

No. 817,541.

PATENTED APR. 10, 1906.

C. W. ARMBRUST.
BRAKE SHOE.

APPLICATION FILED NOV. 9, 1905.

Fig. 1.

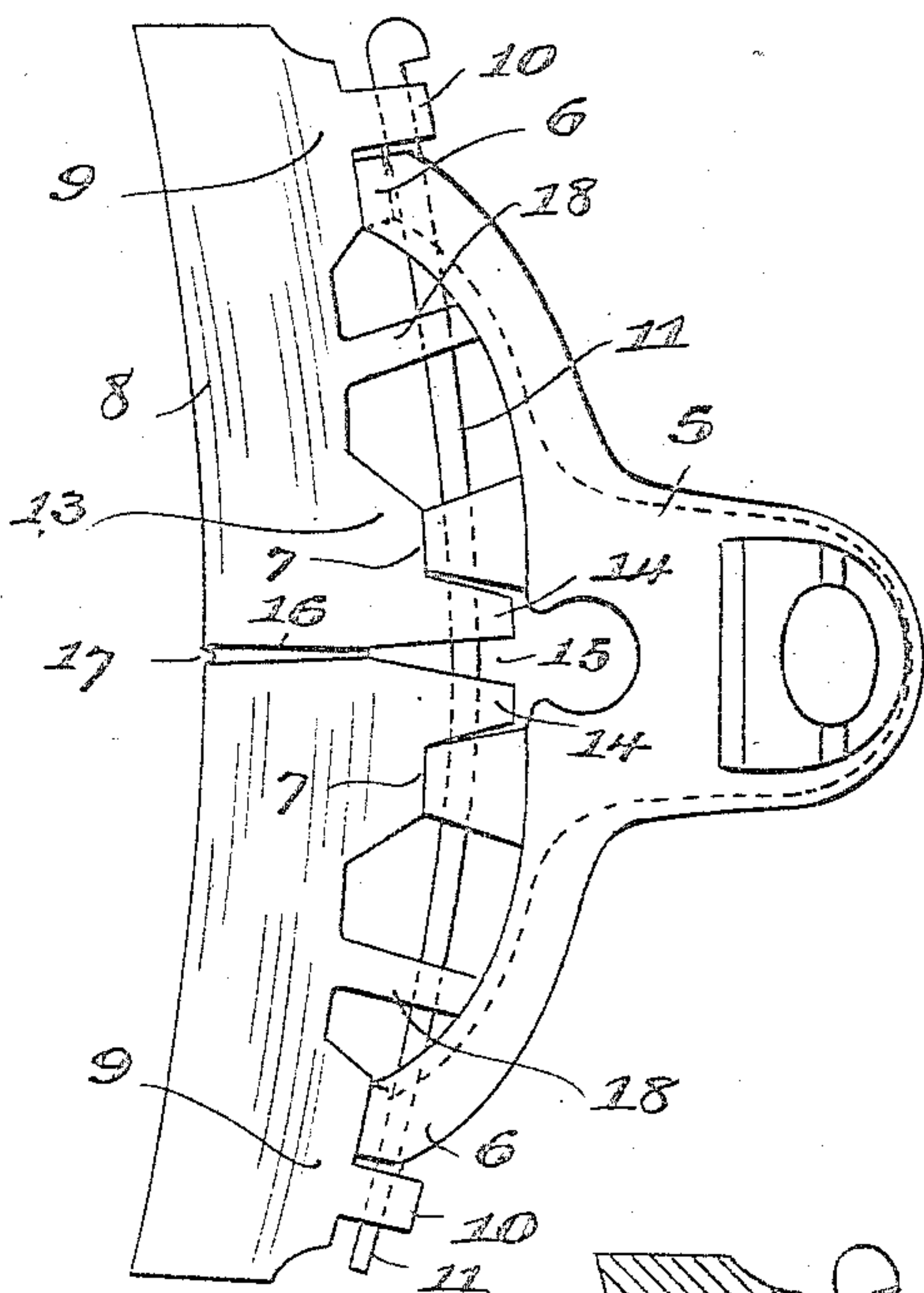


Fig. 2.

