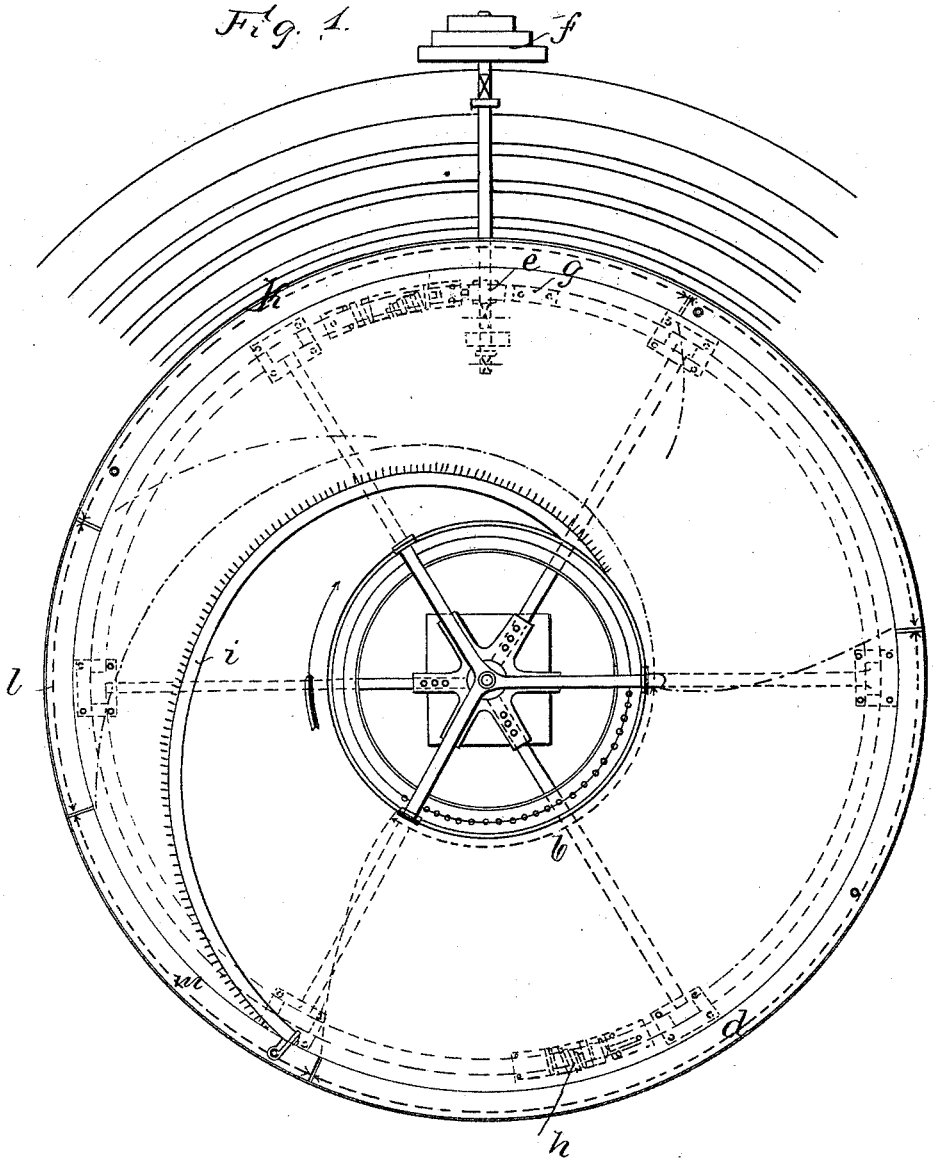
(No Model.) 4 Sheets—Sheet 1.

W. J. BARTSCH.

ORE DRESSING APPARATUS.

No. 491,672. Patented Feb. 14, 1893.

Fig. 1.



Witnesses:
C. Schultze.
A. Zimmermann.

Inventor.
Wilhelm Julius Bartsch
by Robert Bühler
Attorney.

