

(Model.)

A. FRENCH & J. ROBERTSON.  
Casting Car Wheels.

No. 237,511.

Patented Feb. 8, 1881.

Fig. 1.

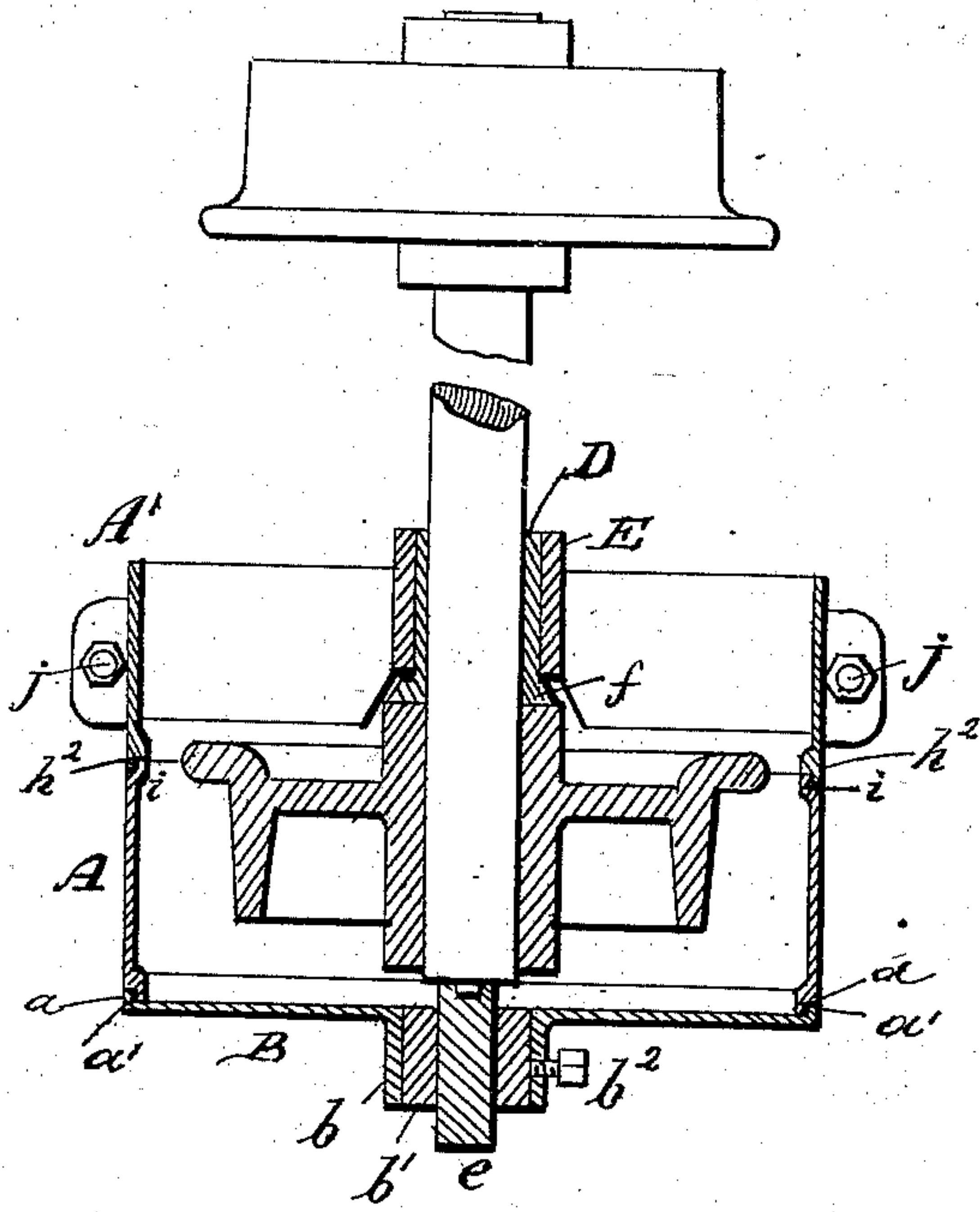


Fig. 2.

