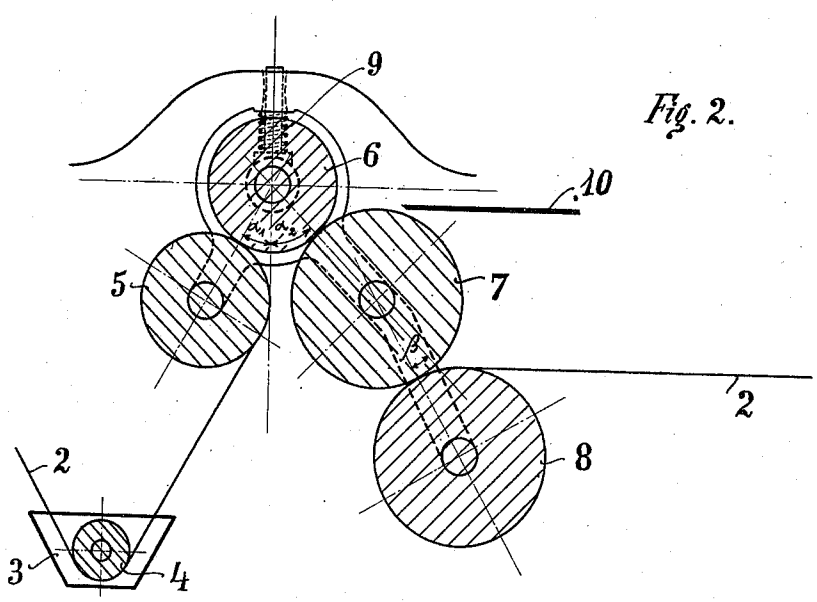
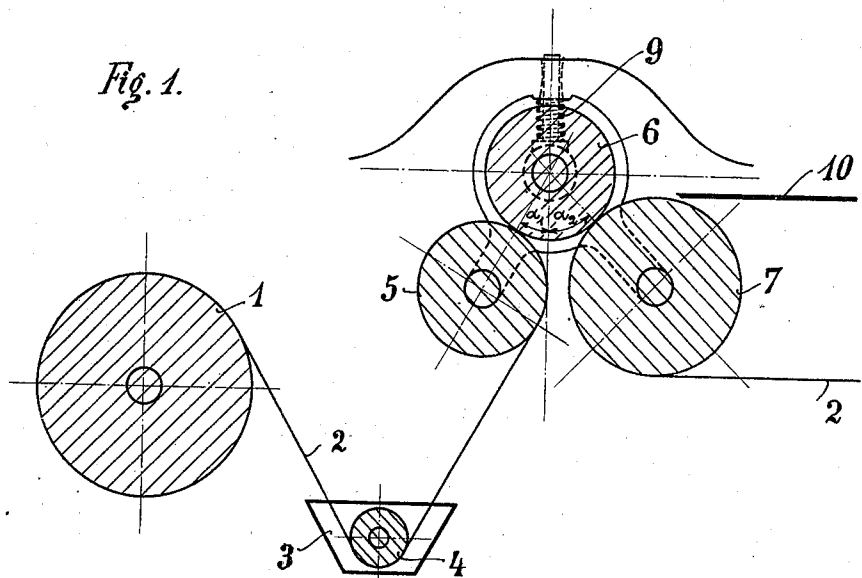


E. LICHTENSTEIN.
 COPYING MACHINE.
 APPLICATION FILED NOV. 12, 1908.

996,418.

Patented June 27, 1911.



Witnesses:

Chas. A. Becker.
George G. Anderson.

Indentor:

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By Hugh N. Wagner,
His Attorney.

UNITED STATES PATENT OFFICE.

EDMUND LICHTENSTEIN, OF BERLIN, GERMANY.

COPYING-MACHINE.

996,418.

Specification of Letters Patent. Patented June 27, 1911.

Application filed November 12, 1908. Serial No. 462,351.

To all whom it may concern:

Be it known that I, EDMUND LICHTENSTEIN, a subject of the German Emperor, residing in Berlin, Germany, have invented
5 new and useful Improvements in Copying-Machines, of which the following is a specification.

In the drawings, Figure 1 is a longitudinal sectional view of the invention, and Fig.
10 2 is a similar view of a modification.

In copying machines with water-tanks, it is essential that the pressure applied for squeezing moisture from the paper is greater than that applied for copying, in order that,
15 during the copying operation, no water liable to smudge the writing is expressed from the paper. For this purpose, the rollers must be suitably adjusted, and it is usual to use two eccentrics or levers, by means of
20 which the same effect can be obtained with one eccentric. Another method consists in arranging the rollers 5, 6, and 7 in such relation to each other that a spring 9 or the like thrusting the roller 6 against the rollers 5
25 and 7 produces greater pressure between the moisture-expressing rollers 5 and 6 than between the rollers 6 and 7 where the copying takes place. The two angles α_1 and α_2 must, of course, be unequal.

Fig. 2 shows a construction with four
30 rollers, where copying is effected in two places. The pressure between the rollers 5 and 6 is also in this case greater than between the rollers 6 and 7 and 7 and 8. The
35 pressure between the rollers 7 and 8 is increased by the weight of the rollers 6 and 7. To prevent the application of greater pressure between 7 and 8 than between 5 and 6,

the axis of the roller 8 is displaced, to the extent of the angle B, from the plane containing the axes of the rollers 6 and 7. 40.

I claim:

1. A copying machine including a moisture expressing roller, a copying roller adjacent the moisture expressing roller, and a
45 spring pressed roller in engagement with each of the first named rollers, said rollers being so disposed that the pressure of the spring pressed roller on the moisture expressing roller exceeds the pressure exerted
50 by the spring pressed roller on the copying roller.

2. In a copying machine in combination with a cylinder, and a platen arranged adjacent thereto, a pressure roller engaging the
55 cylinder and platen and being so arranged as to exert a greater pressure against the cylinder than against the platen.

3. In a copying machine, a cylinder, a platen adjacent thereto, a revoluble member
60 supporting said platen, and a pressure roller engaging the cylinder and platen and arranged so as to exert a greater pressure against the cylinder than against the platen,
65 said platen being arranged to exert less pressure against said revoluble member than the pressure that said pressure roller exerts against said cylinder.

In witness whereof I have hereunto signed
70 my name this 22nd day of October 1908, in the presence of two subscribing witnesses.

EDMUND LICHTENSTEIN.

Witnesses:

HENRY HASPER,
WOLDEMAR HAUPT.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."