

(No Model.)

3 Sheets—Sheet 1.

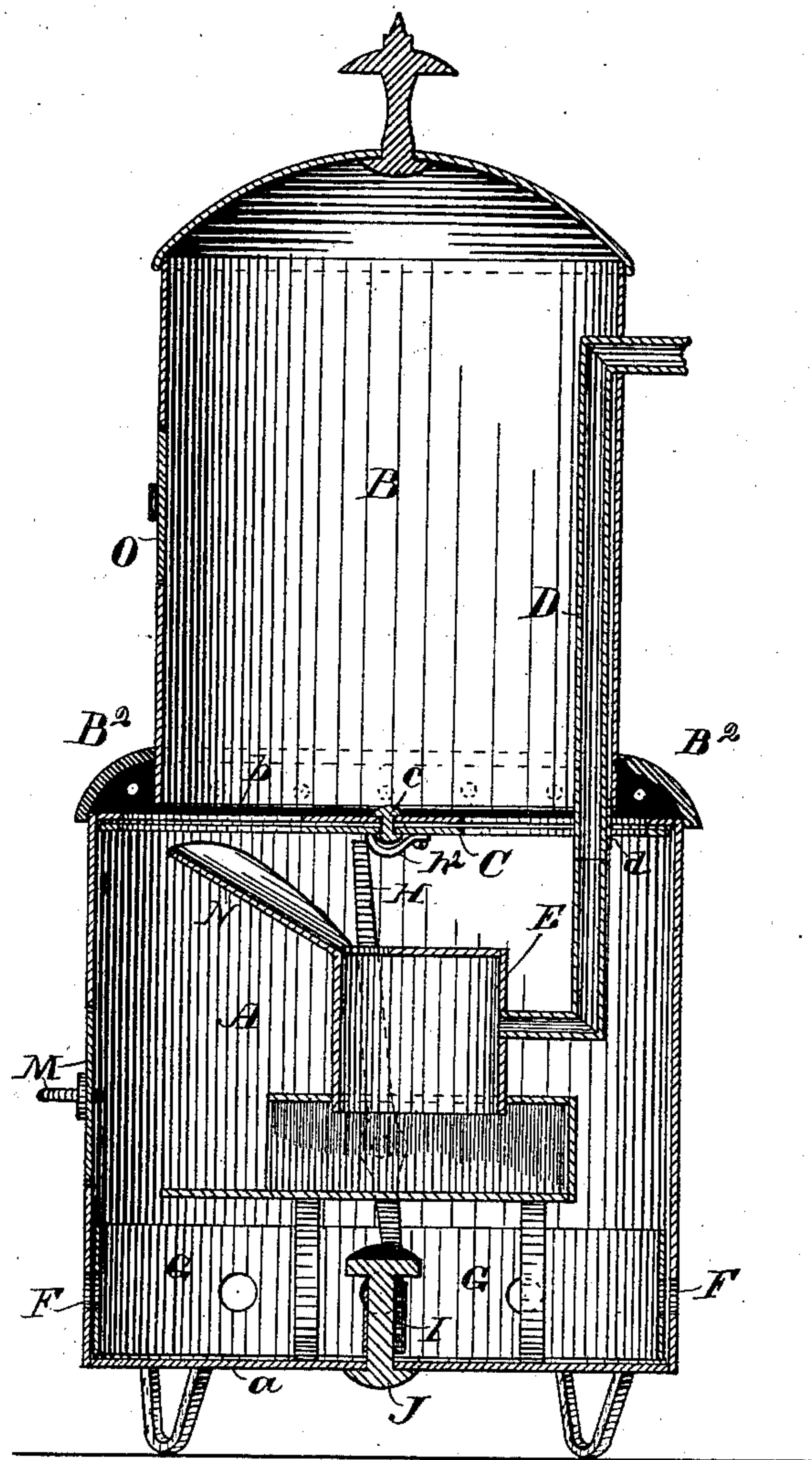
B. D. STEVENS.

