

No. 885,906.

PATENTED APR. 28, 1908.

H. BECK.
ELECTRIC ARC LAMP.
APPLICATION FILED NOV. 16, 1908.

Fig. 1.

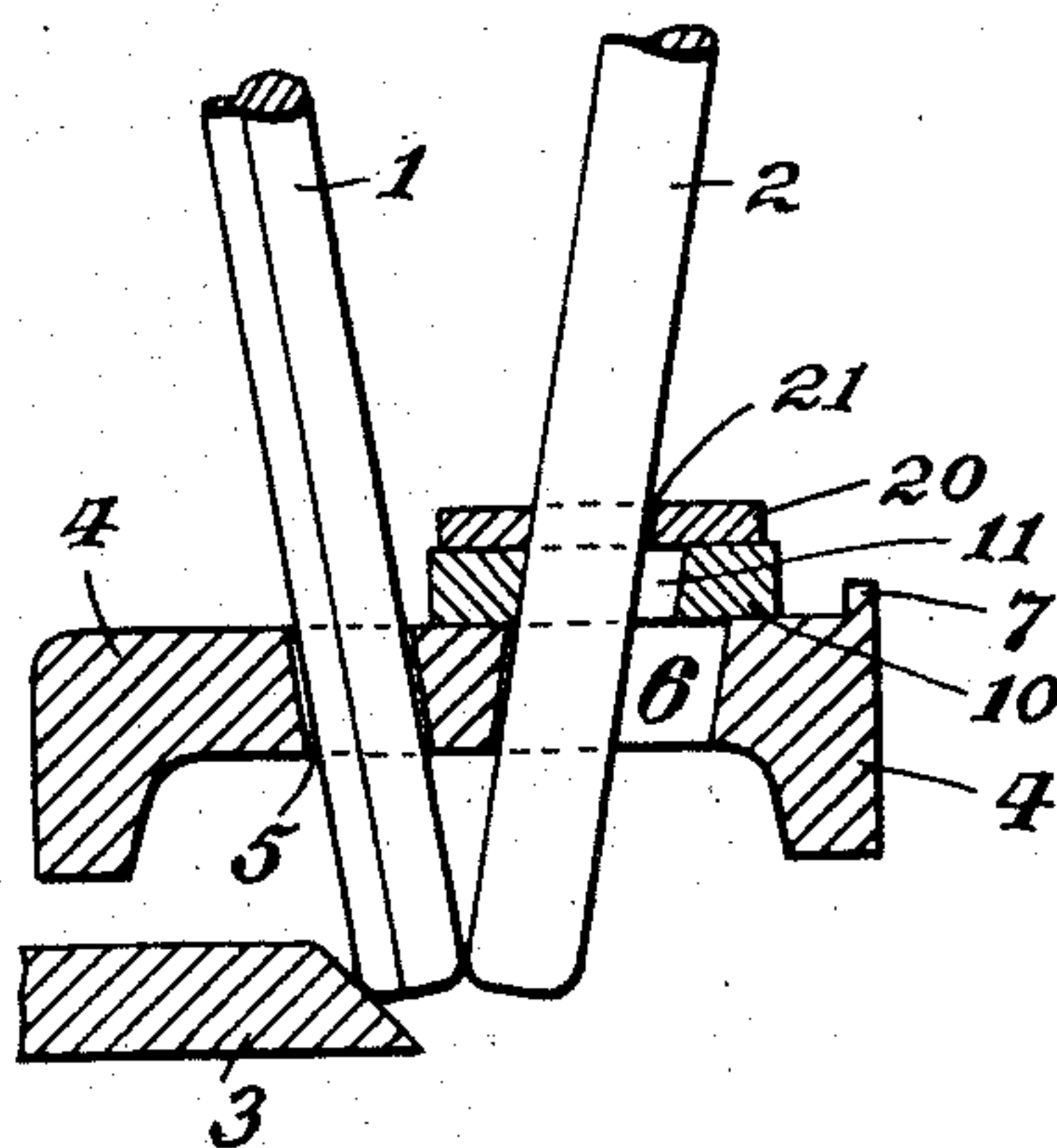
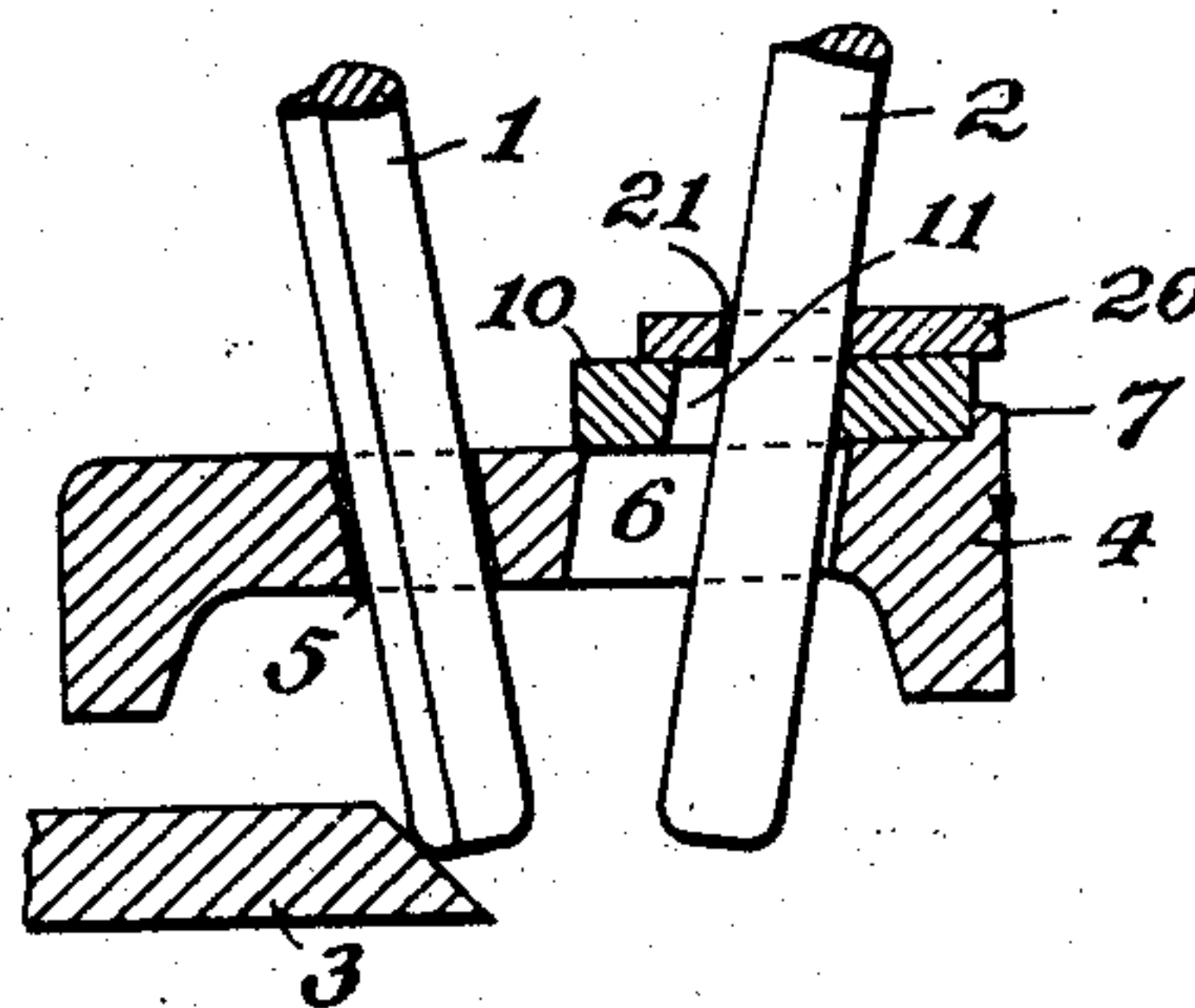


