W. SOWDEN.

SEPARATION AND EXTRACTION OF DUST AND IRON FROM BRASS BORINGS, BRASS TURNINGS, AND LIKE MATERIAL.

APPLICATION FILED JULY 20, 1917.

1,332,078.

Patented Feb. 24, 1920.

2 SHEETS—SHEET 1.

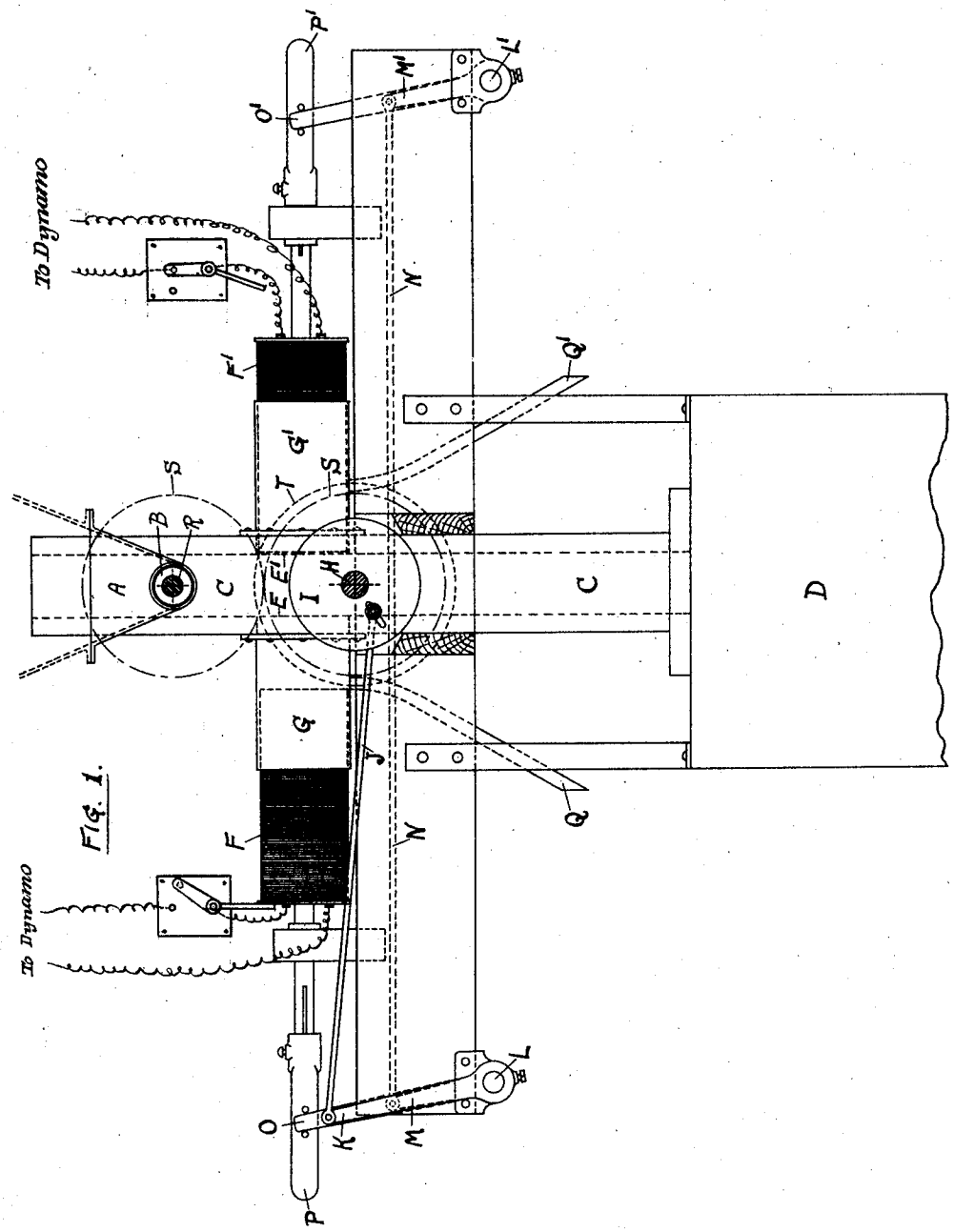


Fig. 1.