SAFETY CASING FOR RAILWAY CAR STOVES.

No. 277,854.

Patented May 15, 1883.

Fig 1.



Witnesses

Wm J. Tanner

A. M. Tanner

By his Attorney

Inventor

Benjamin D. Stevens

Wm A. McKenney

(No Model.)

3 Sheets—Sheet 2.

B. D. STEVENS.

SAFETY CASING FOR RAILWAY CAR STOVES.

No. 277,854.

Patented May 15, 1883.

Fig. 3.

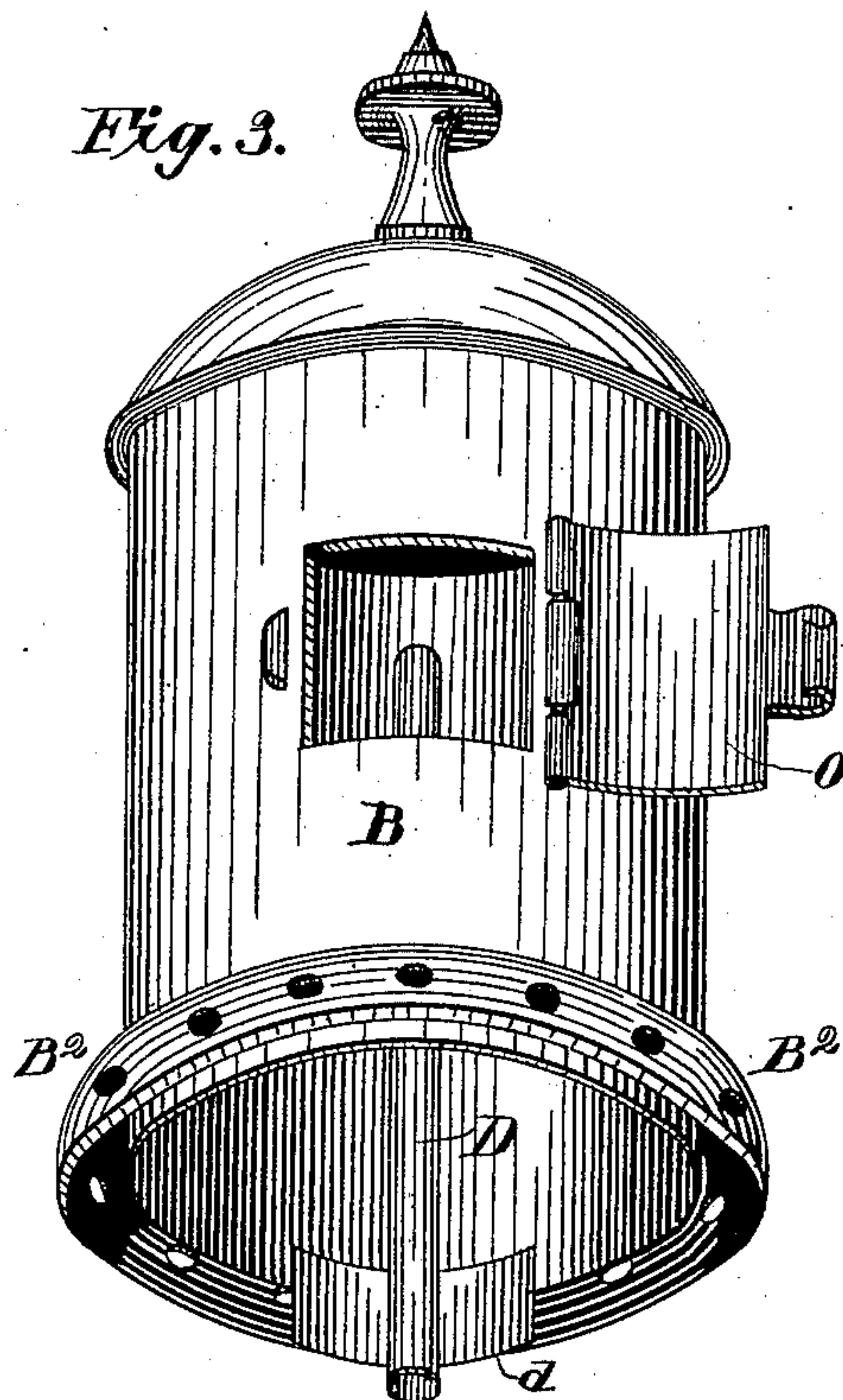


Fig. 2.

