

No. 624,263.

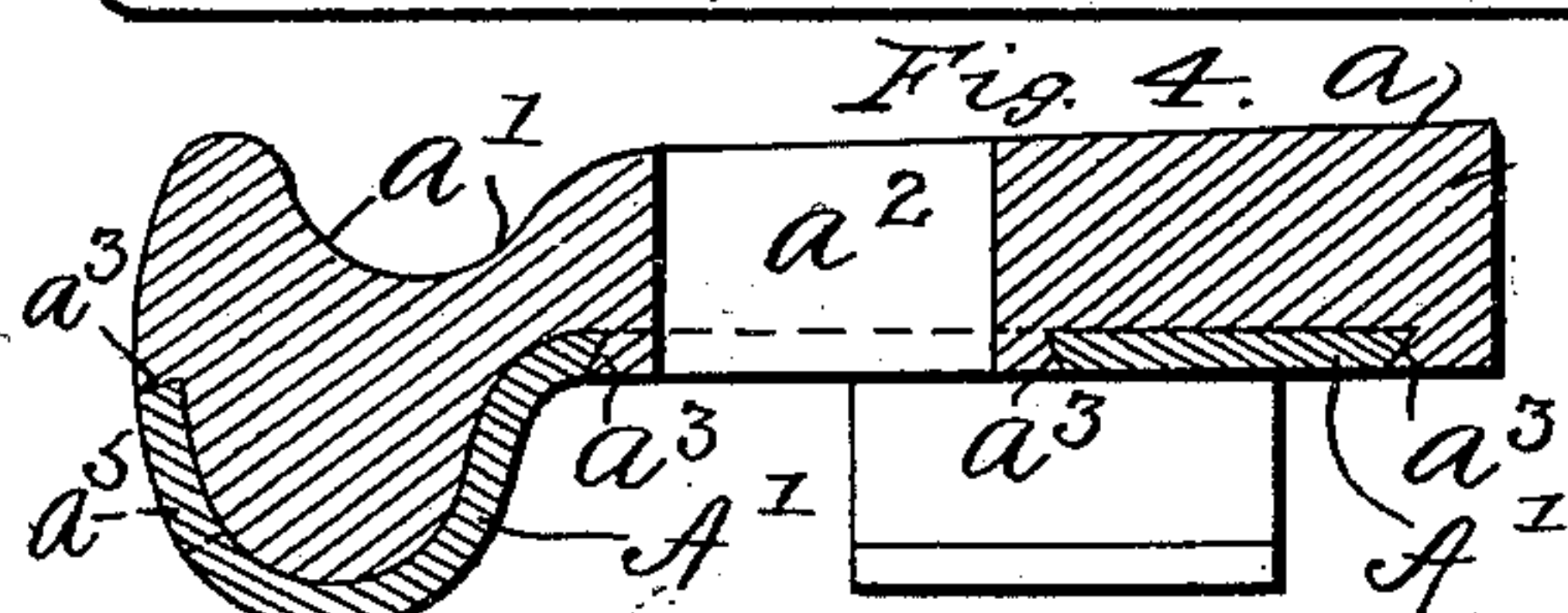
