

G. A. GILBERT.
MAGNETIC SEPARATOR.

No. 348,121.

Patented Aug. 24, 1886.

Fig. 1.

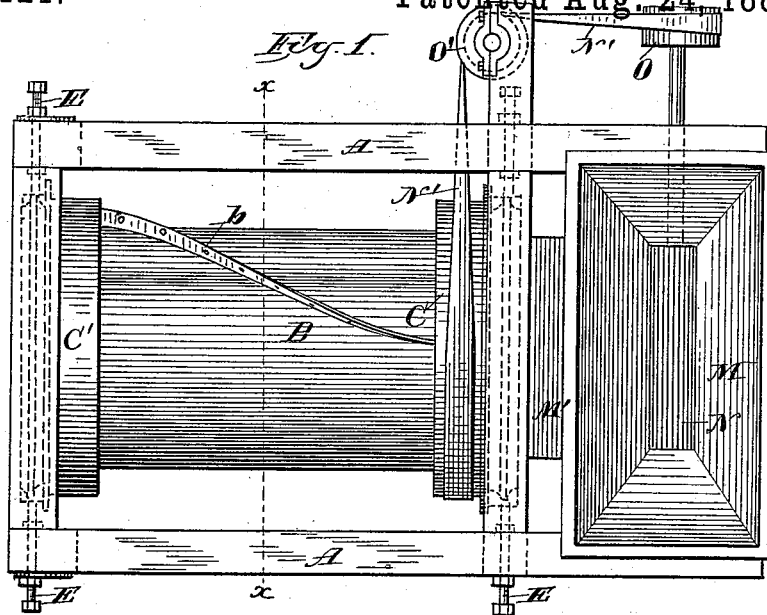


Fig. 2.

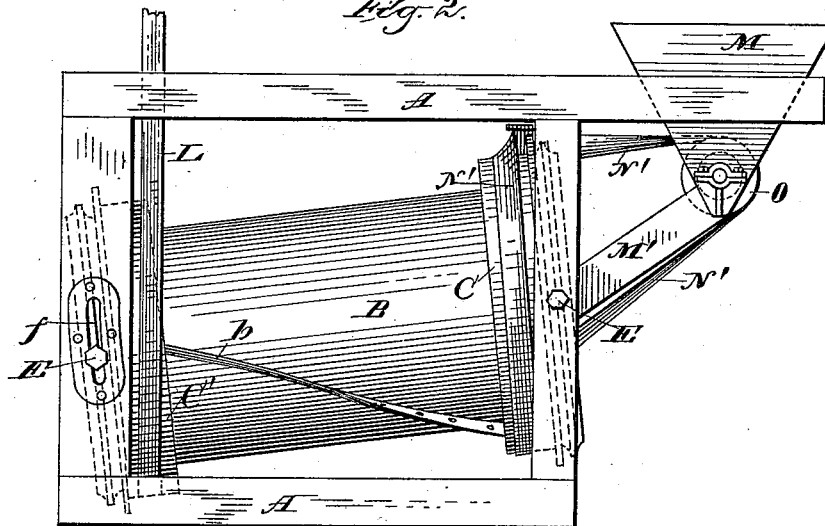
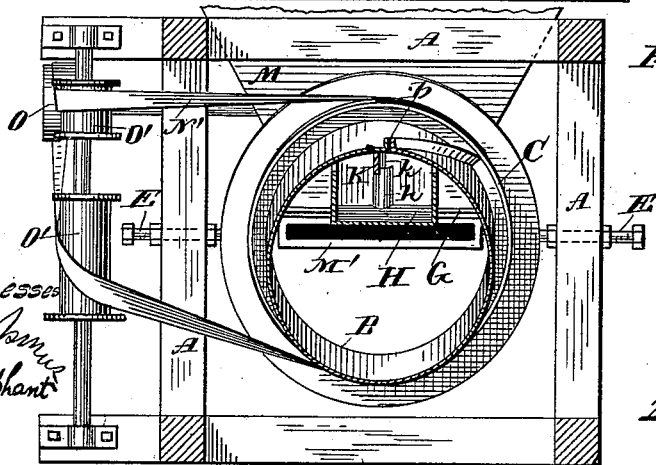


Fig. 3.



