F. H. RYAN.

CENTER PUNCH.

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1,313,335.

Patented Aug. 19, 1919.

Fig. 1.

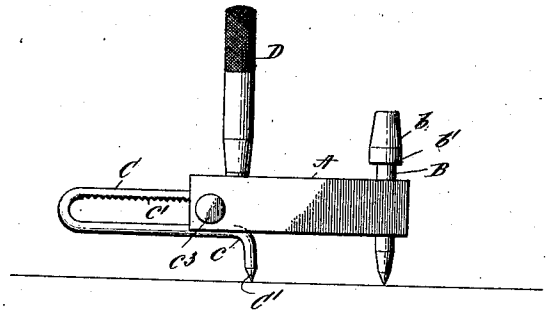


Fig. 3.

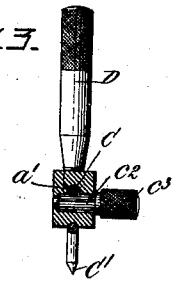


Fig. 2.

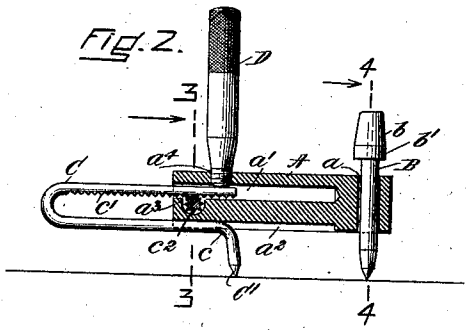


Fig. 4.

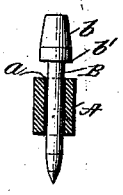
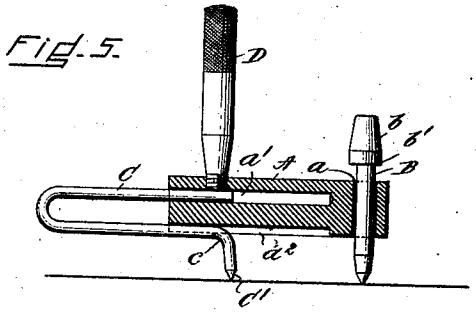


Fig. 5.



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UNITED STATES PATENT OFFICE.

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CENTER-PUNCH.

1,313,335. Specification of Letters Patent. Patented Aug. 19, 1919.

Application filed March 21, 1916. Serial No. 85,711.

To all whom it may concern:

Be it known that I, FREDERICK H. RYAN, a subject of George V, King of England, and a resident of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in Center-Punches, of which the following is a specification.

My invention relates to an instrument for gaging, or what is commonly known as a center punch. The implement is particularly designed for use by machinists for accurately marking the center of a hole or holes equally spaced, to be drilled in a piece of steel or other material. Most implements of this type tend to be rather cumbersome in view of the various means of adjustment of the punch and the spacing pin. My invention presents a simple form of construction and is also featured by the simplicity of its operation.

The invention will be best understood from the drawings in which it is shown in its preferred form.

Figure 1 is a front elevation of the device.

Fig. 2 is a view in longitudinal section.

Fig. 3 is a section on the line 3—3 of Fig. 2.

Fig. 4 is a section on the line 4—4 of Fig. 2.

Fig. 5 is a view partly in longitudinal section showing a variation of the device.

A is a bar having a vertical bore a near one end, in which the punch B is loosely mounted. As the punch B is free to move in or out of the bore a it thus adjusts itself to the level of the work. In order to prevent the punch from dropping down through the bore a the punch B has a head b with a shoulder b^1 which rests against the bar when the punch drops. In the opposite end of the bar A is a longitudinal bore a^1 extending into the bar toward the end where the punch is mounted. Within this bore a^1 fits the rod C. This rod is U-shaped as shown in the drawings, the under leg being parallel to the upper leg and curving as at c to extend downward and form the spacing pin C^1. The bar A is grooved on its under side as at a^2 and in this groove the lower leg of the rod C slides and is thus prevented by the walls of this groove from bending and thus twisting the rack or bringing the spacing pin out of alinement with respect to the punch B. For moving and adjusting the spacing pin with respect to the punch, I prefer to make use of the following device: The upper leg of the rod C is adapted to form a rack c^1 on its under side. Engaging this rack is the pinion c^2 mounted in the bore a^3 in the side of the bar A. This pinion has any proper handle c^3 for rotating it when desired. When it is desired to set the punch at a certain distance with respect to the spacing pin, the pinion c^2 is turned, thus moving the rod C in or out of the bore c^1 until the pin C^1 is in the position intended. I prefer to provide additional means for holding the rod C in its proper position, and for this purpose I provide the set screw D which fits into an interior threaded bore a^4 in the top surface of the bar A. This screw D also serves as a handle by which the device is held during its operation.

