

No. 636,289.

Patented Nov. 7, 1899.

C. A. A. RAND.
DRIVING GEARING.

(Application filed Apr. 17, 1899.)

(No Model.)

Fig. 2.

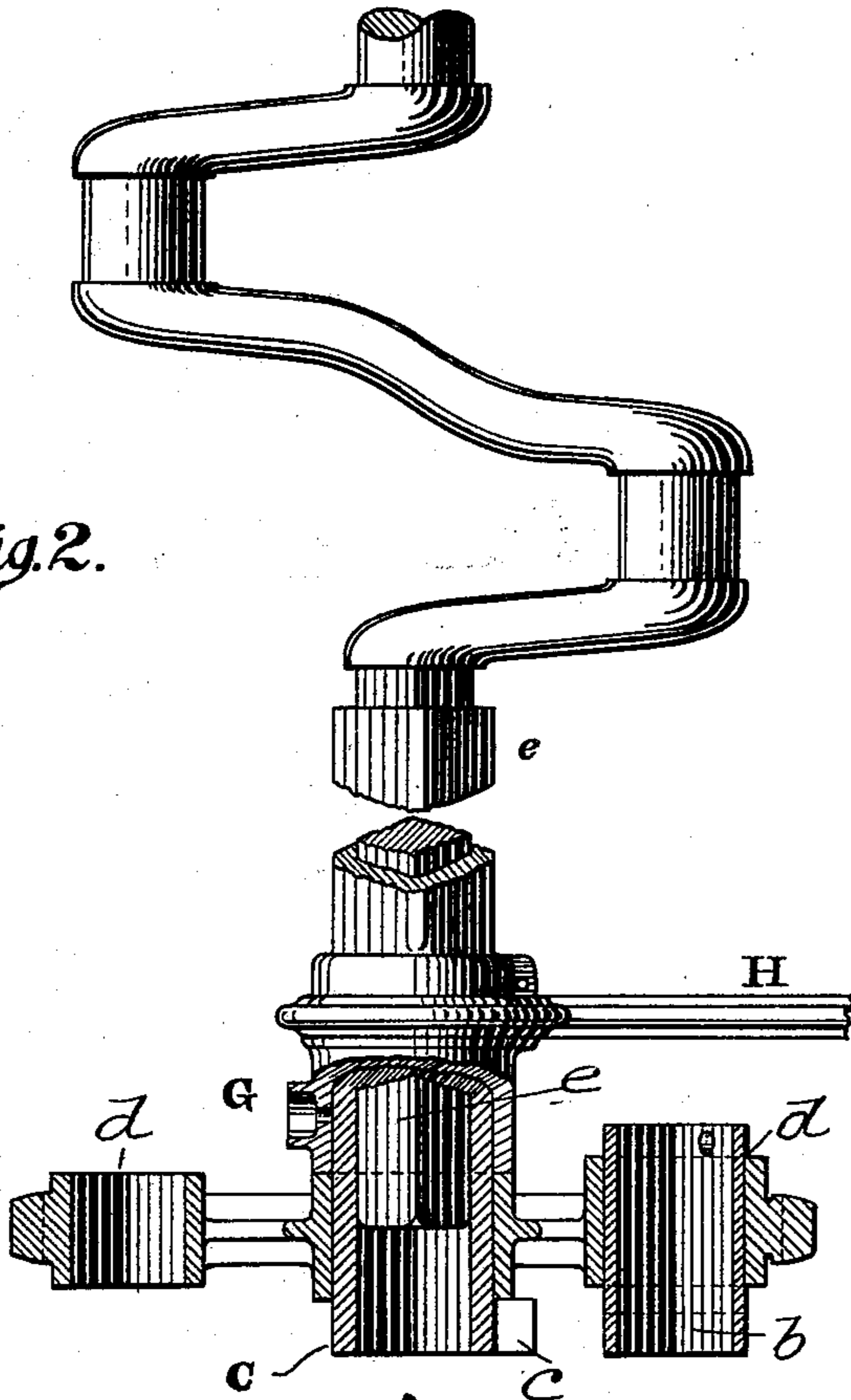


Fig. 4.