Fig. 2.



Attest:
May Hughes
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Heinrich Beck, Inventor:
by *William R. Baird*
his Atty.

UNITED STATES PATENT OFFICE.

HEINRICH BECK, OF FRANKFORT-ON-THE-MAIN, GERMANY, ASSIGNOR TO BECK FLAMING LAMP COMPANY, OF CANTON, NEW YORK, A CORPORATION OF NEW YORK.

ELECTRIC-ARC LAMP.

No. 885,906.

Specification of Letters Patent.

Patented April 28, 1908.

Application filed November 16, 1906. Serial No. 343,739.

To all whom it may concern:

Be it known that I, HEINRICH BECK, a subject of the German Emperor, residing at Frankfort-on-the-Main, Germany, have invented certain new and useful Improvements in Electric-Arc Lamps, of which the following is a specification.

My invention relates to electric arc lamps and more particularly to lamps of the kind described in Letters Patent of the United States No. 795681, issued to me July 25th, 1905, and has for its object the sealing of the feeding aperture for the free electrode and its novelty consists in the construction and adaptation of the parts employed to effectuate this purpose.

The lamp described in that patent comprised a framework forming the upper part of the globe and through which framework the electrodes were adapted to be fed by gravity, either when arranged in parallel vertical planes, or when inclined to each other. Means were provided to feed the electrodes downward evenly. One electrode was supported upon a permanent support, and as it burned away at its lower extremity gradually descended by its weight, and the other electrode was free from any permanent support but was swung or supported from the other electrode. Each electrode was guided against lateral displacement by suitable mechanism and each lamp passed through apertures in the framework. The aperture for the passage of the free or second electrode was necessarily greater in diameter or at least longer in one direction than the aperture for the passage of the supported electrode, because in the latter instance there was no lateral movement to such electrode and the burning pencil could be adapted snugly to fit the aperture.

