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PATENTED APR. 9, 1907.

G. H. BARTLETT.  
PUNCH AND DIE PRESS.  
APPLICATION FILED NOV. 21, 1906.

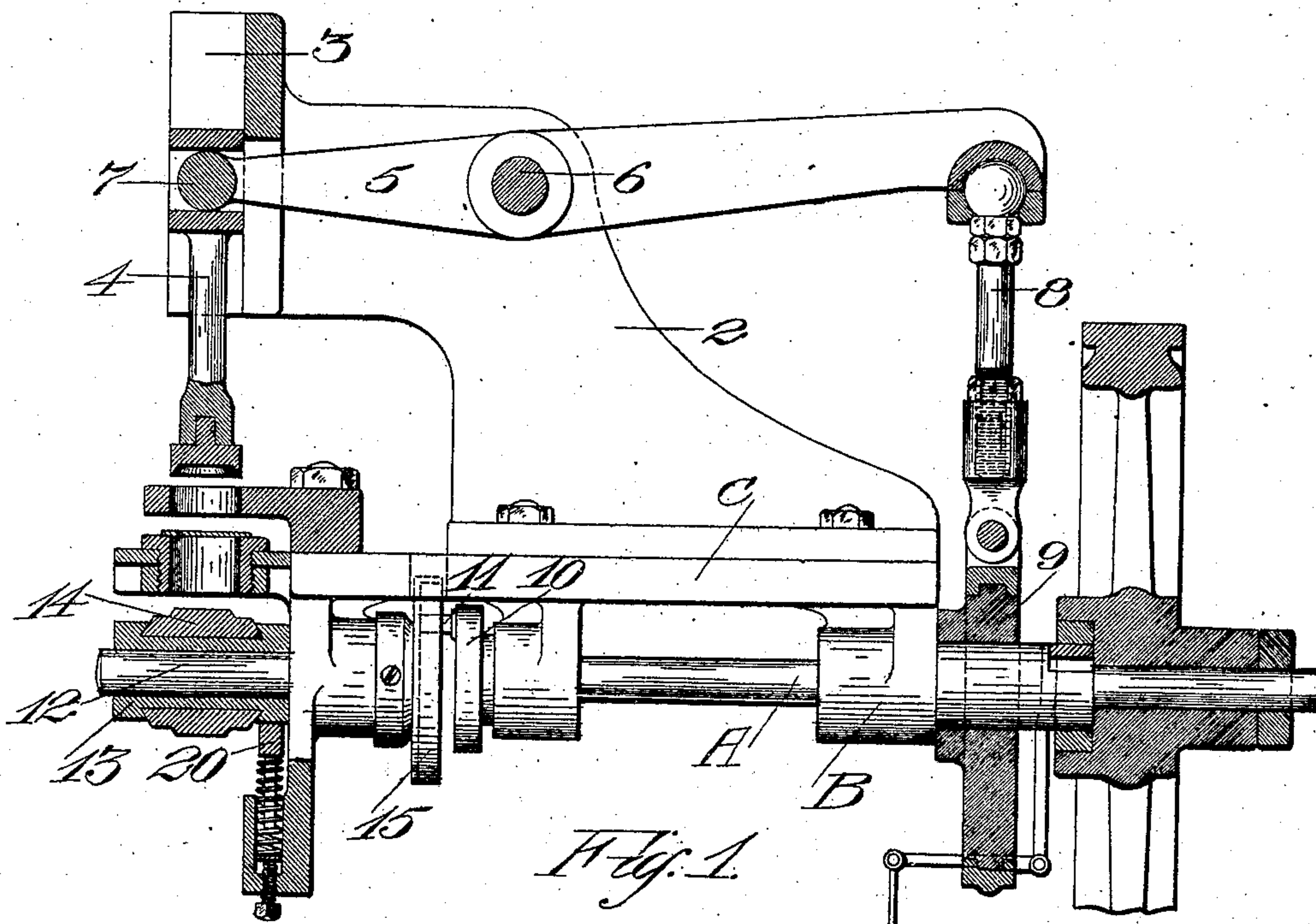
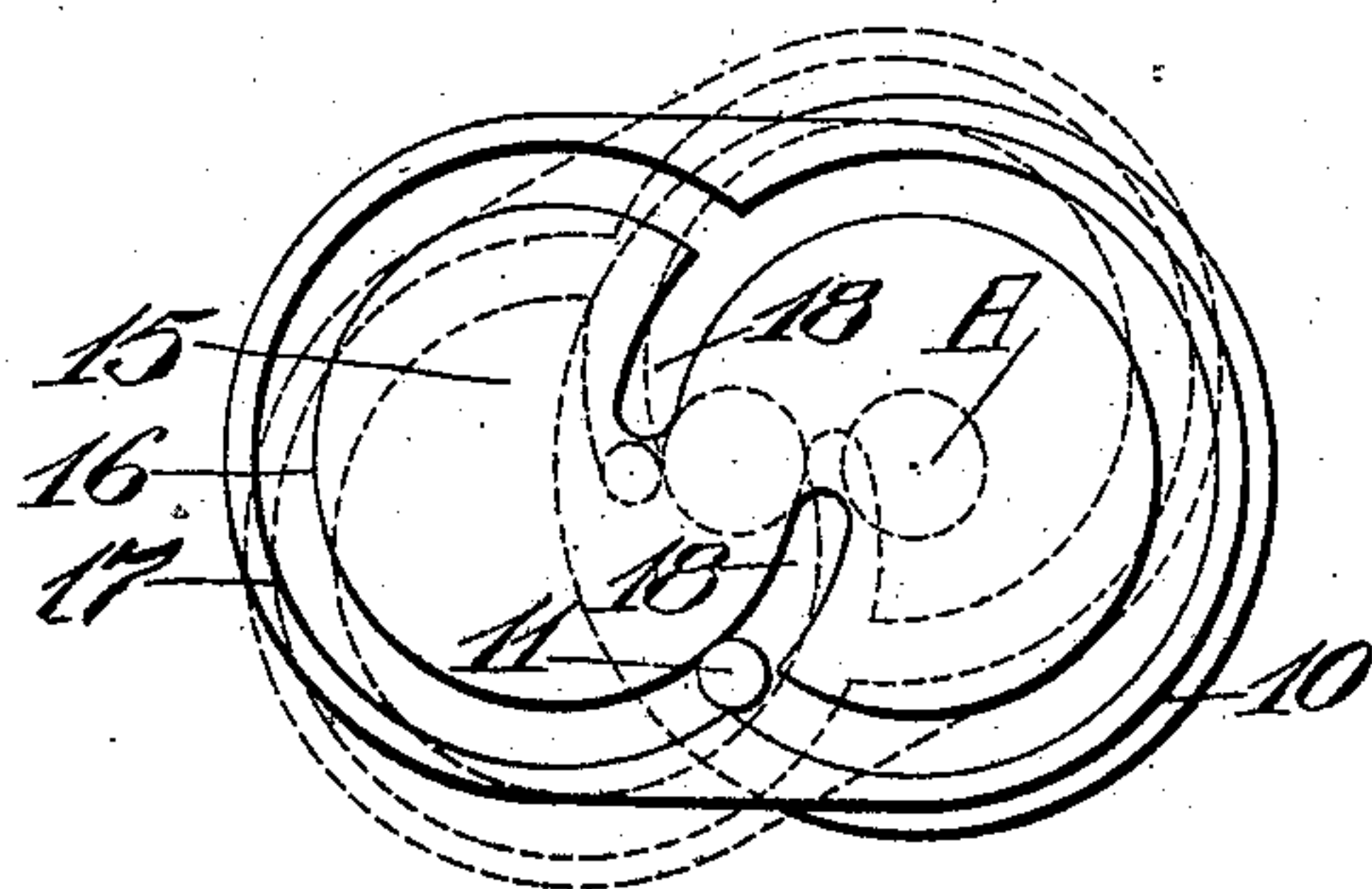


