R. T. WILLIAMS.

HAND PRINTING-WHEEL.

No. 183,735. Patented Oct. 24, 1876.

Fig. 1.

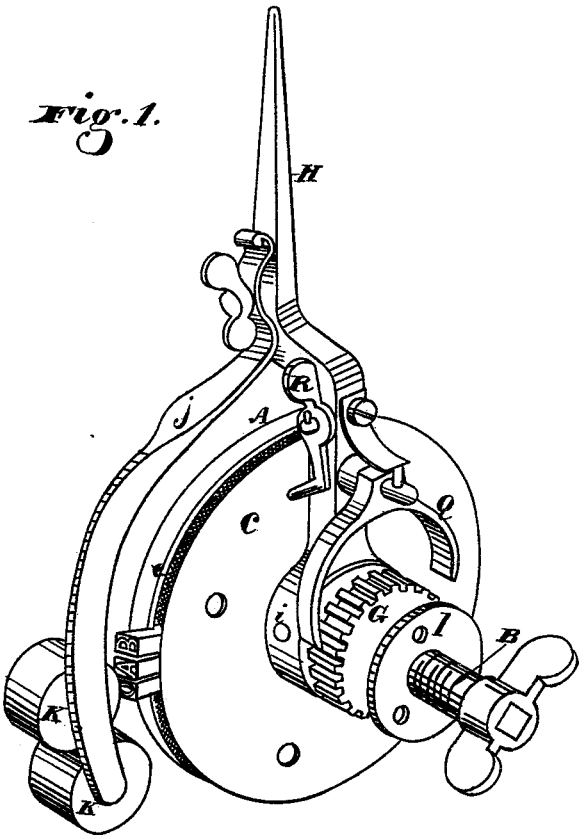


Fig. 3.

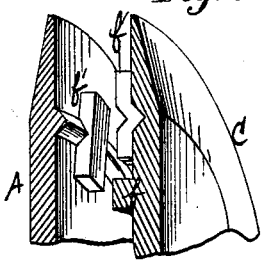
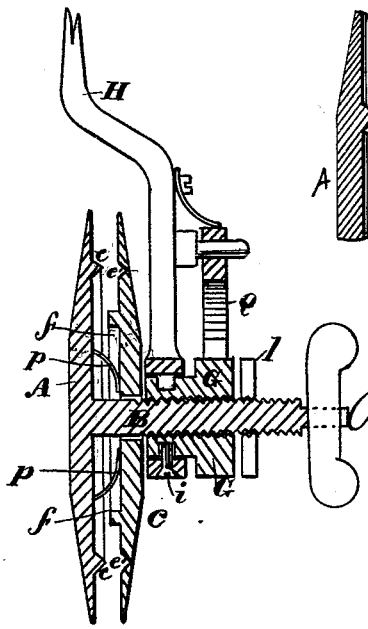


Fig. 2.



Witnesses

Geo. H. Strong.

Jno. L. Boone

Inventor

Robt. T. Williams

by Dewey & Co

Attys

UNITED STATES PATENT OFFICE.

ROBERT T. WILLIAMS, OF VICTORIA, BRITISH COLUMBIA.

IMPROVEMENT IN HAND PRINTING-WHEELS.

Specification forming part of Letters Patent No. **183,735**, dated October 24, 1876; application filed July 28, 1876.

To all whom it may concern:

Be it known that I, ROBERT T. WILLIAMS, of Victoria, British Columbia, have invented an Improvement in Hand Printing-Wheels; and I do hereby declare the following description and accompanying drawings are sufficient to enable any person skilled in the art or science to which it most nearly appertains to make and use my said invention without further invention or experiment.

My invention relates to certain improvements in that class of hand printing-wheels in which the types are held between two circular plates or disks, so that they will project from its rim so as to print or make an impression when the wheel is moved over a suitable surface; and it consists in the improvements hereinafter specified and claimed.

In the accompanying drawings, Figure 1 is a perspective view of my printing-wheel; Fig. 2 is a section of the same. Fig. 3 is a detail, showing stops for type.

A is a circular plate or disk, from the center of which a shaft, B, projects on one side. This disk I call the permanent disk. C is another circular plate or disk, similar to A, which has a hole through its center, so that it can be slipped upon the shaft B close up against the disk A, and this I call the movable disk. The inside face of the disk A is plain, except that it is has a V-shaped ridge, marked *e*, at a short distance from its outer rim, which extends entirely around it, while the movable disk C has a V-shaped groove, *e'*, extending around it in a similar manner, directly opposite the V-shaped ridge. This movable disk has, also, a square-shouldered ridge, *f*, extending around its inner face a short distance inside of the V-shaped groove, against the outer edge of which the base of the types abut when they are set up between the disks. I also provide stops *f'* upon the inner faces of the heads, for the type to abut against when they are tightened up by the rotation of the disk A. The outer end of the shaft B is formed into a screw, and a nut, G, fits this screw, so that it can be turned up against the outside face of the movable disk. The outside face of the nut is made circular, and that half of it which is toward the outer end of the screw is toothed, while the inner half is plain and somewhat smaller than the toothed portion, and has a groove made around it, as shown.

