

HOLDING WORK ON FACE-PLATES AND IN CHUCKS.

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Every machine shop should have appliances to do special work with, if it makes any pretence of being modern. All modern shops do a variety of work outside the product for market, either in repairs or tools, so good appliances pay everywhere.

In fine shops where watch tools are made, they use a face-plate having principles like that in the accompanying figure. I have made the sketch different in some particulars from the face-plates in the shops named, but I do this to apply it to heavier work, rather than to improve it.

The stock A, is made to be screwed on the spindle of the lathe in the ordinary way. The eccentric plate B, is let into the stock A, and secured at any required position by the bolts D and nuts E. The work-plate C, comes through the eccentric plate B, and when such plate B, is secured by its bolts, it also fixes the work-plate C, to the position it then occupies.

The center G, of the work-plate C, is, in the sketch, the center of the stock also; and when the eccentric plate B, occupies the position there shown, this center will be true with the spindle that the whole device may be mounted upon.

When the plate B, is turned to a new position within the stock A, the center G, will become eccentric, and some other point on the plate C, will be concentric to the spindle. Then, again, turning the plate C, in its bearing will bring other points opposite, and thus by adjusting these two plates, every point on the work-plate C, may be brought in line with the center of the spindle.

Work may be fastened against the plate C, by bolts having heads within the slots F, as usual; and when so fastened, any point on such work may be brought in line with the central position, and finished as required. Thus, a plate to have a number of holes that must be parallel to each other—for instance, a drill jig—may be finished at one sitting. The simplicity of this device will be apparent to every mechanic, and its value will be equally clear.

Ordinarily, the whole work in making this tool could be done on the lathe it is to be used on, except planing the slots F, and there are no hair-splitting kinks to be straightened out in any operation on it. The heads of the bolts D, should be counter-bored into the stock A, about one-quarter inch deep. Then the lips which overhang the plate B, should be cut under so that the cylindrical parts of these heads shall be partly removed; and while their lips overhang this plate, the walls below them will prevent the bolts from turning while the nuts are being tightened.

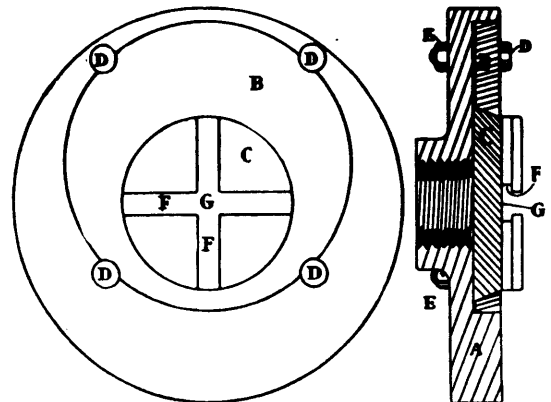
On this plate C, an angle-plate or a chuck may be attached, and thus extend the capacity greatly.

It frequently happens that it is necessary to attach pieces to a lathe face-plate that cannot, for one reason or another, be either held by the edges in a chuck or by clamps on its outer face. Such a piece as a thin disk of brass, which must be finished on the periphery and on a face at one operation, would be in point.

If the operation to be made is a light one, and the piece be not of too great weight in comparison to the

surface to lie against the face-plate, this method will suffice:—To the face-plate of the lathe, and to the surface of the piece that is to be fastened to it, apply a coat of ordinary shellac varnish, such as pattern-makers use. If this varnish be very thin, let one coat dry, and apply another one over it, on both pieces. At once, after the second coat is on the two faces, set the varnish on fire and let it burn out. This will burn the alcohol out of the varnish and heat the gum to a sticky consistency. It will also heat the face-plate and the piece to be attached to it, a trifle. At the moment the flame vanishes from the varnish, carefully place the piece on the face-plate in the exact place desired, and press it on tightly with the tail stock spindle. Ordinarily it is requisite to put a plate, of a size to cover the piece, between it and the spindle, in the tail stock, to obtain an even pressure.

The person who has not tried this method of fastening, will be surprised at the strength of this joint. At the same time, if care be not taken to get everything just right, the joint may be a very poor one. Like all else, if it be done well, it will be good; but, *vice versa*.



This method of attachment is useful in a thousand places besides the one set forth, and the places where it can be of benefit will be understood by any one who needs to use it. I may say, however, that pattern-makers will find this a reliable way to change and mend patterns in a hurry. They must be careful to not scorch the edges of the wood in the burning operation. If pattern-makers will varnish a joint, allow it to become dry, and then heat both pieces before a fire until they become sticky, a good joint will be secured. Yet shellac is not as strong as glue, and it is only recommended where haste is the chief element in a job.

Where a strong joint must be made between a piece and the lathe, and where the piece is not of a character to be either bolted or clamped, this method is recommended:—Take a false plate of parallel thickness, and of a size larger than the piece to be operated—great enough to be clamped to the face plate of the lathe without interfering with the work. Cut a piece of tinfoil as large as the back of the piece to be attached; wet the foil thoroughly, and also the back of the piece as well as the plate, in strong ammonia; place them in the positions desired, the one above the other, the foil between and the piece on