

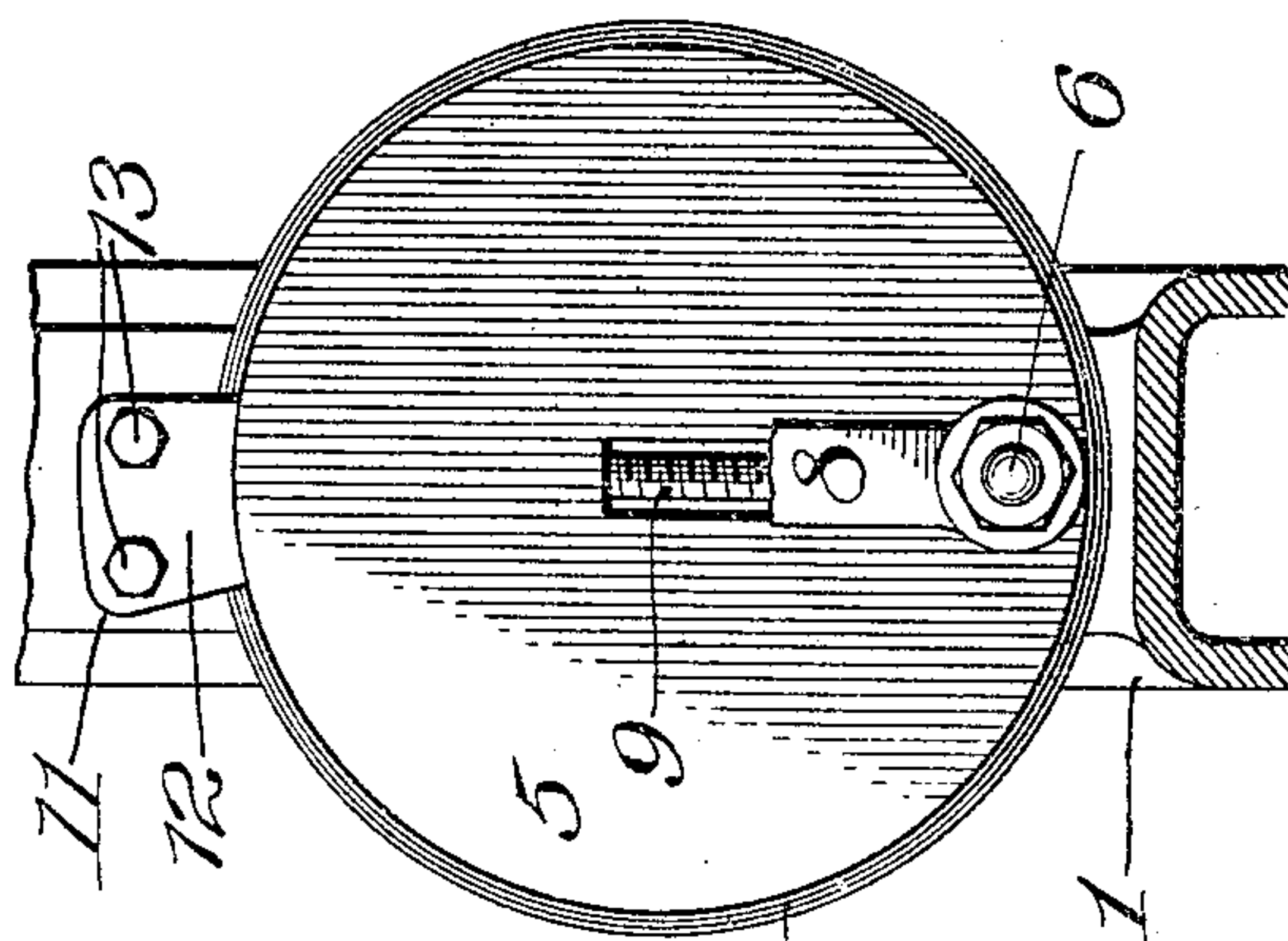
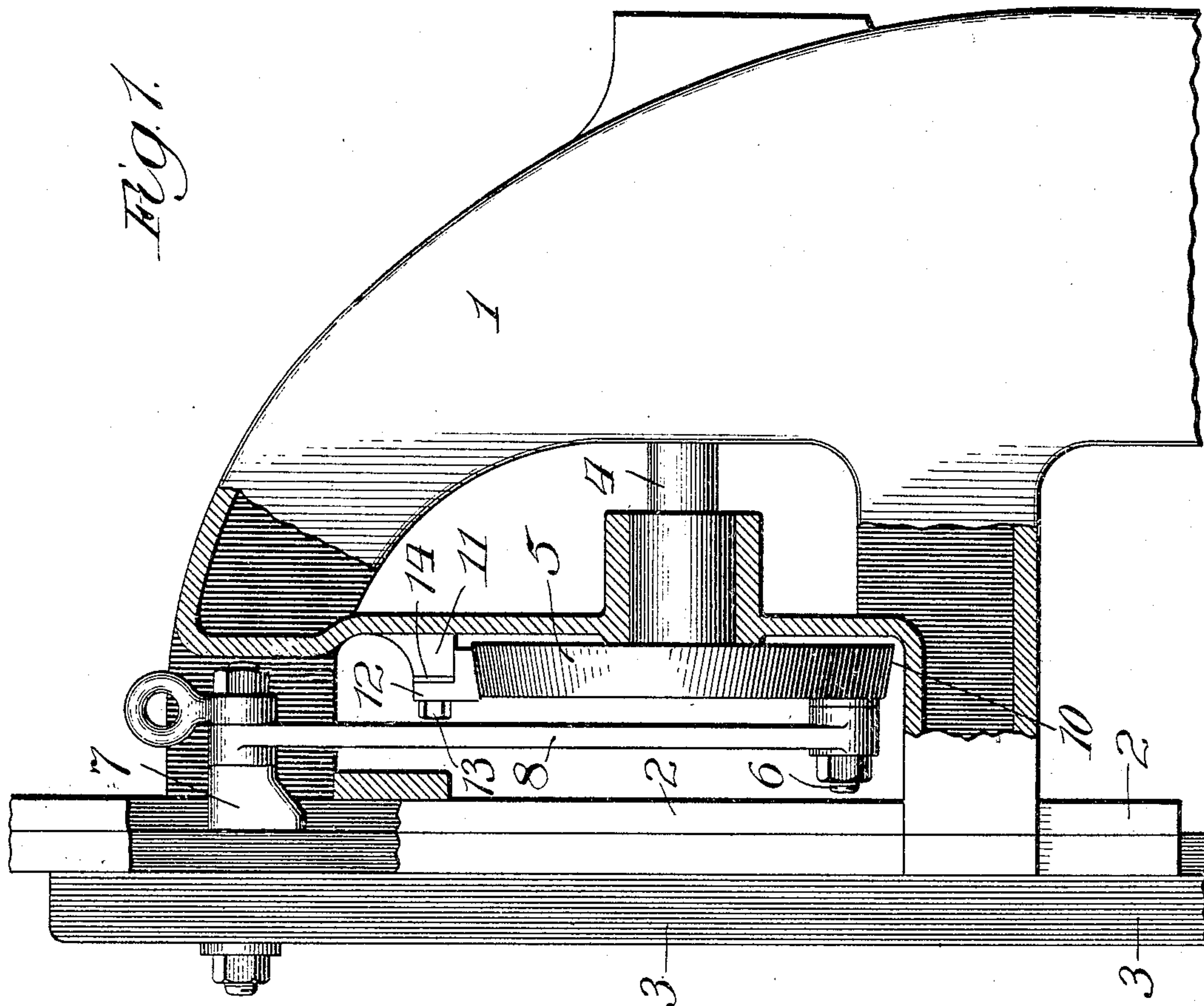
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PATENTED JUNE 13, 1905.

