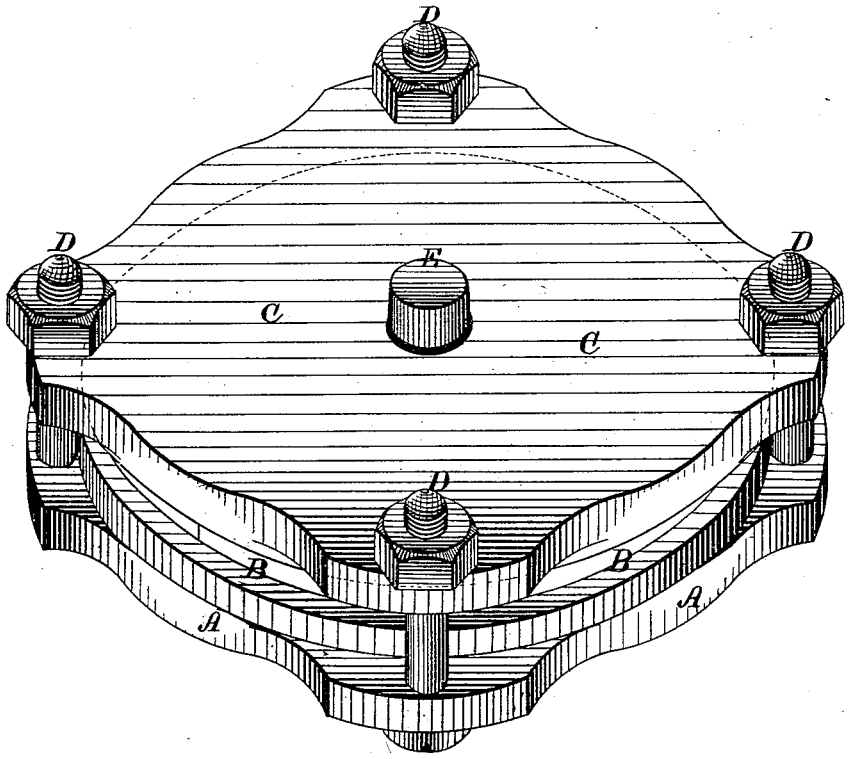
2 Sheets--Sheet 1.

G. HART.

Mold for forming Artificial Grind-Stones.

No. 167,527. Patented Sept. 7, 1875.

Fig. 1.



WITNESSES:

Jas. E. Hutchinson

John R. Young

INVENTOR.

Gilbert Hart, by

Prindle and Co, his Attys

2 Sheets--Sheet 2.

G. HART.

Mold for forming Artificial Grind-Stones.

No. 167,527. Patented Sept. 7, 1875.

Fig. 2.

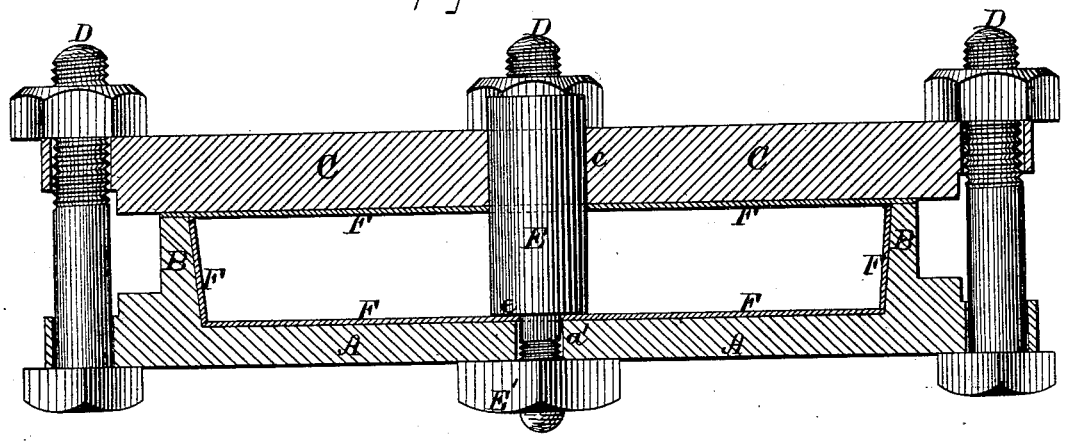
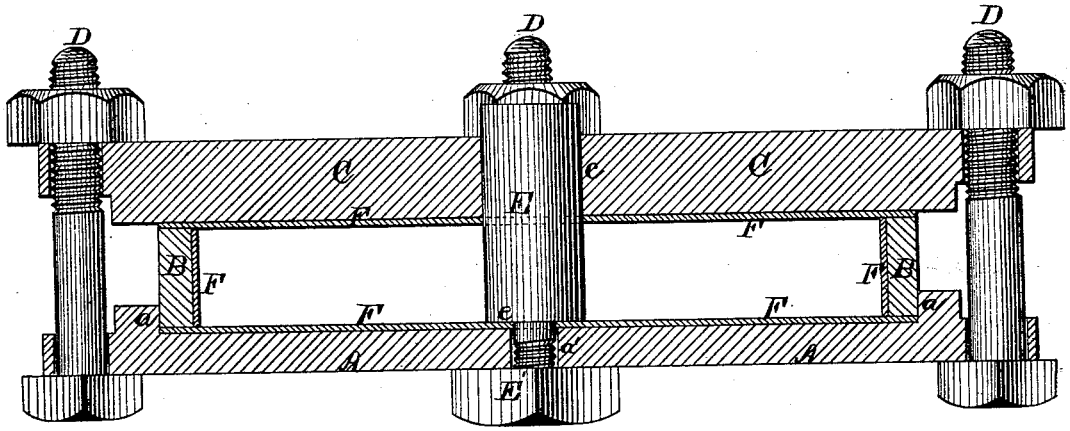


Fig. 3.