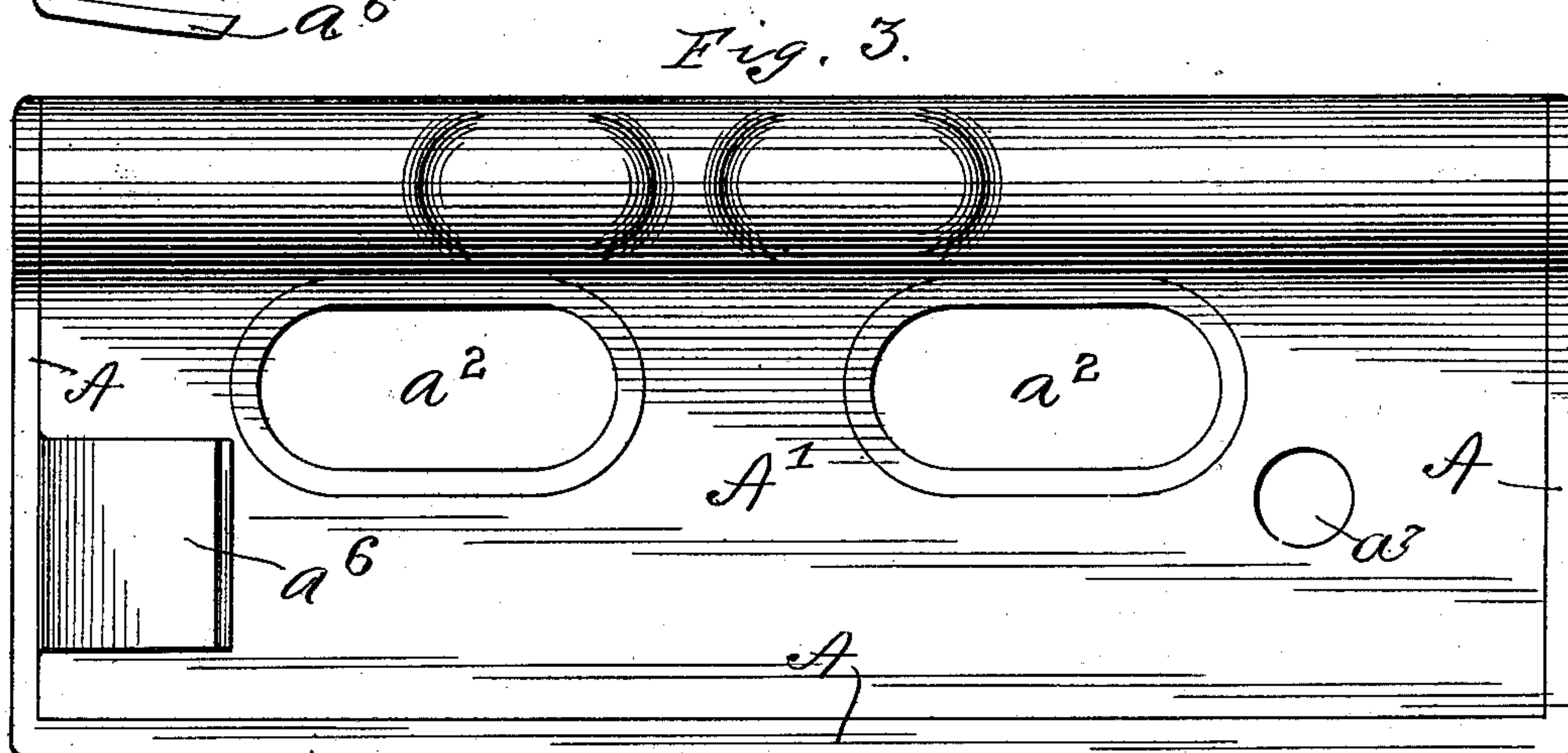
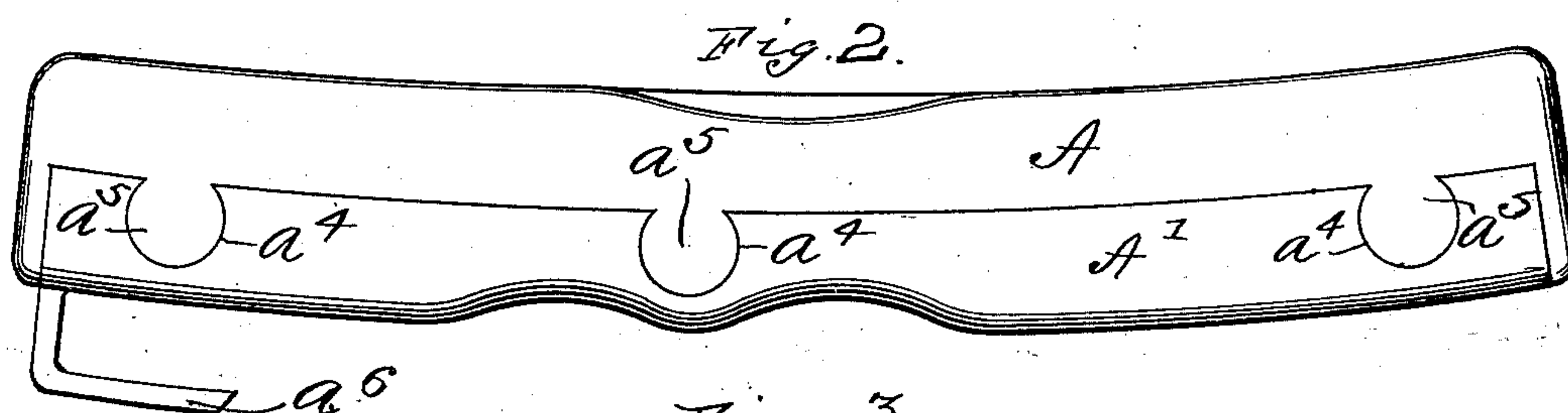
