

Sept. 28, 1926.

1,601,378

A. P. SLADE

APPARATUS FOR ASSEMBLING DIAMONDS ON DRESSING WHEELS

Filed Sept. 5, 1924

Fig. 1

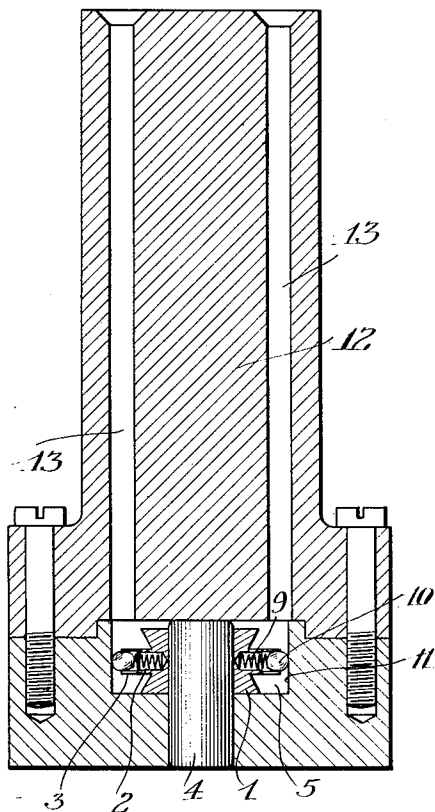


Fig. 2

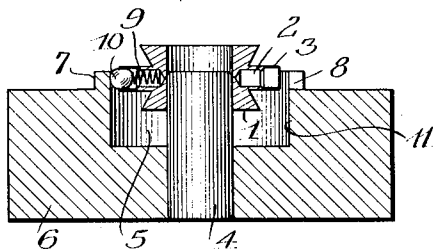


Fig. 3

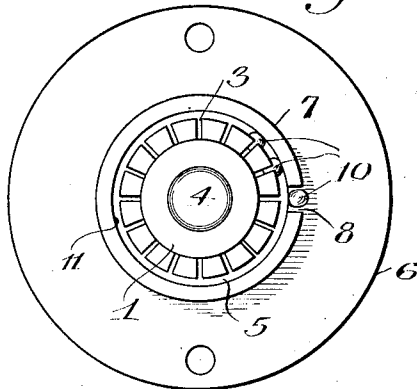


Fig. 4

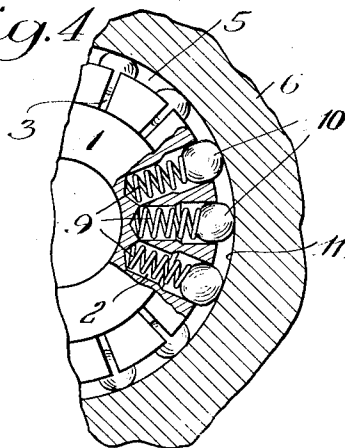


Fig. 5

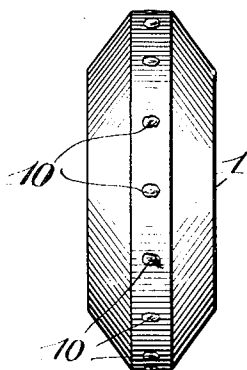
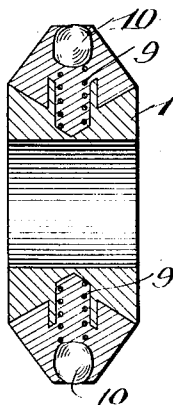


Fig. 6



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UNITED STATES PATENT OFFICE.

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APPARATUS FOR ASSEMBLING DIAMONDS ON DRESSING WHEELS.

Application filed September 5, 1924. Serial No. 736,094.

My invention relates to a method and apparatus for assembling diamonds around the periphery of a dressing wheel such as used for trimming the operative surfaces of a grinder, and has for its principal purpose to afford a way of securing a series of spaced diamonds in place with their outermost or operative points at uniform distances from the center or rotary axis of the wheel on which they are mounted.

The invention has for a further purpose to provide a practical mechanism by means of which a series of diamonds can be readily positioned and secured in place in proper relationship to the dressing wheel.

With these ends in view, the invention comprises the structure that will be clearly understood from the following description, when read in conjunction with the accompanying drawings, the novel features being pointed out in the claims following the description.

