

(No Model.)

A. HEMPEL.

MAGNETIC CLEANING APPARATUS.

No. 390,229.

Fig. 1. Patented Oct. 2, 1888.

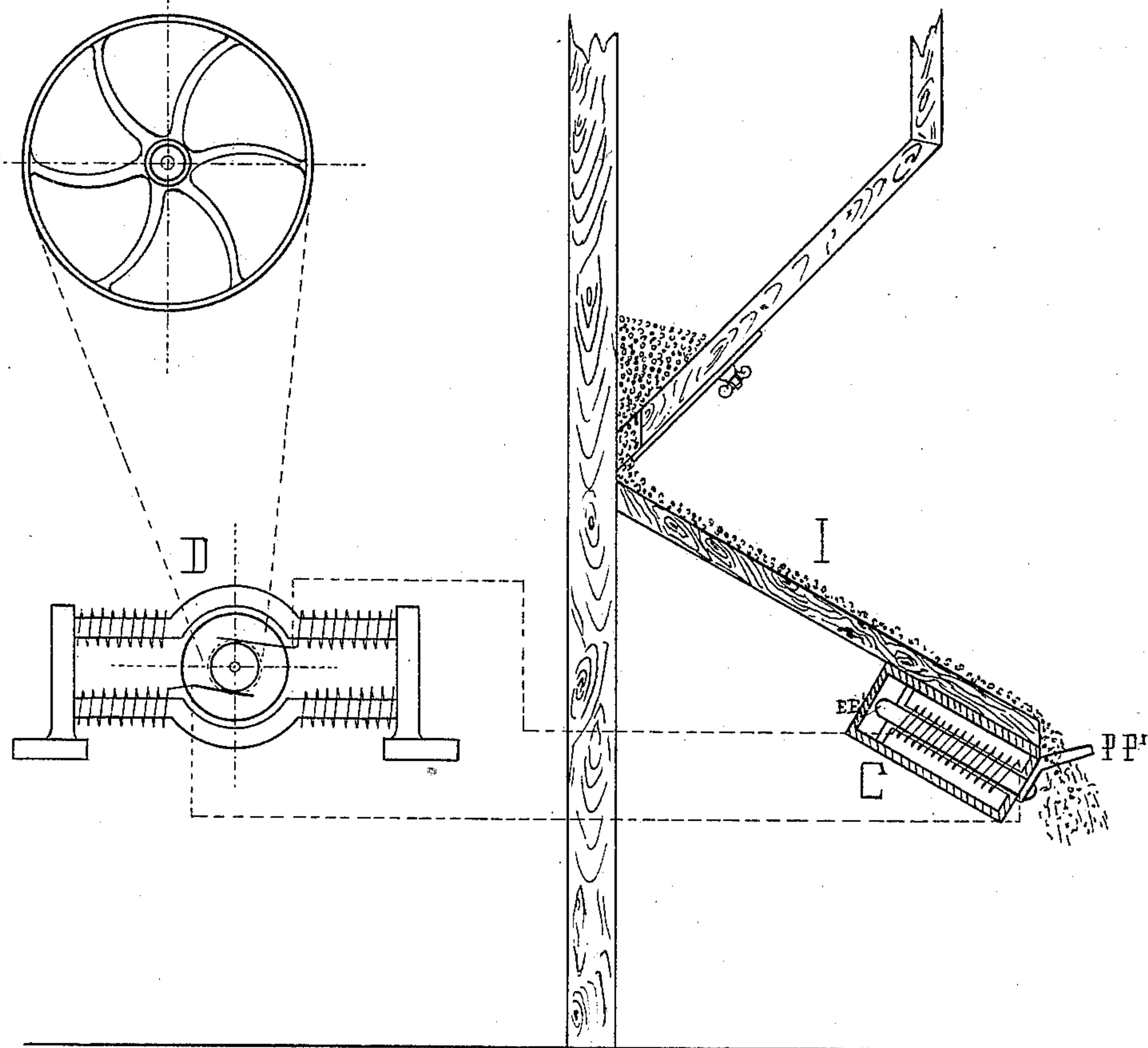
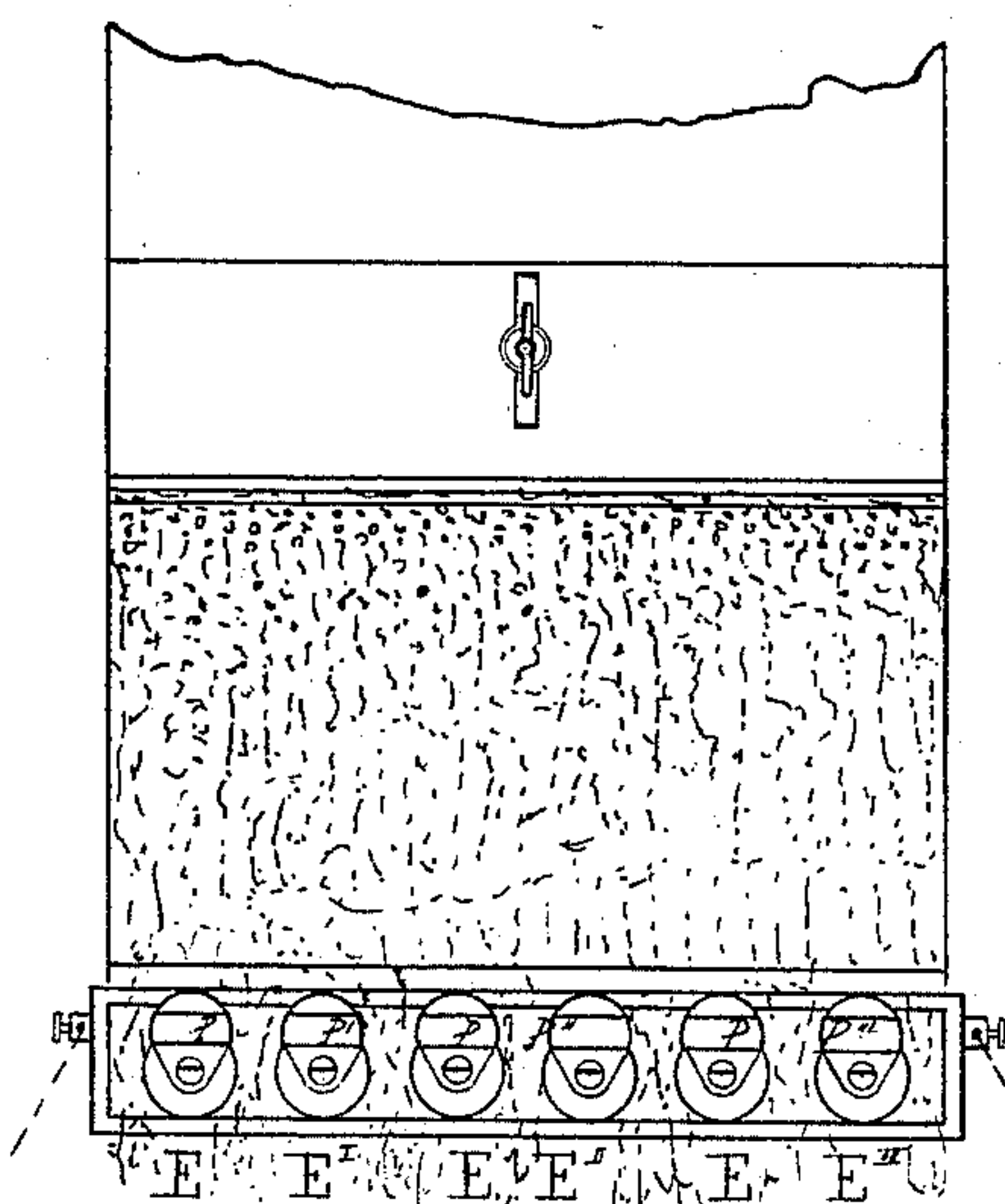


