May 8, 1934. F. CHATEAUNEUF 1,957,879

GRINDING MACHINE

Filed June 26, 1931

Fig. 1.

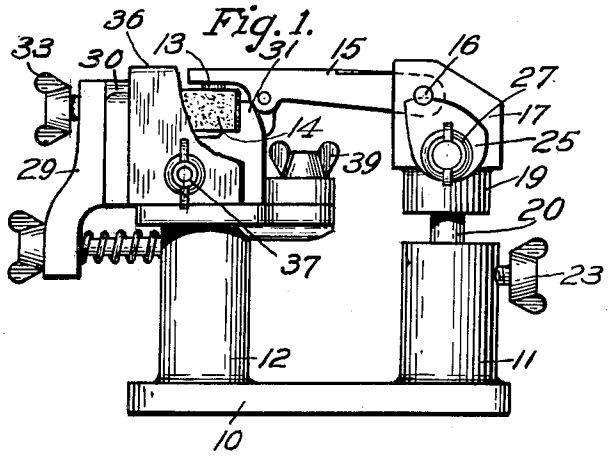


Fig. 2.

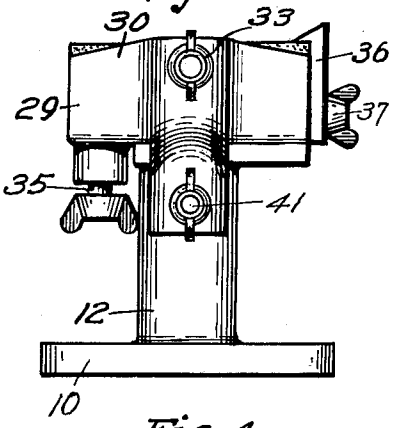


Fig. 3.

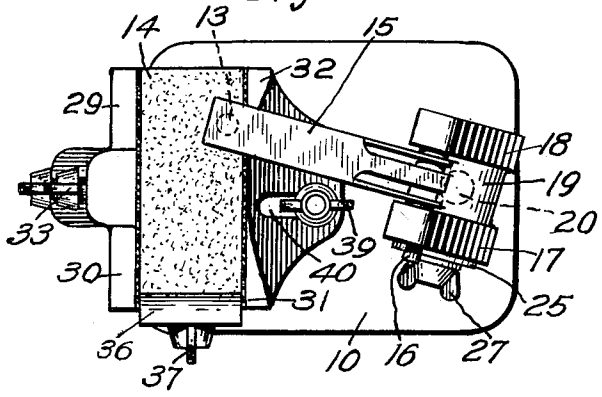


Fig. 4.

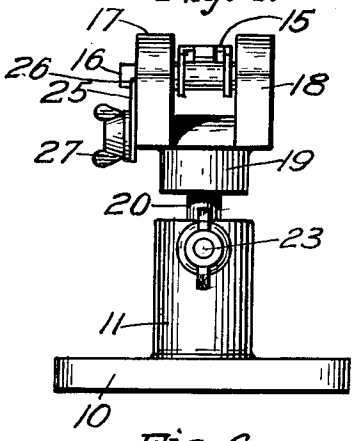


Fig. 5.

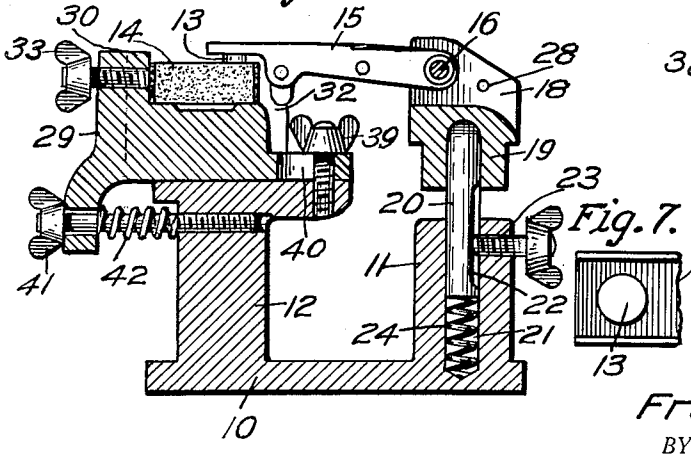


Fig. 6.

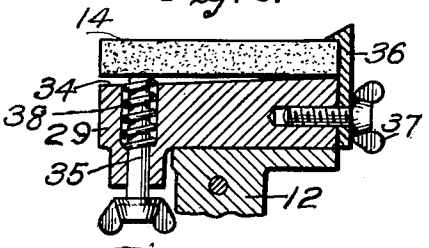


Fig. 7.

