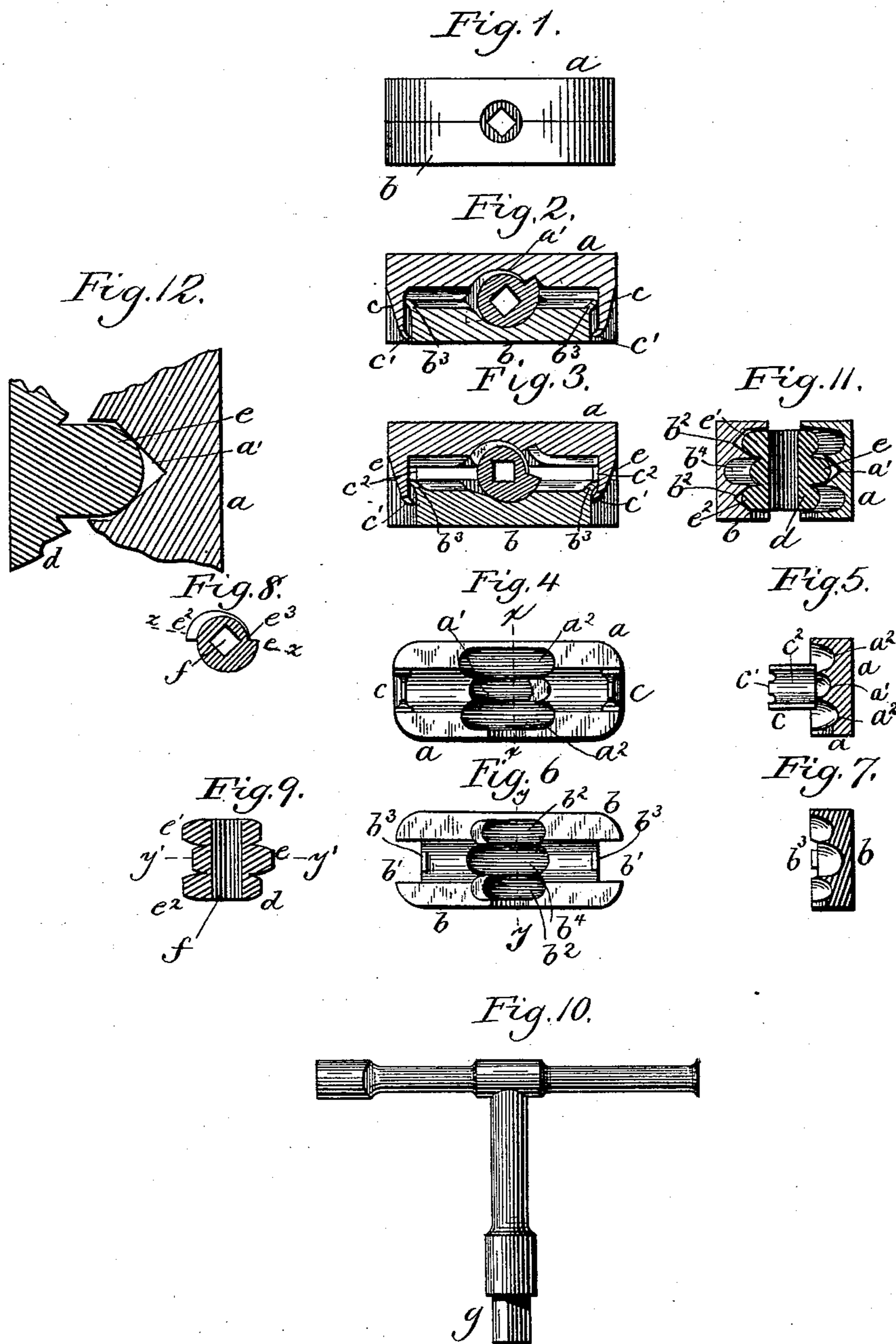


(No Model.)

W. WICKERSHAM.
PRINTER'S QUOIN.

No. 453,226.

Patented June 2, 1891.



Witnesses

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PRINTER'S QUOIN.

SPECIFICATION forming part of Letters Patent No. 453,226, dated June 2, 1891.

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To all whom it may concern:

Be it known that I, WILLIAM WICKERSHAM, a citizen of the United States, now residing in Worcester, in the county of Worcester and State of Massachusetts, have invented a new and useful Improvement in Printers' Quoins, as shown and explained in the following specification and drawings.

The quoin herein represented is not altogether new, as in my application for a patent on printers' quoins filed March 29, 1888, I showed a quoin with two outside blocks with narrow cavities in their adjacent sides adapted to receive a disk with one or more cams on its perimeter to expand the quoin by said disk being turned by a key. In this my present application I have the two outside blocks, but I have three cavities in the adjacent sides of each, and I have three disks placed side by side having only one cam on the edge of each. The cavities and the cams are constructed and adapted each to the other in such manner that the middle disk operates in the middle cavity of one of the blocks while the two outside disks operate in the two outside cavities of the other block in expanding the quoin, all of which will be more fully explained by reference to my drawings, in which—

Figure 1 shows the completed quoin.

Fig. 2 is a horizontal section in the middle of the completed quoin.

Fig. 3 is a horizontal section through the middle of the quoin when partly expanded.

Fig. 4 is the inside view of the block in which the middle disk operates in expanding the quoin.

Fig. 5 is a vertical and cross section of the block shown in Fig. 4, in the line *x*.

Fig. 6 is an inside view of the block in which the two outside disks operate in expanding the quoin.