Fig. 2.



Witnesses.
Anthony Steffen.
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UNITED STATES PATENT OFFICE.

ALWIN HEMPEL, OF DRESDEN, SAXONY, GERMANY.

MAGNETIC CLEANING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 390,229, dated October 2, 1888.

Application filed August 22, 1887. Serial No. 247,613. (No model.) Patented in Germany October 1, 1887, No. 42,950; in Belgium October 31, 1887, No. 79,250, and in France January 17, 1888, No. 186,534.

To all whom it may concern:

Be it known that I, ALWIN HEMPEL, of the city of Dresden, in the Kingdom of Saxony and German Empire, have invented certain
5 new and useful Improvements in Magnetic Cleaning Apparatus, (for which I have obtained Letters Patent in Germany, No. 42,950, dated October 1, 1887; in Belgium, No. 79,250, dated October 31, 1887, and in France, No.
10 186,534, dated January 17, 1888,) of which I declare the following to be a true and correct specification.

My invention relates to a magnetic cleaning apparatus, the object of which is to separate
15 any iron particles—such as pieces of wire, nails, tacks, filings, slag, and other similar matter—from cereals, seeds, minerals, tan, plaster-of-paris, and other materials. The apparatus employed hitherto are generally provided
20 with permanent magnets, so that the pole-tips are flush with the surface of the board. Now, as the matter or material under treatment passes these pole-tips in a more or less thick layer, the upper surface is precluded from the action
25 of the magnets, and iron particles which adhere to the said pole-tips are torn off and forced forward by the following material, and so pass off into the cleansed grain or other material.

Figure 1 is a part section representing the
30 arrangement of the electro-magnets, and Fig. 2 a partial top view of the inclined surface I and the electro-magnets.

My apparatus can be made to contain any desired number of magnets, E E' E E², preferably electro-magnets of horseshoe form. The
35 electro-magnets are excited by a small dynamo, which gives them a very high attractive force. The pole-tips of these magnets, which are embedded in a frame or box, C, protrude from the
40 same at P P' P P², &c., and stand at an obtuse

angle to the inclined surface I, beneath which my system of magnets is arranged. As the substance to be cleansed falls from the inclined surface I onto the pole-tips P P' P P², &c., the same is divided into thin layers or streams, 45 which come first in contact with the pole-tips themselves and then pass the magnetic field of the two neighboring pole-tips. In order that substances which do not readily slide or move may not remain lying, the pole-tips are 50 arched or made in the form of a roof. The iron separated out is not driven off by the material subsequently passing the magnets—for instance, light pieces of wire will glide under the pole-tips and remain suspended from the same. 55

The system of magnets forms an independent readily-transportable apparatus, which, when properly attached, can be employed to very great advantage in many branches of industry.

Having now particularly described and as- 60
certained the nature of my said invention, I declare that what I claim, and desire to secure by Letters Patent, is—

1. In a magnetic cleaning-machine, the combination of the incline I with the magnets E E' 65
E² and their pole-tips P P' P², and the frame or box C, substantially as and for the purpose set forth.

2. In a magnetic cleaning-machine, the pole-tips extending upward under an obtuse angle 70
and arched or of roof-like form, so that the material to be cleaned will not remain lying on the same, substantially as set forth.

In testimony whereof I have signed this specification in the presence of two subscrib- 75
ing witnesses.

ALWIN HEMPEL.

Witnesses:

E. CELWAGER,
EMIL DOMSCH.