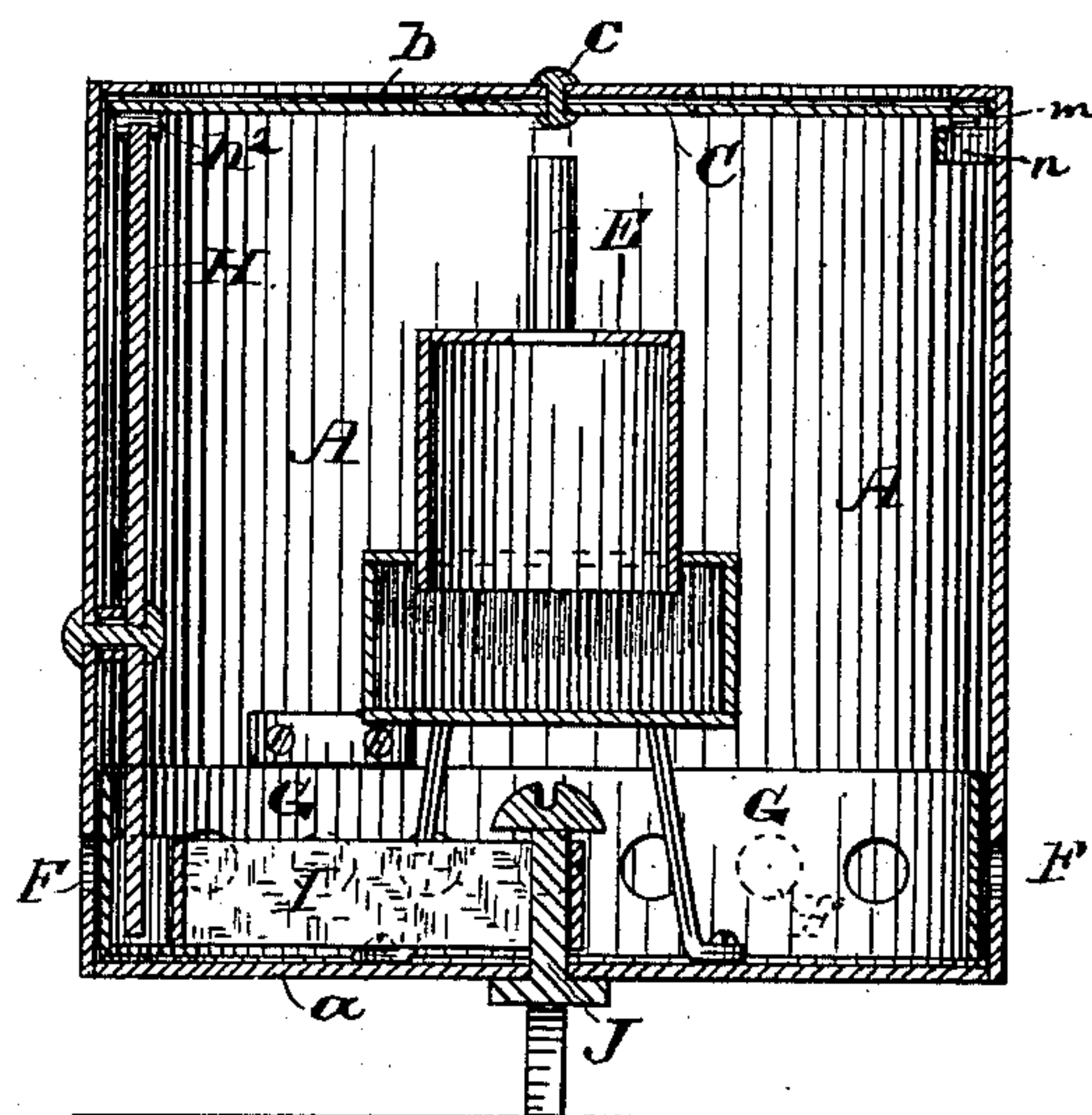
