No. 649,353. Patented May 8, 1900.

H. M. REICHENBACH.

MACHINE FOR MAKING MAT-SURFACE PHOTOGRAPHIC PAPER.

(Application filed Jan. 3, 1900.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

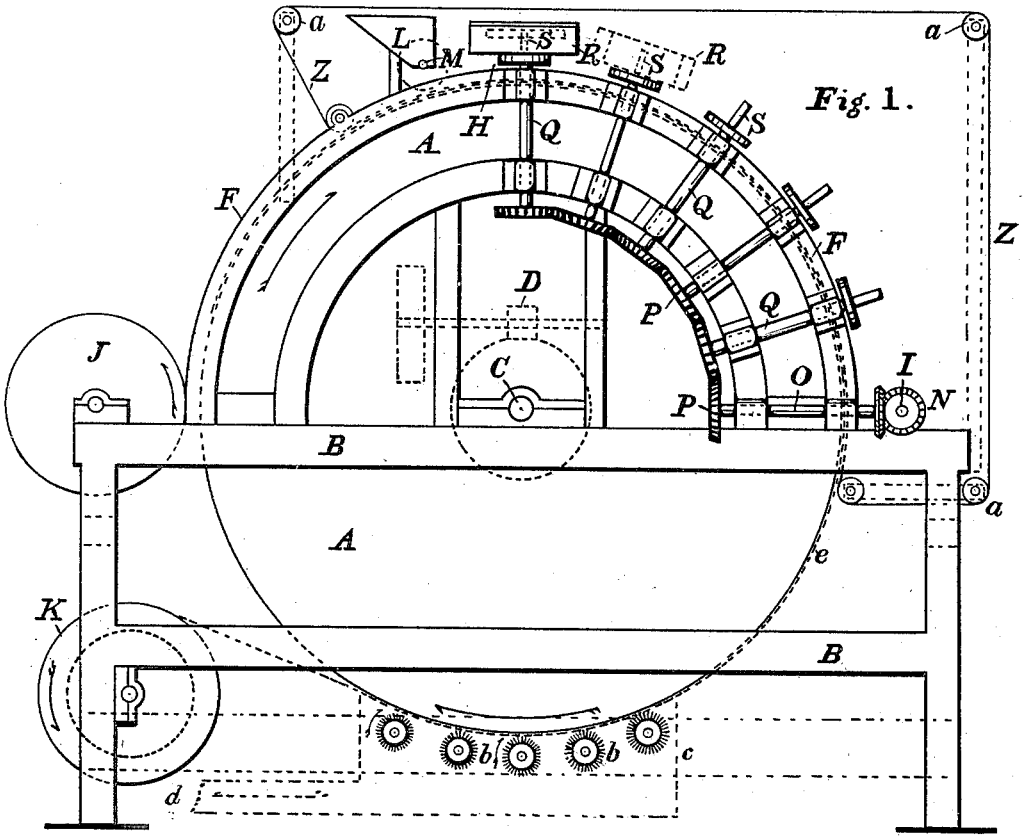


Fig. 2.

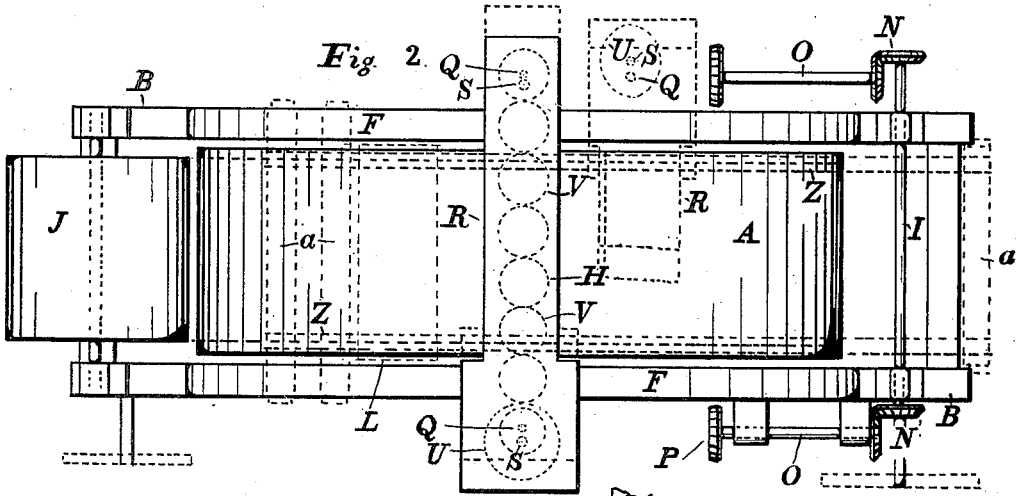
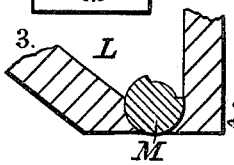


