

(No Model.)

D. PREW.
BRAKE SHOE.

No. 277,159.

Patented May 8, 1883.

Fig. 1.

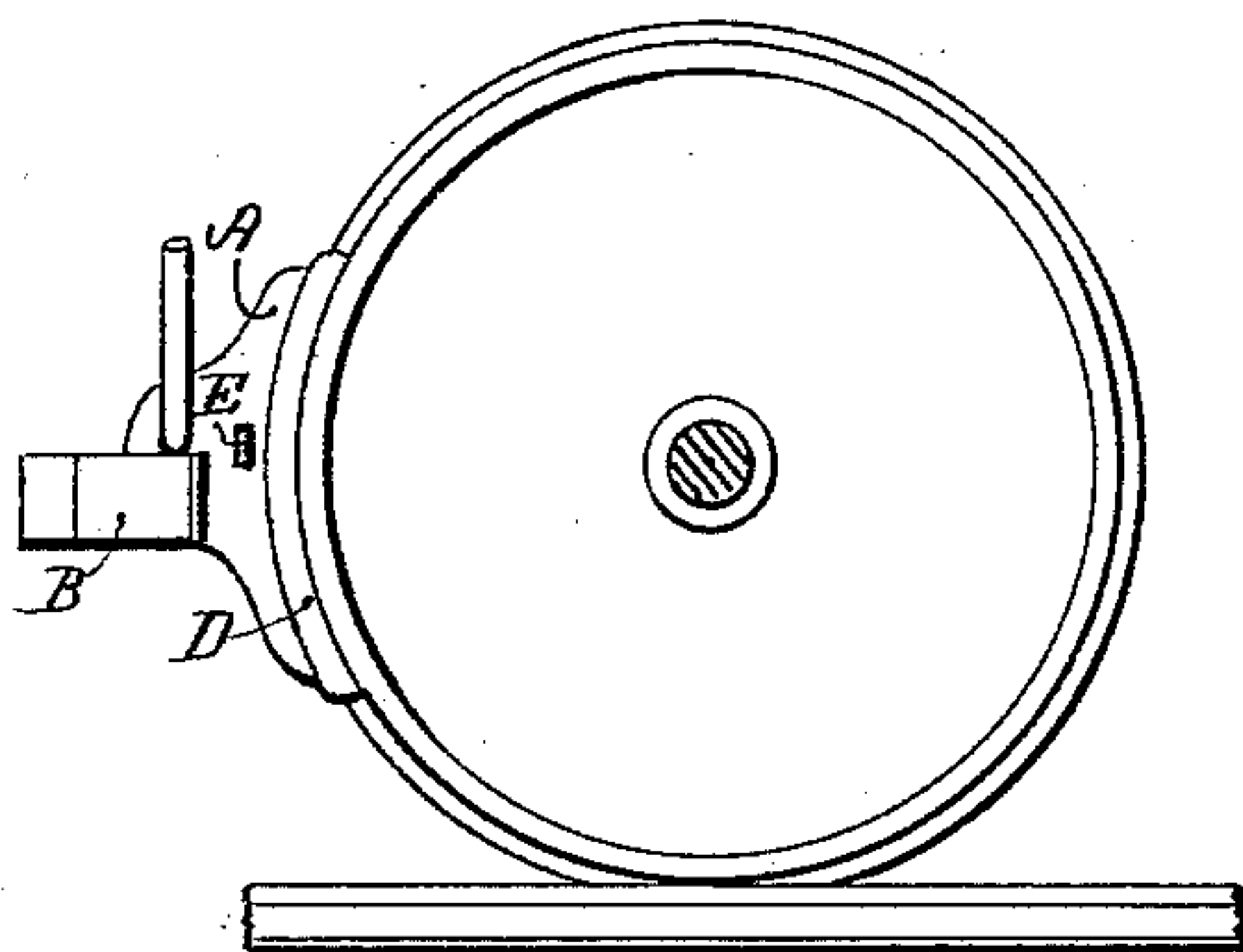


Fig. 2.