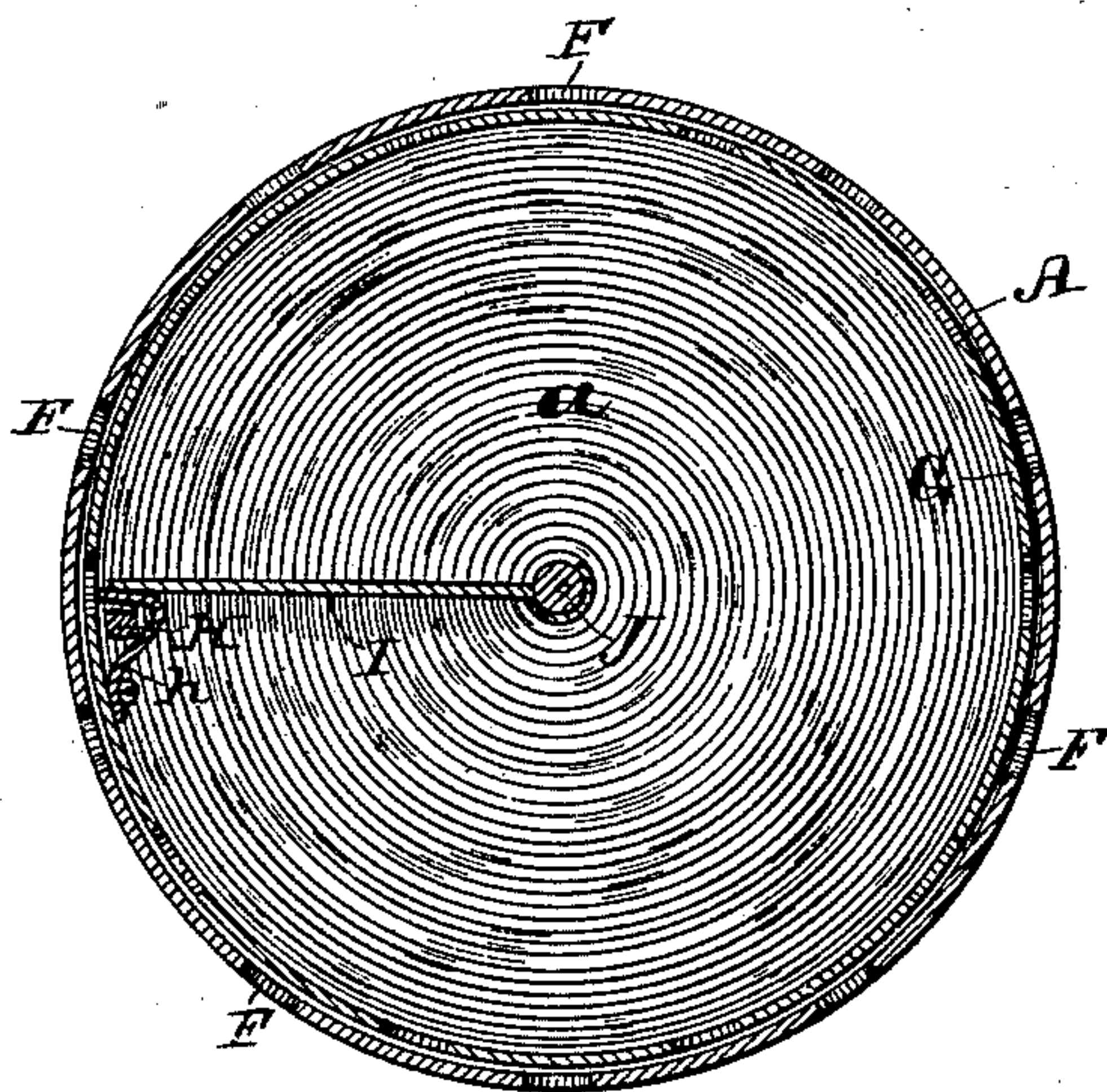


