

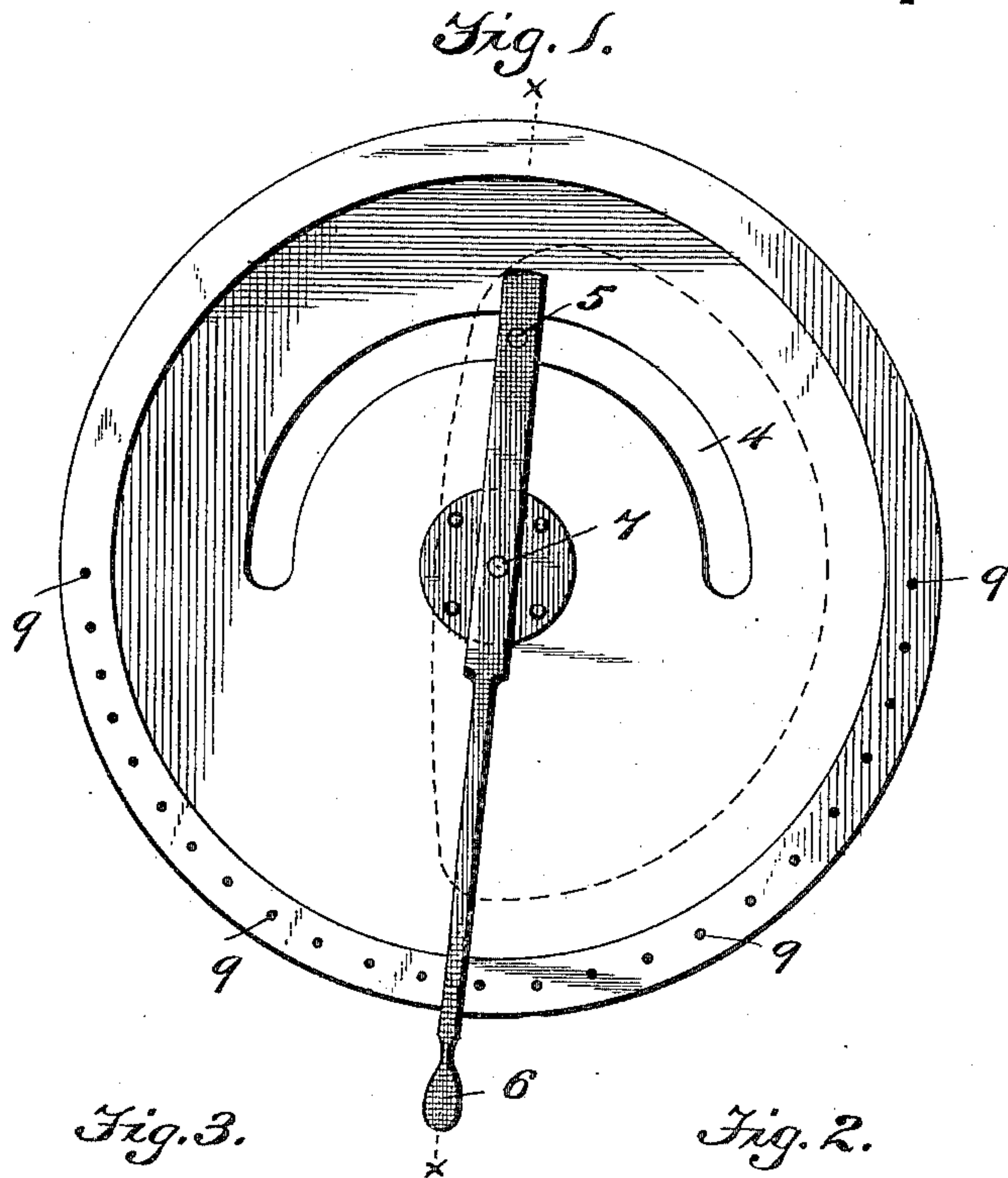
(No Model.)

