

A. J. SWEENEY.

Gear-Wheels for Harvesting-Machines.

No. 153,630.

Patented July 28, 1874.

Fig. 1.

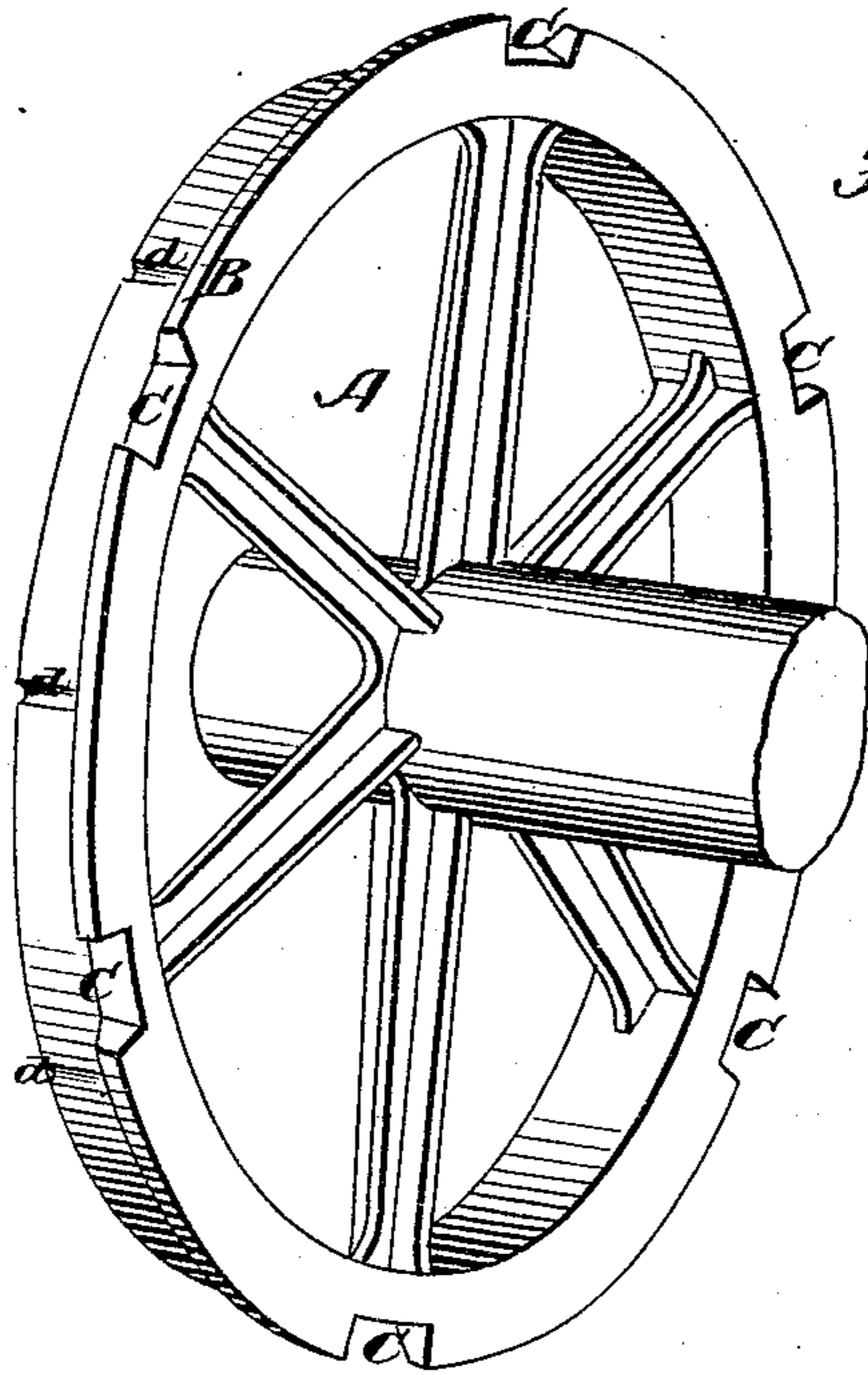


Fig. 2.