Witness
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(No Model.)

2 Sheets—Sheet 2.

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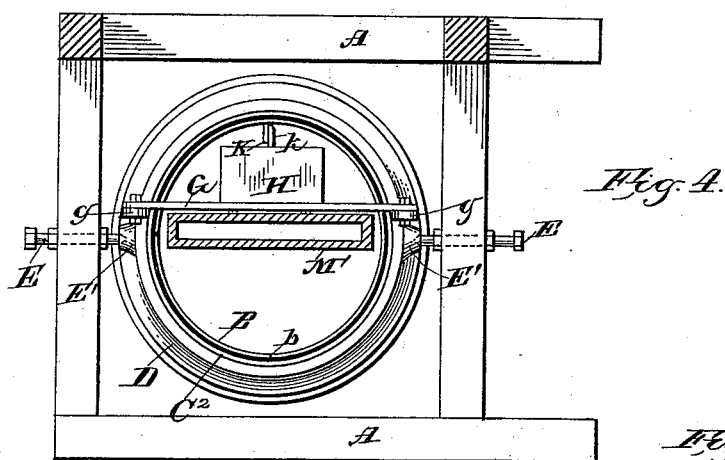
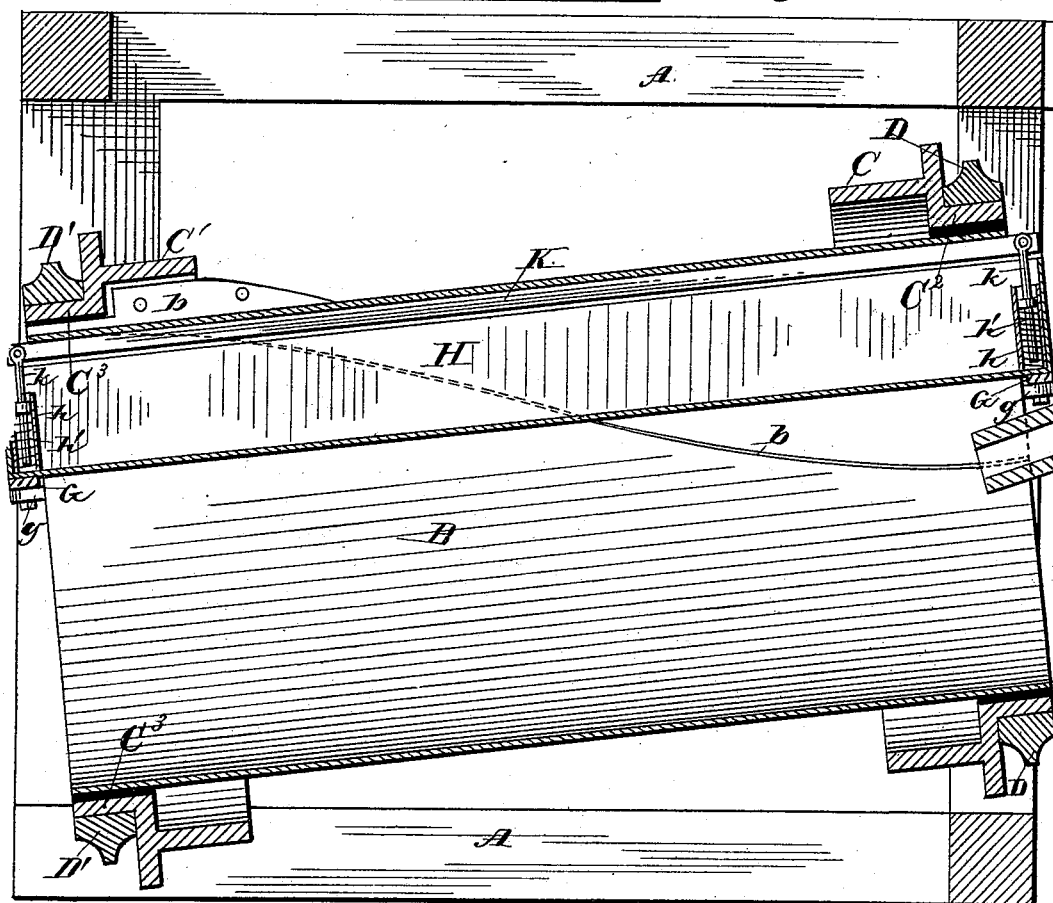


Fig. 5.