Fig. 8.

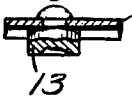
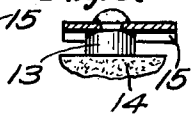


Fig. 9.



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1,957,879

GRINDING MACHINE

Frank Chateauneuf, Hampstead, N. H.

Application June 26, 1931, Serial No. 547,003

4 Claims. (Cl. 51—157)

The invention relates to grinding machines especially adapted for grinding distribution contacts commonly used in ignition systems for hydrocarbon engines suitable for self-propelled vehicles. The invention consists of a semi-automatic device for adjusting the contact member to the stone and for adjusting the stone to the contact member. The invention further consists of horizontally adjusting the stone and frame to various sizes of contact frames.

The object of the invention is to provide a grinding machine having semi-automatic adjusting devices for the various members so the operator of the machine can concentrate on the member to be adjusted while springs will move the members in one direction and the operator will move them in the opposite direction with ease and accuracy to obtain a perfect grinding adjustment. Under the present condition car owners and others have great trouble in keeping the contacts in good condition and it is to obviate this difficulty by devising a machine which can be used by anyone, either skilled or unskilled in the art, to obtain a smooth surface on the contacts.

Referring to the figures.

Figure 1 shows a front elevation of the same.

Figure 2 shows a side elevation of the same.

Figure 3 shows a plan view of the same.

Figure 4 shows an opposite end view of the same.

Figure 5 shows a longitudinal cross section through the machine.

Figure 6 shows a traverse section through the frame for supporting the grindstone.

Figure 7 shows an under plan view of the contact to be ground with the frame broken away.

Figure 8 is a side elevation of the same partly broken away showing the defect in the contact to be ground.

Figure 9 is a side elevation of the contact member located in position on the grindstone.

Referring to the drawing which illustrates my new grinding machine, having a base 10 for supporting the operating members. Formed integral with the base 10 are two vertical columns 11 and 12 respectively which support the holder for the contact member 13 to be ground and the grindstone 14. The machine is especially adapted for grinding distributor contacts commonly used in ignition systems for hydrocarbon engines used to drive self-propelled vehicles. The contact member 13 is secured to the holder 15 which is supported on the shaft 16 having bearings 17 and 18 in the swinging head 19. The holder 15 is free to swing on the shaft 16 and the swinging head 19 is free to turn on the vertical stationary shaft 20. This allows a universal movement for the grinding operation and for adjusting the contact member 13 to the stone 14. The vertical shaft 20 is adjustable in the hole 21 machined in the vertical column 11. Machined on the shaft 20 is a flat surface 22 which permits the setscrew 23, threaded into the column 11, to hold the shaft 20 in the adjusted position. The setscrew is provided with a butterfly head to facilitate the operation. This type of setscrew is used throughout the machine. Located in the hole 21 is a spring 24 held normally under compression by the shaft 20 for forcing the shaft 20 upwardly when the setscrew 23 is released. By this construction the contact 13 and the contact frame 15 can be adjusted in proper relation to the grindstone 14. That is, when the shaft is free to move upwardly by the action of the spring 24 the operator can adjust the head 19 until the contact 13 is flat against the stone 14 when the grinding operation takes place. If the contact is uneven so that it will not lay flat against the stone a new contact can be used temporarily for adjustment and then removed and the defective contact can be reset for the operation.

When the contact frame 15 is placed in position on the shaft 16 it is locked by the cam plate 25 entering the slot 26 cut in the shaft 16. The cam plate 25 is then locked by the setscrew 27. The numeral 28 indicates a small hole for allowing another size shaft to be used for different contact frames.

The grindstone 14 can be adjusted and leveled to the contact member 13 by novel devices as shown in Figure 6. The stone 14 is supported in a frame 29 which in turn is supported by the column 12. The stone 14 is held in position between the wall 30 and the upwardly extending projections 31 and 32 forming a part of the frame 29. The stone is padded with cloth material so the pressure will not break the stone. After the stone is placed in position it is held rigidly by a setscrew 33. The surface 34 is slanting in relation to the frame 29 and the stone rests partly on the surface and partly on the adjustable screw 35. The end of the stone resting on the surface 34 is held by a clamp 36 which is rigidly secured in position to the frame 29 by the setscrew 37. The setscrew 35 is threaded into the boss formed integral with the frame 29 and to adjust the stone the setscrew is turned downwardly allowing the

spring 38 to press against the stone and force it upwardly allowing sufficient play for the stone to be adjusted manually. When the stone is adjusted it is securely fastened by the setscrew 33 at which time the screw 35 is moved upwardly under the stone to provide a rigid support.