WITNESSES:

Allan Bennett.

Gertrude Mitchell.

INVENTOR:

Walter Sowden

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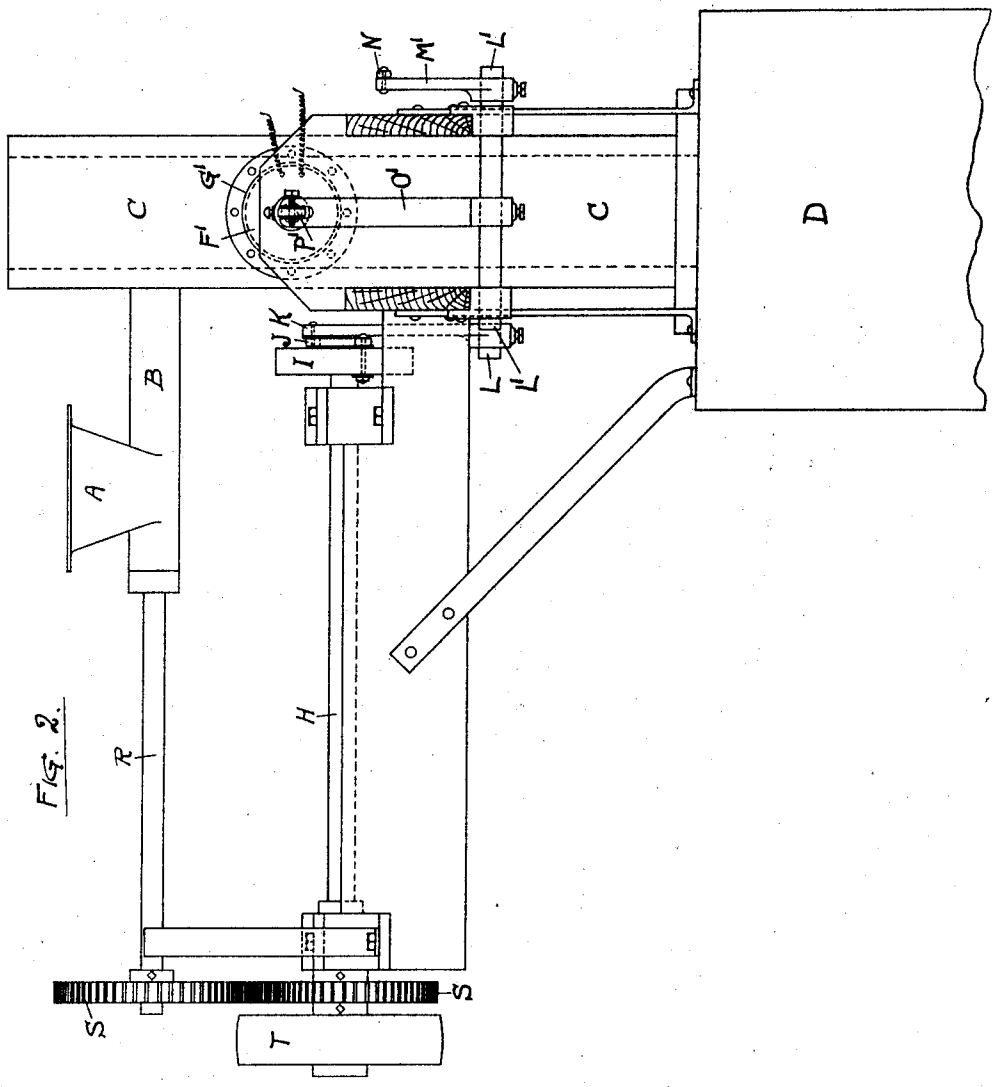


Fig. 2.

