July 31, 1934. H. D. SNYDER 1,968,322

PUNCH

Filed March 6, 1934

Fig. 1.

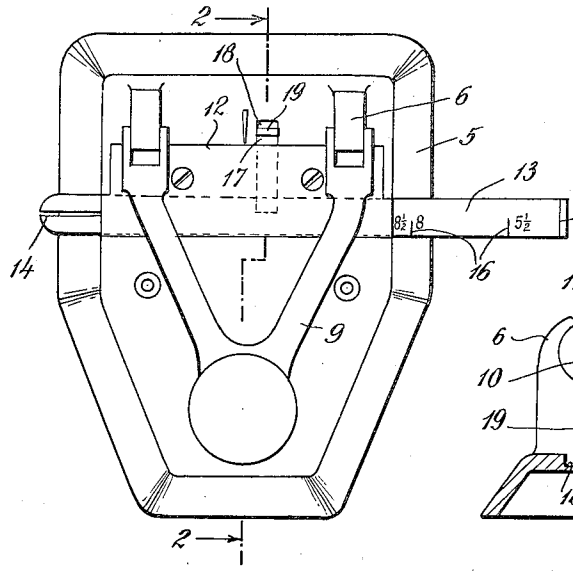


Fig. 2.

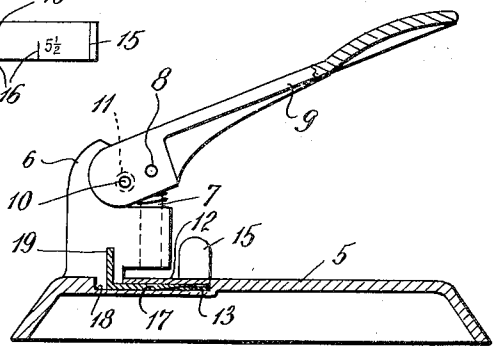


Fig. 4.

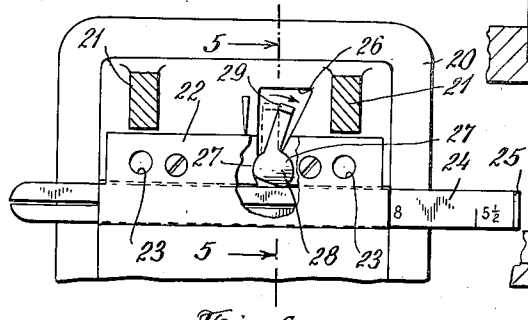


Fig. 3.

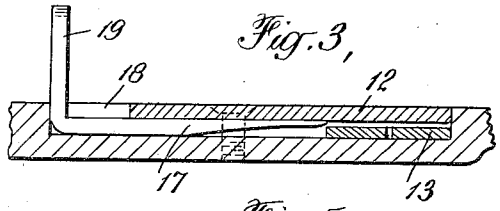


Fig. 5.

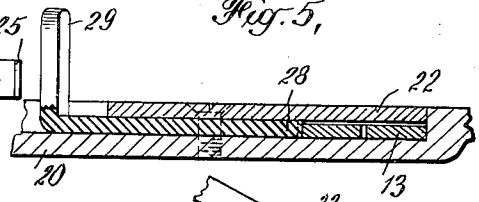


Fig. 6.

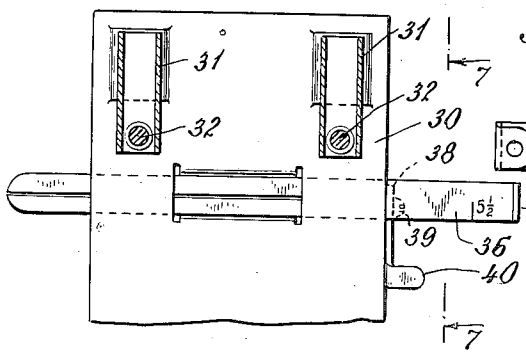
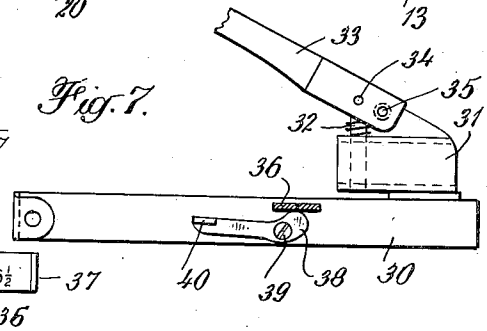


Fig. 7.