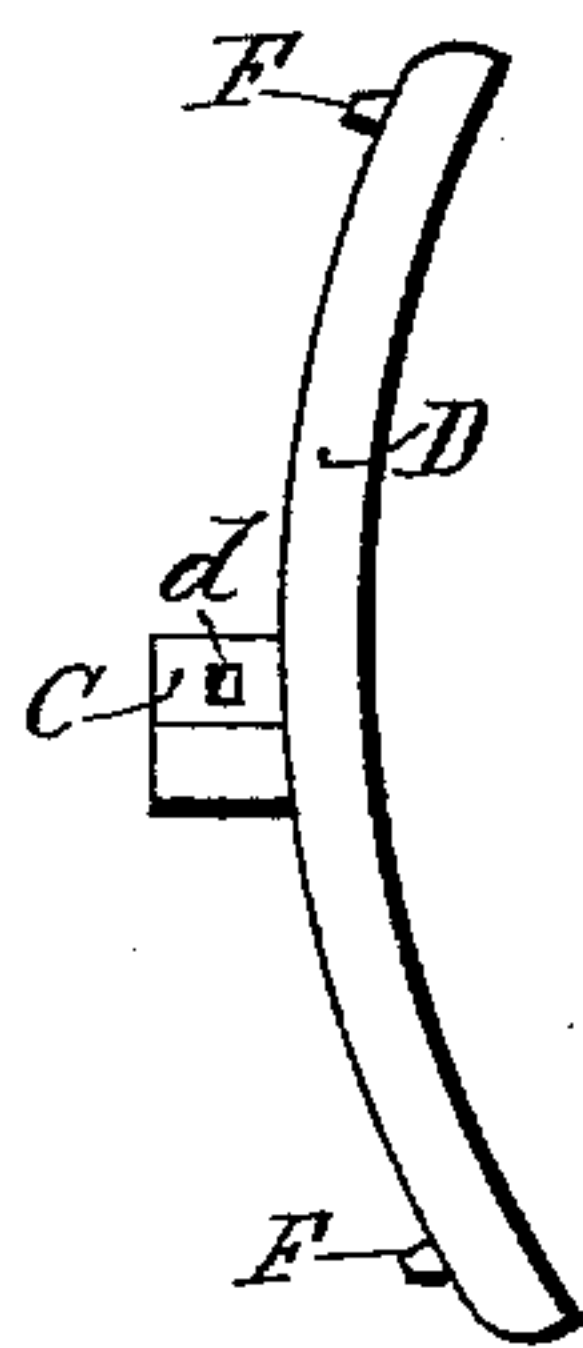


Fig. 4.

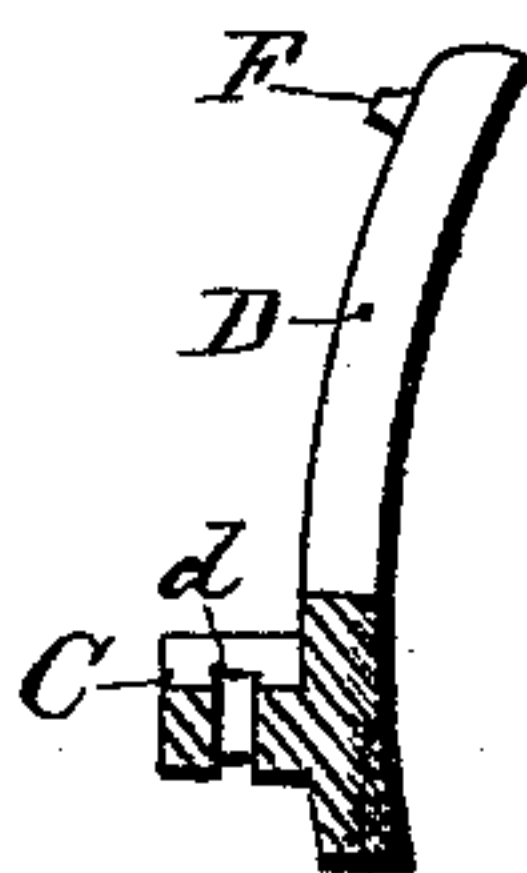
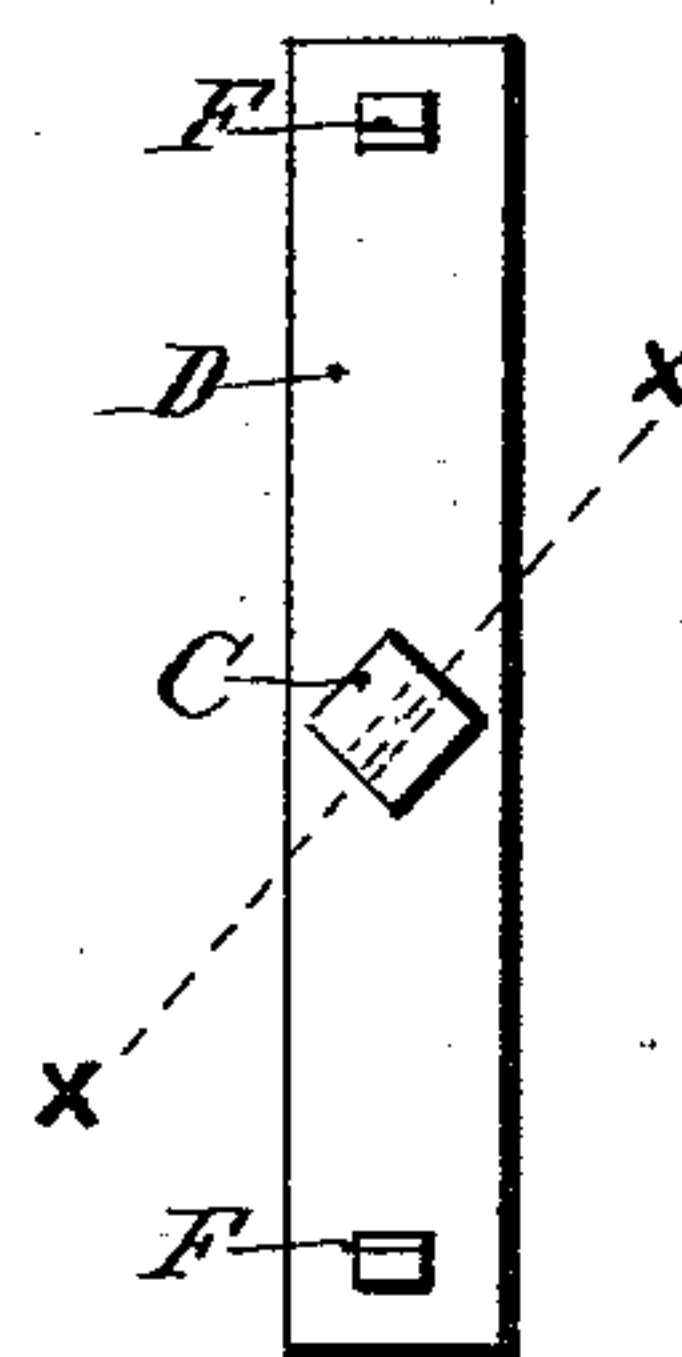