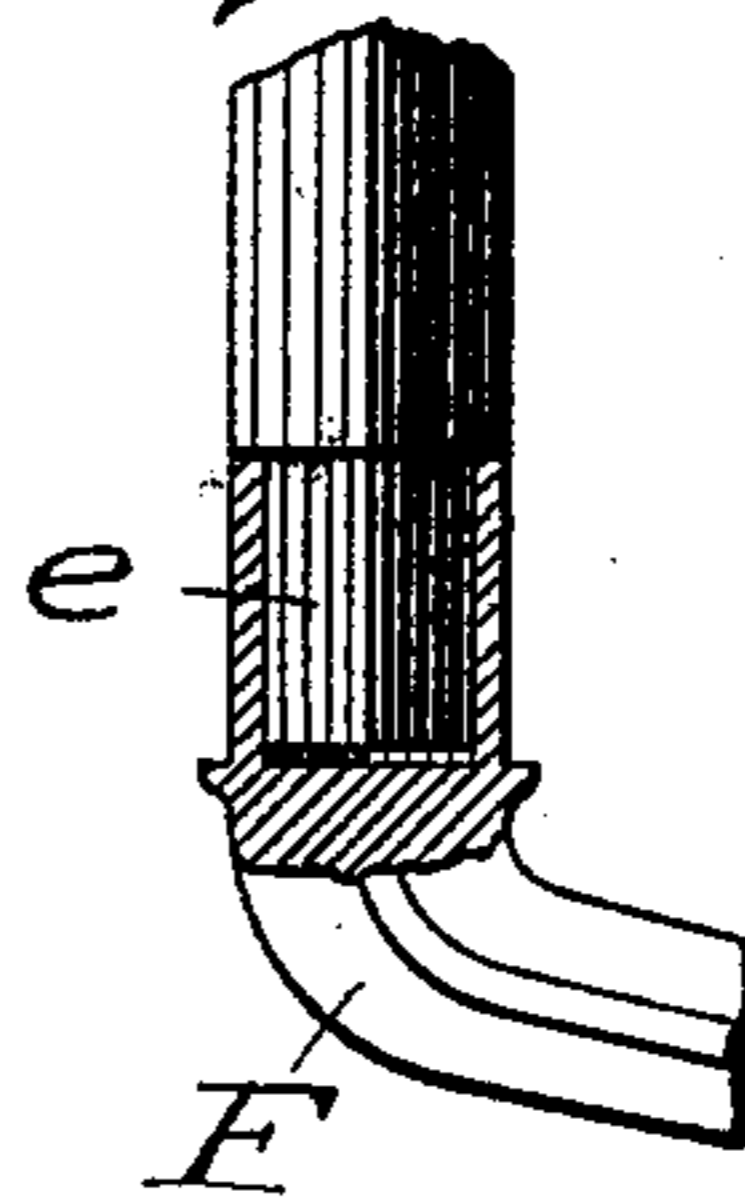


Fig. 3.