WITNESSES:
Jas. C. Hutchinson
John R. Young

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UNITED STATES PATENT OFFICE.

GILBERT HART, OF DETROIT, MICHIGAN.

IMPROVEMENT IN MOLDS FOR FORMING ARTIFICIAL GRINDSTONES.

Specification forming part of Letters Patent No. **167,527**, dated September 7, 1875; application filed March 13, 1875.

To all whom it may concern:

Be it known that I, GILBERT HART, of Detroit, in the county of Wayne and in the State of Michigan, have invented certain new and useful Improvements in Molds for Forming Artificial Grindstones; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompaning drawing, making a part of this specification, in which—

Figure 1 is a perspective view of the exterior of my improved mold. Fig. 2 is a vertical central section of the same; and Fig. 3 is a like view, showing a modification in the construction of the lower portion of said mold.

Letters of like name and kind refer to like parts in each of the figures.

My invention has for its object an increase in the facility and accuracy of construction of artificial grindstones, emery-wheels, &c.; and it consists, principally, in the employment, within a mold, of a detachable lining of thin metal, paper, or other like material, which may be removed with the molded article, substantially as and for the purpose hereinafter specified. It consists, further, in the construction of the sectional mold employed, substantially as and for the purpose hereinafter shown.

In the annexed drawing, A represents the base or bottom of my mold, which is constructed, preferably, from cast metal, is circular in general form, and is provided upon its upper side with an annular flange, B, which in diameter and height corresponds to the diameter and thickness of the stone or wheel to be molded. The flange B may be cast with, and form part of, the bottom plate A, as shown in Fig. 2; or, as seen in Fig. 3, said flange may be formed separate, and, at its lower edge and outer side, fit within a shoulder, *a*, provided upon said plate. Upon the upper edge of the flange B is fitted a cover, C, which is plain upon its sides, and, in plan view, has substantially the same shape and dimensions as the bottom plate A. Two or more bolts D and D pass vertically through the portions of said bottom plate and cover outside of said flange B, and enable the whole to be closely confined together when desired. At the axial centers of the plate A and cover C are provided openings *a'* and *c*, respectively, within which is fitted a round pin, E, that corresponds in size to the dimensions of the mandrel-opening that is to be formed at the center of the stone or wheel to be molded. The opening *a'* within the plate *a* is somewhat smaller than the body of the pin E, and the lower end of the latter is correspondingly reduced so as to fit therein, a shoulder *e*, at the upper end of such reduced portion being in contact with the upper side of said plate. The projecting end of said pin is threaded, and upon the same is placed a nut, E', which, when screwed upward to place, confines said pin firmly in position.

The mold thus constructed is used by removing the cover, filling the interior space with plastic material for forming the artificial stone, and then replacing and securing said cover in position, after which said mold is set aside until its contents dry or harden. When the molded material has become sufficiently set, the cover is removed, the center-pin loosened, and the same, with the stone, is then removed from the mold; but, as the plastic material employed for such purposes expands in drying, it has heretofore been found necessary to give a certain amount of flare or draft to the mold, in order that the completed article might be withdrawn therefrom without mutilation.

This method of facilitating the removal of the stone is, however, open to the objection that the amount of draft requisite in order to overcome its tendency to adhere to the sides of the mold gives to the periphery of said stone unequal dimensions at its edges, and renders the article produced less useful than would be the case were said periphery formed upon a line parallel to its axis. To overcome this objection I fit loosely within my mold a detachable lining, F, made, preferably, of thin sheet metal, although hard paper or other similar substance can be employed for this purpose, if desired. The lining F may either be constructed in two sections, as in the mold shown in Fig. 2, or in three sections, as shown in Fig. 3; but in either case its interior faces receive the plastic material, and it is removed from

the mold with the same when properly set, after which the detachment of said lining is easily and quickly effected.

By my method the molded stones are easily and quickly removed from the mold, and when separated from the lining have perfect accuracy of form.

When the annular flange B is constructed separate from the bottom plate A it is divided vertically at one point, and is removed with the molded article, after which it may be easily sprung open, so as to release said article.

Having thus fully set forth the nature and merits of my invention, what I claim as new is—

1. In combination with the mold A, B, and C, constructed as shown, the detachable lining F, fitted to and caused to cover the entire inner surface of the said mold, substantially as and for the purpose specified.

2. The hereinbefore-described mold, consisting of the bottom plate A, concentric flange B, cover C, confining-bolts D and D, and center-pin E, all combined to operate in the manner and for the purpose substantially as shown.

In testimony that I claim the foregoing I have hereunto set my hand this 6th day of March, 1875.

GILBERT HART.

Witnesses:

GEORGE SCOTT,

G. L. HOWARD.