

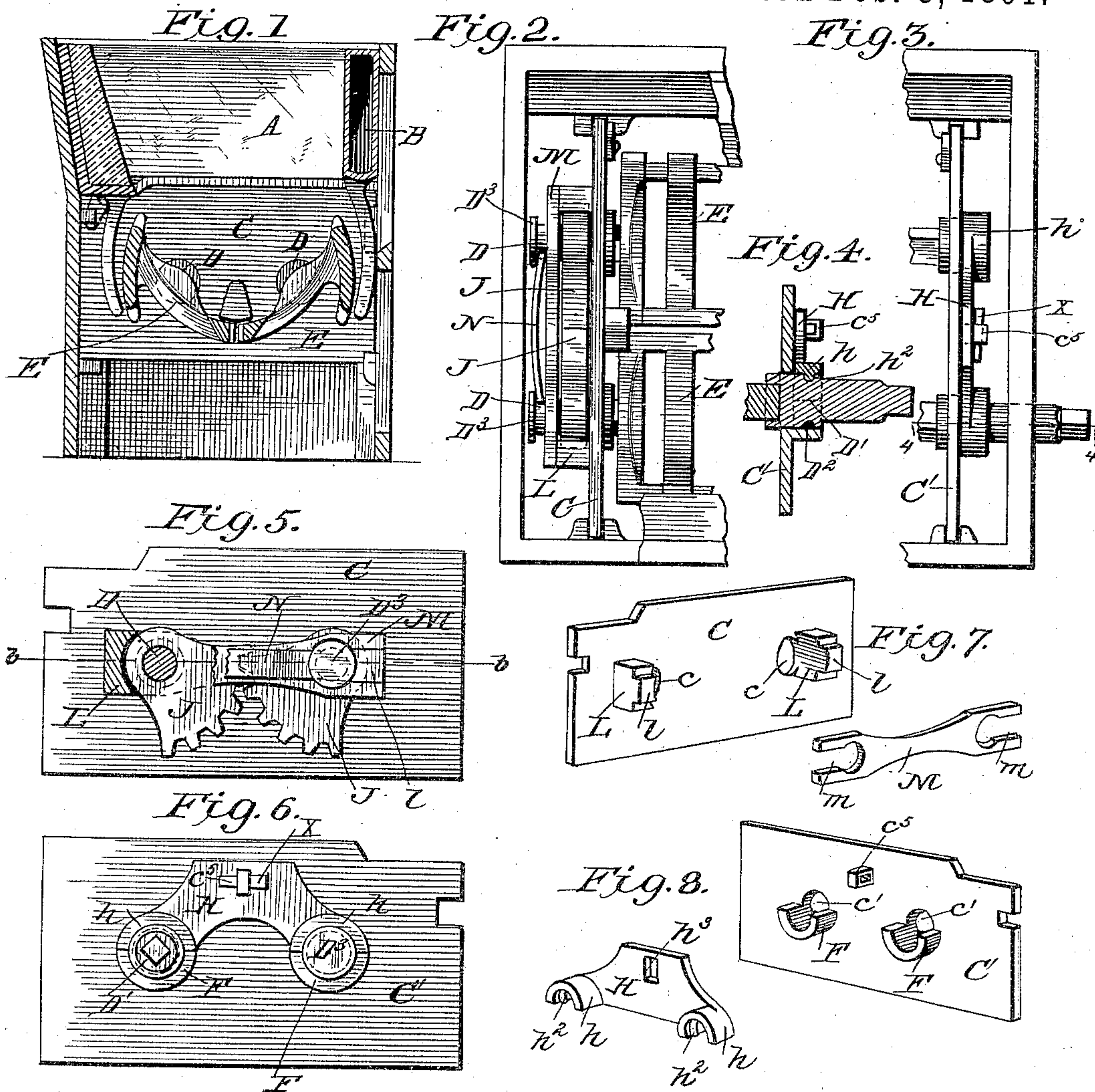
(No Model.)

2 Sheets—Sheet 1.

C. L. BEERS.
GRATE SUPPORT.

No. 445,873.

Patented Feb. 3, 1891.



WITNESSES:
Fred G. Dieterich
M. D. Blondel

INVENTOR:
Charles L. Beers.
BY *Mann & Co.*
ATTORNEYS

(No Model.)