In the drawings:

Fig. 1 is a vertical sectional view of an apparatus designed to carry out the method forming the subject matter of my invention.

Fig. 2 is a sectional view of the holder, showing the position of the diamond carrier when inserting the diamonds.

Fig. 3 is a plan view of the parts illustrated in Fig. 2.

Fig. 4 is a partial enlarged horizontal sectional view.

Fig. 5 is a side elevation of the completed product, and

Fig. 6 is a transverse vertical sectional view of the same.

In carrying out the invention, I employ as part of the dressing wheel, a carrier such as disclosed in my copending application Serial Number 736,095 filed September 5, 1924 and designated at 1. Carrier 1 includes radially extending tubular diamond retainers 2 which are split at 3, or otherwise provided with openings in their side walls to admit the binding material.

To position the diamonds, the carrier is inserted on a pin 4 within an opening 5 in the holder 6 in the manner shown in Fig. 2, and held manually with the tubular retainers 2 in line with a shoulder or flange 7 on the holder. The shoulder 7 has an opening 8 through which spring 9 and diamond 10 are successively inserted into each tubular retainer 2. As each diamond is inserted

against the action of a spring, the carrier is rotated to bring the next tubular retainer opposite the opening 8, the previously inserted diamonds being held in place by the shoulder 7 as shown in Fig. 3.

This operation is repeated until all the diamonds are in place, whereupon the carrier is moved downwardly to the bottom of opening 5, being guided and centered by pin 4, until it assumes the position of Fig. 1. With the parts in this position the circular wall 11 bounding the opening 5 serves to limit the outward movement of the diamonds under the action of springs 9, and thus maintains the diamonds with their outermost points spaced equally and uniformly from the center or axis of the carrier 1.

Following this, the conductor 12 is positioned on the holder 6, the conductor 12 being provided with passages 13 leading from the top thereof to the opening 5. A suitable binder such as type metal may then be flowed into the passages 13, filling the opening 5 in and around the tubular retainers, and imbedding the springs 9 and all but the operative points of diamonds 10, so that the latter are held rigidly in their predetermined position, as fixed by springs 9 and circular wall 11. When the type metal or other binder has hardened, the conductor 12 is removed and likewise the carrier 1. The walls of the latter may then be cut away as illustrated in Fig. 5 and the carrier is ready for use as part of the dressing wheel illustrated in my co-pending application referred to above.

The invention may be carried out in other ways than that particularly described, and wherever it is desirable to secure a series of diamond points or analogous elements in a predetermined and uniform relation on a carrier, and this application is intended to cover any other adaptations or departures as may come within the intent of my improvement or the scope of the following claims.

I claim:

1. Mechanism for assembling diamonds or analogous elements around the periphery of a carrier comprising a holder having an opening to receive the carrier, a circular wall to limit the outward movements of and position the diamonds arranged in the carrier, said circular wall terminating in a shoulder having an opening through which

the diamonds are successively inserted into the carrier, and means whereby a binder can be flowed into said opening into and around the carrier to retain the diamonds in predetermined position.

2. Mechanism for assembling diamonds about the periphery of a dressing wheel comprising a circular carrier having independent retainers arranged radially, a fixed circular wall surrounding the carrier, and a coil spring in each radial retainer for holding a diamond yieldably against said wall.

3. Mechanism for assembling diamonds about the periphery of a dressing wheel comprising a circular carrier having radial retainers, a fixed circular wall surrounding the carrier, and means for holding diamonds in said radial retainers in yieldable contact with the wall.

4. Mechanism for assembling diamonds about the periphery of a circular carrier

comprising a holder having a circular opening to receive the carrier, a circular wall to define the position of diamonds arranged in the carrier, and a conductor positionable upon the holder and having openings communicating with the opening in the holder to convey a binder thereto.

5. Mechanism for assembling diamonds about the periphery of a circular carrier comprising a holder having a circular opening to receive the carrier, a vertical carrier supporting pin arranged centrally of the opening, a circular wall to define the position of diamonds arranged in the carrier, and a conductor positionable upon the holder and having openings communicating with the opening in the holder to convey a binding material thereto.

In witness whereof, I have hereunto signed my name.

ALTON P. SLADE.