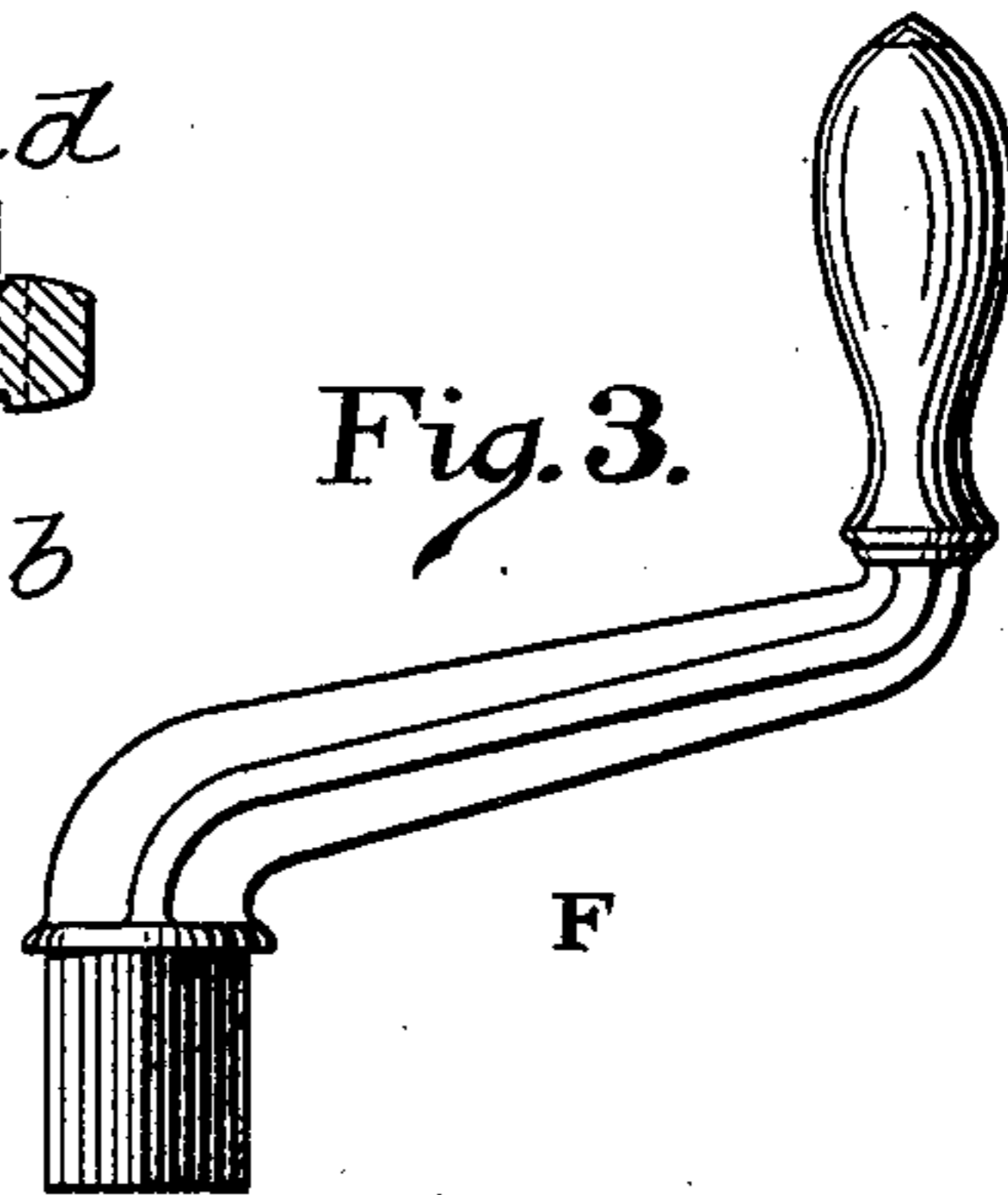
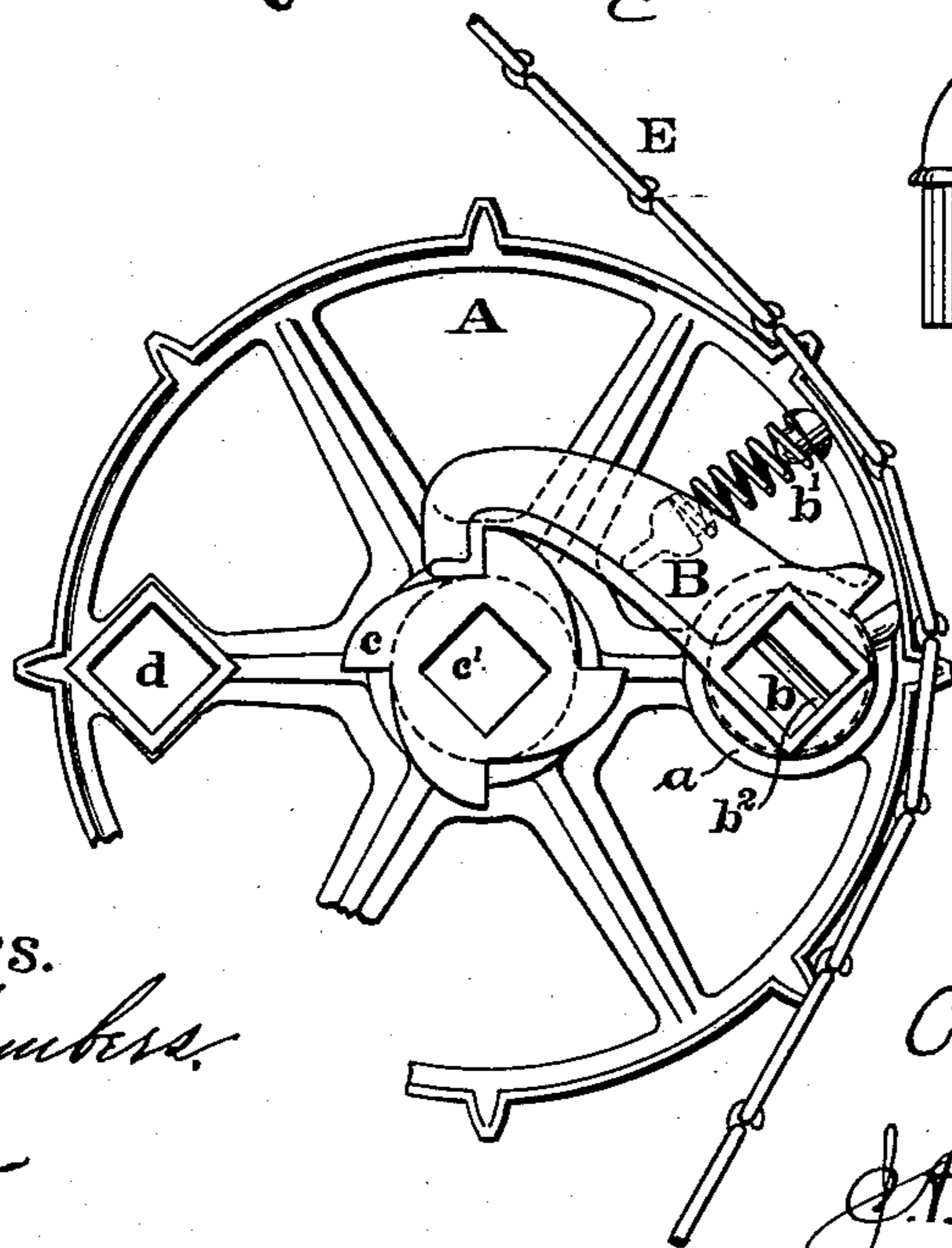