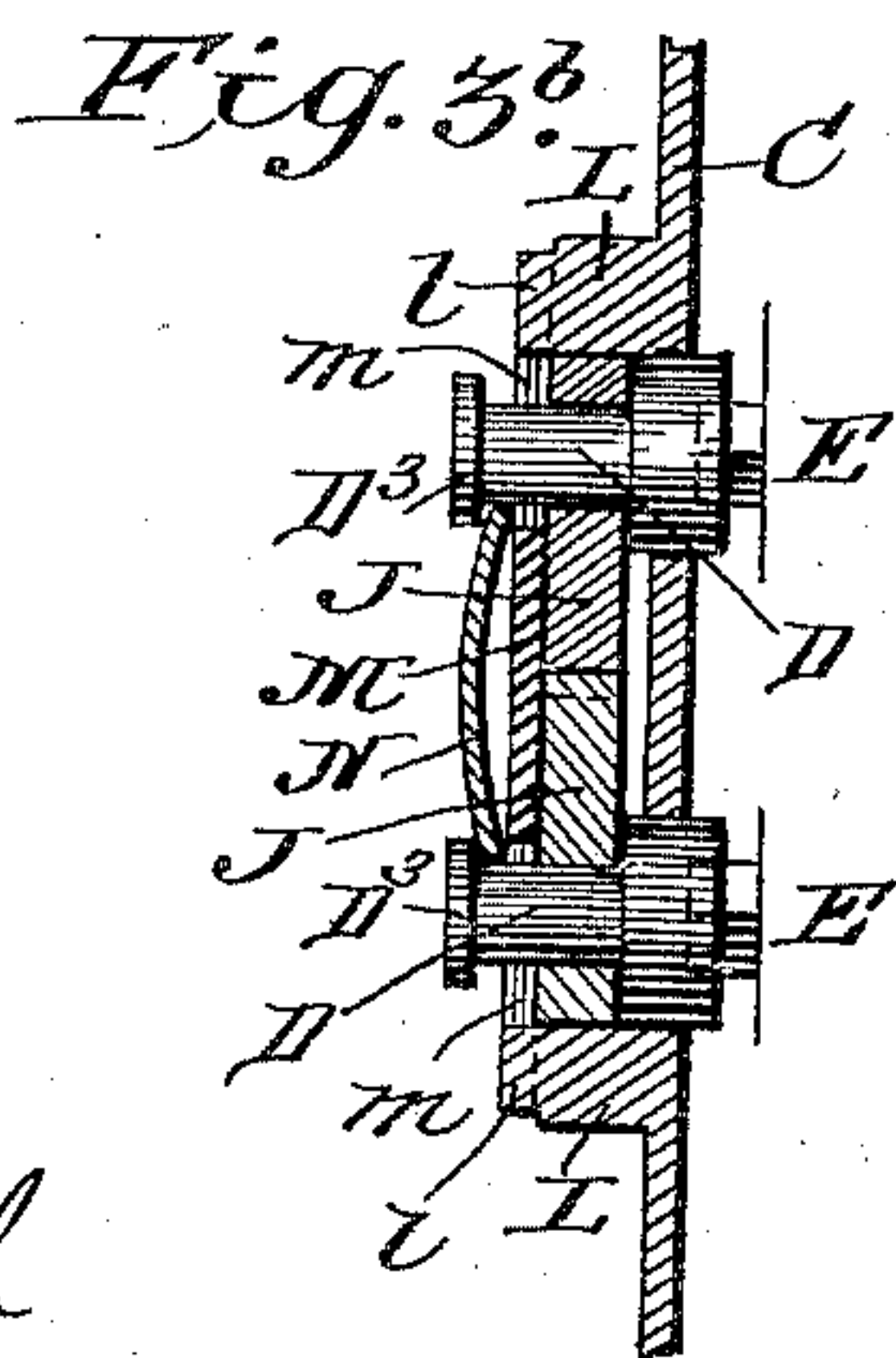
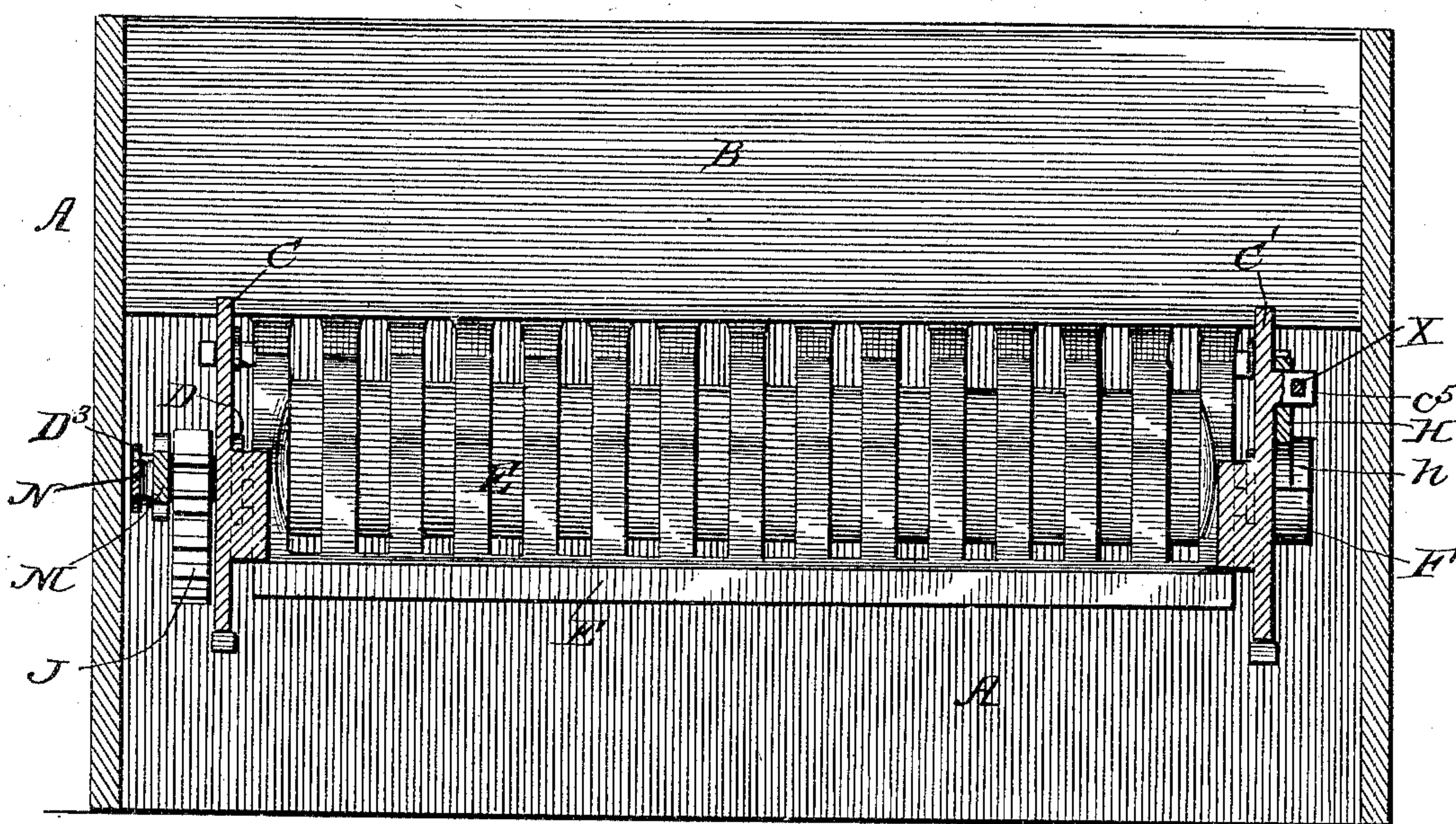
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Fig. 3^a