Witnesses:

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UNITED STATES PATENT OFFICE.

GEORGE A. GILBERT, OF LINCOLN, ILLINOIS.

MAGNETIC SEPARATOR.

SPECIFICATION forming part of Letters Patent No. 348,121, dated August 24, 1886.

Application filed October 23, 1885. Serial No. 180,705. (No model.)

To all whom it may concern:

Be it known that I, GEORGE A. GILBERT, of Lincoln, in the county of Logan, and in the State of Illinois, have invented certain new and useful Improvements in Machines for Separating Magnetic from Non-Magnetic Substances; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention relates to devices for separating magnetic from non-magnetic substances, and will be fully described hereinafter.

In the drawings, Figure 1 is a plan view of my device. Fig. 2 is a side view; Fig. 3, a section on line *x x*, Fig. 1. Fig. 4 is a front end view of the cylinder of my device. Fig. 5 is a longitudinal vertical section through the same.

A is the frame of my machine, and B is the cylinder. The latter is of steel, and consists of a single sheet that is joined at its edges, as at *b*, with a leather or other non-magnetic substance interposed. The metal composing the cylinder is magnetized, and each edge of the sheet of which it is composed forms one pole of the magnet. The binding rivets must of a necessity be of a non-magnetic metal.

The cylinder B has pulleys C C', one secured about each of its ends, and a non-magnetic packing is interposed between the cylinder and adjacent surface of each pulley. The pulley C has a journal, C², that fits in a swinging bearing-box, D, and the pulley C' has a journal, C³, that turns in an adjustable box, D', the box D being supported by screw-bolts E, that extend through the frame into lugs E' on the box, while the box D' is supported by like bolts that are adjustable up and down in slots *f* in the frame, to give the desired pitch to the cylinder. The boxes are each provided with a pair of lugs, *g g*, and each pair supports a bar, G, across the end of the cylinder above its horizontal center, and these bars in turn support each an end of a box or trough, H, that extends from one end of the

cylinder to the other, as shown in Fig. 5. In each end of the trough is provided a housing, *h*, for a coiled spring, *h'*, and these springs support each a leg, *k*, of a scraper, K, that projects out of the trough H and up against the inner periphery of the cylinder, so that as the cylinder is turned by means of a belt, L, its inner surface will be freed by the scraper from all adhering matter, which latter will be deposited in the trough H.

The cylinder is fed through a hopper, M, and spout M', the material being carried in by a roller, N, in the bottom of the hopper. This roller is driven by a belt, N', and pulleys O and O'. The edges of the sheet that composes cylinder B are joined by a spiral or diagonal seam, preferably, so that the scraper will shear past its joint without engagement with it.

The scraper is made of any non-magnetic substance.

The operation of my device is very simple. As the cylinder revolves slowly, the magnetic substances that are in the grain come in contact with the surface of the cylinder, adhere thereto, and are carried up to the scraper, which dislodges them.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

A cylinder for magnetic separators, consisting of a single sheet of steel permanently magnetized and joined at its edges, in combination with a non-magnetic strip interposed between said edges, a frame in which said cylinder is suspended, and mechanism for revolving said cylinder.

In testimony that I claim the foregoing I have hereunto set my hand, at Milwaukee, in the county of Milwaukee and State of Wisconsin, in the presence of two witnesses.

GEORGE A. GILBERT.

Witnesses:

STANLEY S. STOUT,
MAURICE F. FREAR.