(No Model.)

C. L. RIKER.

GRATE.

No. 330,739. Patented Nov. 17, 1885.

Fig. 1.

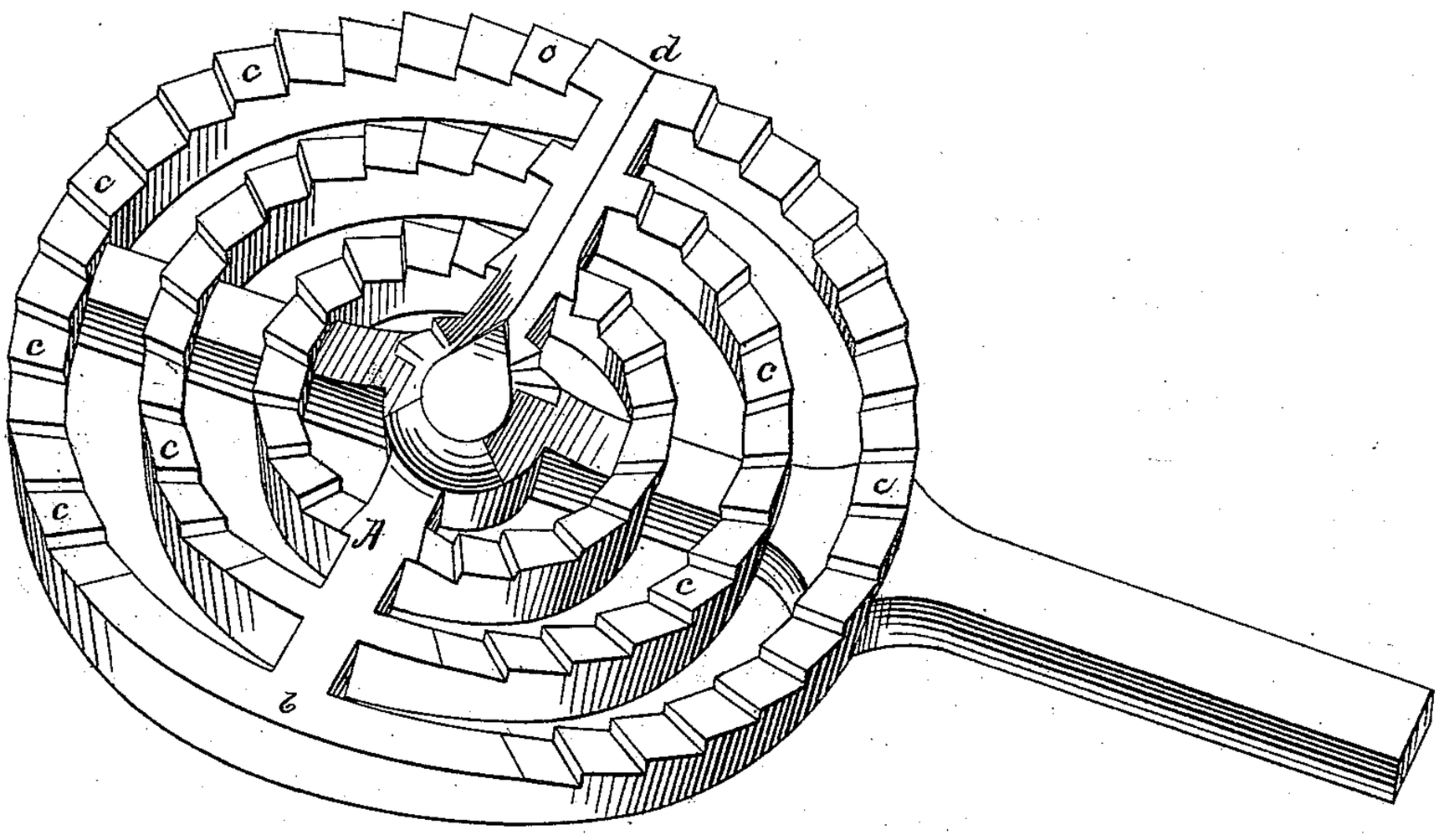

Fig. 2.