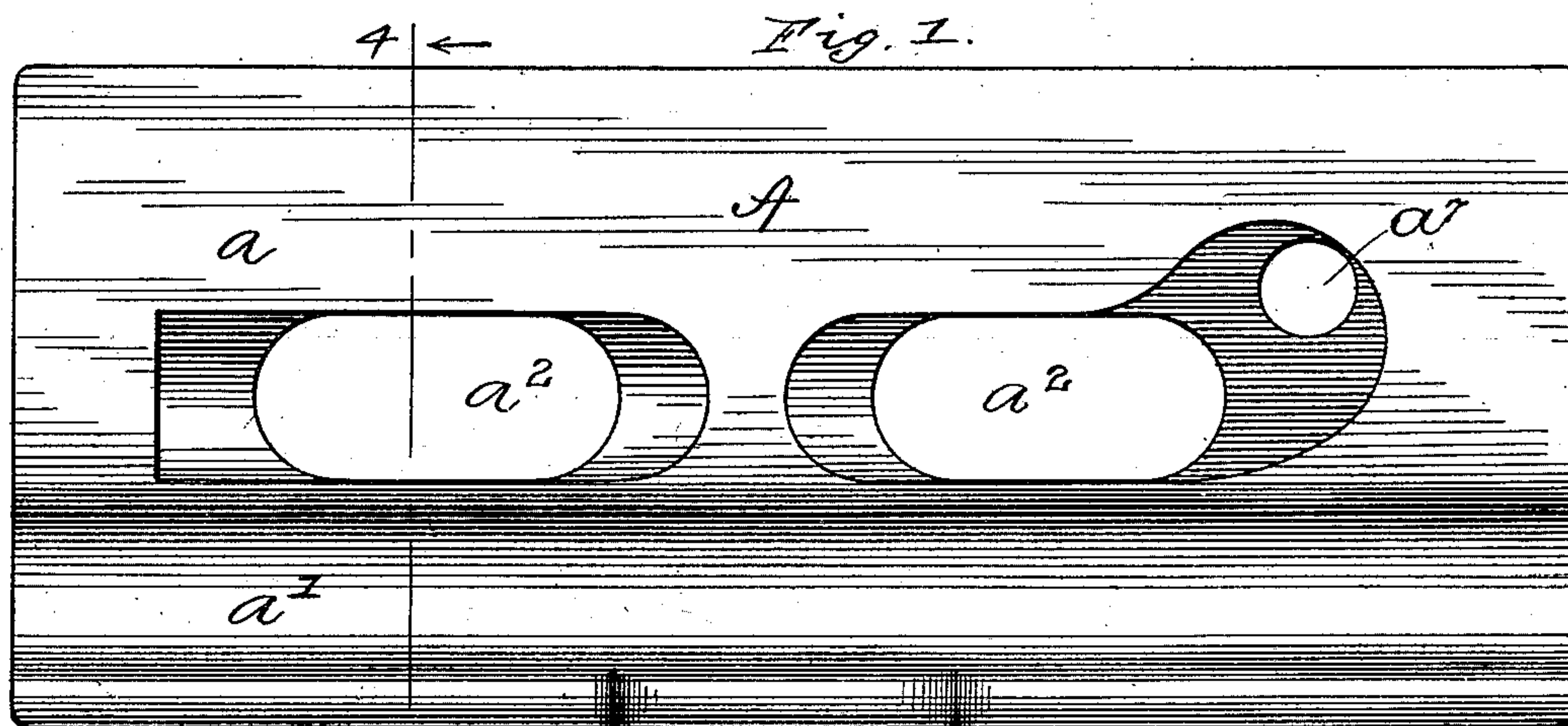
Patented May 2, 1899.