Fig. 3.



Witnesses

Albert Hill.

M. W. McDonald.

Inventor

Henry M. Reichenbach

by his Attorney Frederick P. Fish

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Fig. 4.

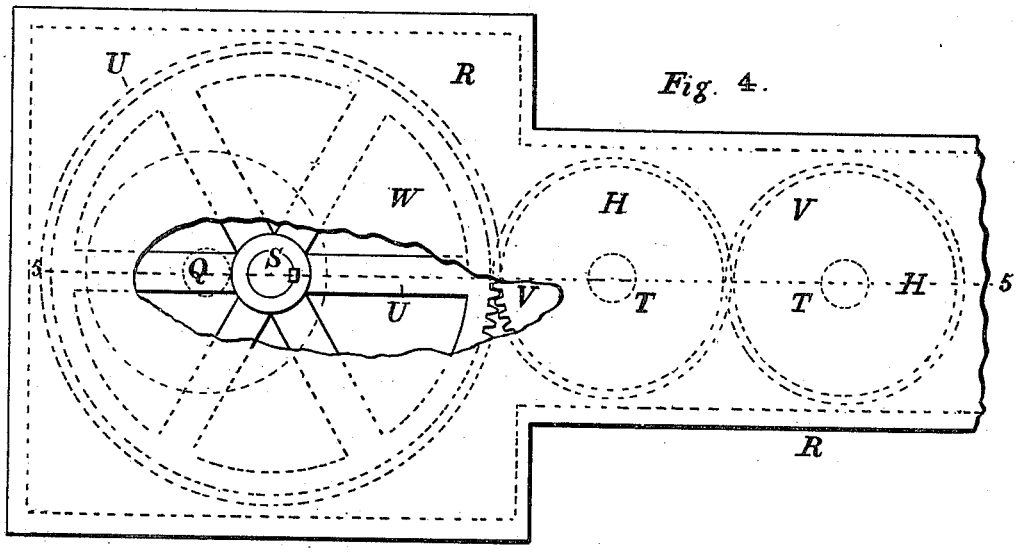
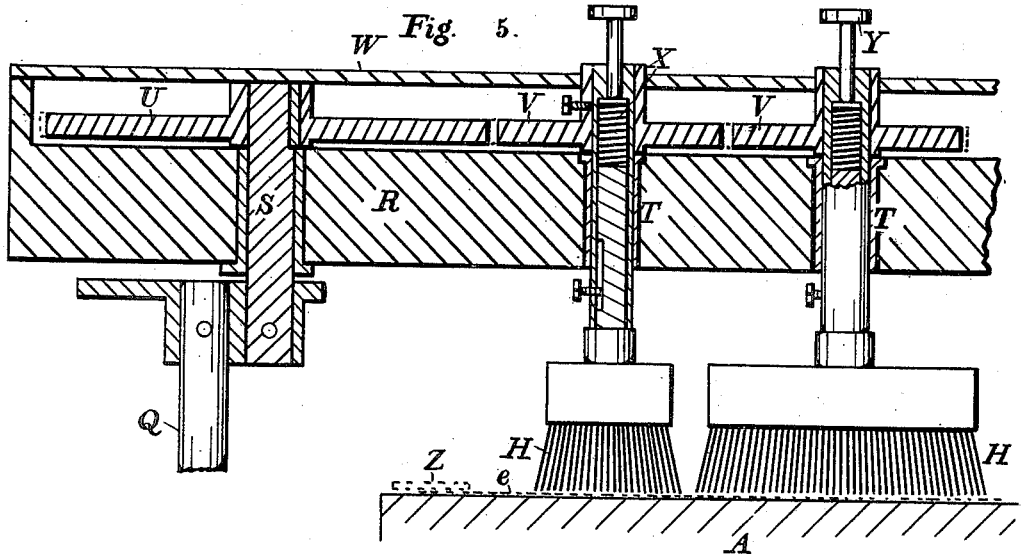


