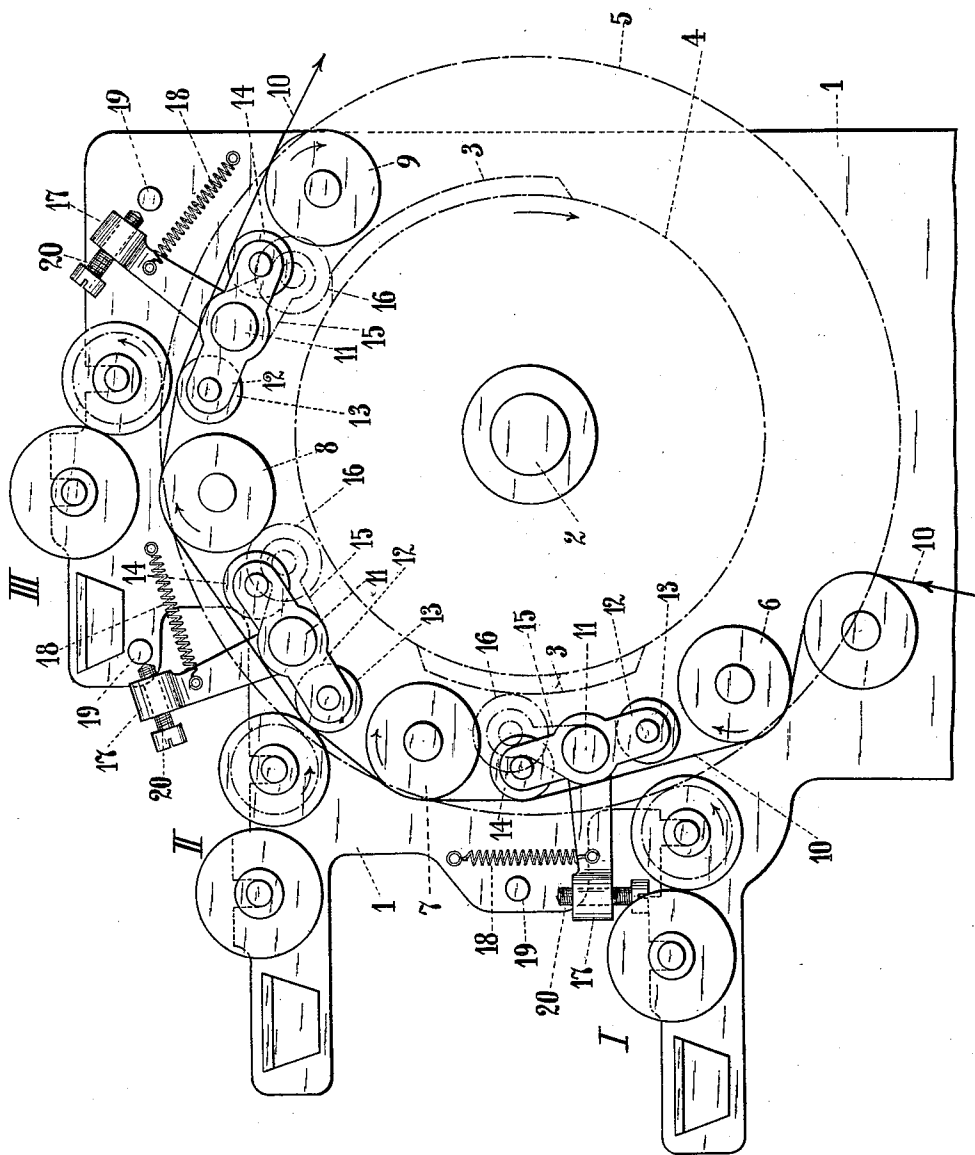


E. WEINGÄRTNER.
 RULING MACHINE.
 APPLICATION FILED JULY 7, 1910.

1,008,094.

Patented Nov. 7, 1911.



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UNITED STATES PATENT OFFICE.

EDUARD WEINGÄRTNER, OF LEIPZIG-PLAGWITZ, GERMANY.

RULING-MACHINE.

1,008,094.

Specification of Letters Patent.

Patented Nov. 7, 1911.

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To all whom it may concern:

Be it known that I, EDUARD WEINGÄRTNER, a citizen of Switzerland, residing at Leipzig-Plagwitz, Germany, have invented certain new and useful Improvements in Ruling-Machines, of which the following is a specification.

In the known ruling machines, the interruption of the ruling operation is usually brought about by raising the ruling device, at certain intervals, with cams arranged on a rotating disk from the ruling cylinder and then bringing it back again on to the ruling cylinder. This mode of interrupting the ruling has the disadvantage that the ruling shaft is caused to be bent, owing to the load thereon and on account of the vibrations occasioned by the said lifting and return movement of the ruling devices whereby the interruption and recommencement of the ruling proceeds in a very irregular manner. According to the present invention these drawbacks are overcome by the provision of stationarily mounted ruling devices while the sheets to be ruled are carried through the machine by means of an endless conveyer and are brought in and out of contact with the ruling devices by lifting and lowering the conveyer with the aid of pressure rollers which are positively controlled and in this way the interruption of the ruling operation on the paper sheets is brought about in a very desirable manner. The paper may be carried by the endless conveyer in any of the well known ways. A ruling machine of this kind is diagrammatically shown in the accompanying drawing.