A. L. STREETER.

BRAKE SHOE.

(Application filed Aug. 17, 1898.)

(No Model.)



Witnesses,
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UNITED STATES PATENT OFFICE.

ALFRED L. STREETER, OF CHICAGO, ILLINOIS.

BRAKE-SHOE.

SPECIFICATION forming part of Letters Patent No. 624,263, dated May 2, 1899.

Application filed August 17, 1898. Serial No. 688,753. (No model.)

To all whom it may concern.

Be it known that I, ALFRED L. STREETER, a citizen of the United States, and a resident of Chicago, in the county of Cook and State of Illinois, have invented a new and useful Brake-Shoe, of which the following is a specification.

This invention relates to brake-shoes, and relates particularly to the type of brake-shoe comprising a grooved or channeled flange portion adapted to engage the flange of a wheel, as in the case of drive-wheels of locomotives, and a straight flat portion adapted to engage the tread proper of the wheel, the flat portion of the friction-surface of said shoe being cut away or "skeletoned" immediately adjacent to said groove or channel, so as to reduce the friction-surface at this point, and thus equalize the wear on the wheel due to the action of the rails and of the shoe, and thus maintain the tread of the wheel practically straight. Owing to the weakening of shoes of this type, due to the cutting away or skeletoning thereof, it is necessary in order to secure requisite strength to insure against breaking of the shoes when the brakes are applied that they be made entirely of steel, which construction is very expensive on account of the high price of the material of which the shoe is made.

A primary object of the present invention is to provide a skeleton brake-shoe of this type made of cast-iron and reinforced, so as to possess requisite strength.

To this end the invention consists in making the body of the shoe of cast-iron and in securing to the back thereof a steel plate, which is cut away to correspond to the desired skeletoning of the shoe and which extends laterally over both solid sides thereof and around the flange.

The invention also consists of the various other features, combinations of features, and details of construction hereinafter described and claimed.

In the accompanying drawings a brake-shoe embodying my invention is fully illustrated.

Figure 1 is a plan view of the face of the shoe. Fig. 2 is a side view on the flange side thereof. Fig. 3 is a plan view of the back thereof, and Fig. 4 is a sectional view on the line 4 4 of Fig. 1.

Referring now to the drawings, A is the body portion of a brake-shoe embodying my invention, the face or friction-surface of which comprises a straight portion a , which engages the tread proper of the wheel, and a groove or channel a' formed in the flange of the shoe, which engages the flange of the wheel. Formed in said body portion A of said brake-shoe, immediately adjacent to the groove or channel a' , are holes or openings a^2 , which extend laterally over so much of the flat portion a of the friction-surface of the shoe as receives the greatest wear from the action of the rails, thus reducing the wear on this portion of the wheel-tread due to the action of the brake-shoe, all in a familiar manner. As shown, also, the holes a^2 extend entirely through the brake-shoe.