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1,968,322

PUNCH

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Application March 6, 1934, Serial No. 714,232

10 Claims. (Cl. 164—59)

This invention relates to punches of the type used to perforate sheets of paper and the like for binding and other purposes, and particularly to locking devices adapted to secure a gauge bar in predetermined and fixed position with reference to the punch elements.

In punches of the kind hereinafter more fully described, it is customary to provide a gauge bar which is movable transversely of the base of the punch and adapted to provide a stop for the edge of the sheet to be punched. Thus the holes in successive sheets may be spaced uniformly from the edges of the sheets. The gauge may be adjusted when necessary to accommodate sheets of varying sizes.

It is the object of the present invention to provide simple and effective means for locking the gauge bar in the desired position so that it will not be moved accidentally during the punching of a multiplicity of sheets, thereby preventing the punching of holes in other than the desired positions.

Other objects and advantages of the invention will be apparent as it is better understood by reference to the following specification and accompanying drawing, in which

Fig. 1 is a plan view of a punch embodying the invention;

Fig. 2 is a section on the line 2—2 of Fig. 1;

Fig. 3 is an enlarged sectional view of a portion of the punch base and locking device, as shown in Figs. 1 and 2;

Fig. 4 is a fragmentary plan view partially in section illustrating a modified form of the locking device;

Fig. 5 is an enlarged sectional view on the line 5—5 of Fig. 4;

Fig. 6 is a fragmentary plan view partially in section illustrating another form of the locking device; and

Fig. 7 is a side elevation of the punch as shown in Fig. 6.

In carrying out the invention, a wedging device is provided which is adapted to be moved into engagement with the gauge bar extending transversely of the base of the punch. The wedging device may vary in form. Thus, it may be a simple wedge supported suitably in the base and adapted to be moved into engagement with the gauge bar. Alternatively, the wedging device may be pivoted, taking the form of a cam or eccentric which, when turned about its pivot, will engage and wedge the gauge bar. Thus, by a simple manual operation, the gauge bar may be locked in any desired position or released to permit readjustment to another position.

Referring to the drawing (Figs. 1 to 3 inclusive) 5 indicates a base of any suitable material having standards 6 which include guideways for punches 7 pivotally connected at 8 to an operating handle 9. The operating handle is provided with pins 10 which are mounted in suitable openings 11 in the standards 6, the openings 11 being somewhat larger than the pins to permit free movement of the punches 7 in their guideways. A punch plate 12 is secured to the base 5 and is provided with suitable openings beneath the punches so that sheets which are slipped under the punches may be perforated by depressing the handle 9.

A gauge bar 13, preferably split at 14 and having an upturned end 15, is slidably supported in the base 5 beneath the plate 12. It may be provided with suitable indicia 16 indicating the spacing of the end 15 from the punches 7. In using the device, the gauge bar 13 may be shifted transversely of the base, thereby affording a stop against which the edge of the sheet rests as it is introduced beneath the punches. The distance of the perforations from the edge of the sheet is thus fixed. The split gauge bar ensures sufficient friction so that the gauge bar does not slide too easily in the base. Nevertheless the gauge bar may be displaced by force applied to the upturned end 15.

To avoid such displacement, the present invention provides a wedge member 17 slidably mounted in a recess 18 in the base. An upturned end 19 permits manual operation of the wedge, which may be moved from the position indicated in Fig. 3 to that indicated in Figs. 1 and 2, in which the free end is interposed between the plate 12 and the gauge bar 13, thereby locking the gauge bar in the adjusted position. By releasing the wedge, the gauge bar is readily released.

