(No Model.)

# G. CONKLING.

## MAGNETIC SEPARATOR.

No. 420,334. Patented Jan. 28, 1890.

*Fig. 1.*

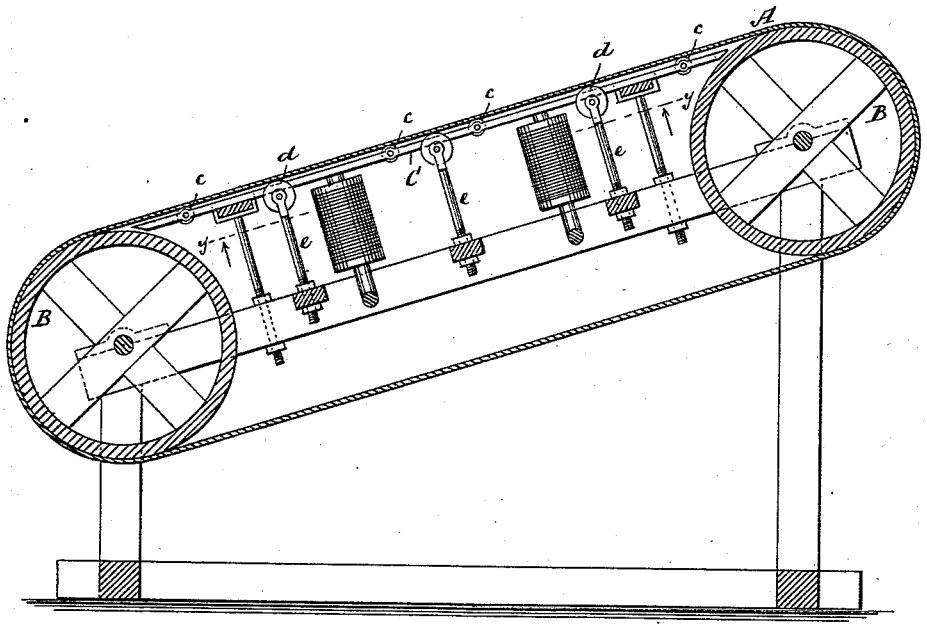
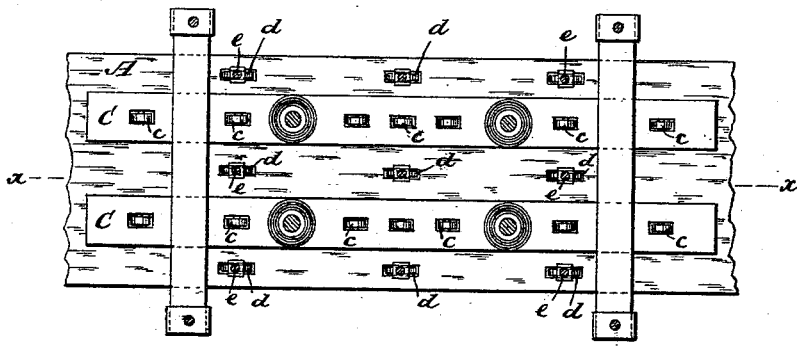



*Fig. 2.*




WITNESSES:

Eduard Wolff.
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INVENTOR:

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BY

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# UNITED STATES PATENT OFFICE.

GURDON CONKLING, OF GLENS FALLS, NEW YORK.

## MAGNETIC SEPARATOR.

SPECIFICATION forming part of Letters Patent No. 420,334, dated January 28, 1890.

Application filed May 29, 1889. Serial No. 312,564. (No model.)

*To all whom it may concern:*

Be it known that I, GURDON CONKLING, a citizen of the United States, residing at Glens Falls, in the county of Warren and State of New York, have invented new and useful Improvements in Magnetic Separators, of which the following is a specification.

This invention relates to certain improvements in magnetic separators of that class in which an endless belt is used in combination with a magnet situated within said belt and close to one of its strands, said improvements being pointed out in the following specification and claims and illustrated in the accompanying drawings, in which—

Figure 1 represents a longitudinal vertical section in the plane *x x*, Fig. 2. Fig. 2 is a horizontal section in the plane *y y*, Fig. 1.

Similar letters indicate corresponding parts.

In the drawings, the letter A designates an endless belt which extends round pulleys B B. In the interior of this belt and close to the inner surface of one of its strands is situated a magnet C, which may consist of one or more plates and be made in the form of a permanent magnet or in the form of an electro-magnet. Screws or other suitable means may be used for adjusting the magnet or magnets C in relation to the belt A. In using machines of this class for magnetic separation I have found that the belt A is liable to cling to the magnet or magnets C, so that the machine is rendered unmanageable, and in order to remedy this disadvantage I have combined with the magnet or magnets C and with the belt A supporting-rollers, which are so located that they prevent the belt from coming in contact with the magnet or magnets.

In the example shown in the drawings each of the magnets C is provided with a series of rollers *c c*, which are mounted in slots formed in the bodies of the magnets and which are made of brass or other non-magnetic material. In addition to the rollers *c* another series of rollers *d* may be applied between and on the outsides of the magnets C. These rollers are mounted in bifurcated supports *e*, which are adjustably secured in the main frame of the machine. By these rollers the belt A is prevented from coming in contact with the magnets C, and it is therefore not liable to cling to the same.

What I claim as new, and desire to secure by Letters Patent, is—

1. A magnetic separator comprising an endless traveling belt, a magnet located within the belt, and a series of rollers journaled in bearings on the magnet between the ends thereof to support the belt at points along the magnet between its extremities, substantially as described.

2. A magnetic separator comprising an endless traveling belt, pulleys supporting the same, a magnet located within the belt and having a series of slots along its length, and a roller journaled to the magnet in each slot thereof to support the belt at different points between the extremities of the magnet, substantially as described.

3. A magnetic separator comprising an endless belt, a magnet extending longitudinally within the belt, and a series of rollers disposed at intervals along the magnet between its extremities and supporting the belt at different points between said extremities of the magnet, substantially as described.

4. A magnet having slots between its ends, in combination with rollers projecting through the slots and an endless belt resting on the rollers between the ends of the magnet, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

GURDON CONKLING.

Witnesses:

J. VAN SANTVOORD,

ERNST F. KASTENHUBER.