The body portion A of my improved brake-shoe is made of cast-iron and is reinforced by means of a strengthening-plate A', secured to the back thereof, which preferably forms one integral piece and extends over both the flat portion and around the flange of said shoe and is provided with holes or openings corresponding to the holes or openings a^2 in the body A of said brake-shoe. The plate A' is preferably dovetailed into the back of said brake-shoe, both around its entire outer edge and also around the edges of the holes or openings therein. This can be conveniently and economically effected by making the plate A' smaller than the back of said brake-shoe and the holes or openings in said plate larger than the holes or openings in said shoe, beveling the edges of said plate, as shown at a^3 , and then casting the body portion of said shoe upon said plate in such manner that the back of said plate will be exposed. In order to more securely lock the bent or curved edge of the plate A' to the flange of the body of the shoe, I prefer, in addition to dovetailing the edge of said plate to said flange, to provide holes or openings a^4 in or adjacent to the outer edge of the bent portion of said plate A', which covers the flange of the shoe, said holes or openings being preferably outwardly flared and being interlocked with studs a^5 , secured in and preferably formed integral with the body portion A of the shoe, as they will be naturally when the body portion of the shoe is cast upon the plate A'. Preferably, also,

the holes or openings a^4 "cut out" at the edge of the plate A' being largest back from the edge, thus not only will the studs a^5 be attached to the body of the shoe at their ends, 5 but also lengthwise on one side and will operate to dovetail the edge of said plate securely to the body portion of said shoe on the outside of the flange. Thus even if the flange were to break at the bottom of the groove or 10 channel a' said plate A' would operate to maintain it in position.

As shown, the brake-shoe is designed to be attached to the brake-head by means of a hook a^6 on the upper end of said brake-shoe 15 and a bolt or stud on the brake-head, which engages a hole or opening a^7 in the lower end of said brake-shoe, all in a familiar manner. As shown, also, the hook a^6 is formed integral with the strengthening-plate A' .

20 Among the advantages of a shoe of my invention may be enumerated its great relative strength as compared with shoes made entirely of cast-iron, thus rendering it possible to wear said shoes much thinner than all-cast-iron shoes, increasing the life of the shoe and 25 reducing the quantity of scrap produced when said shoe is discarded, the interlocking of the body of the shoe with the flexible and practically unbreakable strengthening-plate, and 30 the great economy in the cost effected, owing to the cheapness of the material used as compared with steel.

I claim—

1. A flanged brake-shoe comprising a cast-iron body portion, a strengthening-plate of 35 steel or wrought-iron secured to the back thereof and holes or openings in said shoe adjacent to the flange thereof, said strengthening-plate extending laterally on both sides of 40 said holes or openings and around the flange of said shoe, substantially as described.

2. A flanged brake-shoe comprising a cast-

iron body portion, a steel or wrought-iron strengthening-plate, holes or openings in said shoe adjacent to the flange thereof, said 45 strengthening-plate extending laterally on both sides of said holes or openings and around the flange of said shoe, the edges of said plate being dovetailed into the body of the shoe around their outer edges and also around the 50 edges of said holes or openings, substantially as described.

3. A flanged brake-shoe comprising a cast-iron body portion, a steel or wrought-iron strengthening-plate, holes or openings in said 55 shoe adjacent to the flange thereof, said strengthening-plate extending laterally on both sides of said holes or openings and around the flange of said shoe, holes formed in the flanged edge of said plate and studs or projec- 60 tions formed integral with the body of the shoe, which interlock with said holes or openings, substantially as described.

4. A flanged brake-shoe comprising a cast-iron body portion, a steel or wrought-iron 65 strengthening-plate, holes or openings in said shoe adjacent to the flange thereof, said strengthening-plate being dovetailed into the body of the shoe around its entire edge and also around the edges of the holes or open- 70 ings in said shoe, holes in the edge of said plate which extends around the flange of the shoe and which "cut out" at the edge of said plate and studs or projections formed integral with the body of the shoe, which interlock 75 with said holes or openings in the edge of said plate, substantially as described.

In testimony that I claim the foregoing as my invention I have hereunto set my hand this 11th day of August, 1898.

ALFRED L. STREETER.

Witnesses:

C. J. BROUGHTON,
F. C. CRITTENDEN.