In the practical operation of this lamp it has been found that when the aperture in the framework through which the free electrode is adapted to pass is not well sealed, the products of combustion arising from the burning electrodes and the dust will pass upward through this aperture and will injuriously affect the mechanism above the same. If a single seal plate is employed as has been attempted, and this plate is large enough in its lateral movement to seal the aperture necessary to accommodate the electrode, it is apt

to touch the other electrode with disastrous results.

How to accomplish the desired purpose was considerable of a problem, but I finally did so by using the construction herein described, comprising a plurality of superimposed apertured plates adapted to slide one above the other, each plate encircling the electrode, the lowermost one having a large opening and the plates above having progressively diminishing openings, so that each plate is adapted to seal a portion of the aperture in the surface beneath it, and the lowermost plate is adapted to seal the outer portion of the aperture in the framework and at the same time is not wide enough when the electrode is nearest to the supported electrode to contact with the supported electrode.

In the drawings, Figure 1 is a vertical section through the frame of the lamp and the sliding sealing plates, showing the free electrode in a position close to the supported electrode and Fig. 2 is a similar view showing the same electrode in a position away from the supported electrode.

In the drawings 1 is the supported electrode; 2 is the free electrode supported from or carried by the supported electrode by suitable mechanism (not shown); 3 is the support for the electrode 1; 4 is the framework of the upper part of the lamp provided with a small aperture 5 to admit of the passage of the supported electrode 1, and a larger and wider aperture 6 to admit of the passage of the free electrode 2; 7 is a stop lug secured to or made integral with the frame and adapted to limit the lateral slide of the sealing plates.

The sealing plates consist of a series of superimposed plates of which two only are shown in the drawings. 10 is the lower plate having an aperture 11 much wider than the electrode 2 adapted to pass therethrough and 20 is the upper plate having an aperture 21 which just permits the electrode 2 to pass therethrough and is consequently smaller than the aperture 11.

When the parts are in the position shown in Fig. 1 it will be noted that the plate 10 seals the aperture 6 at the right and that its aperture 11 is itself sealed by the plate 20 and that when the parts are in the position

shown in Fig. 2 the plate 10 seals the aperture 6 at the left and that its aperture 11 is sealed by the plate 20, while at the same time the stop lug 7 limits its movement in this direction.

It is obvious that the number of sliding plates may be increased and other modifications made in the construction of the parts without departing from the principles upon which the invention is based.

What I claim as new is:

1. In an electric arc lamp, an electrode, a frame having an aperture through which the electrode passes, said aperture of greater diameter than the electrode so as to permit lateral movement of the latter, and means for sealing the aperture, comprising a plurality of superimposed plates supported by the frame and apertured for the passage of the electrode through them, one of said plates partially sealing the aperture in the frame and another partially sealing the aperture in the plate below it, each of said plates being free to slide by the lateral movement of the electrode.

2. In an electric arc lamp, an electrode, a frame having an aperture through which the electrode passes, said aperture of greater diameter than the electrode so as to permit lateral movement of the latter, and means for sealing the aperture, comprising a plurality of superimposed plates supported by the frame and formed with apertures of successively reduced diameter, one of said apertures being approximately of the diameter of the electrode and another of greater diameter than the same and of lesser diameter than the aperture in the frame, each of said plates being free to slide by the lateral movement of the electrode.

3. In an electric arc lamp, an electrode, a frame having an aperture through which the electrode passes, said aperture of greater diameter than the electrode so as to permit lateral movement of the latter, and means

for sealing the aperture, comprising a plurality of superimposed plates supported by the frame and formed with apertures of successively reduced diameter, one of said apertures being approximately of the diameter of the electrode and another of greater diameter than the same and of lesser diameter than the aperture in the frame, each of said plates being free to slide by the lateral movement of the electrode, and a stop projecting from the frame in the path of movement of one of said plates.

4. In an electric arc lamp, a pair of electrodes having relative lateral movement, an apertured frame through which both electrodes pass, and means adapted to seal one of the apertures in the frame, comprising a first plate snugly fitting one of the electrodes, and a second plate intermediate the first plate and the aperture in the frame and loosely fitted to said electrode, said plates being free to slide by the lateral movement of the electrode.

5. In an electric arc lamp, an apertured frame, an electrode adapted to be fed through the same, and a plurality of sliding frames having apertures of progressively decreasing diameters through which the electrode also passes, said plates free to be moved by the electrode, and cooperating to seal the aperture in the frame.

6. In an electric arc lamp, an electrode, a frame having an aperture of greater diameter than the electrode, through which the electrode passes, a slidable plate embracing the electrode and moving with it and adapted to close a portion of said aperture, and an intermediate slidable plate adapted to close the remaining portion of the aperture.

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

HEINRICH BECK.

Witnesses:

JEAN GRUND,
CARL GRUND.