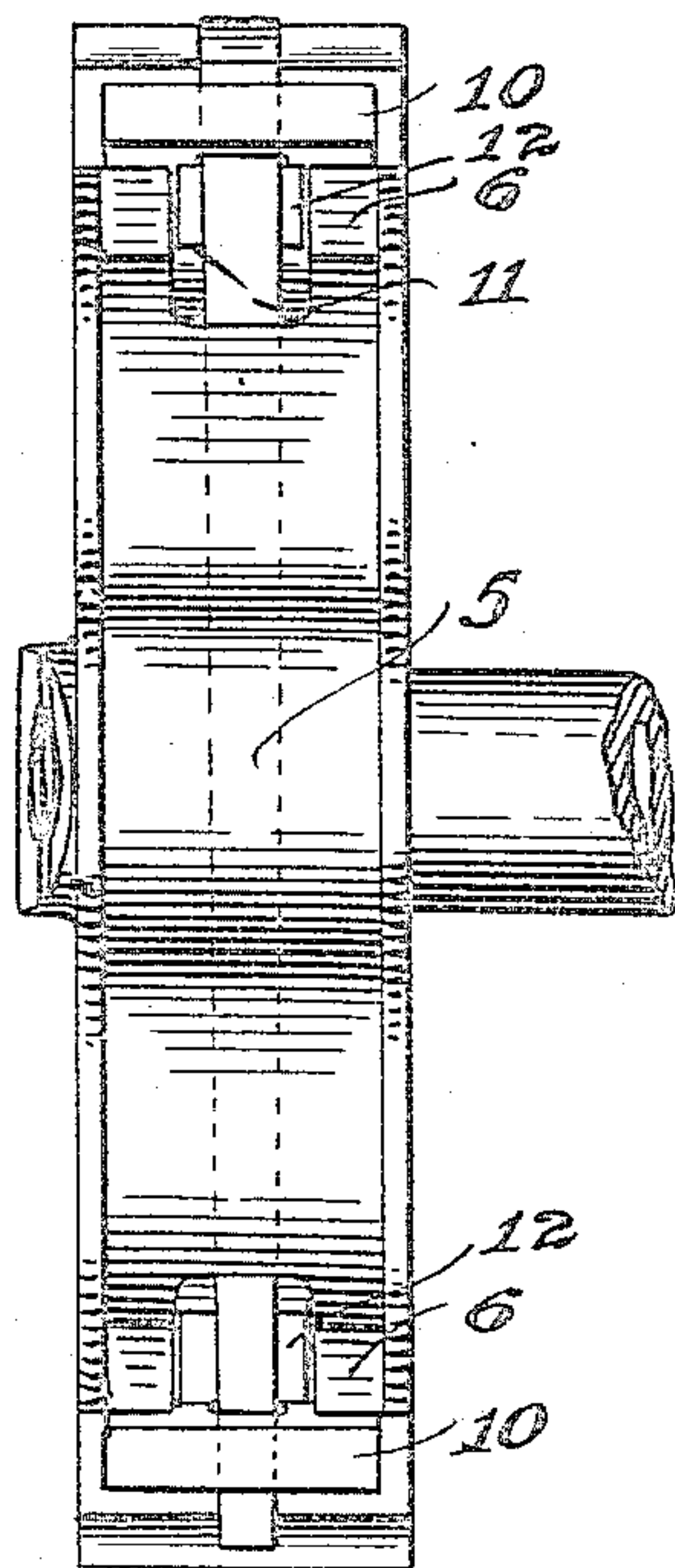


Fig. 4.