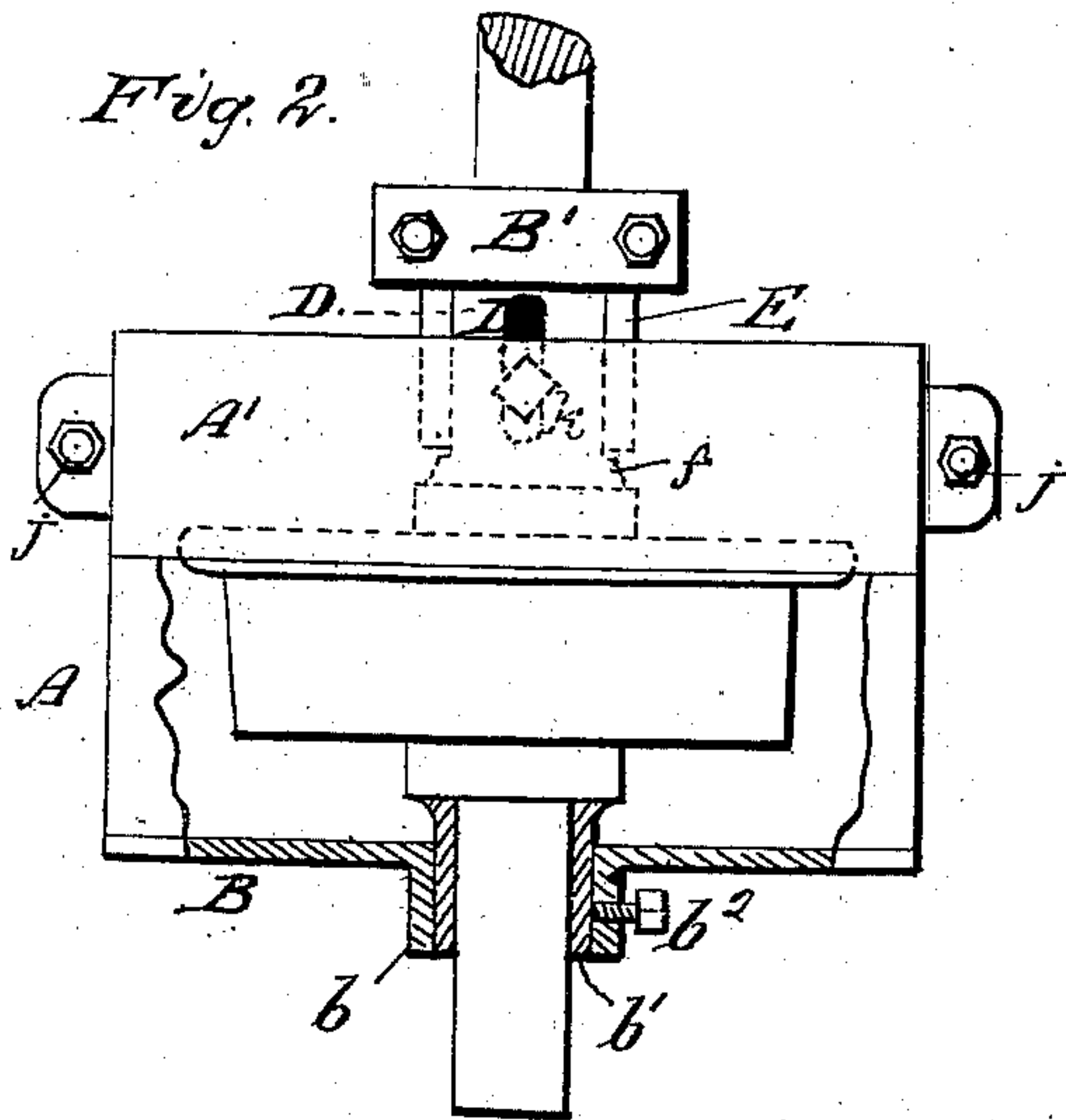


Fig. 3.

