

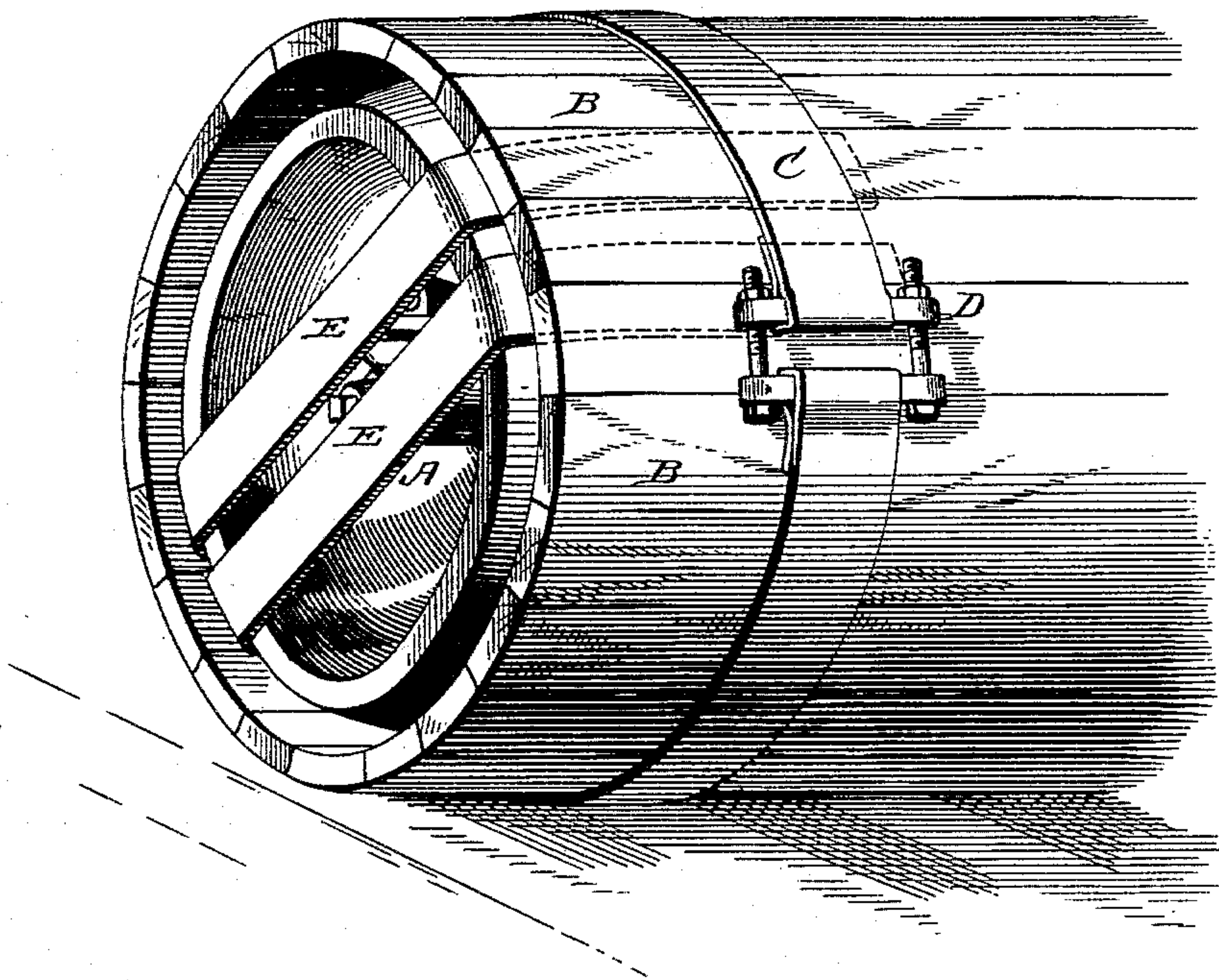
(No Model.)

H. J. KREBS.

PROTECTIVE COVERING FOR METALLIC FLASKS.

No. 412,190.

Patented Oct. 1, 1889.



Witnesses

*Edgar Spinden Jr.*  
*Edgar Spinden Jr.*

H. Johs. Krebs

Inventor

By his Attorney Geo. A. Sawyer.



# UNITED STATES PATENT OFFICE.

HENRIK JOHANNES KREBS, OF WILMINGTON, DELAWARE, ASSIGNOR TO  
THE DELAWARE CHEMICAL COMPANY, OF SAME PLACE.

## PROTECTIVE COVERING FOR METALLIC FLASKS.

SPECIFICATION forming part of Letters Patent No. 412,190, dated October 1, 1889.

Application filed May 29, 1889. Serial No. 312,633. (No model.)

### *To all whom it may concern:*

Be it known that I, HENRIK JOHANNES KREBS, a citizen of the United States, residing at Wilmington, in the county of New Castle and State of Delaware, have invented certain new and useful Improvements in Protective Coverings for Metallic Flasks; 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 drawing.

Metallic flasks used for the storage and transportation of liquids or gases under pressure are usually cylindrical in form, with concave, convex, or flat ends, and, while varying in size, one, six, or seven feet long and ten or twelve inches in diameter may be considered as the average. They are made of iron with joints welded and calculated to withstand a pressure of several hundred pounds to the square inch. While the discharge-valves are at present placed in different positions according to the form of the ends and other circumstances, I prefer a flask with deep concave ends, and I place the discharge-valve in same. For transportation it is not generally considered safe to ship the flasks bare, and they are therefore, as a rule, put up in heavy boxes, which are necessarily cumbersome and short-lived, and are occasionally not returned by the consignee.

The object of this invention is to provide a cheap, simple, and efficient means of protecting these cylinders, as will be more fully explained, referring to the drawing, which shows one end of the flask, the other end being similar, but without the valve.

A represents the cylinder or flask. B represents a series of wooden strips or battens one or two inches wide, and the same length as the flask. These battens are preferably laid on close enough to touch each other, so as to exclude the sun's rays, which, when given free access, sometimes cause a considerable rise in temperature and pressure. A strap or

hoop C at each end and, if necessary, another in the middle retain the battens in place, and a tightening device D, consisting of two short bars perforated at each end and provided with bolts and nuts, serves to secure the battens to the flask. The ends of the hoops, being left long enough, are merely bent around the bars and the ends turned under, no rivets being required.

The discharge-valve I place in the deep concave end of the flask. Over this end one or more metal straps E E are placed, the ends passing under the battens, as shown by the dotted lines, and are securely retained in place by screwing up the tightening-bolts in D. Thus the valve is protected not only from accidental injury, but from being tampered with.

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

1. The combination, with a cylinder or flask having a concaved end, and a valve secured therein, of the protecting-cover herein described, extending longitudinally of and surrounding said cylinder or flask, and the transversely-arranged straps extending across said concaved end and having bent ends secured between said flask and cover, substantially as set forth.

2. The combination, with the cylinder or flask having a concaved end, and a valve secured therein, of the protecting-cover composed of a series of wooden battens extending longitudinally of said cylinder or cask, the retaining-hoops encircling said battens, the end tightening-bars and nutted bolts, and the straps extending across said concaved end of the flask and secured at their ends between said flask and cover, substantially as set forth.

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

HENRIK JOHANNES KREBS.

Witnesses:

ELMER S. MYERS,

CHARLES F. SMALLEY.