Fig. 5.



Witnesses Albert Hill
M. W. McDonald

Inventor
Henry M. Reichenbach
by Frederick P. Church
his Attorney

UNITED STATES PATENT OFFICE.

HENRY M. REICHENBACH, OF ROCHESTER, NEW YORK, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE GENERAL ARISTO COMPANY, OF SAME PLACE.

MACHINE FOR MAKING MAT-SURFACE PHOTOGRAPHIC PAPER.

SPECIFICATION forming part of Letters Patent No. 649,353, dated May 8, 1900.

Application filed January 3, 1900. Serial No. 297. (No model.)

To all whom it may concern:

Be it known that I, HENRY M. REICHENBACH, a citizen of the United States, residing at Rochester, New York, have invented an Improved Machine for Making Mat-Surface Photographic Paper, of which the following is a specification, reference being had to the accompanying drawings.

My invention relates to an improved machine or apparatus designed to remove the gloss from sensitized photographic papers by grinding or abrading the same, so as to leave the surface a dead mat.

My invention is fully described and illustrated in the following specification and the accompanying drawings, the novel features thereof being specified in the claims annexed to the said specification.

In the accompanying drawings, Figure 1 is a side view. Fig. 2 is a plan view. Fig. 3 is a partial section of the hopper. Fig. 4 is a plan view of the grinding mechanism. Fig. 5 is a longitudinal vertical section of the same on the line 5 5, Fig. 4.

My machine consists, essentially, of a revolving and a series of rotating and reciprocating brushes arranged around the drum, so as to grind or abrade the surface of the paper as it travels along with the drum.

A represents the drum, and B B a suitable supporting-frame. The drum is constructed in any suitable way, being provided with the shaft C, driven by the worm and worm-gear D or other suitable device. Upon the side frames B B are mounted the frames or arches F F, which serve to support the brushes H and the mechanism for imparting to them the requisite motions.

I is a transverse driving-shaft, to which motion is imparted in any suitable way, as by a belt and pulley, and which transmits motion to the brushes by suitably-arranged shafts and gearing.

J is the roll of sensitized paper, which is unwound as the drum revolves, and K is the roll of surfaced paper, which is driven in any suitable manner, so as to wind the paper up thereon.

L is a hopper, from which any suitable abrasive material, such as finely-powdered pumice, is delivered onto the paper on the drum just before it passes under the brushes H. Any suitable means may be employed to discharge the abrasive from the hopper. In practice I have used a revolving roller M, driven in any suitable way and provided with a longitudinal groove, as indicated in Fig. 3.

Any suitable number of brushes may be employed, and they are driven from the shaft I by the bevel-gears N N, the shafts O O on the sides of the machine, and two trains of suitable gears P P.

Q Q represent a series of radial shafts, one on each side of the machine, journaled on the arches F and serving to support the transverse bars R R, which carry the brushes and the gears by which they are rotated. At their inner ends the shafts Q are provided with the gears P, which are driven from corresponding gears on the inner ends of the shaft O O. At their outer ends the shafts Q are provided with suitable bosses or disks which carry the crank-pins S, which as they revolve cause the bars R, carrying the brushes, to reciprocate across the face of the drum and also drive the gearing by which the brushes are caused to revolve. The construction will be understood from Figs. 4 and 5, in which T T represent the axes of the brushes, and U V V a train of gears by which they are rotated. The large gear U is keyed or otherwise fastened on the crank-pin S. This crank-pin passes through a journal or sleeve in the bar R and as it revolves shifts the bar R forward and backward lengthwise, while at the same time the gear U travels and revolves with it, so that rotary motion is transmitted to the first gear V. The bar R is recessed to contain the gears, and it may be provided with a cover W. The bar W is supported at each end on the crank-pins S, the large gear U being used at one end only. To save space, the large gears are placed at the opposite ends of alternate bars. The brushes are somewhat longer than they are wide and are arranged alternately with their long axes at right angles to each other, as in Fig. 4, in which the end of the first and the side of the second is shown,

