

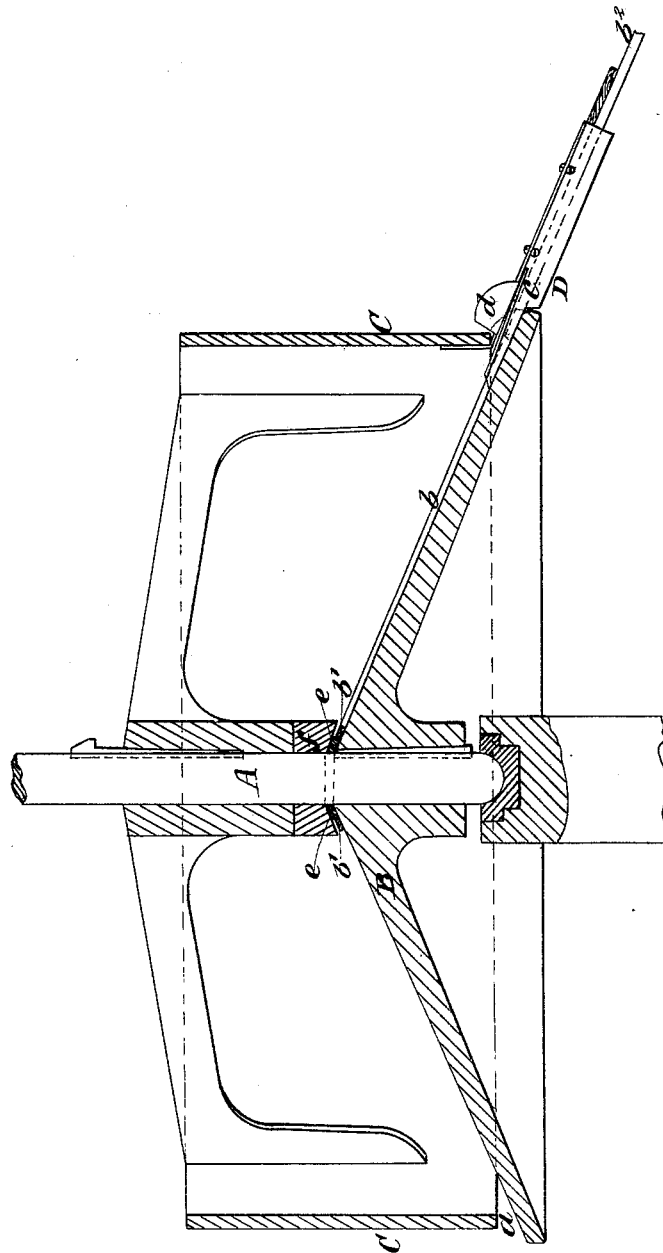
M. P. ISMAY.

Feed and Delivery Devices for Paint-Mills.

No. 218,748.

Patented Aug. 19, 1879.

Fig. 1.



WITNESSES

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INVENTOR

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Fig. 2.