The handle H has a ring formed on one end, which is large enough to pass over the plain portion of the nut. A screw, *i*, is then screwed through the ring and into the groove in the nut, so that the nut can rotate inside of the ring without danger of displacement. A bend is made in the shank of the handle across the edges of the disks, so as to bring the handle in the proper position, and a spring-arm, *j*, is secured to the shank at the second bend. This spring-arm has two detachable inking-rollers, K K, attached to its end, and it is so curved as to bring the rollers close to the face of the types when the disks are revolved. A set-nut, *l*, outside of the nut G, when turned close up against the nut G, prevents it from coming loose. By this means the two halves can be set at any distance apart and not move while rotating.

The types which I use in this machine are each beveled to the radius of the machine, and provided with a V-groove on one side corresponding with the V-ridge on the inside of the disk A, and a V-ridge on its opposite side which corresponds with the V-groove of the plate or disk C, so that the types can be placed between the disks with their bases resting upon the square shoulder of the ridge *f*, and when the disks are close together the V-ridges of the types will fit in the V-groove on one side, and the V groove of the type will fit over the V-ridge of the opposite disk, thus locking them in place when the disks are forced together by the nut G.

It will be noticed that I do not use radial grooves for the types to fit in, as in other machines of this class. I can therefore shift the types to or from each other, as desired, whereas this cannot be done when the radial grooves are used.

Upon the face of one of the heads is a gage or radial measure, by means of which the operator can at a glance tell how many type to set up to fill a given space, or by the aid of such measure space out the type to any required distance apart without placing quadrats between them.

Flat springs *p p* are secured to the inside face of the movable disk, so that when the nut

is withdrawn or unscrewed the springs will force the disks apart. Two or more parallel lines of types can be set up between these disks, and securely fastened together, the interlocking points of the types keeping them in place.

Q is a two-armed pawl, which is secured on a pin which projects from the shank of the handle, so that it will be opposite the toothed portion of the nut G. The arms of this pawl can be alternately engaged with the teeth on the nut, so as to stop its rotation when the disks are being screwed up or unscrewed. The nut will then be held stationary while the disks are revolved by hand, so as to turn the nut off by turning the screw. This is quite convenient for opening and closing the disks, but can be dispensed with, as it is not necessary.

R is a thumb-pawl, which engages with one or more holes in the outside face of the disk, so that the operator can stop the motion of the wheel and hold it in a fixed position, when he desires. This pawl also serves to hold the loose head so that the type can be secured in place by rotating the screw and permanent disk. The heads being adjustable to any required width apart, the device may be used as a book-binder's fillet, the rims of said heads being either grooved or plain.

This machine can be used for indexing books of any thickness; for printing visiting-cards, names on the outside and inside of books, as well as the backs of the same; for marking clothing, printing dates, and for various other purposes; but its chief value is in its especial adaptation for book-binder's use as a binder's type-holder for gold-lettering, a book-binder's "band-nippers" for forcing leather over and down the sides of bands on the backs of books, and as a binder's adjustable movable double roll or fillet for running gold lines on books, thus rendering the machine capable of various applications.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The stationary disk A, with its fixed screw-shaft B, and having the V-shaped ridge *e*, in combination with the movable disk C, with its corresponding V-shaped groove *e'* and square-shouldered ridge *f*, and the binding-nut G, substantially as and for the purposes described.

2. The type-holding disks A C, arranged to be clamped together by the nuts G and *e*, and having the springs *p p* secured between them, for the purpose specified, substantially as set forth.

3. The adjustable disks A C, adapted to be used without the type as a book-binder's fillet, substantially as above specified.

4. In combination with a printing-wheel having one fixed and one movable disk for clamping the types, the nut G, one half of which forms a bearing for the ring on the handle, and the two-armed pawl Q, substantially as and for the purposes specified.

5. The stops *f'* upon the inside opposite faces of the two clamping-heads for the types to abut against when being tightened up spirally, substantially as specified.

6. The thumb-pawl R, arranged upon the handle, in combination with the loose nut G, screw B, and disk A, substantially as and for the purpose set forth.

In witness whereof I have hereunto set my hand this 27th day of June, 1876.

ROBERT T. WILLIAMS.

Witnesses:

T. N. HIBBEN,

C. W. KAMMERER.