Journalled in the machine frame 1 which consists of two lateral walls conveniently connected together, is a transversely extending shaft 2, with its ends projecting beyond the machine frame and one end of which carries a disk 4 with exchangeable cams 3, while on its other end is secured a toothed wheel 5. Arranged at equal distances around the shaft 2 and rotatably journalled in the machine frame are a number of guide rollers 6, 7, 8, 9 over which travels an endless band or cloth 10 which, by means of an appropriate device, is caused to travel in the direction of the arrows indicated in the drawing. Between the guide rolls and beneath the path of the cloth 10, are shafts 11, each journalled parallel to the corresponding guide roller and carrying within the frame

1 a double armed lever 12 at each side. These levers 12 carry each two rollers 13, 14 over which the band or cloth 10 is caused to travel. At one side of the machine frame, the end of each shaft 11 carries secured to it a lever 15, at the free end of which is a roller 16, bearing against the circumference of the disk 4. During the rotation of the disk 4, the rollers 16 are so influenced by the cam members 3 as to cause the shafts 11 together with the rollers 13, 14 carried by them, to be angularly displaced about a certain angle at determined intervals. The other end of each shaft 11 has secured to it an outwardly extending arm 17, the upper portion of which is influenced by a traction spring 18 having the tendency to draw the arm 17 against a stationary abutment 19. Thus these springs tend to hold the shafts 11 in the position of rest and the extent of movement of the arms 17 can be regulated by set screws 20 provided in the head portion of each arm 17.

Arranged in stationary bearings at a short distance from the path of travel of the conveying cloth 10 and located within the scope of oscillation of the rollers 13, 14 controlled by the shaft 11, are the ruling devices I, II, III, which are driven in common by the gear wheel 5 mounted on the main shaft 2 and are inked in a known manner.

The operation of the machine is as follows: When during the working of the machine one of the rollers 16 in coöperating with the disk 4 is caused to engage with a cam face 3 the corresponding shaft 11 is rocked by means of the lever 15 and the arm 17 is moved, against the tension of its spring 18, away from its abutment 19 thereby so displacing the rollers 13, 14 that the conveying cloth 10 with the sheets to be ruled can freely pass beneath the ruling device, as indicated by the position of the parts opposite the ruling device marked I. As soon as the roller 16 leaves the cam face 3, the spring 18 becomes operative and draws the arm 17 against its abutment 19. Consequently the shaft 11 is rocked in backward direction displacing the rollers 13, 14 in such a manner that one of these rollers presses the conveying cloth together with the sheets resting thereon, against the ruling device, thereby bringing about the ruling of the paper sheets as indicated by the position of the parts opposite ruling mechanism marked II.

What I claim and desire to secure by Letters Patent is:—

1. In a ruling machine the combination of stationarily mounted ruling devices, an endless conveyer for the sheets to be ruled and positively controlled pressure rollers for moving the said conveyer to or from the said ruling devices.

2. In a ruling machine the combination of stationarily mounted ruling devices, an endless conveyer carrying the sheets to be ruled and oscillating rollers disposed to be brought against the conveyer for moving the said conveyer to or from the said ruling devices.

3. In a ruling machine the combination of stationarily mounted ruling devices, an endless conveyer carrying the sheets to be ruled, rollers for moving the said conveyer to or from the said ruling devices and means to move said rollers alternately against and away from the said conveyer.

4. In a ruling machine the combination of stationarily mounted ruling devices, an endless conveyer carrying the sheets to be ruled, rollers for moving the said conveyer to or from the said ruling devices and levers carrying said rollers and moving the said rollers alternately against and away from the said conveyer.

5. In a ruling machine the combination of stationarily mounted ruling devices, an endless conveyer carrying the sheets to be ruled, rollers for moving the said conveyer to or from the said ruling devices, levers carrying said rollers in pairs and a rocking shaft for each said lever to move a pair of said rollers alternately against and away from the said conveyer.

6. In a ruling machine the combination of stationarily mounted ruling devices, an endless conveyer carrying the sheets to be ruled, rollers for moving the said conveyer to or from the said ruling devices, levers carrying said rollers in pairs, a rocking shaft for each said lever and a lever on the other end of said shaft for rocking the said shaft to move a pair of said rollers alternately against and away from the said conveyer.

7. In a ruling machine the combination of stationarily mounted ruling devices, an endless conveyer carrying the sheets to be

ruled, rollers for moving the said conveyer to or from the said ruling devices, levers carrying said rollers in pairs, a rocking shaft for each said lever and a lever on the other end of said shaft, a roller on the end of said last mentioned lever and a cam co-operating with said roller for rocking the said shaft to move a pair of said rollers alternately against and away from the said conveyer.

8. In a ruling machine the combination of stationarily mounted ruling devices, an endless conveyer carrying the sheets to be ruled, rollers for moving the said conveyer to or from the said ruling devices, levers carrying said rollers in pairs, a rocking shaft for each said lever, an arm on the one end of said shaft and a stationary abutment for the said arm for limiting the rocking movement of the said shaft.

9. In a ruling machine the combination of stationarily mounted ruling devices, an endless conveyer carrying the sheets to be ruled, rollers for moving the said conveyer to or from the said ruling devices, levers carrying said rollers in pairs, a rocking shaft for each said lever, an arm on one end of said shaft, a stationary abutment for the said arm for limiting the rocking movement of the said shaft and a set screw on the said arm for adjusting the extent of rocking movement of the said shaft.

10. In a ruling machine the combination of stationarily mounted ruling devices, an endless conveyer carrying the sheets to be ruled, rollers for moving the said conveyer to or from the said ruling devices, levers carrying said rollers in pairs, a rocking shaft for each said lever, an arm on one end of said shaft a stationary abutment for the said arm for limiting the rocking movement of the said shaft, a traction spring connected to the said arm and tending to draw the said arm against said abutment, and a set screw on the said arm for adjusting the extent of rocking movement of the said shaft, all substantially as set forth.

In testimony whereof I affix my signature in the presence of two witnesses.

EDUARD WEINGÄRTNER.

Witnesses:

MORITZ SPENCER,

RUDOLPH FRICKE.