J. F. HOY.

SLOTTING MACHINE.

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UNITED STATES PATENT OFFICE.

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SLOTTING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 792,418, dated June 13, 1905.

Application filed April 13, 1905. Serial No. 255,302.

To all whom it may concern:

Be it known that I, JOHN FRANCIS HOY, a citizen of the United States, residing at Philadelphia, Pennsylvania, have invented certain new and useful Improvements in Slotting-Machines, of which the following is a specification.

This invention relates to slotting-machines and pertains to an improvement designed to avoid much springing of parts ordinarily due to the thrust of the overhanging crank in doing heavy cutting.

The invention will be readily understood from the following description, taken in connection with the accompanying drawings, in which—

Figure 1 is a side elevation, part vertical section, of portions of a slotting-machine of otherwise ordinary construction, but embodying my improvement; and Fig. 2, a face view of the crank-disk and its supports.

In the drawings, 1 indicates the frame of the slotter; 2, the cutter-bar guide vertically adjustable in the frame; 3, the cutter-bar mounted for reciprocation in the guide; 4, the crank-shaft; 5, the crank-disk; 6, the crank-pin; 7, the cutter-bar wrist; 8, the connecting-rod connecting the crank-pin and the wrist, and 9 the screw for radially adjusting the crank-pin in the crank.

All of the parts thus far referred to may be and are illustrated as of usual construction. The crank is necessarily overhung from a bearing disposed to the rear of it, and the upward strain imposed upon the crank as the result of the resistance offered to the downward motion of the cutter-bar in heavy cutting tends to spring the crank-shaft and to impose extraordinary wear upon the upper portion of its front bearing.

Proceeding with the drawings, 10 indicates the periphery of the crank-disk, which has a beveled contour arranged, preferably, with the smaller diameter outwardly; 11, a bracket projecting rigidly from the frame above the crank-disk and preferably to that side of the vertical plane of the axis of the crank which will bring it nearer into the somewhat angu-

lar line of strain; 12, a shoe secured to the bracket 11 and having its under surface engaging and fitting the periphery of the crank-disk, its upper horizontal surface fitting under the bracket, this shoe having a vertical flange against the face of the bracket; 13, bolts securing the shoe against the bracket, and 14 a shim disposed between the front face of the bracket and the rear face of the flange of the shoe.

The shoe being properly adjusted to the periphery of the crank-disk manifestly furnishes the crank with a support much farther forward toward the line of strain than is possible with a bearing located entirely behind the crank. This bearing behind the crank is thus relieved of much of its duty and the strains transmitted to the frame through the shoe. The beveling of the periphery of the crank-disk permits of the taking up of wear of the shoe by adjusting the shoe inwardly, which may be accomplished in an obvious manner by thinning the shim between the shoe and its bracket, thus permitting the shoe to be set farther to the rear. The device in addition to strengthening the machine generally and permitting it to do heavier work than usual imposes special heavy strains and wear upon parts in accessible position, the shoe being easily gotten at for purposes of compensating adjustment, while any adjustment or reparation of the parts behind the crank would require the dismantling of the machine.

While the invention has been specifically described as an improvement in slotting-machines, attention should be called to the fact that there are quite a number of reciprocating metal-working machines in which the reciprocating motion is produced by an overhung crank, bringing about the evils which it is the aim of my invention to overcome. It is, therefore, to be understood that while the term "slotting-machine" is generally understood in the machine-tool art as implying a machine having a reciprocating tool and having its reciprocations vertical I herein use that term in connection with my invention in an illustrative rather than a restrictive sense, my in-

vention comprehending any reciprocating machine-tool with an overhung crank of which the slotting-machine is a mere exemplification.

I claim as my invention—

5 1. In a reciprocating machine, the combination, substantially as set forth, with the frame, cutter-bar, crank-shaft, and connecting-rod, of a crank-disk mounted on the crank-shaft, a portion projecting from the frame
10 rigidly over the edge of the crank-disk, a shoe secured to such projecting frame portion and engaging the periphery of the crank-disk, and means for adjusting said shoe.

2. In a reciprocating machine, the combination, substantially as set forth, with the
15 frame, cutter-bar, crank-shaft, and connecting-rod of a crank-disk mounted on the crank-shaft and having its periphery of beveled contour, a frame portion projecting rigidly over
20 the edge of the crank-disk, a beveled shoe fitting between the edge of the crank-disk and the under surface of said projecting frame portion, and means for securing said shoe adjustably to said projecting frame portion.

3. In a reciprocating machine, the combination, substantially as set forth, with the
25 frame, cutter-bar, crank-shaft, and connecting-rod, of a crank-disk mounted on the crank-shaft, and a shoe adjustably secured to the frame above the crank-disk and engaging the
30 upper portion of its periphery.

4. In a reciprocating machine, the combination, substantially as set forth, with the
35 frame, cutter-bar, crank-shaft, and connecting-rod, of a bevel-edged crank-disk mounted on the crank-shaft, a frame portion rigidly projecting over the edge of the crank-disk, a shoe engaging between the edge of the crank-disk and the under surface of said projecting
40 frame portion, a flange projecting upwardly from the shoe and disposed in front of said projecting frame portion, and bolts engaging said flange and frame portion.

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