(No Model.) 4 Sheets—Sheet 2.

W. J. BARTSCH.

ORE DRESSING APPARATUS.

No. 491,672. Patented Feb. 14, 1893.

Fig. 2.

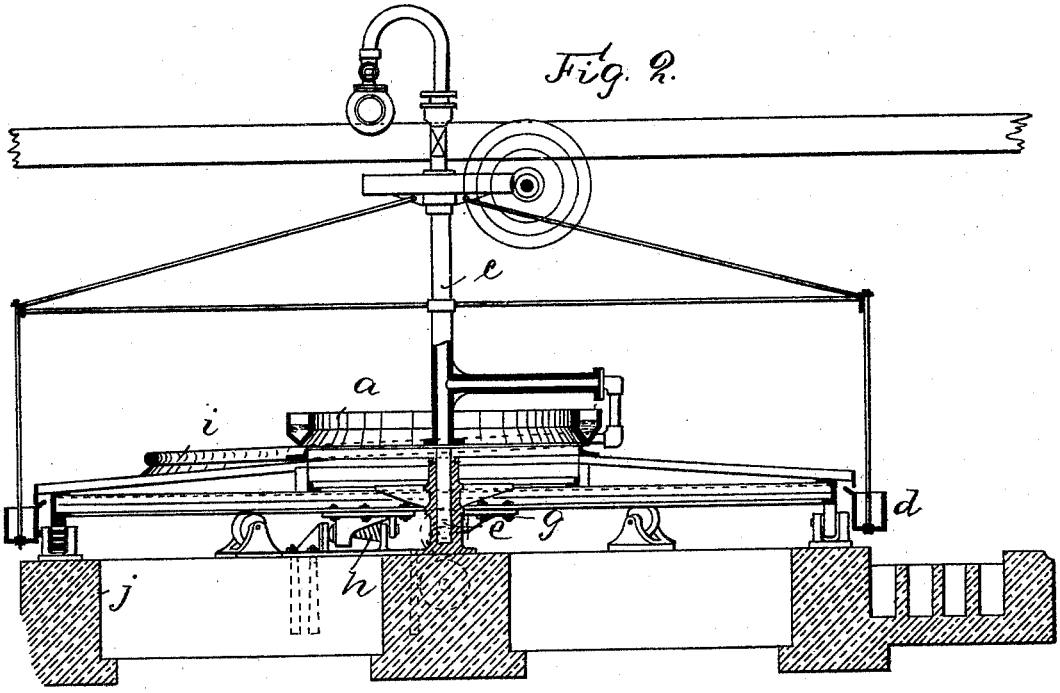
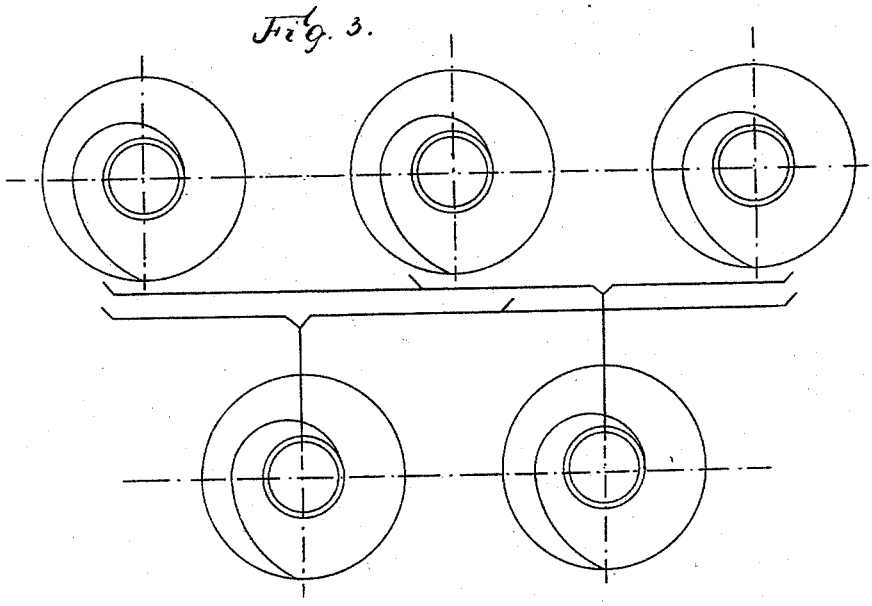


Fig. 3.