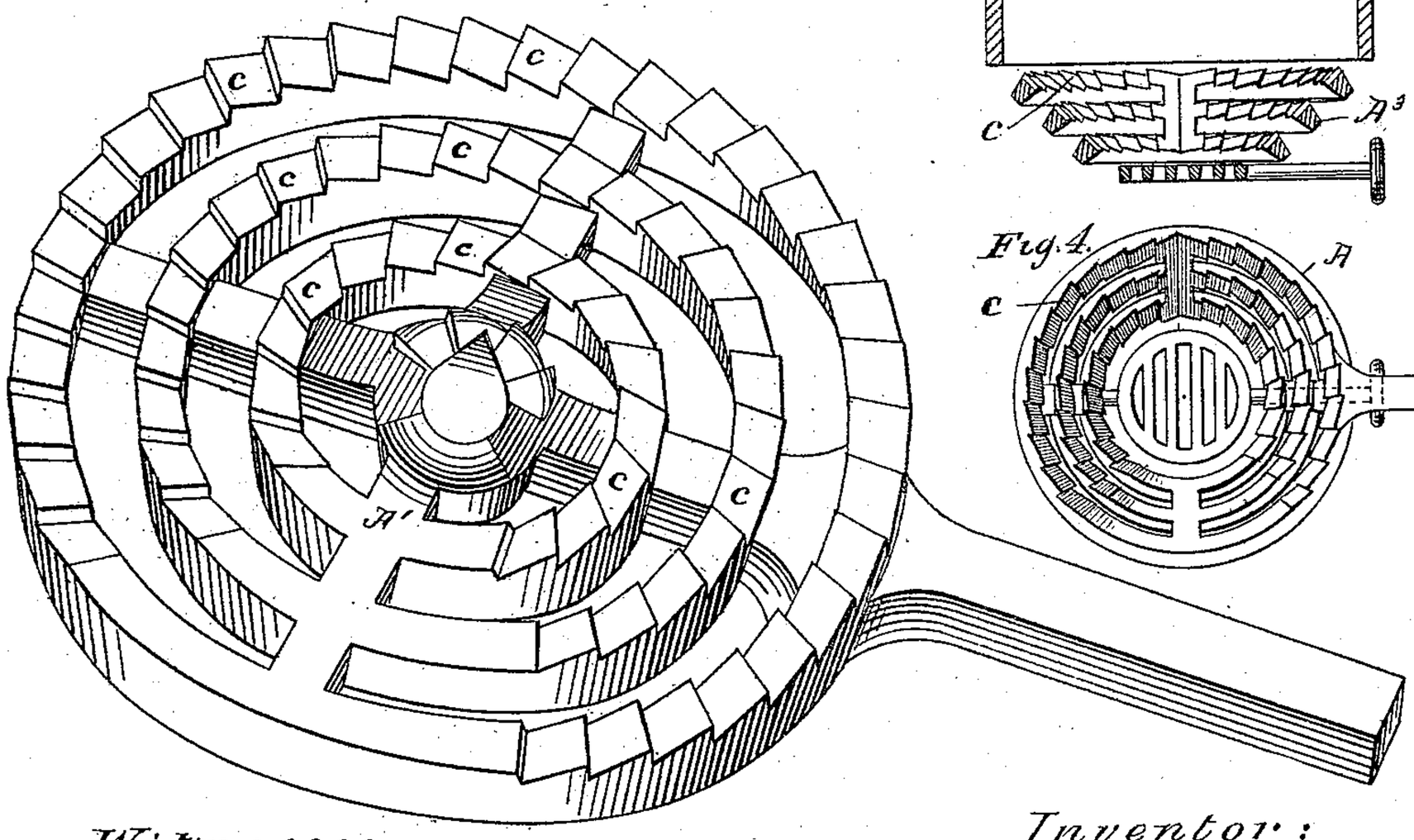

Fig. 3.