H. S. BANTA.

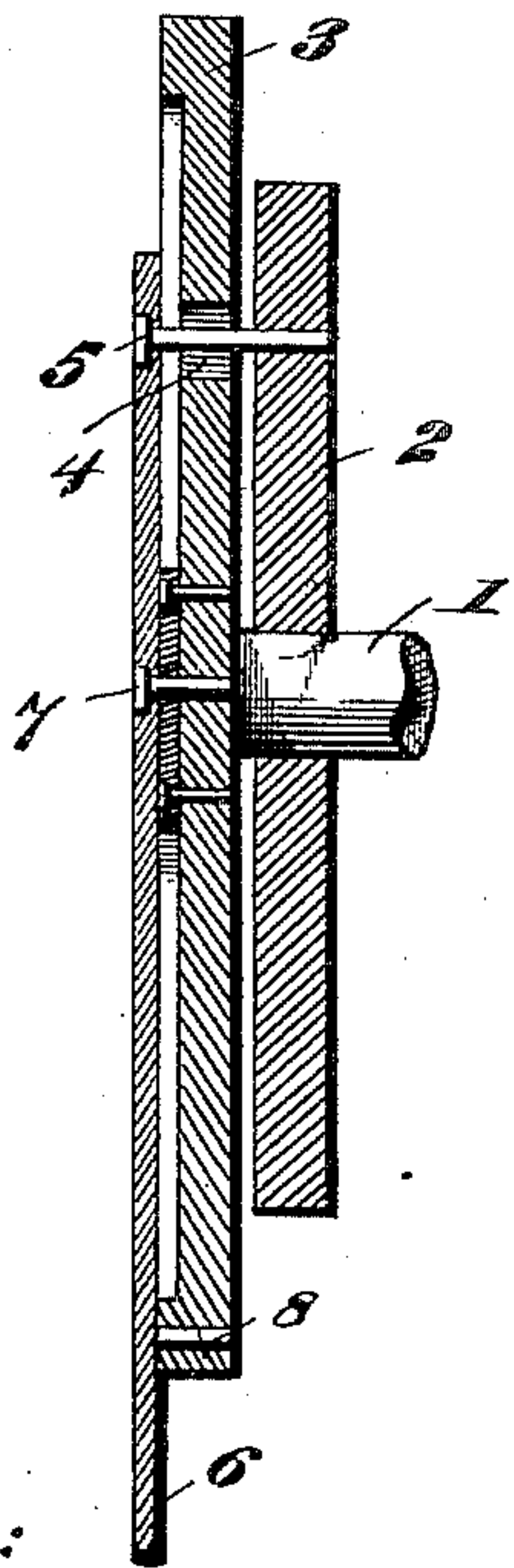
DEVICE FOR ADJUSTING AND SECURING CAMS.

No. 411,275.

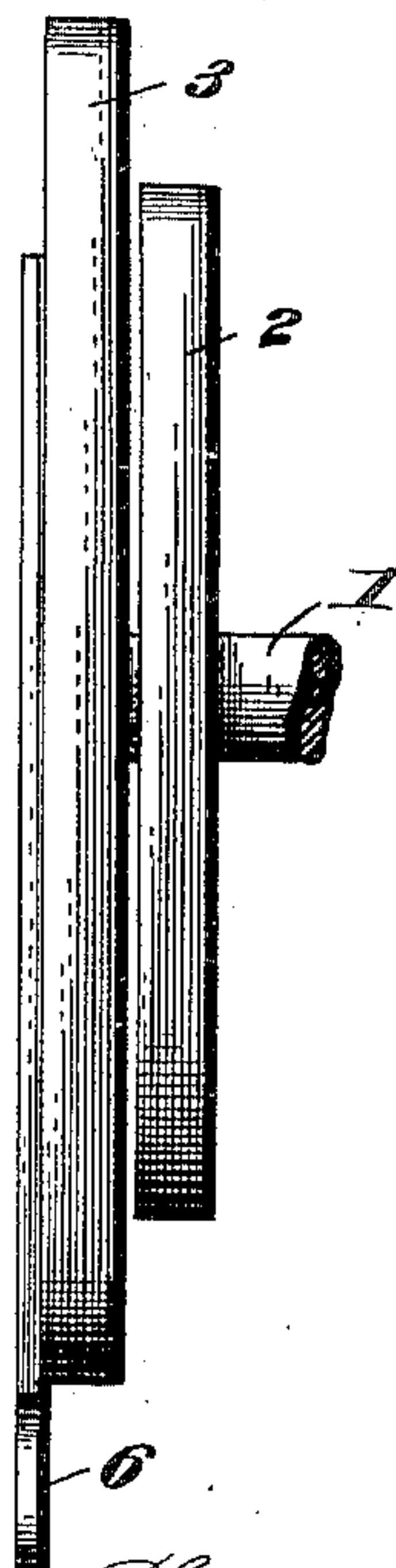
Patented Sept. 17, 1889.