The stone can be adjusted to different lengths of contact frame by turning the setscrew 39, which is threaded into the frame 29 and extends through the slot 40. The slot allows for horizontal adjustment by hand in one direction and the spring 42 in the opposite direction. That is, the frame can be adjusted by unfastening the setscrew 39 and by turning the setscrew 41 it will force the frame inwardly to change the position of the stone in relation to the contact member. To adjust the frame in the opposite direction the screw is turned in the relative direction and the spring 42 forces the frame outwardly in accordance with the movement of the setscrew. The setscrew 39 is reset and the frame is held rigidly in the operating position. In operation the contact member and the frames of various sizes can be placed in the machine for grinding the contact member 13 on the stone 14 by a swinging movement. The contact frame 15 is free to swing on the shaft 16 and can be taken out or placed in position at the will of the operator by removing the cam lock 25 from the slot 26, or vice versa. The operator then turns the setscrew 23 away from the shaft 20 which allows the spring 14 to force it upwardly in position to adjust the contact 13 to be ground on the stone 14. The adjustment is made by the spring 24 in one direction and by hand in the opposite direction by locating the swinging head 19 in the proper position.

The grindstone 14 can be adjusted or leveled to the surface of the contact 13 by placing the stone under the clamp 36 on the surface 34 which is inclined to allow the stone to be adjusted from the opposite end by the spring 38 in one direction and by hand in the opposite direction. After the stone is adjusted it is supported by the setscrew 35 and clamped rigidly in position by the setscrew 33.

The stone 14 and the frame 29 can be adjusted horizontally to allow for different sizes of contact frames. The frame 29 is held in position by the setscrews 39 and 41 by relieving the pressure of the setscrews the frame can be adjusted by the spring 42 in one direction and by hand in the opposite direction within the length of the slot 40. The operations of the machine allow certain adjustments by springs in one direction and by hand in the opposite direction which permits accurate adjustment because the operator can concentrate on his adjusting and the spring and hand will determine the movement without detracting his attention from the member to be adjusted.

What I claim as new and desire to secure by Letters Patent of the United States is:

1. A grinding machine having a base and column support integral with the base for the member to be ground, a column support integral with the base for the grindstone, said column support having a hole therein, a shaft in the hole, a swinging head for supporting the member to be ground, a spring in the hole in the column under the shaft for adjusting the shaft in one direction and free to be manually operated in the opposite direction, a set screw for holding the shaft in position after it is adjusted.

2. A grinding machine having a base, a column, integral with the base for supporting the member to be ground, a second column integral with the base, a frame supported by the second column, abutment surfaces formed on the frame, an inclined surface formed in the frame for supporting the stone at one end, a spring for adjusting the stone in one direction and free to be manually adjusted in the opposite direction, an adjustable setscrew concentric with the spring for supporting the grindstone after it is adjusted, a setscrew threaded into the frame for holding the grindstone rigidly in position against the abutments after it has been adjusted.

3. A grinding machine having a base, a column integral with the base for supporting the member to be ground, a second column integral with the base, a frame supported by the second column, abutment surfaces formed on the frame, an inclined surface formed in the frame for supporting the stone at one end, a spring for adjusting the stone in one direction and free to be manually adjusted in the opposite direction, an adjustable setscrew concentric with the spring for supporting the grindstone after it is adjusted, a setscrew threaded into the frame for holding the grindstone rigidly in position against the abutments after it has been adjusted, and means for horizontally adjusting the frame and stone in relation to the member to be ground.

4. A grinding machine having a base, a column integral with the base for supporting the member to be ground, a second column integral with the base, a frame supported by the second column, abutment surfaces formed on the frame, an inclined surface is formed in the frame for supporting the stone at one end, a spring for adjusting the stone in one direction and free to be manually adjusted in the opposite direction, an adjustable setscrew concentric with the spring for supporting the grindstone after it is adjusted, a setscrew threaded into the frame for holding the grindstone rigidly in position against the abutments after it has been adjusted, a projection integral with the frame, a slot in the projection, a setscrew threaded into the column structure to allow the frame to be adjusted horizontally, a downwardly extended projection integral with the frame, a setscrew extending loosely through a hole in the projection and threaded into the column structure for adjusting the frame horizontally in one direction, a spring concentric with the setscrew abutting against the column structure and the projection on the frame for adjusting the frame in the opposite direction.

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