Fig. 7 is a vertical and cross section in the middle of the block shown at Fig. 6 in the line *y*.

Fig. 8 is a horizontal section through the middle disk of the system of the three disks in the line *y y*.

Fig. 9 is a vertical section through the middle of the most elongated parts of the system of disks in the line *z z*.

Fig. 10 is the key.

a is the male block, having lugs at the ends

to secure it to the other block, as shown in Figs. 1 and 2.

b b is the female block, having spaces at its ends to receive the lugs of the block *a*.

c c are the two lugs which pass into the spaces *b' b'* at the ends of the block *b*.

a' a' are the cavities in the block *a*, in which the cam *e* on the edge of the middle disk operates in expanding the quoin.

a² a² show the deep cavities in the block *a*, in which the most extended parts *e' e²* of the cams of the outside disks swing round freely without touching.

b' b' are the two spaces at the ends of the block *b* for the lugs *c c* to pass into when the quoin is closed.

Fig. 11 is a vertical section through the middle of the quoin when fully expanded, showing the V-shaped cavity *a'* and the disk *e* in it; also showing the V-shaped cavities *b² b²* in the block *b* and their disks *e'* and *e²* in them in the act of expanding the quoin as they rest in their respective cavities.

Fig. 12 shows a vertical section of the cavity *a'* in the block *a* and the disk *e* in it on a large scale, so that the character of the V-shaped cavity *a'* and the cam *e* on the edge of the middle disk in the system *d* can be more readily seen, and also the manner in which the cam *e* rests in the cavity *a'* can be seen more clearly.

This construction and this method of locking a printer's form by a quoin having a system of three cams resting in three narrow V-shaped cavities, while it expands the quoin and locks up the form, gives a greater holding power than any in use, as all three of these cams while resting on diagonal surfaces have to slip backward in order to release the lock.

b² b² are the cavities in the block in which the two cams *e'* and *e²* on the edges of the two outside disks of the system *d* operate in expanding the quoin.

b³ b³ are two points bent outward into the spaces *b' b'*, and slide in and out in small grooves *c² c²* in the inner sides of the lugs *c c* as the quoin is expanding or contracting, so that when the triple disk *d* is placed in the triple cavity *a² a' a²* in the block *a*, and the lugs *c c* are placed in the spaces *b' b'*, and the points *c' c'* are bent inward, as shown in

Figs. 2 and 3, then the points $b^3 b^3$ and $c' c'$ prevent the two outside blocks from separating only far enough for the proper expansion of the quoin in locking the form, and the three parts—the triple disk d and the two blocks a and b —will be held together so as to require only one picking up and placing between the chase and the furniture in the form and the application of the key in the square hole f in the triple disk d , and turning the key to lock the form. Since the function of the quoin in locking the form and the space that the quoin occupies between the chase and the furniture are so universally known by printers, I deem it unnecessary to show in my drawings the form and positions of my quoin therein. I therefore limit my explanations mainly to the parts of my quoin which I deem to be new.

Fig. 9 is a system of disks with the parts of their cams of greatest elongation at opposite sides—that is, the most extended parts of the two outside cams at e' and e^2 and the most extended part of the middle cam at e on the opposite side, as shown at Fig. 9—and these two outside disks with their cams on their edges $e' e^2$ being adapted to operate in the cavities $b^2 b^2$ in the block b at the same time that the cam e on the edge of the middle disk operates in the middle cavity a' in the block a , all adapted to each other and operating together to expand the quoin when the said system of disks d are turned by the square part of the key g , Fig. 10. By this system of disks d and this method of arrangement of the cams on their edges, as shown at e and $e' e^2$, and the adaptation of the cavities a' and $b^2 b^2$ to receive them there is a constant bearing of these said cams in their respective cavities in the blocks a and b as the quoin expands; also, by this construction and arrangement another advantage is gained—that is, the angular grade of the cams or operative edges of the said disks is less by one-half in expanding the quoin to the same amount than when two cams are used on the edges of one disk, and this less angular grade on the operative edges of said disks will give greater security to the lock as the less angular grade

there is either on the curved edges of these disks or on a wedge the less tendency there is for them to slip backward, so that while the traction will be the same with a given pressure the tendency to slip back will be only one-half. I have the angular grade of curve on the edges of these disks $e e' e^2$ as nearly equal on all parts of it as can well be made from e to e^3 , as shown in the section of the middle disk in Fig. 3, and that will make the traction or holding power of the quoin equal at all points of the expansion of the quoin as it expands in locking the form. I make the three cavities a^2 and a^2 and b^4 deep enough so that the large parts of the cams $e, e',$ and e^2 can swing round in them without touching, while the same cams are all the time bearing in the cavities a' and $b^2 b^2$ as the quoin expands.

Having explained my invention, what I claim as new is—

1. In a printer's quoin, the combination of three disks in a system d with one cam on the periphery of each, having the most elongated part of the middle cam on one side and the most elongated parts of the two outside cams on the other side of the axis of motion as an operative instrument for expanding the quoin, substantially as described, and for the purpose set forth.

2. In a printer's quoin, the combination of a system of three disks, each disk having one cam on its periphery, the middle disk having its most elongated part on one side, while the two outside disks have their most elongated parts on the other side of its axis of motion, the middle disk being adapted to act in the middle cavity of one of the blocks a , while the cams on the edges of the two outside said disks operate in the two outside cavities $b^2 b^2$ in the block b in expanding the quoin, the two blocks a and b constructed as described, as and for the purpose set forth.

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Witnesses:

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