



of each when assembled. The crank pin engages a hole in the slide bar, which in turn fits in the keyway of the clamp. The face of the eccentric disk as well as the face of the clamp should be polished to provide a smooth-rubbing surface. To produce a quiet-running unit, the eccentric must be counterbalanced as shown in Fig. 9. This is merely a turned piece which is located directly opposite the crank pin.

It is important that the chuck shaft be set exactly at right angles to the eccentric. To do this, first the crankshaft and disk are installed. Then, with the rear bell of the motor casing removed, the chuck shaft and bearings are set in position. After that you engage the crank pin in the clamp, fasten the upper chuck-shaft bearing to the casing with machine screws and finally braze the bearings as in Fig. 2. At the bottom of the eccentric stroke, the chuck should

come about $\frac{1}{8}$ in. above the top of the upper bearing.

Fig. 4 details the construction of a simple, caster-fitted stand on which the machine can be mounted and belted to a motor set below. The circular machine table is supported by two adjustable

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