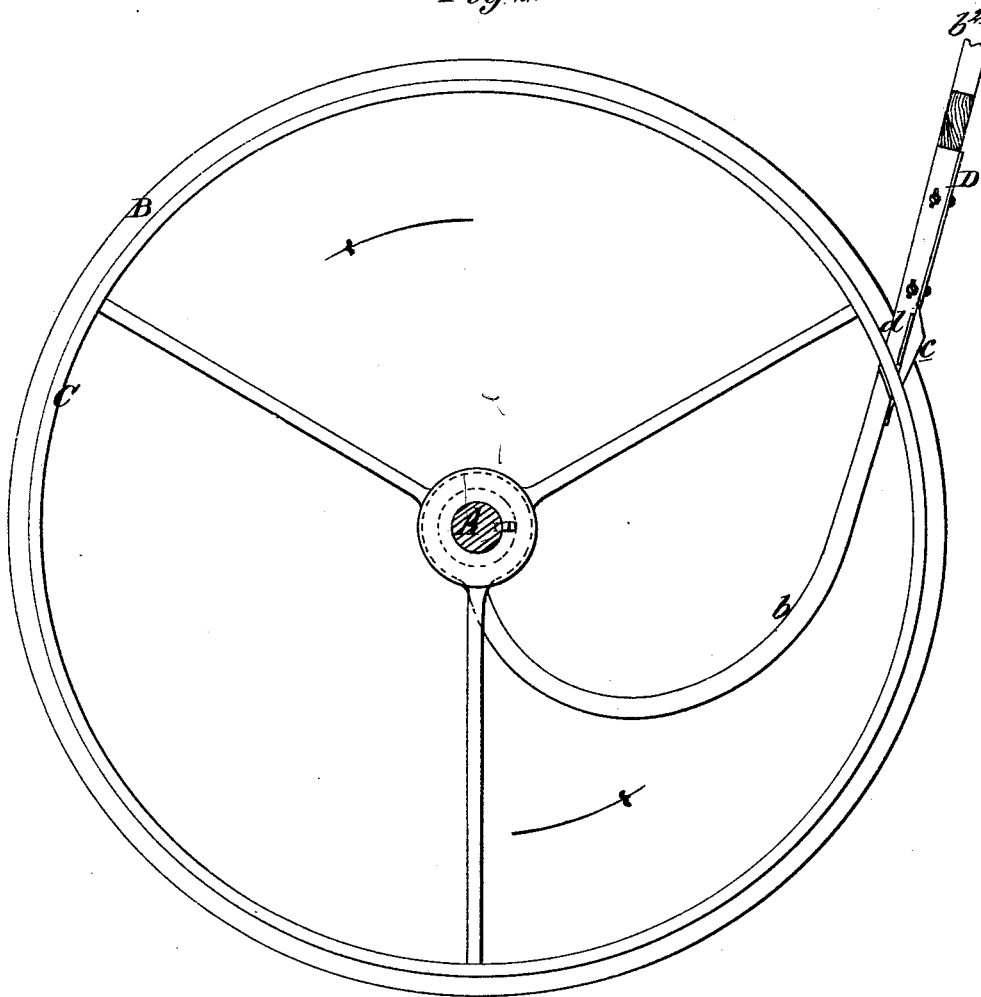
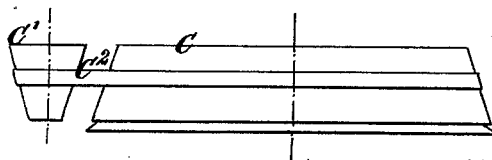


Fig. 3.



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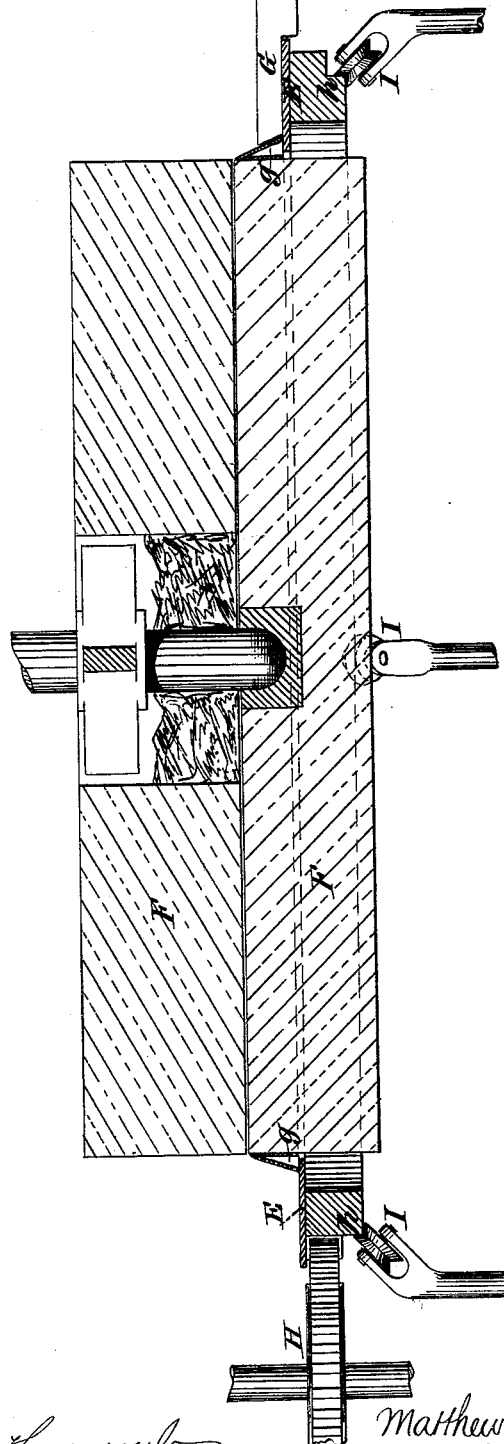
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Fig 4.



