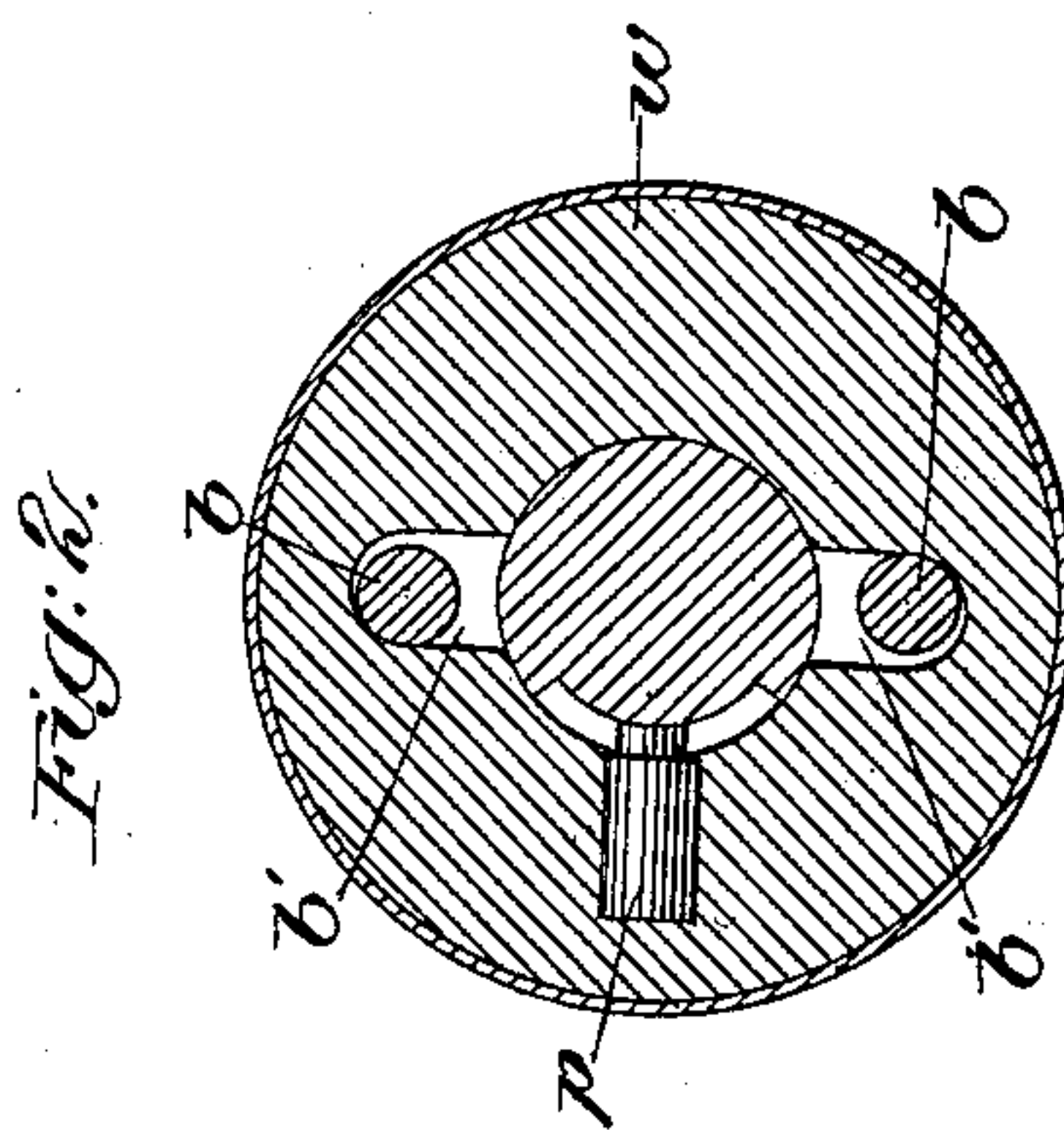
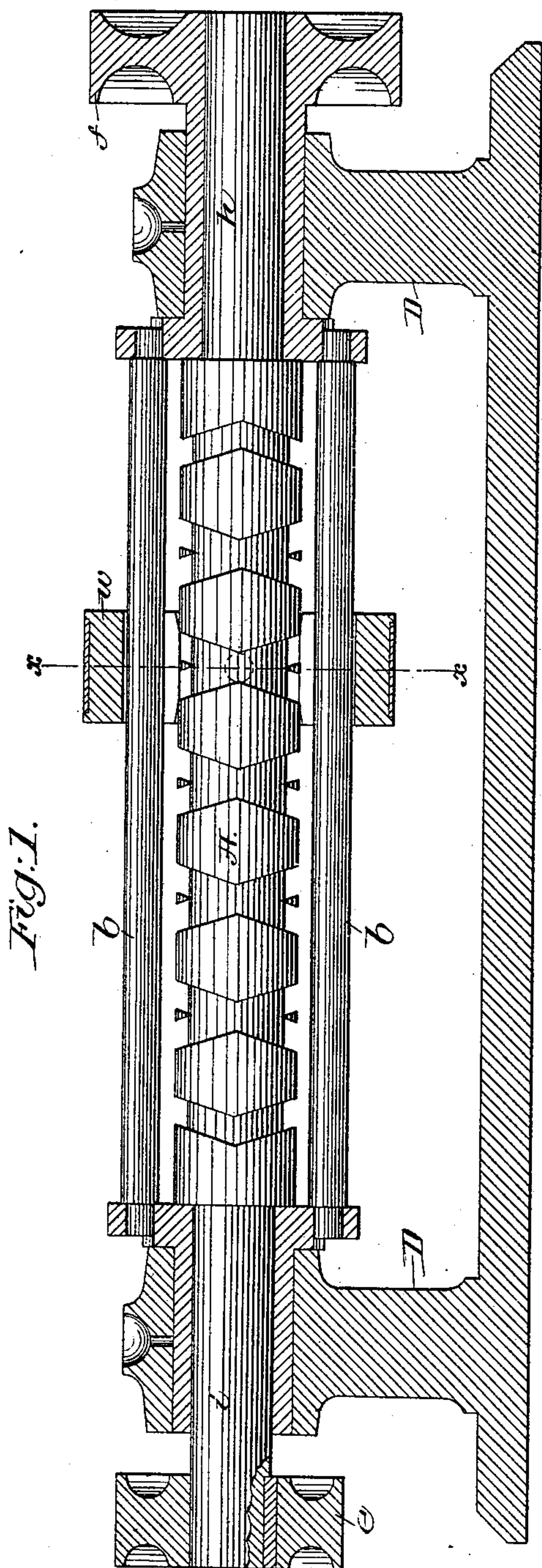