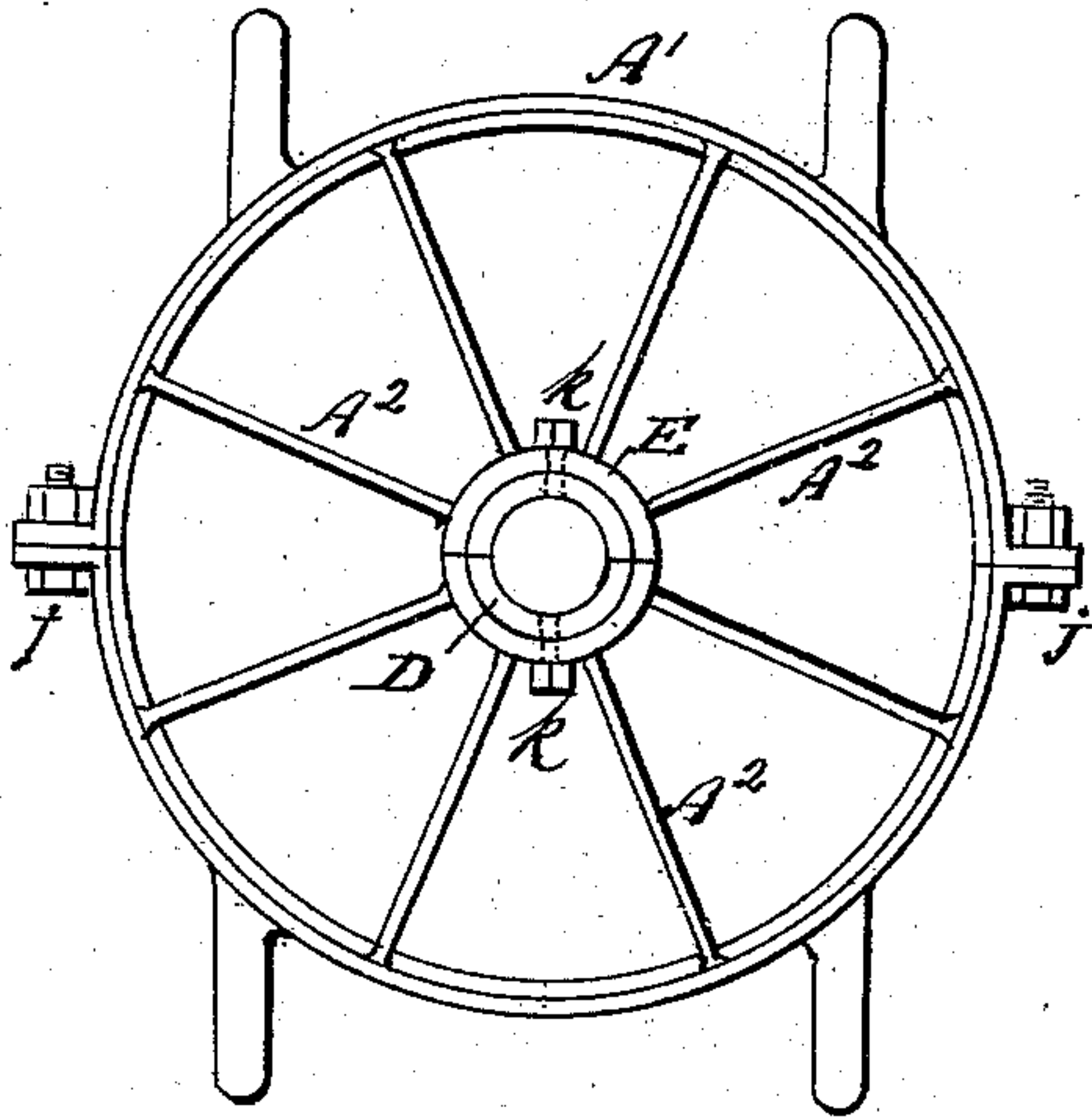
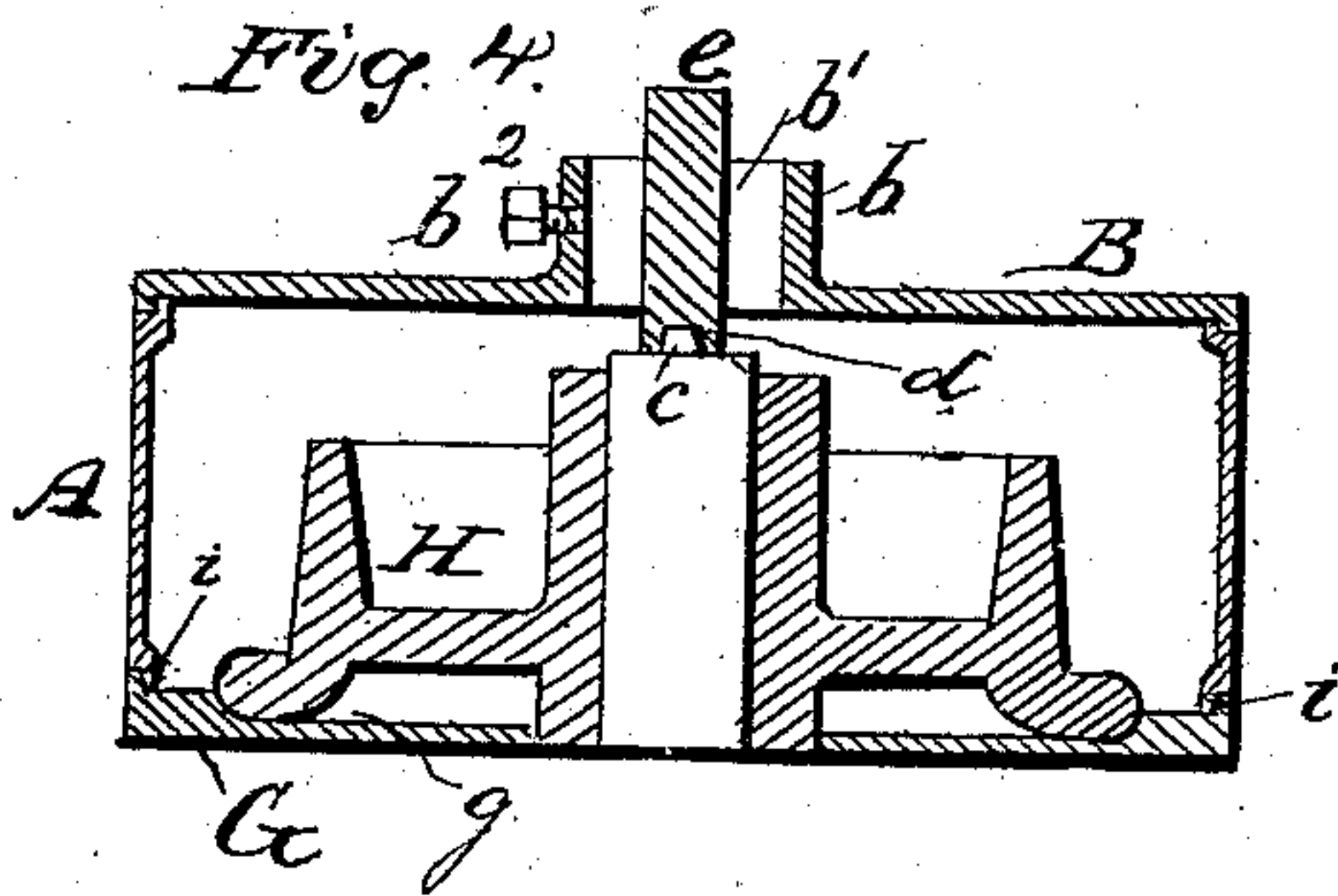