Witnesses:
E. Schultze.
A. Zimmermann.

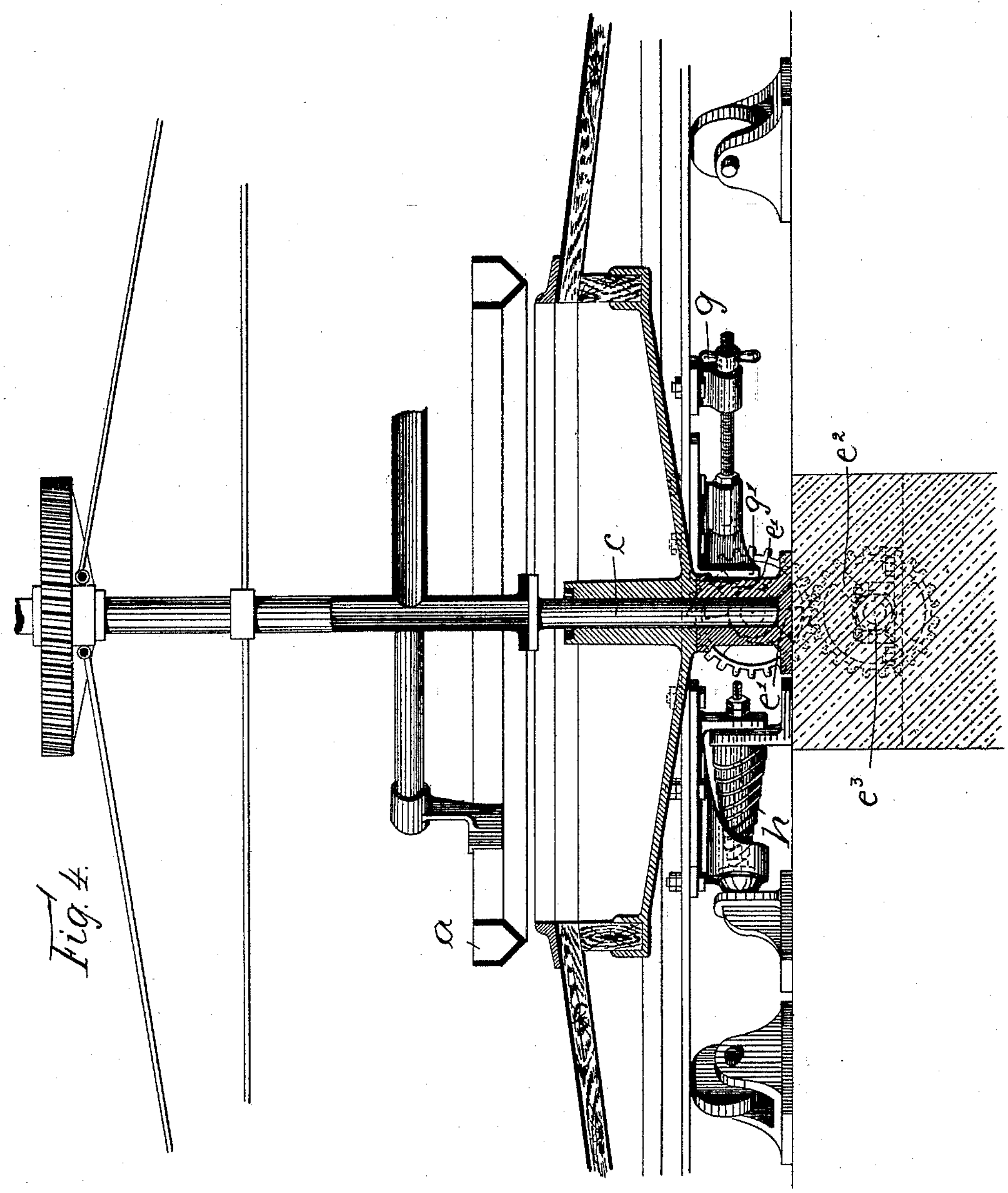
Inventor:
Wilhelm Julius Bartsch
by Robt. Wirth
Attorney.