In Figs. 4 and 5, I have illustrated another form of the invention in which the base 20 is provided with standards 21 similar to the standards 6 and a punch plate 22 having openings 23 similar to the punch plate 12. A gauge bar 24 with an upturned end 25 is slidably mounted in the base beneath the punch plate. A recess 26 in the base is formed preferably with rounded edges 27 to receive a wedge member 28 in the form of a cam or eccentric with an operating handle 29. By moving the handle 29 from the position indicated in dotted lines in Fig. 4 to the position indicated in full lines, the wedging member engages the gauge bar 24 and locks it in adjusted position.

In Figs. 6 and 7, a base 30 is provided with standards 31 which may be of pressed metal instead of the solid construction illustrated in Figs. 1 and 4. Guideways are provided for punches 32 which are actuated by the handle 33 pivoted at 34 to the punches and supported by pins 35 in the standards 31.

A gauge bar 36 with an upwardly directed end 37 is slidably mounted in the base 30. To lock the gauge bar in any desired position, a wedging member in the form of a cam or eccentric 38 is pivoted by means of a screw 39 at the side of the base and is adapted to engage the under side of the gauge bar 36. An operating handle 40 permits movement of the wedging member to lock or release the gauge bar.

The several embodiments of the invention herein illustrated and described indicate the principle and mode of operation of the locking device or gauge bars as hereinafter claimed. These locking devices are simple and effective, and enable the operator to adjust and lock the gauge bar in any desired position. When the gauge bar is thus held, it will not be displaced accidentally during the punching of a multiplicity of sheets. Consequently, all of the punched holes will register accurately, and binding of the sheets is facilitated.

Various changes may be made in the form and arrangement of the various parts without departing from the invention or sacrificing any of the advantages thereof.

I claim:

1. In a punch, a base, a gauge bar movable transversely thereof and manually operable wedging means supported on the base at one side of the gauge bar and adapted to be moved into engagement with the gauge bar to secure it frictionally in adjusted position.

2. In a punch, a base, a gauge bar movable transversely thereof and manually operable wedging means slidably supported on the base at one side of the gauge bar and adapted to be moved into engagement with the gauge bar to secure it frictionally in adjusted position.

3. In a punch, a base, a gauge bar movable transversely thereof and manually operable wedging means pivotally supported on the base at one side of the gauge bar and adapted to be moved into engagement with the gauge bar to secure it frictionally in adjusted position.

4. In a punch, a base, a punch plate, a gauge bar movable transversely thereof and manually operable wedging means supported on the base at one side of the gauge bar and adapted to be moved into engagement with the gauge bar to secure it frictionally in adjusted position.

5. In a punch, a base, a punch plate, a gauge bar movable transversely thereof and manually operable wedging means slidably supported on the base at one side of the gauge bar and adapted to be moved into engagement with the gauge bar to secure it frictionally in adjusted position.

6. In a punch, a base, a punch plate, a gauge bar movable transversely thereof and manually operable wedging means pivotally supported on the base at one side of the gauge bar and adapted to be moved into engagement with the gauge bar to secure it frictionally in adjusted position.

7. In a punch, a base having a recess, a punch plate partially covering the recess, a gauge bar movable transversely of the base and manually operable wedging means supported in the recess and adapted to be moved into engagement with the gauge bar to secure it in adjusted position.

8. In a punch, a base having a recess, a punch plate partially covering the recess, a gauge bar movable transversely of the base and manually operable wedging means slidably supported in the recess and adapted to be moved into engagement with the gauge bar to secure it in adjusted position.

9. In a punch, a base having a recess, a punch plate partially covering the recess, a gauge bar movable transversely of the base and manually operable wedging means pivotally supported in the recess and adapted to be moved into engagement with the gauge bar to secure it in adjusted position.

10. In a punch, a base, a split gauge bar movable transversely thereof and manually operable wedging means supported on the base and adapted to be moved into engagement with the gauge bar to secure it in adjusted position.

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