Fig. 1

Fig. 2.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

GEORGE H. BARTLETT, OF SAN FRANCISCO, CALIFORNIA.

## PUNCH AND DIE PRESS.

No. 849,881.

Specification of Letters Patent.

Patented April 9, 1907.

Application filed November 21, 1906. Serial No. 344,462.

*To all whom it may concern:*

Be it known that I, GEORGE H. BARTLETT, a citizen of the United States, residing in the city and county of San Francisco and State of California, have invented new and useful Improvements in Punch and Die Presses, of which the following is a specification.

My invention relates to a device for producing an intermittent rotary motion in conjunction with a reciprocating motion, so that parts of the rotary apparatus are successively brought into line with the reciprocating mechanism.

It consists in the combination of parts and in details of construction which will be more fully explained by reference to the accompanying drawings, in which—

Figure 1 is a side elevation, in partial section, of my apparatus. Fig. 2 is an enlarged view of disk 15.

It is the object of my invention to provide an intermittently-rotating mechanism having stationary intervals in conjunction with a continual reciprocating device acting in unison with the rotary device or parts carried thereby.

In the present drawings I have only shown a sufficient portion of my invention to illustrate the novel parts.

A is a horizontal shaft turnable in journal-boxes B upon a supporting-bed C. This bed is shown as having an arm 2 rising from one end, extending forwardly, and having vertical guide 3, within which a stem or reciprocating rod 4 is slidable. This stem is connected with a lever-arm 5, which is fulcrumed at 6, and the front end is connected by a ball or suitable joint 7 with the reciprocating stem. The rear end of the lever is connected by rod 8 with an eccentric or crank at 9, which is mounted upon the shaft A, so that when motion is transmitted to revolve this shaft it will reciprocate the vertical stem.

The front of the shaft A has fixed to it a disk 10, from the face of which projects a crank-pin 11.

12 is a shaft journaled out of line with the shaft A and carrying upon its front end a head 13. This head is designed to carry dies 14 upon opposite sides, and it is designed to revolve this head in such a manner that each of the dies will be successively brought into line with the vertically-moving stem, which may also carry one member of the stamping or other device, and the revoluble portion is brought to a state of rest, while the reciprocating

stem is brought down to coact with each die or part carried by the revoluble head 13. The device for effecting this intermittent revolution of the head consists of a disk 15, fixed to the inner end of the shaft 12 and having a channel milled in its face, into which channel the pin 11 of the disk 10 projects. The channel in the disk is milled or otherwise formed so as to form two circular and concentric segments each having an inner outline 16 and an outer outline 17. These segments are on a line passing transversely of the center of the axis of shaft A, so that the disk or device has its greatest diameter on this line.

Intermediate the segments the track or channel is curved inwardly toward the center, as shown at 18, and when the shaft A and the disk 10 are revolved the pin 11 will travel around the semicircular groove in the disk without producing any motion of the shaft 12. Leaving the regular curvature of the disk, the pin in its revolution contacts with the side of the channel or depression 18 which connects the two segments and by this contact causes the disk and its shaft to revolve until by reason of the eccentricity of the axes of the shaft A and 12 the pin 11 will rise out of the depression 18 and the shaft 12, and head 13 will then cease to revolve. The disk is then in such position that the following segment, into which the pin is now entering, is concentric of the shaft A. Therefore the pin will pass around the segmental channel during a half-revolution of the shaft A, at the end of which when it commences to rise in the latter half of its revolution it will again contact with the sides of the groove 18 of the opposite segment and by this contact again revolves the device a half-revolution. Thus each of the die-surfaces of the part 13 are successively brought into line with the vertically-reciprocating stem or punch to act in unison therewith and remain stationary while the pin 11 is traveling around the circular segment of the disk.

The head 13 is maintained in a stationary position while coacting with the punch by a spring-pressed plunger 20, the upper end of which is caused by the action of the spring to contact with a flattened surface on that part of 13 which is in line with the head of the plunger, the pressure being sufficient to retain the parts in position when desired; but when the pin 11 again acts upon the cam the spring of the plunger will yield and allow the head 13 to again turn a half-revolution.



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

- 5 1. In a device for producing an intermittent revolution of a shaft with stationary periods between said revolutions, a disk mounted upon the end of the shaft, there being a channel cut in the face of the disk, said channel forming two circular segments with an  
10 intervening connecting portion which curves inwardly toward the axis of the shaft, a second shaft having a crank-pin projecting into the channel of the disk, and means communicating a rotary motion to the crank-shaft.
- 15 2. In a device for producing an intermittent rotary motion of a shaft, an oval disk fixed to the shaft with its major axis intersecting the shaft, there being segmental

grooves formed in each end of the disk, said grooves converging to meet on the minor 20 axis of the disk and form a continuous channel, a driving-shaft journaled out of line with the first-named shaft and having a crank-pin entering the groove of the disk, and a spring-pressed plunger engaging a flattened part 25 carried by the first-named shaft to hold it stationary during the movements of the crank-pin through the concentric portions of the disk-channel.

In testimony whereof I have hereunto set 30 my hand in presence of two subscribing witnesses.

GEORGE H. BARTLETT.

Witnesses:

FRANKLIN S. SMITH,  
FREDERICK E. MAYNARD.