(No Model.) 4 Sheets—Sheet 3.

W. J. BARTSCH.

ORE DRESSING APPARATUS.

No. 491,672. Patented Feb. 14, 1893.



Witnesses:
W. Greenwood
R. F. Janofsky

Inventor
Wilh. Julius Bartsch.
by: Robert Deinler
Attorney.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

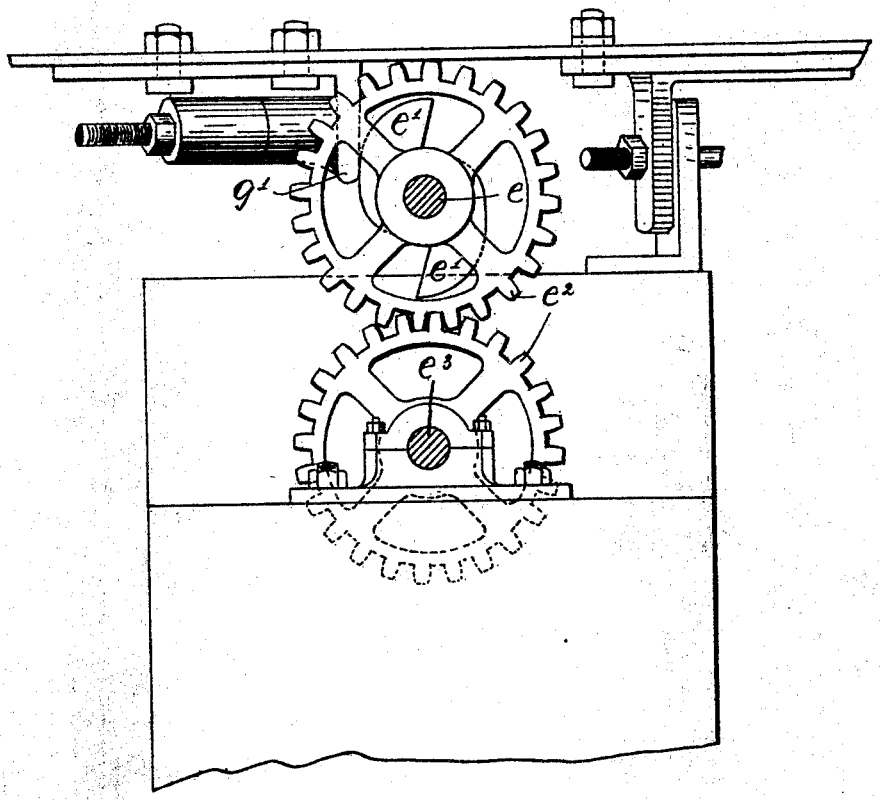
(No Model.) 4 Sheets—Sheet 4.

W. J. BARTSCH.

ORE DRESSING APPARATUS.

No. 491,672. Patented Feb. 14, 1893.

Fig. 5.



Witnesses:
E. Kayser
Carl Rossbach.

Inventor
Wilh. Julius Bartsch
by Robert Wade
Attorney.

UNITED STATES PATENT OFFICE.

WILHELM JULIUS BARTSCH, OF DRESDEN, GERMANY.

ORE-DRESSING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 491,672, dated February 14, 1893.

Application filed January 12, 1892. Serial No. 417,900. (No model.)