Fig. 3.



Witnesses.

Charles H. Beedle
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UNITED STATES PATENT OFFICE.

DAVID PREW, OF PROVIDENCE, RHODE ISLAND.

BRAKE-SHOE.

SPECIFICATION forming part of Letters Patent No. 277,159, dated May 8, 1883.

Application filed February 8, 1883. (No model.)

To all whom it may concern:

Be it known that I, DAVID PREW, of Providence, in the State of Rhode Island, have invented an Improvement in Brake-Shoes, of which the following is a specification.

My invention consists in chill-hardening or tempering the brake-shoe from the back surface of the same, while the front or bearing surface is left in a comparatively soft condition; and the object of my invention is to increase the wearing qualities of the shoe.

It is found in the practical working of ordinary brake-shoes that the friction developed by the application of the brake to the wheel in stopping the train gradually deteriorates the quality of the iron of which the shoe is made, causing the same to become soft and fragile, so that the shoes are soon worn out, and are then comparatively worthless for the purpose of remelting; and it is also found that the shoes wear very unevenly, so that one shoe on the brake-beam may be nearly worn out while the shoe at the opposite end is capable of continued service, which necessitates the removal of both shoes at the same time in order to preserve the evenness of the brake; but I have discovered that by chilling or hardening the shoes from the back surface the shoes will be caused to wear evenly, and for at least twice the length of time of the ordinary shoes, and the metal of the discarded worn-out shoes will be adapted for remelting, thus preventing the former waste of iron.

Figure 1 is an elevation of a car-wheel and brake-shoe. Fig. 2 is an edge elevation of the shoe. Fig. 3 is a back elevation of the same. Fig. 4 is a partial edge view cut off obliquely in the line *xx* of Fig. 3.

In the drawings, A is the socket-piece, which serves to connect the shoe to the brake-beam B. The hub C of the shoe D is made in square form obliquely of the shoe, as shown in Figs. 2 and 3, and provided with a key-slot, *d*,

adapted to receive the key E for securing the shoe D to the socket-piece A. At near the ends of the shoe, and at the back side of the same, are made the spurs F F, which fit into suitable socket-openings made in the face of the piece A, serving to keep the brake-shoe firm and secure from movement at its ends.

In casting the brake-shoes the chill should be of sufficient thickness to affect the iron to within about one-quarter of an inch of the working-face of the shoe, and the action of a chill in the molding-flask will be such as to produce a gradually-increasing degree of hardness from the front or wearing surface to the back surface of the shoe. Brake-shoes cast in this manner become gradually softer and softer by use, as is required for securing the proper amount of friction upon the surface of the wheels, the hardness produced by the chill being gradually removed by the friction and wear to which the face of the shoe is subjected, and the quality of the remaining unused iron will be suitably preserved for remelting.

Instead of being cast with a chill, the brake-shoe may be hardened at its back by any of the known processes of hardening or tempering, whereby a gradually-increasing state of hardness can be produced, running back from near the front or bearing surface of the shoe; and in carrying out my invention I do not limit myself to any particular form of the shoe, nor to any particular mode of attaching the same to the brake-beam.

I claim as my invention—

A brake-shoe made with a gradually-increasing hardness from near its front to its back surface, substantially as described, as a new manufacture.

DAVID PREW.

Witnesses:

NELSON E. CHURCH,
SOCRATES SCHOLFIELD.