Fig. 1.



Witnesses.

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UNITED STATES PATENT OFFICE.

CHARLES A. ANDERSON RAND, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE
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DRIVING-GEARING.

SPECIFICATION forming part of Letters Patent No. 636,289, dated November 7, 1899.

Application filed April 17, 1899. Serial No. 713,264. (No model.)

To all whom it may concern:

Be it known that I, CHARLES A. ANDERSON RAND, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Driving-Gearing, of which the following is a specification.

My invention consists in such an arrangement and combination of parts (essentially a sprocket wheel or gear mounted loosely upon a shaft, but adapted to be clutched thereto) as to enable an operator by manual means, first, to actuate the sprocket wheel or gear adapted to give movement to other portions of machinery as may be geared to it by chain or otherwise, to give movement to the shaft upon which the said wheel is loosely supported without turning the wheel, or to give motion to the wheel without turning the shaft upon which it is supported.

I have shown my invention as applied to a self-binding harvester.

In the accompanying drawings, Figure 1 is a side elevation of the sprocket-wheel for the packer-shaft of an ordinary self-binding harvester. Fig. 2 is a sectional plan view of the sprocket-wheel and a portion of the said packer-shaft, its bearing, and one of its supports. Fig. 3 represents a hand-crank to be used in turning the sprocket-wheel manually. Fig. 4 shows a modified form of packer-shaft and crank for turning same.