Fig. 4.



WITNESSES

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# UNITED STATES PATENT OFFICE.

ALFRED FRENCH AND JOHN ROBERTSON, OF GOLD HILL, NEVADA.

## CASTING CAR-WHEELS.

SPECIFICATION forming part of Letters Patent No. 237,511, dated February 8, 1881.

Application filed September 20, 1880. (Model.)

*To all whom it may concern:*

Be it known that we, ALFRED FRENCH and JOHN ROBERTSON, of Gold Hill, in the county of Storey and State of Nevada, have invented certain new and useful Improvements in Casting Car-Wheels; and we do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification, in which—

Figure 1 is a vertical sectional view of a flask for molding car-wheels embodying our improvement. Fig. 2 is a side view of the same, a portion of the flask being broken away to show a certain modification in the arrangement of its parts, as hereinafter described. Fig. 3 is a plan or top view of the flask, and Fig. 4 is a vertical section of the nowel with its "follower-board" and the pattern placed in position ready for the ramming of the sand around it.

Similar letters of reference indicate corresponding parts in all the figures.

Our invention relates to the casting of wheels for railroad-cars either with or without their axles; and it consists in the construction and arrangement of parts of a molding-flask specially adapted to this purpose, and by the use of which, when the wheel is cast upon its axle, its position thereupon may be adjusted according to whether the journals are to be at the extreme ends of the axle, outside of the wheels, or on that portion of the axle which lies between the wheels.

In Fig. 1 of the accompanying sheet of drawings we have shown the flask arranged to cast the wheel on the extreme ends of the axle, and in Fig. 2 we have shown it arranged to cast the wheels upon the axle at some distance from the ends, to allow for the outside journals. The arrangement of the flask shown in Fig. 1 is also applicable to the casting of the wheel without its axle by simply substituting a removable mandrel for the axle therein shown.