WITNESSES:

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INVENTOR:

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UNITED STATES PATENT OFFICE.

CHARLES L. BEERS, OF SCRANTON, PENNSYLVANIA.

GRATE-SUPPORT.

SPECIFICATION forming part of Letters Patent No. 445,873, dated February 3, 1891.

Application filed June 7, 1890. Serial No. 354,665. (No model.)

To all whom it may concern:

Be it known that I, CHARLES L. BEERS, residing at Scranton, in the county of Lackawanna and State of Pennsylvania, have invented certain new and useful Improvements in Grate-Supports, of which the following is a specification.

My invention has for its object to provide suitably-arranged supports for grates of cooking-stoves, furnaces, locomotive-boilers, &c., which will be simple in construction, cheap as to cost, and which can be readily attached to or detached from the fire-pot.

My invention consists in the peculiar combination and novel arrangement of the several parts, all of which will be hereinafter fully described in the annexed specification, and particularly pointed out in the claims, reference being had to the accompanying drawings, in which—

Figure 1 is a cross-section of a fire-box of a stove with my improvements applied. Fig. 2 is a top plan view of one end of the fire-box with a grate-supporting frame in position. Fig. 3 is a top plan view of the opposite end and the opposite supporting-frame. Fig. 3^a is a longitudinal section of my improvements. Fig. 3^b is a horizontal section taken on the line *b b*, Fig. 5. Fig. 4 is a detail cross-section taken on the line 4 4, Fig. 3. Figs. 5 and 6 are end views of the grate-supporting frames. Figs. 7 and 8 are detail perspective views thereof, showing their respective holding or cap plates removed.