Fig. 4.



Witnesses

Wm. J. Tanner

A. M. Tanner

By his Attorney

Inventor

Benjamin D. Stevens

Wm. A. McKenney

(No Model.)

3 Sheets—Sheet 3.

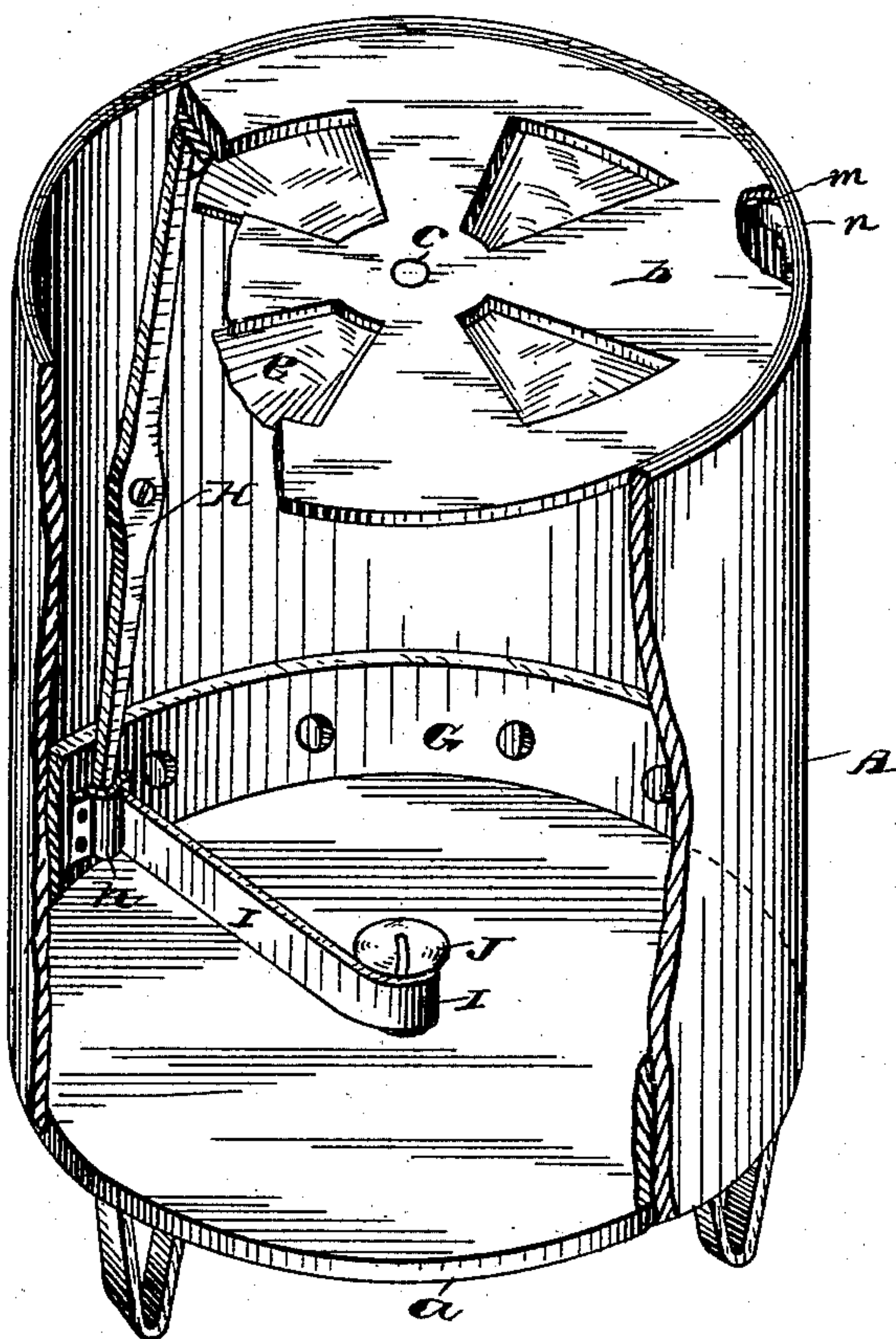
B. D. STEVENS.