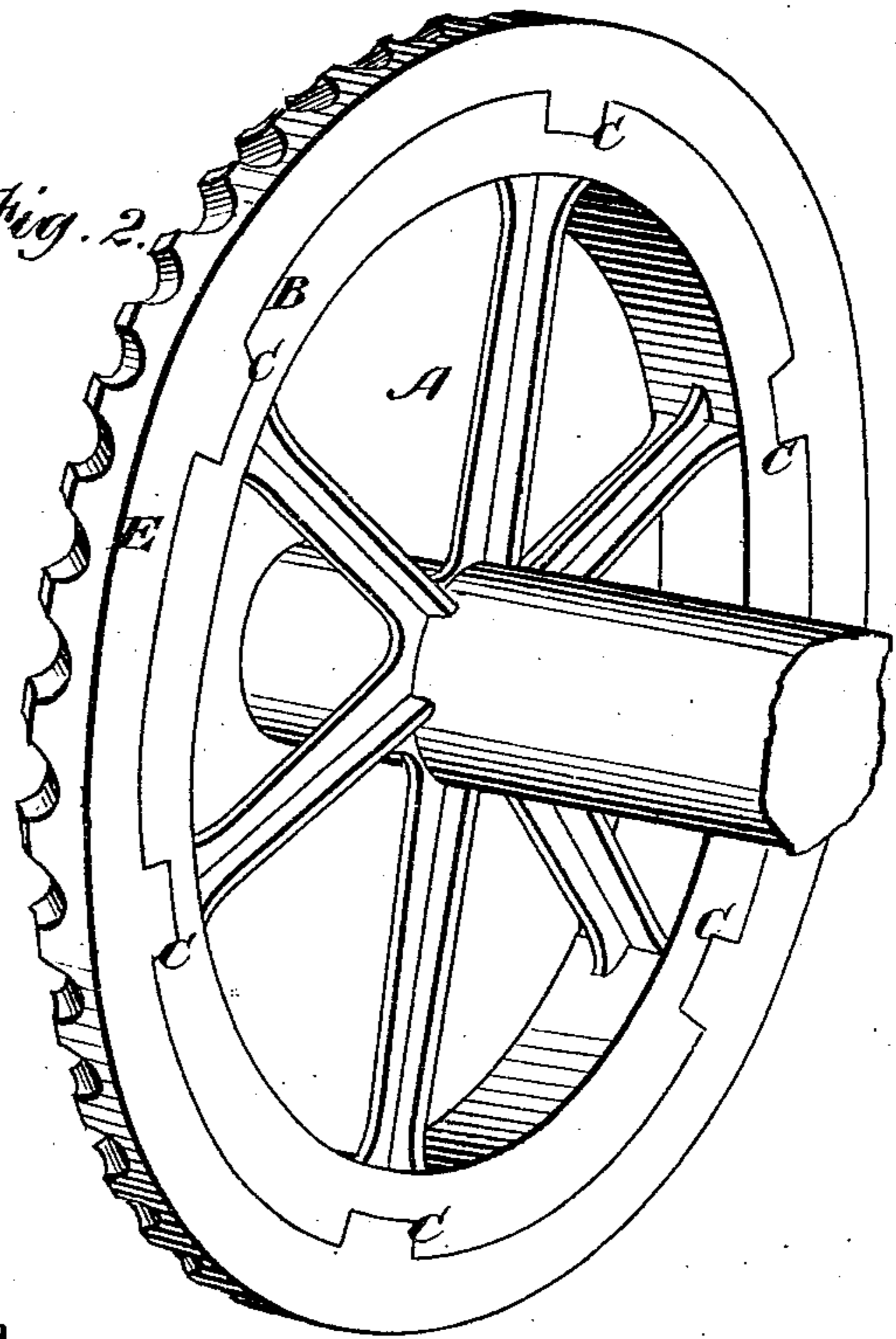
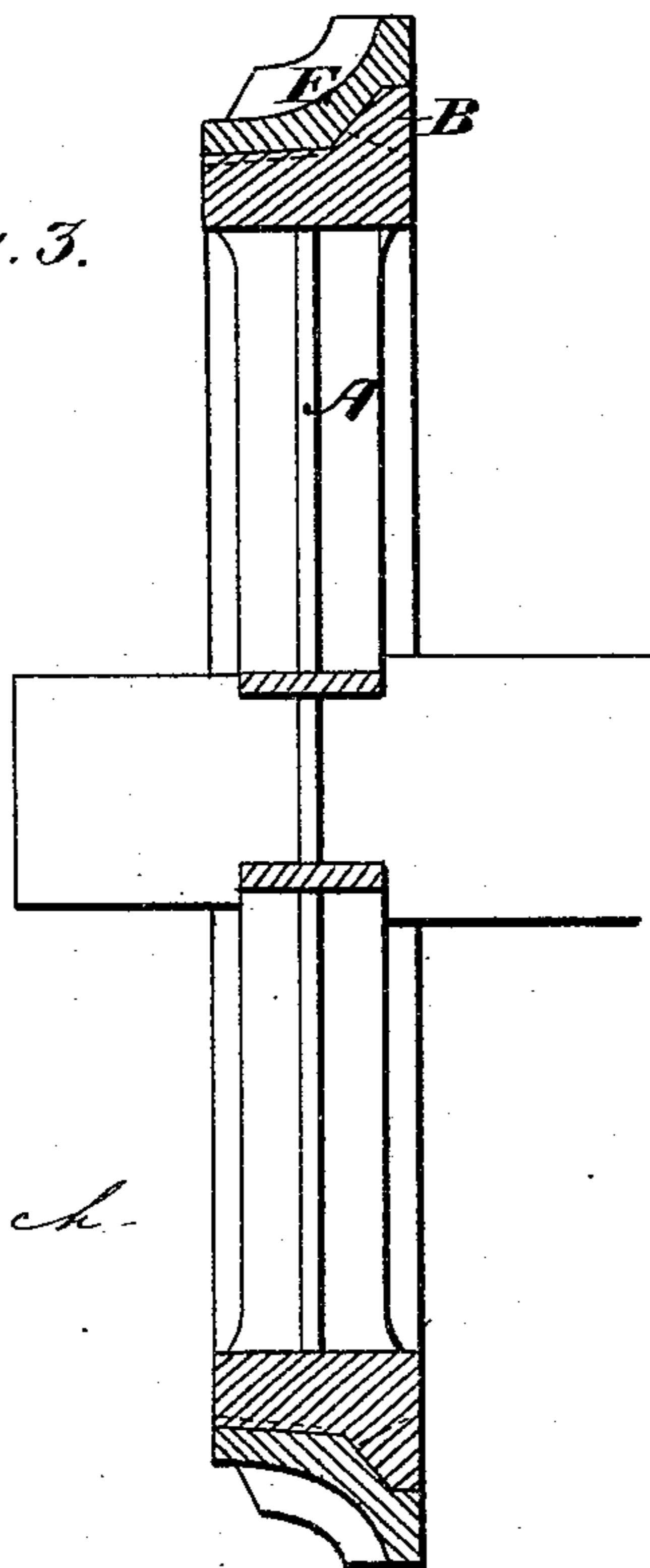


