90 hydraulic piston disposed in a cylinder Q, so as to elevate and lower the entire apparatus.

According to the rotary speed which it is desired to impart to the skein-carriers and also the energy, more or less strong, given to
95 the stroke of the whip, elliptic or eccentric wheels of various sizes are employed. In the drawings there are shown four types by way of an example—viz., M M', indicated at Fig. 1, and also those shown at Figs. 5, 6, and 7.
100 These varying successive speeds imparted to the skein-carriers have the effect of producing

mechanically and without strain upon the yarn and even to a superior degree the advantages of the manipulations by hand.

- In order to permit of constantly and more effectually moving the threads among themselves upon the skein-carriers, I adopt a novel form of curved carrier. Good results may also be obtained by making one of the sides of the skein-carrier straight and the other curved.
- 10 The arrangement hereinbefore described and consisting in combining with the ordinary movements of the skein-carriers, on the one part, different successive speeds, and on the other part a constant displacement of the threads by reason of the novel shape—convex, concave, or undulated—given to the skein-carriers offers the great advantage of constantly displacing and separating the threads among themselves during their traveling, and
- 15 consequently of permitting a more homogeneous and intimate penetration of the dye-stuffs or the washing or bleaching liquors during the various treatments to which they are subjected, which is of the highest importance.
- 25 What I claim, and desire to secure by Letters Patent of the United States, is—
1. In a machine for dyeing or for washing yarn or like materials in skeins, the combination with the ordinary means employed for
- 30 elevating and lowering the skein-carriers as well as for producing the displacement of the skeins upon the carriers, of eccentric gears and interposed gears meshing therewith and

keyed directly to the spindles of the skein-carriers for imparting to the said skein-carriers during their eccentric displacement in both directions of movement varying successive speeds, substantially as hereinbefore described and for the purpose specified. 35

2. In a machine for the treatment of yarn or like materials in skeins, the skein-carriers of a shape constituting an undulated skein-carrier, combined with means for imparting thereto during their eccentric movements in both directions of movement varying successive speeds, substantially as hereinbefore described and shown. 40 45

3. In a machine serving for the purpose described, the combination with the ordinary arrangements hitherto provided in connection with skein-carriers, of an operating-gear of eccentric toothed wheels and gears on the spindles of said skein-carriers meshing with said eccentric wheels for imparting to their skeins varying successive speeds during every revolution; the said skein-carriers having undulatory portions, the whole substantially as described and for the purpose specified. 50 55

In testimony whereof I have hereunto set my hand, in presence of two subscribing witnesses, this 31st day of January, 1901. 60

CÉCAR CORRON.

Witnesses:

JEAN GERMAIN,
FRANCIS GULLIET.