(No Model.)

W. H. RANKIN.
CARD GRINDING MECHANISM.

No. 377,116.

Patented Jan. 31, 1888.



Witnesses.
Fred L. Emery.
John P. C. President.

Inventor.
William H. Rankin.
by Leroy Gregory Atty

UNITED STATES PATENT OFFICE.

WILLIAM H. RANKIN, OF LAWRENCE, MASSACHUSETTS.

CARD-GRINDING MECHANISM.

SPECIFICATION forming part of Letters Patent No. 377,116, dated January 31, 1888.

Application filed April 19, 1887. Serial No. 235,322. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. RANKIN, of Lawrence, county of Essex, and State of Massachusetts, have invented an Improvement in Card-Grinding Mechanism, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

10 This invention has for its object to improve and simplify the mechanism shown and described in United States Letters Patent No. 301,922, granted to me July 15, 1884. In the machine described in the said patent the grinding-wheel is guided by and slides upon the slotted sleeve which rotates the wheel, the said sleeve surrounding the screw; but herein the sleeve is omitted and the grinding-wheel is made to slide directly upon the screw itself, 20 the wheel being rotated by cross-rods connecting the tubular bearing-sleeves in which the journals of the screw run.

My invention consists, essentially, in the combination, with a grinding-wheel and a screw-shaft upon which the said wheel slides, of a rotating frame to rotate the said grinding-wheel, substantially as will be described.

Figure 1, in longitudinal section, shows a sufficient portion of a card-grinding machine to enable my invention to be understood; and Fig. 2, a section of Fig. 1 on the line *x*.

The standard D, screw A, journals *h i*, the hollow sleeve-journals, and the pulleys *e f* are and may be all as usual, or as in United States Patent No. 301,922, wherein like parts are designated by like letters.

Herein the grinding-wheel *w*, of any usual material employed for card-grinding, is bored to fit the body of the screw A, a pin, *p*, at one side of the hub entering the thread of the screw and acting to slide the wheel on the screw-shaft as the wheel is rotated by the cross-bars *b b*, connecting the sleeve-journals *g g*, the said

cross-bars entering loosely spaces *b' b'* in the wheel. When the wheel is mounted upon a sleeve, as in the patent referred to, the power to rotate the wheel is all applied to the pin extended through a slot in the sleeve and engaging the thread 5. When a sleeve is used, as described in the said patent, to guide the wheel, the surface of the sleeve must be turned true and must be concentric to the screw-shaft, and must remain so to enable the different parts to operate without binding or cramping.

Guiding the wheel directly upon the screw enables me to entirely dispense with the sleeve, thus simplifying the apparatus and reducing its cost, and by extending the rods *b* through the wheel from side to side I am enabled to rotate the wheel with greater accuracy and with less wear than when a single pin is used, as in the said patent.

The bars and journals constitute a frame; and, if desired, one bar might be omitted, but two work best.

I claim—

1. The screw-shaft, combined with the surrounding wheel guided directly upon it, and having a pin to enter the spaces between the threads of the screw shaft, and means to operate the wheel, substantially as described.

2. The screw-shaft and the surrounding wheel mounted and guided directly upon it, and having a pin to enter the spaces of the screw-thread, and having a rod-receiving opening, *b'*, combined with a rotating frame having a rod extended through the wheel in the said opening, to operate substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILLIAM H. RANKIN.

Witnesses:

JOHN H. STAFFORD,
ARETAS R. SANBORN.