WITNESSES:

Allan Bennett.

Gertrude Mitchell.

INVENTOR:

Walter Sowden

UNITED STATES PATENT OFFICE.

WALTER SOWDEN, OF LEEDS, ENGLAND.

SEPARATION AND EXTRACTION OF DUST AND IRON FROM BRASS BORINGS, BRASS TURNINGS, AND LIKE MATERIAL.

1,332,078. Specification of Letters Patent. **Patented Feb. 24, 1920.**

Application filed July 20, 1917. Serial No. 181,880.

To all whom it may concern:

Be it known that I, WALTER SOWDEN, a subject of the King of Great Britain and Ireland, residing at Leeds, in the county of York, England, have invented new and useful Improvements in or Relating to the Separation and Extraction of Dust and Iron from Brass Borings, Brass Turnings, and like Material, of which the following is a specification.

This invention relates to improvements in the method of separating and extracting dust and iron from brass borings, brass turnings, and other material, and in apparatus for use in connection therewith.

In the accompanying drawings—

Figure 1 is a front elevation of my improved apparatus in a convenient form, and partly in section.

Fig. 2 is a side elevation of same.

According to my said invention the material to be cleaned is placed in a suitably elevated hopper A, and is conveyed therefrom, at any desired rate of feed, by means of a rotating worm device B delivering into the upper end of an upright separating chamber or chute C, which in turn delivers into a box or receptacle D beneath, or into suitably arranged side or bottom chutes.

A suitable exhaust fan (not shown), connecting with the upper part of the separating chamber C, is arranged to induce (if required) an upward blast of air through the separating chamber C, this air blast meeting the falling material and separating therefrom the comparatively light dust particles, which may be collected in any convenient manner.

At convenient intermediate points on opposite sides of the separating chamber C are provided side openings E, E^1, and in external conjunction respectively with these openings are mounted a pair of electromagnets F, F^1, having an alternating reciprocating movement within a corresponding pair of cylindrical casings or tubes G, G^1, said alternating and reciprocating movement being adjustably controlled from a main driving shaft H, for instance by means of a crank disk I, connecting rod J, crank K, countershafts L, L^1, cranks M, M^1, long connecting rod N, cranks O, O^1, and spindles P, P^1. Each of these magnets when in its inner or operative position is magnetized by means of a dynamo (not shown) or otherwise, and thus serves to attract and separate from the falling material any particles of iron, which accumulate until the magnet moves outward, when the current is automatically cut off by means of a suitably placed switch (not shown) and the magnet demagnetized, the iron being dropped for collection by way of chutes Q, Q^1, or other convenient means.

The feed worm shaft R is driven from the aforesaid main shaft H by toothed gearing S, chain gearing, or the like, and the said main shaft H is driven in any convenient manner as for instance by belt pulley T.

I claim:

1. In a device of the class described, a chute with openings in its opposite side walls, sleeves projecting therefrom, magnets extending through said sleeves into said openings, means for horizontally shifting said magnets in said sleeves to collecting and discharging positions, and means for energizing and deënergizing the magnets in the respective positions.

2. In combination, a chute with openings in its opposite walls, sleeves projecting therefrom, magnets extending through said sleeves into said openings, means for reciprocating the magnets comprising a main drive shaft for the machine, counter shafts on opposite sides of said main shaft, a crank disk on said main shaft, a crank on one of said counter shafts, a connecting rod by which the crank disk on the main shaft oscillates said crank, crank members mounted on the respective counter shafts, a connecting rod coupling the last mentioned cranks by which said counter shafts are oscillated in unison, other cranks on the respective counter shafts, and spindles carried by the respective magnets and engaged and reciprocated by the said other cranks.

WALTER SOWDEN.

Witnesses:

ALLAN BENNETT,

GERTRUDE MITCHELL.