*Fig. 3.*



*Fig. 2.*



Witnesses:

*E. S. Banta*  
*H. S. Banta*

Inventor:

*Harry S. Banta*  
By *Edson Bros.*  
Attorney.



# UNITED STATES PATENT OFFICE.

HARRY S. BANTA, OF KANSAS CITY, MISSOURI.

## DEVICE FOR ADJUSTING AND SECURING CAMS.

SPECIFICATION forming part of Letters Patent No. 411,275, dated September 17, 1889.

Application filed February 9, 1889. Serial No. 299,232. (No model.)

*To all whom it may concern:*

Be it known that I, HARRY S. BANTA, a citizen of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Devices for Adjusting and Securing Cams of Printing-Presses; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to devices for adjusting the fly-cam of a printing-press; and it has for its object to provide means for easily and quickly adjusting the cam in either direction—backward or forward—while the press is in motion or at rest and without the use of a wrench or other contrivance, which requires time and labor.

With these ends in view my invention contemplates the combination of a cam loosely mounted on its shaft and a lever connected to the cam and adapted to be fixed by suitable devices on the cam-shaft to cause the cam and lever to rotate with said shaft. By mounting the cam on the shaft so that it can be turned thereon either backward or forward to change the relative position or angle of the cam with reference to the shaft and providing the lever, the latter and the cam can be more easily and expeditiously adjusted than is possible when the cam is secured by a set-screw or other well-known mechanical expedient. In connection with the loosely-mounted cam and lever I employ a rotary plate or disk, which is fixed to the cam-shaft in close juxtaposition to the cam thereon and has a series of apertures and a segmental slot, and through this slot of said rotary disk or plate passes a pin or bolt which connects one end of the adjusting-lever to the cam, while the other end of the lever is secured to the disk by a removable pin or bolt, which fits in one of the series of perforations in the disk.

To enable others to understand my invention, I will proceed to describe my preferred embodiment thereof in connection with the accompanying drawings, in which—

Figure 1 is a side elevation showing the cam-shaft in cross-section. Fig. 2 is an edge

view with the shaft in side elevation, and Fig. 3 is a sectional view on the line  $xx$  of Fig. 1.

Like numerals of reference denote corresponding parts in the several figures of the drawings, referring to which—