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UNITED STATES PATENT OFFICE

MATTHEW P. ISMAY, OF OUSEBARN, NEWCASTLE-UPON-TYNE, ENGLAND.

IMPROVEMENT IN FEED AND DELIVERY DEVICES FOR PAINT-MILLS.

Specification forming part of Letters Patent No. **218,748**, dated August 19, 1879; application filed March 26, 1879.

To all whom it may concern:

Be it known that I, MATTHEW PARKER ISMAY, of Ousebarn, Newcastle-upon-Tyne, England, have invented Improvements in or relating to Apparatus for Grinding Paint and other like substances, of which the following is a specification.

My invention relates to means or appliances employed in combination with apparatus for grinding paint and other like substances, for the purpose of feeding or delivering the substance to be operated upon to the grinding apparatus, and for effecting its discharge when ground from the said apparatus; and it consists, first, in the employment of a revolving receptacle, in combination with a stationary knife or knives, for feeding or delivering the substance to be operated upon to the grinding apparatus; and, secondly, in the employment of a revolving basin, in combination with a stationary knife, for effecting the discharge of the substance when ground from the grinding apparatus.

And in order that my said invention may be fully understood, I shall now proceed more particularly to describe the same, and for that purpose shall refer to the several figures on the annexed sheet of drawings, the same letters of reference indicating corresponding parts in all the figures.

Figure 1 of the accompanying drawings is a sectional elevation, and Fig. 2 is a plan, of an apparatus constructed according to the first part of my said invention for feeding or delivering the substance to be operated upon to the grinding apparatus; and Fig. 3 is a diagram illustrating a method of driving the improved feeding apparatus. Fig. 4 is a sectional elevation of an apparatus constructed according to the second part of my said invention, for effecting the discharge of the substance when ground from the grinding apparatus.

Referring to Figs. 1 and 2, the feeding apparatus consists of an upright revolving shaft, A, having fast thereon a disk, B, which forms the bottom of the receptacle for the substance (say, for example, white lead) to be operated upon, and also having secured thereon an annular vertical ring or cylinder, C, forming the sides of the said receptacle, and which is

mounted on the shaft A in such a position that a space, *a*, will be left between the lower extremity of the sides C and the upper surface of the disk or bottom B, through which space passes one or more stationary knives, D, according to the number of grinding apparatus which are to be simultaneously supplied. (one being shown in the example illustrated.)

The bottom B of the receptacle may be either inclined from the center to its periphery, as shown, or flat, if preferred, and the ring or cylinder C, forming the sides of the receptacle, may be made adjustable upon the shaft, as shown, so as to regulate the size of the space *a* between the sides C and bottom B to suit the feed required, the knife or knives D being changed to correspond in size to the said adjustment.