A, as shown, is a sprocket-wheel, but where desirable it may be a gear-wheel. Upon it is pivoted the pawl B, which oscillates in a suitable bearing *a* in the wheel A. I have shown the pawl as having a large square axial opening *b*, into which the square end of a hand-crank F may be inserted.

C is a sleeve, as here shown; but it may be treated merely as a shaft having a square hole *c'* in its end or otherwise adapted to receive the crank. The sleeve is supported in the bearing G, that is sustained by the support H. Upon the end of this sleeve are the ratchets *c*, with which the working end of the pawl B engages. The pawl is held in working position by the spring *b'*. Near the periphery of the wheel A is the square opening *d*. A pin *b²* is inserted through the axis of the pawl outside of the support in the wheel

to hold it in place. In a self-binding harvester of the kind in which the binding attachment is adjusted longitudinally a slip-shaft of some form is of course needed. In the present instance I have shown the packer-shaft to be squared, as at *e*, and adapted to slide within the sleeve above mentioned. As shown, the chain E may be considered as connected to the elevating devices on a self-binding harvester.

The operation of my invention is as follows: In case it is desired to turn all of the parts here shown in the direction of the hands of a watch the crank F is inserted in the opening *d*. It will readily be understood that the wheel will be given motion, such mechanism as is connected to it by means of chain or gearing will be moved, and the shaft upon which the wheel is supported will be rotated, the spring keeping the pawl B engaged with the ratchet-teeth *c*. If it is desired to turn the packer-shaft alone, which is here shown as a sleeve, the crank F will be inserted into the opening *c'*. When turned in the direction of the movement of the hands of a watch, which is the only direction needed in the present instance, the ratchets will simply deflect the end of the pawl out of the way and rotate under it. If the crank F be inserted into the opening *b* and turned in the direction of the movement of the hands of a watch, the first effort will be to raise the end of the pawl from engagement with the ratchets *c*, when the wheel A will be free to turn without giving motion to the sleeve. Stated in short, it may be said that if the crank be inserted in the opening *d* the entire self-binding harvester may be operated by hand. Inserting the crank in the opening *c'*, the binding attachment alone may be operated. Inserting in the opening *b*, the elevators of the machine alone may be operated. If longitudinal adjustment of the binding attachment is not required, the sliding connection of packer-shaft proper and the sleeve shown will not be needed, and the shaft portion itself may extend through the sprocket-wheel and a square be formed on its end, in which event the socket in the crank, as shown in Fig. 4, will furnish efficient means for rotating it.

The crank may be considered simply as the tool by which the advantages of my invention are made available.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination of a shaft, a wheel loosely mounted thereon, a clutching device normally locking said shaft and wheel together, and means for rotating the wheel that shall first unclutch it from said shaft, substantially as described.

2. Driving-gearing consisting of a gear or sprocket-wheel, a shaft upon which said gear or sprocket-wheel is loosely mounted, a clutch consisting of a ratchet and pawl for connecting the wheel and shaft, means for applying a rotary motion to the wheel that shall first move the pawl from engagement with the ratchet, all combined substantially as described.

3. The combination of a wheel, its supporting-shaft, a ratchet on the shaft, and a pawl

on the wheel, the wheel also having the opening *d*, the pawl having the opening *b*, and the shaft having the opening *c'*, substantially as described.

4. The combination of a shaft, a wheel loosely mounted thereon, a clutch device normally locking the wheel to the shaft, a bearing on the wheel to receive a hand-crank for turning the wheel and shaft together, a bearing on the shaft by means of which the hand-crank may be connected directly to the shaft to turn it independently of the wheel, and a second bearing on the wheel to receive the hand-crank, the clutching device being connected with this bearing so that when the wheel is rotated by putting the crank in this bearing the clutch will first be moved to unlock the wheel from the shaft.

CHARLES A. ANDERSON RAND.

Witnesses:

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