To all whom it may concern:

Be it known that I, WILHELM JULIUS BARTSCH, a subject of the King of Saxony, and a resident of Dresden, in the Kingdom of Saxony, Empire of Germany, have invented certain new and useful Improvements in Ore-Dressing Apparatus, of which the following is a clear and exact specification.

The invention will first be described in connection with the drawings, and then pointed out in the claim.

Figure 1 is a plan of the general arrangement, Fig. 2 a cross-sectional elevation and Fig. 3 a detailed plan of part of my said improvements. Fig. 4 is a detailed cross-sectional elevation of the central part, drawn to an enlarged scale. Fig. 5 is a detail view of the means for obtaining a vibrating motion of the table.

Like letters of reference denote corresponding parts in each view.

The charging is effected by a cone-shaped receptacle [or other similar contrivance] into the circular feed-channel *a* which terminates below in a point and is furnished throughout one third of its circumference with holes for regularly distributing the material to be dressed the length of the charging edge or tilt *b* above the frame of the feed-channel *a*. By means of the vertical axis *c* rotary motion is effected with variable velocity. The material fed into the receptacle issues through the perforations *b* and flows slowly toward the periphery forming arc-shaped undulations over the tables or surfaces which are made of india-rubber or other suitable material and which rests on a wooden frame work. While passing along in this manner the material keeps spreading out more and more, becoming in consequence shallower, flows slower and the light, barren or useless slime leaves the dressing-frame by the shaft *d* which is two and half times the length of perforated channel *b*. The specifically heavier ore remains on the frame for further treatment. This perfectly natural ore-dressing process already referred to goes on under an intermittent vibrating or oscillating forward motion of the whole frame. This vibrating motion is produced by spur cams or cogs *e'* on the shaft *e*, said cams being always in contact with adjustable offsets *g'*, provided on the underside of the frame supporting the table, and the shaft *e* being rotated from the shaft e^3 by means of the toothed wheels e^2. The shape of the cams *e'* is such that the forward oscillation of the frame takes place with a velocity and strength diminishing after the middle of the movement; during this forward movement the springs *h* are compressed, and as soon as the offsets *g'* are in line with the radial edge of the cams *e'*, the springs *h* will rapidly retract the frame and the table. In consequence the matter which is on the table is in constant vibration; the lighter parts rise to the surface while the heavier sinks and adheres to the table; in consequence of this an extraordinarily small loss of useful mineral is effected. The number and length of the vibrations and the strength of the vibrating motion can be regulated by the step-pulley *f* the adjusting handle *g* and the springs *h*. The feed channel *a* moves in the direction of the arrow and with it the perforated pipe *i* which is bent into an expanding curve as shown and discharges into the periphery with likewise variable velocity and controllable strength of jet. This said perforated pipe *i* washes [beginning at the top and gradually developing greater force] the materials lying on the table in such a manner, that the lightest in specific gravity first, then the heavier, and finally the heaviest makes its way to the end of the perforated pipe *i* lying on the periphery, as will be understood by reference to Fig. 1 which shows the manner of working up slime of lead and blende.

d is the outlet of the ore-slime.

h is the outlet of the first blende products.

j is the outlet of the second blende products.

m is the outlet of the first lead products.

l is the outlet of the second lead products.

The second lead and blende products are either as shown at Fig. 3, continuously led by selfacting machinery from one or several of these said buddles for further working up to one or more deeper-lying similar buddles, or turned back to go through the original pro-

cess, or collected and passed through special but similar buddles.

Having thus fully described the nature of my invention, what I desire to secure by Letters Patent of the United States is:—

An ore-dressing apparatus, comprising a rotatable annular feed-channel, a spiral perforated pipe secured to the same, a circular table, and means for effecting a vibrating horizontal motion of the table, for the purpose as described.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

WILHELM JULIUS BARTSCH.

Witnesses:

ARTHUR J. HOLROYD,

HERNANDO DE SOTO.