It is preferred to make the knife compound, as shown in the drawings, the same consisting of a body, *b*, the knife proper, *c*, and a scraper, *d*. The body *b* is formed at one end with a ring, *b*¹, which encircles a ring or washer, *e*, on which the ring or cylinder is supported with the interposition of a variable thickness of packing-rings, *f*. The end *b*² of the body *b*, opposite to that at which the ring *b*¹ is formed, is secured to any fixed point outside the receptacle, the body at its lower edge resting upon the bottom of the receptacle.

In the drawings, Fig. 1, I have shown the body by straight lines and the view distorted for the facility of elucidating the operation of the apparatus. The knife proper, *c*, is attached to the side of the body *b*, while above the latter, and the knife is fixed the scraper *d*, which fits closely to the sides of the receptacle, so as to cut or remove therefrom the substance under operation. The scraper *d* may, however, be either wholly or partially dispensed with. When a compound knife is used it is only necessary to change the portion *c* to suit the adjustment of the apparatus for a variation of the feed.

In operating with this apparatus, the white lead, for example, is supplied to the receptacle, and the shaft carrying the bottom B and sides C being in motion, the same are caused to travel respectively over or in contact with the lower and upper edges of the stationary knife

D, which discharges the white lead continuously into the grinding apparatus arranged beneath.

If required—as, for example, in the case of soft substances—the receptacle may be surrounded by a stationary casing, in order to prevent any liability of the material being discharged at any other part of the bottom than where the knife or knives are situate.

When two or more knives are employed for supplying a corresponding number of grinding apparatus, it is only necessary that one knife should extend to the center of the feeder, as shown in the drawings, for the purpose of working the substance from the center to the circumference. The other knife or knives may extend inward from the circumference only to a sufficient distance to secure the feed required.

Motion may be imparted to the feeding apparatus in any usual well-known manner. A convenient arrangement is shown in the diagram, Fig. 3, in which the sides C of the feeder are made conical, so as to form a cone-pulley, and a driving cone-pulley, C¹, is employed for transmitting motion to the former by a belt, C².

When the supply of the substance is nearly exhausted the belt may be shifted so as to increase the speed, and thus maintain an approximate uniformity in the feed. The apparatus for collecting and discharging the white lead, for example, which has been operated upon is illustrated in Fig. 4. It consists of a revolving annular basin, E, arranged beneath the point of delivery from the grindstones F or other grinding apparatus, and of a stationary knife or scraper, G, extending across the annular bottom of the said basin, the white lead delivered onto the basin E from the grinding apparatus F being thus continuously discharged as each portion of the basin E in its revolution passes successively beneath the knife or scraper G.

The basin may be slightly inclined, and, if desired, be let into the lower stone, suitably recessed for that purpose; or, as preferred, and illustrated in the drawings, the lower grindstone may be fitted with an inclined hoop, g, so as to prevent the escape of any portion of the paint over the inner periphery of the basin. In either case the lower stone would have an overhanging portion for the purpose described. The lower stone, F, as shown in the drawings, is stationary, while the upper stone is arranged to revolve.

The basin E may be driven by spur-gearing H or otherwise, and rollers I may be provided adapted to an annular projection at h on the under side of the basin, in order to diminish friction in its motion.

I claim as my invention—

1. In a paint-delivery apparatus, the combination of a stationary scraper with a shaft carrying a disk, B, and a vertical cylinder, C, leaving an intermediate space between the disk and cylinder, through which space the said scraper is arranged to pass, as set forth.

2. In a paint-mill, the combination of an upper revolving stone and lower stationary stone with a revolving annular basin, E, and stationary knife, G, the said lower stone having an upper portion or hoop overhanging the said basin, as and for the purpose described.

In witness whereof I have signed my name to this specification in the presence of two subscribing witnesses.

MATTHEW PARKER ISMAY.

Witnesses:

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