We shall first describe the construction of our improved flask, to be followed by a description of the manner of molding and casting with it.

The flask consists, in the first place, of the usual three parts, to wit: the nowel A, the cope A', and the bottom B. The nowel has annular top and bottom flanges, *i* and *a'*, fitting into grooves or recesses formed by the annular flanges *b*<sup>2</sup> and *a* of the cope and bottom, respectively. The bottom B has a central circular aperture, encircled by a downward-projecting collar, *b*, to receive a clamping-sleeve, *b'*, which may be held and adjusted in its collar *b* by means of a set-screw, *b*<sup>2</sup>.

The cope A' is made in two semicircular parts, either bolted together, as shown at *jj*; or the two parts may be connected by a hinge at one end, and a latch or other suitable fastening device at the opposite end. The top of the cope is open, and made with a series of arms or spokes, A<sup>2</sup>, radiating from the halved hub E, as clearly shown in Fig. 3. Into the hub E is inserted a clamping-collar, D, which is also made in two semi-cylindrical parts, each part being held adjustably in its appropriate part or section of the cope and hub by a set-screw, *k*, which projects out through a slot in the hub, as shown in Figs. 2 and 3, whereby we provide for the vertical adjustment of the split clamping-collar D in respect of its hub or sleeve E.

In using this flask we first take, as usual, a so-called "follower-board," G, (see Fig. 4,) which is made with a central circular recess, *g*, deep enough to receive one-half the depth (or thickness) of the flange of the pattern shown at H. It also has an annular groove or recess to receive the top flange, *i*, of the inverted nowel. If it is desired to cast the wheel without an axle, we insert a mandrel into central bore of the pattern, having a short tenon, *c*, which fits into a recess, *d*, in the cylindrical stop *e*. The mandrel and stop are placed in position, and the space around the pattern and its stop is filled with sand and rammed. Next, the bottom B is put on by inserting stop *e* through sleeve *b* and its split clamping-collar *b'*, and when the bottom is in its proper position down upon the flanged rim of the nowel, the stop is fastened by turning screw *b*<sup>2</sup>, and the flask is reversed, the follower-board G removed, and the cope A' placed on the nowel. If the wheel is to be cast upon the extreme end of an axle, the preliminary steps are the same, only an axle is substituted for the mandrel and



stepped with its lower tenoned end into the stop *e*. After the cope has been placed in position upon the nowel, its inside split collar, D, is adjusted within its hub E, with its bottom flange, *f*, bearing against the pattern, as shown in Fig. 1, and then fastened in this position by means of the screws *k k*. This is for the purpose of keeping the sand away from the axle when it is inserted into the mold. If, on the other hand, it is desired to cast the wheel some distance from the end of the axle, we dispense with the adjustable central bottom stop, *e*, and insert the projecting end of the axle through the sleeve *b*, holding it firmly in place by the split clamping-collar *b'* and its screw *b<sup>2</sup>*, as shown in Fig. 2. The axle may be further supported by a clamp, B', suitably supported above the cope, which will relieve the flask from the weight of the axle, which is quite considerable, especially if a wheel has been cast already upon one of its ends. The placing of the pattern in the mold, ramming the sand, and adjusting the cope and its sleeve D, do not differ from the process as described in casting the wheel without an axle, or at the extreme end of an axle.

Having thus described our invention, we claim and desire to secure by Letters Patent of the United States—

1. In a flask for molding car-wheels, the cope A', made in two parts and having a central hub, E, split clamping-collar D, set-screws *k*, and radial arms A<sup>2</sup>, substantially as set forth.

2. The flask composed of the bottom B, having flanged rim *a*, central sleeve, *b*, clamping-collar *b'*, and set-screw *b<sup>2</sup>*, cylindrical nowel A, having annular top and bottom flanges, *i a'*, and cope A', made in two parts and having a central hub, E, split clamping-collar D, set-screws *k*, and radial arms A<sup>2</sup>, all constructed and combined substantially as and for the purpose herein shown and specified.

In testimony that we claim the foregoing as our own we have hereto affixed our signatures in presence of two witnesses.

ALFRED FRENCH.  
JOHN ROBERTSON.

Witnesses:

DANIEL D. DONOVAN,  
DAVID HOLDEN RHODES.