In Fig. 5 is shown the device with the rack and pinion features removed, it being intended that the rod C be moved manually and then held against displacement by tightening the set screw D which impinges against it.

It is easily seen that this mode of operation is very simple, my idea being to eliminate as many contributory parts as possible in order to make an implement which will cost very little to construct. I do not mean to limit myself to the precise construction shown for various modifications may be employed and yet be within the scope of my invention.

What I claim is:—

1. A device of the kind described comprising a unitary member having a punch loosely mounted therein, a spacing member comprising a spacing pin parallel with said punch, its tip being adapted to rest on the surface of the work and said punch being adapted to engage and indent the same surface of the work, said spacing member adapted to slide in said unitary member toward and from said punch whereby the distance between said punch and said spacing member may be adjusted, and means for clamping said spacing member adapted to serve as a handle for said device.

2. A device of the kind described comprising a unitary member having a punch loosely mounted therein, a spacing member comprising a spacing pin parallel with said punch, its tip being adapted to rest on the surface of the work and said punch being

adapted to engage and indent the same surface of the work, said spacing member adapted to slide in said unitary member toward and from said punch whereby the distance between said punch and said spacing member may be adjusted, and means mounted in said unitary member to engage said spacing member and adapted to change the position of said spacing member with relation to said punch.

3. A device of the kind described comprising a unitary member having a punch loosely mounted therein and a spacing member comprising a spacing pin parallel with said punch and having a portion thereof at right angles thereto and adapted to slide longitudinally in said unitary member, whereby the distance between said punch and said spacing pin may be adjusted, and a set screw mounted in said unitary member to engage and clamp the spacing member and also to serve as a handle for said device.

4. In a device of the kind described, a bar, a punch loosely mounted at right angles therein, a spacing pin comprising a U-shaped rod adapted to slide longitudinally in said bar, and means mounted in said bar to shift the location of said punch and said pin with relation to each other.

5. In a device of the kind described, a bar, a punch loosely mounted therein, a U-shaped rod having one leg mounted to slide longitudinally within said bar, the other leg of said rod having a vertical extension to form a spacing pin, and means mounted in said bar to shift the location of said punch with relation to said pin, said bar being grooved whereby the walls of said groove will prevent the twisting of said rod.

6. In a device of the kind described, a bar, a punch loosely mounted therein, a U-shaped rod having one leg mounted to slide longitudinally in said bar, the other leg of said rod having a vertical extension to form a spacing pin, and means mounted in said bar to hold said rod against displacement, said bar being grooved whereby the walls of said groove will prevent the twisting of said rod.

7. In a device of the kind described, a bar, a punch loosely mounted at right angles therein, a spacing pin having a U-shaped extension one leg of which is mounted to slide within said bar, and means for shifting the location of said punch with relation to said pin comprising a rack formed on one leg of said U-shaped extension, and means mounted in said bar adapted to engage and move said extension and said pin.

8. In a device of the kind described, a bar, a punch loosely mounted therein, a U-shaped rod having one leg mounted to slide longitudinally in said bar, the other leg of said rod having a vertical extension to form a spacing pin, and means to shift the location of said punch with relation to said pin.

9. In a device of the kind described, a bar, a punch loosely mounted at right angles therein, a U-shaped rod having one leg mounted to slide longitudinally in said bar, the other leg of said rod having a vertical extension to form a spacing pin, means to shift the location of said punch with respect to said pin comprising coöperating means mounted on said rod and said bar whereby the position of said pin and said punch may be adjusted, and means to hold said rod in position after said pin is set in position.

10. In a device of the kind described, a bar, a punch loosely mounted therein, a U-shaped rod having one leg mounted to slide longitudinally in said bar, the other leg of said rod having a vertical extension to form a spacing pin, and means comprising a set screw adapted to impinge against said rod whereby said pin will be held against displacement.

FREDERICK H. RYAN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."