Fig. 3.



Witnesses.
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UNITED STATES PATENT OFFICE

ANDREW J. SWEENEY, OF WHEELING, WEST VIRGINIA.

IMPROVEMENT IN GEAR-WHEELS FOR HARVESTING-MACHINES.

Specification forming part of Letters Patent No. **153,630**, dated July 28, 1874; application filed June 20, 1874.

To all whom it may concern :

Be it known that I, ANDREW J. SWEENEY, of Wheeling, in the county of Ohio and State of West Virginia, have invented a new and useful Gear-Wheel for Harvesting-Machines; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a perspective view of the spider forming the main portion of the wheel. Fig. 2 is a perspective view of the finished wheel, and Fig. 3 is a vertical section of the same.

Similar letters of reference denote like parts in the several figures of the drawings.

My invention relates to the construction of gear-wheels of that class employed in harvesting-machines for communicating motion from the main axle to the cutting-knives, although it may have a more general application with perhaps equal effect.

It has heretofore been customary to cast these wheels entirely of gun or other composite metal, or in two separate parts, turned, bored, fitted, and fastened together, either of which is exceedingly expensive, and materially adds to the cost of the harvesting-machine.

My invention is designed to remedy this objection, and at the same time produce a wheel equal in strength, durability, and lightness to that made wholly of gun metal. To this end it consists in constructing the wheel of two parts, the inner or central portion, called the "spider," being composed of cast-iron, and the outer or toothed rim of gun or other composite metal, the two being firmly locked together by casting one upon the other, as I will now proceed to describe.

In carrying out my invention, I cast the iron spider A in the form shown in Fig. 1, with a beveled flange, B, at the outer edge of its periphery, having recesses C at suitable intervals. These recesses incline outward toward the center of the wheel, so as to form one part of a dovetail joint or mortise. The periphery of the wheel is also cast with a series of transverse recesses, *d*, arranged preferably between the recesses C, and extending from the inner face of the wheel to the base of the inclined flange. If desired, however,

the recesses *d* may be omitted, or they may be made over the flange to communicate with the recesses C. A pattern of a complete worm or gear wheel is then molded in a suitable flask, and the spider placed within the mold, having been first heated to a red or white heat. The molten gun or other composite metal is then poured into the mold filling the space around the periphery of the spider, and running into the recesses C *d* to form the locking-joints, as shown by dotted lines in Fig. 3. By this means the toothed or gear rim E is firmly connected to the spider, the recesses C preventing it from being displaced or removed at the front, and the flange B at the rear face of the wheel.

As the casting cools its shrinkage draws down the dovetails, and forms a perfectly secure and solid connection between the two parts without injuring either in the cooling process.

I do not confine myself to the special form of joint described for locking the rim and spider together, as any suitable form may be employed for the purpose. I prefer the dovetail joint, however, as being simple and easily molded. Neither do I confine myself to running the rim onto the spider while the latter is hot, although it is preferable, perhaps, to do so.

Having thus described my invention, what I claim is—

1. A gear-wheel composed of a cast-iron spider and a gun-metal or other composite metal rim, one being cast upon the other, so as to enter suitable recesses or depressions formed therein, substantially as described, for the purpose specified.

2. The spider cast with the beveled flange B and a series of recesses or depressions, C, therein of suitable size and form, substantially as described, for the purpose specified.

3. The rim E cast upon the flanged periphery of the spider, so as to bear against the beveled flange, and enter the recesses or depressions C *d* therein, to form a series of locking-joints, substantially as described, for the purpose specified.

A. J. SWEENEY.

Witnesses:

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