1 designates the cam-shaft of an ordinary printing-press, and 2 is the ordinary fly-cam which is fitted snugly and closely on said shaft to prevent any lateral or sidewise play of the cam, while it is capable of turning axially on the shaft to change the position or angle of the cam on the shaft. At one side of this cam is arranged a flat disk or plate 3, which is fitted on and secured rigidly to the shaft in close juxtaposition to the cam. This plate or disk rotates or turns with the shaft, and it has a segmental or an arc-shaped slot 4 formed therein, above, below, or at either side of the center thereof, according to the position of the cam and the direction in which it is desired to adjust it. Through the segmental slot passes a bolt or pin 5, which is secured to the adjustable cam in the lateral face thereof adjoining the rotary disk and at a point some distance beyond the shaft 1 at or near the edge of the cam, as shown, and on this pin or bolt is pivoted one end of an adjusting-lever 6, which is arranged laterally against the rotary disk 3, close against the side thereof. This lever is fulcrumed at an intermediate point of its length on the rotary disk, as at 7, and it is made of yielding or elastic metal, so as to normally press or bear at its free end against the lateral face of the rotary disk, so that a pin 8, which is fixed to said free end of the lever, is normally forced into one of a series of apertures 9, formed in the exposed face of the rotary disk, said apertures being arranged in the arc or segment of a circle with the fulcrum of the lever as a center; but I would have it understood that I do not confine myself to this particular means for rigidly connecting the free end of the adjusting-lever to the rotary disk, nor to the precise details of construction and arrangement of parts herein shown and described as an embodiment of my invention, as I am aware that changes therein can be made without departing from the spirit of my invention.

The operation of my device is obvious from



the foregoing description, taken in connection with the drawings. The plate or disk rotates with the cam-shaft, and the cam is connected to the disk so as to rotate therewith and the shaft through and by means of the lever. To adjust or change the relative position of the cam to the shaft, it is only necessary to disengage the free end of the adjusting-lever from engagement with the rotary disk, which can be easily accomplished by merely moving the outer end thereof laterally of the disk to withdraw the locking-pin from engagement with the aperture in said disk and then change or shift the lever in either direction to the right or left, according to the position which it is desired to move the cam to. As the lever is fulcrumed at an intermediate point of its length and connected to the cam at one side of its center, and the cam is loosely fitted so as to turn axially on the shaft, any movement of the lever on its fulcrum will move the cam a corresponding distance and thus adjust the latter to the desired position.

In the practical manipulation of a printing-press it is necessary to adjust the fly-cam according to the size of the sheet of paper that is to be printed, which in the ordinary press in use requires the use of a wrench to adjust the set-screw, and involves time and labor. With my device the cam can be expeditiously adjusted with great ease, either while the press is in motion or at rest, and as the lever is made of elastic metal it will hold itself in engagement with the disk.

Another advantage is, the fly-cam when on the back center can be easily and quickly let down by simply turning the lever to the farther end of the slot, thereby enabling the pressman to have ready access to the form without the trouble of taking the fly-cam off the press, which of course takes a good deal of time. To adjust the parts in position for operation again, it is only necessary to return the lever to its proper position.

I am aware that changes in the form and

proportion of parts can be made without departing from the spirit or sacrificing the advantages of my invention.

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

1. The combination of an adjustable cam fitted on a shaft, a rotary disk, and a lever connected to said cam and adjustably secured to the disk, substantially as and for the purpose described.

2. The combination of a shaft, an adjustable cam fitted loosely thereon, a rotary disk fixed on the shaft to rotate therewith, and a lever fulcrumed on the disk and pivotally connected to the cam, substantially as and for the purpose described.

3. The combination, with a shaft and an adjustable cam fitted thereon, of a rotary disk fixed to the shaft and having a segmental slot, and a lever arranged laterally of and fulcrumed on said disk and having a connecting-pin which passes through the slot of the disk, substantially as described.

4. The combination, with a shaft and a cam fitted loosely thereon, of a rotary disk fixed to the shaft to rotate therewith, a lever fulcrumed on the disk and connected to the cam, and mechanism for detachably holding said lever on the disk against movement thereon, substantially as and for the purpose described.

5. The combination, with a shaft and a cam fitted loosely thereon, of a rotary disk fixed on the shaft and having a series of apertures, and a lever fulcrumed on the disk and connected to the cam, said lever having a locking-pin adapted to be forced into one of the series of apertures in the disk to confine the lever against movement on its fulcrum, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

HARRY S. BANTA.

Witnesses:

D. W. PARKER,  
L. B. PARKER.