My present invention, which relates more particularly to improvements on the devices disclosed in a previous application made by me May 28, 1890, Serial No. 353,516, seeks to simplify the construction thereof to adapt the same to be more easily manufactured and at a much less cost.

In the accompanying drawings, A indicates the fire-box of a stove, the front wall of which is formed with the usual water-front B. C C' indicate the grate-supporting frames, which are adapted to be detachably held in the fire-box in a manner clearly set forth in my other application referred to.

The frames C C' are each formed with apertures *c* and *c'*, respectively, which form the bearings for the hubs or spindles D D', each of which is formed on its inner face with

non-circular sockets to receive the non-circular journals on the ends of the several grate-sections E. To form a solid bearing for said hubs and to provide means whereby they will not become accidentally detached, I cast the frame or plate C' with a semicircular boss F on the outer face of said frame about the lower edge of each of the apertures *c'*, said bosses being extended sufficiently to form a solid bearing for the hubs D' D', and to hold said hubs in position I provide a casting H in the shape of a cap-plate, formed with semicircular bosses *h h*, which when the plate H is placed in position form, in connection with the bosses F, a complete housing for the hubs D'. Any suitable means may be provided for holding said plate in position; but I prefer to employ the means shown, which consists in providing said plate with an aperture *h*², which fits over an apertured lug C⁵ on the back of the plate C', a wedge-key *x* being passed through the apertured lug C⁵, serving to hold the plate securely in place.

To provide means whereby the hubs D' D' cannot be withdrawn when the cap-plate H is in position, I form said hubs with annular grooves D² D² and form the inner faces of the semicircular bosses *h* with ribs *h*² *h*², which seat in said grooves, as most clearly shown in the drawings.

Upon the back face of the plate C and adjacent to the outer vertical walls of the apertures *c c* are formed segmental lugs or bosses L, arranged as most clearly shown in Fig. 7 of the drawings, said bosses being formed with offsets *l l*, in which seat the bifurcated ends *m m* of the locking-bar M, said ends being adapted to slip under the heads D³ of the hubs D D, and to hold said bar M in position I provide the spring locking-plate N, which fits over said plate and between the bosses L, as shown. By this arrangement it will be seen that the gear-segments as they drop to their lowermost position will bear against said bosses (see Fig. 5) and be thereby limited in their movement, they being also held from being thrown upward too far in the same manner.

From the foregoing description, taken in connection with the drawings, the operation and advantages of my improvements will readily appear. It will be seen that by their

use I am enabled to cast all of the supporting-frames in the usual molds now in use, and thereby avoid the necessity of constructing special molds for the purpose.

5. The several parts are simple in construction, are made interchangeable, and one or more of the parts can be readily replaced by any ordinary mechanic.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. A grate-support comprising the plate C, formed with apertures *c c*, segmental bosses L, arranged to the outer vertical edges of said apertures *c c*, said bosses formed with offsets *l l*, the hubs D, formed with heads *D³*, the plate M, formed with bifurcated ends *m m*, adapted to fit under said heads *D³* and seat in said offsets *l*, and the spring-plate for holding said plate M in position, substantially as shown and described.

2. A grate-support comprising the frame C', formed with the apertures *c' c'*, semicircular bosses F, cast integral with said frame C' about the lower half of said apertures, the

hubs D', journaled therein, the cap-plate H, formed with semicircular cap-pieces *h*, adapted to fit over said bosses F, and means for holding said plate H in position, substantially as shown and described.

3. An improved grate-support comprising a frame C', formed with apertures *c'*, cast with outwardly-extending semicircular bosses F, the apertured lug C⁵, the hubs D', having annular grooves *d* journaled in said apertures, bosses F, the plate H, formed with cap-pieces *h h*, adapted to fit over the bosses and formed with internal ribs *h²*, adapted to fit the annular grooves in said hubs D', an aperture *h³*, adapted to fit over said lug C⁵, and the wedge-key *x* for holding said plate in locked position, substantially as shown and described.

The above specification of my invention signed by me in the presence of two subscribing witnesses.

CHARLES L. BEERS.

Witnesses:

FRED G. DIETERICH,
 SOLON C. KEMON.