so that the entire surface of the paper is subjected to their action. The brushes are forced against the paper by the springs X, Fig. 5, arranged in any convenient way. Any particular brush may be withdrawn from action by the knob Y.

The whole grinding apparatus may be inclosed in a suitable case and a suction-fan connected therewith.

The edges of the paper are protected by the belts Z, which travel along with the drum and paper at its edges, being carried by any suitable corner pulleys or rollers *a*, supported in any suitable manner from the frame or arches. Any suitable provision may be made for adjusting the belts laterally, so as to adapt the machine to papers of different widths.

The brushes *b b* are used on the paper after it has been ground to remove any dust adhering thereto. They are supported in any suitable way and driven in a direction opposite to that of the movement of the paper by any suitable arrangement of belts or gears. They are inclosed in a casing *c*, having a spout *d*, connected with a suction-fan.

It will be understood that the forward motion of the paper is caused, primarily, by the revolving drum, which the paper acted upon hugs closely.

I claim—

1. The combination with the revolving drum having the smooth periphery around which a web of paper is adapted to extend, and protecting-belts extending partially around the drum and over the edges of the web, of a plurality of rotary brushes arranged over the drum, and means for reciprocating said brushes longitudinally of the drum.

2. The combination with the revolving drum having the smooth periphery, of a plurality of rotary brushes arranged over the drum-surface, means for reciprocating said brushes longitudinally of the drum, and means for feeding a pulverized abradant upon the surface of the drum in front of the brushes.

3. The combination with the revolving drum having the smooth surface around a portion of which a web of paper is adapted to extend, of the continuous protecting-belts extending partially around the drum over the edges of the web, a plurality of revolving reciprocating brushes arranged over the drum and operating upon the surface of the web, and means for feeding a pulverized abradant to the surface of the drum in front of the brushes.

4 The combination with the paper-support, of a bar extending across the support, a series of rotary brushes thereon, gearing between said brushes, a shaft in stationary bearings having a crank engaging the bar, and a gear on the crank engaging the brush-gears whereby the reciprocation of the bar and the rotation of the brushes will be accomplished.

5. The combination with a paper-support, of a series of elongated rotary brushes arranged over the support, the horizontal axes of adjacent brushes extending at right angles, and gearing between the brushes for operating them simultaneously.

6. The combination with a paper-support, of a bar extending over the paper-support, a series of rotary arbors on the bar, and brushes on the arbors and movable longitudinally thereof to maintain yielding contact with the paper on the support.

7. The combination with a paper-support, of a reciprocatory bar arranged over the support, a series of rotary arbors on the bar, and brushes on the arbors and movable longitudinally thereof to maintain yielding contact with the paper on the support.

8. The combination with a paper-support, a bar arranged over the support, cranks journaled at opposite ends in the bar, and a gear on one of the cranks, of a series of rotary brushes on the bar, and intermeshing gears connected to the brushes and meshing with the gear on the crank.

9. The combination with the revolving drum having a smooth periphery, paper-web supply and take-up devices, and protecting-belts extending partially around the drum and over the edges of the paper, of rotary and reciprocating brushes operating over the drum, and means for supplying pulverized abradant in front of the brushes.

10. The combination with a paper-support and a plurality of movable brushes over the support, of continuous protecting-belts having their outer faces extending over the edges of paper on the support, and while the paper is being operated upon by the brushes.

HENRY M. REICHENBACH.

Witnesses:
GEO. B. SELDEN,
ALBERT WILL.