SAFETY CASING FOR RAILWAY CAR STOVES.

No. 277,854.

Patented May 15, 1883.

Fig. 5.



Witnesses

Wm. J. Tanner

A. M. Tanner

Inventor

Benjamin D. Stevens

By Wm. A. McKenney
Atty

UNITED STATES PATENT OFFICE.

BENJAMIN D. STEVENS, OF BURLINGTON, VERMONT.

SAFETY-CASING FOR RAILWAY-CAR STOVES.

SPECIFICATION forming part of Letters Patent No. 277,854, dated May 15, 1883.

Application filed December 18, 1882. (No model.)

To all whom it may concern:

Be it known that I, BENJAMIN D. STEVENS, a citizen of the United States, residing at the city of Burlington, in the county of Chittenden and State of Vermont, have invented certain new and useful Improvements in Safety-Casings for Railway-Car Stoves; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

The present invention relates to that class of stoves for heating railway-cars which are provided with means for automatically closing the draft or air apertures in the event of an accident to the car or in case of the overturning or tilting of the stove.

The object of the invention is to provide a safety-casing for inclosing or surrounding a railway-car stove, by the use of which casing I avoid all danger of burning of the car and consequent loss of life in case of accident. The casing devised by me can be used in connection with an ordinary car-stove, and is provided with bottom openings for the admission of cold air, and with top openings for the passage of the heated air into a radiator or shell surmounting the safety-casing which surrounds the stove. A rotary disk or a sliding register-plate is fitted on the apertured top of the safety-casing, and is connected with the upper end of a spring-pressed lever pivoted to the side or wall of the casing. The lower end of this lever is connected with a ring or band, which is fitted over the air-inlet openings at the bottom of the casing, and is provided with openings registering with those in the casing. A smoke-flue carried by the radiator or top shell extends through one of the openings in the top of the casing and connects with the smoke-pipe of the stove. The radiator rests upon the safety-casing in such a manner that the smoke-pipe of the former serves as a stop for keeping open the hot-air-discharge openings in said casing so long as the stove is in an upright position. When the car or the stove is tilted or overturned the radiator will topple off, and by the removal of its smoke-

pipe from the pipe of the stove bring into action the spring which is connected with the lever heretofore mentioned as being connected with the top rotary disk or sliding plate and with the ring or band. The force exerted by the spring serves to move the last-named devices for closing all the apertures in the casing, consequently preventing the escape of fire and causing the latter to go out. A stop or projection on the inner wall of the casing and a projection on the rotary or sliding plate serve to limit the extent of movement of the latter and hold it in a closed position.

In the accompanying drawings, Figure 1 is a vertical sectional view of my safety-casing and the stove inclosed thereby, the draft-openings being uncovered. Fig. 2 is a sectional view, showing the casing closed and the radiator removed therefrom. Fig. 3 is a perspective view of the removable radiator or top of the casing. Fig. 4 is a horizontal section taken through the bottom portion of the casing. Fig. 5 is a perspective view of the closed safety-casing, its wall being broken out to show the interior arrangement of parts.