Fig. 4.

Witnesses:

E. Wolff.

Augustus.

Inventor:

Carroll L. Riker

By David Arburn

Attorney.

UNITED STATES PATENT OFFICE.

CARROLL L. RIKER, OF BROOKLYN, ASSIGNOR TO LIZZIE C. RIKER, OF ESOPUS, NEW YORK.

GRATE.

SPECIFICATION forming part of Letters Patent No. 330,739, dated November 17, 1885.

Application filed March 13, 1884. Serial No. 124,088. (No model.)

To all whom it may concern:

Be it known that I, CARROLL L. RIKER, of Brooklyn, in the county of Kings and State of New York, have invented a new and useful Improvement in Grates; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making a part of this specification.

My invention relates to circular grates for coal-burning furnaces.

The object of my improvement is to facilitate clearing the grate of cinders and clinkers, and to afford a freer access of air to the burning coals.

It consists in a circular rotating grate constructed with circular concentric bars provided with beveled teeth or projections inclined toward a common point of discharge presenting a plane surface, so that when the grate is reciprocated to and fro upon its axis the ashes, cinders, and clinkers will work forward over the entire grate to said point of discharge.

In the accompanying drawings, Figure 1 is a view in perspective of my improved grate detached from the fire-pot and furnace; Fig. 2, a similar view of a modification of the same. Fig. 3 illustrates my invention as embodied in a circular grate of basket form, Fig. 4 being a top view of said grate.

A, Fig. 1, represents a grate cast of iron in the customary manner. The upper surface of each bar and of the central point of the grate is serrated in the form of a ratchet having a series of teeth, *c c c*, inclined toward the front. The front portion, *b*, of the grate at the point of discharge is left plain, and the teeth on the bars are inclined from a diametrically-opposite point, *d*, on each side toward said front plain surface, *b*, as shown in Fig. 1.

The grate A is designed to be mounted so as to tip toward the front to facilitate the removal of the cinders and clinkers after they have been worked forward by the reciprocation of the grate upon its central pivotal axis.

In Fig. 2 a similar grate, A′, is illustrated; but in this the inclined teeth *c c c* are all set the same way, so that the cinders, &c., over the whole grate are all caused to work forward in the same circular direction by means of its reciprocation.

Where the grate is in basket form, as at A^3, Fig. 3, the teeth are cast upon the face of the annular bars to incline either from the back of the grate to the front, as shown in Figs. 3 and 4, in form similar to the construction shown in Fig. 1, or to incline all in the same direction in manner similar to the teeth on the grate shown in Fig. 2.

The projections or teeth *c c* serve not only to cause the cinders thereon to work forward automatically in the direction of their inclination when the grate is shaken, but by supporting the coals upon their apices, permit a free access and circulation of air through the intervening notches or recesses, which will promote a more perfect combustion of the fuel.

The front edge of each tooth may be cut or formed at any desired angle with the line of movement of the grate to promote a lateral as well as forward movement of the cinders and clinkers.

I do not claim as new a circular grate serrated on its upper surface to present cutting-edges running in one direction a short distance and then facing the opposite way for a short distance, and so on with alternate reversals around the entire circumference of the grate, the same being designed to break and cut up the clinkers thereon, as described in Letters Patent No. 121,733; nor a grate constructed for the same purpose with independent serrated bars, and in which the alternate bars are capable of independent movement in opposite directions, such as are described in the Letters Patent Nos. 121,733 and 167,657, or with separate independent bars serrated for a portion of their length only, as shown in the English Letters Patent No. 10,531 of 1845.

I claim as my invention—

A circular grate constructed, substantially as herein described, of a series of concentric

circular bars adapted to rotate upon a central pivot, and provided with series of beveled teeth or angular projections upon its upper surface inclining toward a common section having a plane face and at which the cinders are discharged from the grate by its reciprocation.

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

CARROLL L. RIKER.

Witnesses:

WILLIAM J. BARKER,

ED. S. GAINES.