The letter A designates a casing, which in the present instance is in the form of a cylinder. It may, however, be of a square or other shape, according to the form of stove it is intended to inclose. The casing is constructed of boiler or wrought iron, and is provided with a close or solid bottom, *a*, and with an apertured top, *b*. The latter is secured to the body of the casing by bolts, rivets, or other fastening devices, so as to permit it to be removed for the purpose of introducing the stove into the casing. The apertures in the top of the casing (generally four or more in number, although one may suffice) serve to conduct heated air into a radiator or drum, B, surmounting the casing. This drum is composed of a sheet-metal shell and a base, B², of cast-iron or other heavy metal. The object of this construction is to make the radiator so heavy that it will rest firmly on the top of the casing without the use of special fastening devices. An apertured disk or plate, C, turning on a central pivot, *c*, or made to slide back and forth, is fitted on the under side of the apertured top *b* of the casing. When the apertures in said disk coincide with those in the

aforesaid top *b*, a free and unobstructed passage of heated air from the casing into the radiator will take place.

The radiator is provided with a vertical smoke-pipe, *D*, which extends below the lower edge of the shell of the radiator and projects into the casing, where it is connected with the smoke-pipe *E* of the stove. An enlargement or plate, *d*, on the pipe *D* enters one of the apertures in the top of the casing, and serves to hold the disk or plate *C* in such position that the openings or apertures in the casing are open to their full extent. A series of openings, *F*, made in the side of the casing *A*, serve for the admission of cold air into the latter for supporting combustion and supplying air to be heated by passage through the casing and radiator. A ring or band, *G*, having a series of openings corresponding with the openings *F*, is arranged on the inside of the casing, and is connected with the lower end of a lever, *H*, pivoted to the wall or side of the casing. The ring has a socket, *h*, in which the lever is stepped, and a plate-spring, *I*, bearing against said socket, is secured to a bolt or pin, *J*, rising from the center of the bottom of the casing. The upper end of the lever bears against a projection or stop, *h*², on the under side of the rotary disk or sliding plate *C*. When the radiator is in position and its pipe connected with the smoke-pipe of the stove, the bottom and top openings are uncovered, so as to insure a perfect draft or free passage of air. When, however, the top or radiator is removed by accident or other cause, the withdrawal of the smoke-pipe and its plate or enlargement *d* from the aperture in the top of the casing will bring the spring *I* into action and cause it to close the casing in an air-tight manner by bringing the solid parts of the lower band and top plate opposite the openings in the casing. Hence it follows that the closing of the draft-openings will render the casing air and fire

tight. A lug or projection, *m*, on the under side of the movable plate *C* comes in contact with a lug, *n*, on the inside of the casing, when the plate is closed by the action of the spring. These lugs thus serve as stop devices for limiting the movement of the plate and holding it closed by means of the spring, the lower plate being also held closed by the pressure of the lever. A door, *M*, in the casing is held in a closed position by appropriate means, and serves for reaching the hearth of the stove. Fuel is supplied to the latter in any suitable manner, and in the present instance by a chute, *N*, at its top, which is in line with one of the apertures in the top of the casing. The radiator is also provided with a door, *O*, and its bottom rim or heavy base is perforated to permit hot air to pass therefrom.

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

1. A safety-casing for railway-car stoves, consisting of a shell or body having bottom air-inlet openings, and a register ring or plate, and an apertured top and movable plate, also provided with apertures, a vertical spring-pressed lever connected with the movable top and bottom plates, and a suitable stop device for limiting the movement of said plates or holding them closed, substantially as herein set forth.

2. The combination of the detachable radiator having a smoke-pipe, with the safety-casing having an apertured top and movable register-plate, and suitable stop for holding said plate closed, and the stove inclosed in said casing, as and for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

BENJAMIN D. STEVENS.

Witnesses:

WM. H. HARE,
GEO. W. WALES.