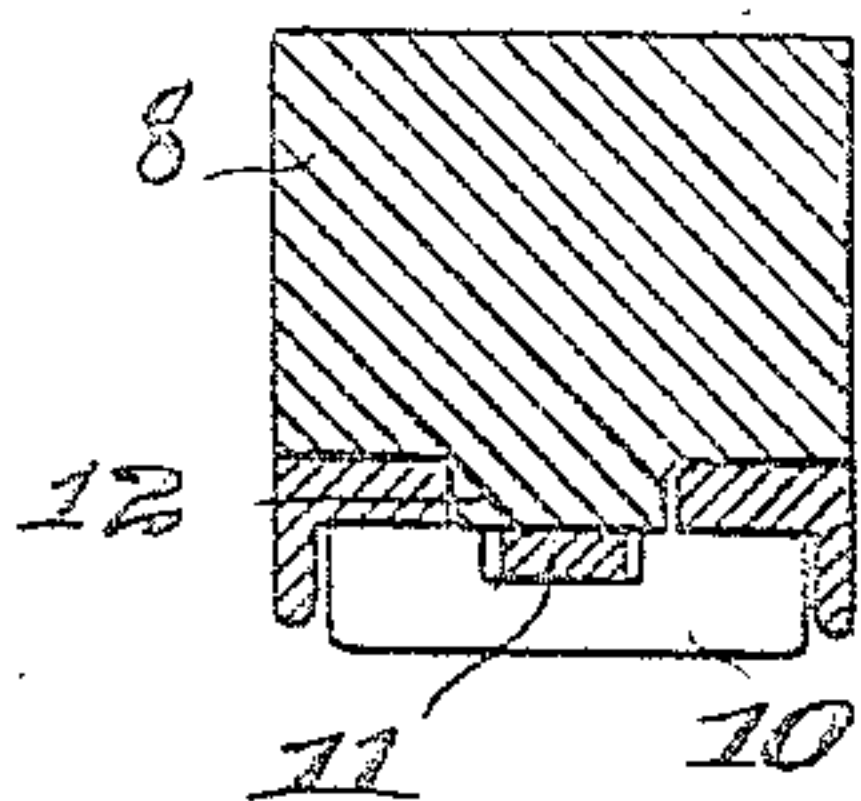
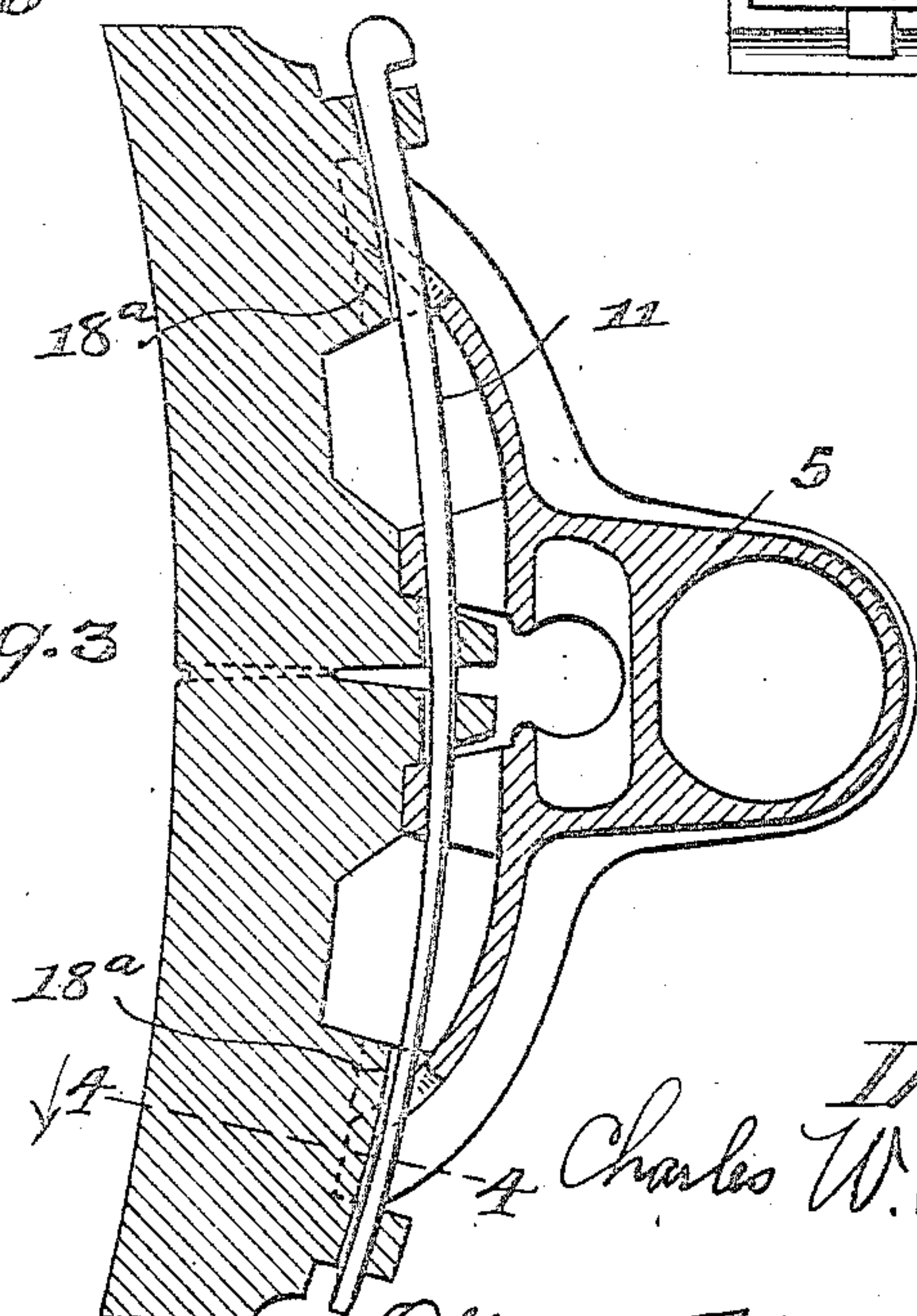


Fig. 3.



Witnesses,
J. E. Mann,
S. N. Pond.

Inventor,
Charles W. Armbrust,
By Offield, Fowler & Lathrop,
Attys.

UNITED STATES PATENT OFFICE.

CHARLES W. ARMBRUST, OF CHICAGO, ILLINOIS.

BRAKE-SHOE.

No. 817,541.

Specification of Letters Patent.

Patented April 10, 1906.

Application filed November 9, 1905. Serial No. 286,571.

To all whom it may concern:

Be it known that I, CHARLES W. ARMBRUST, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Brake-Shoes, of which the following is a specification.

This invention relates to brake-shoes of the class in which the wearing member or shoe proper is separably connected to the back or head supporting the same; and the invention has for its principal object to provide a construction in which substantially the entire thickness of the body or operative portion of the shoe may be used up without breaking connection to the head, thus providing an economical form of shoe in which there is practically no waste.

Another object of the invention is to provide a construction which prevents broken parts or portions from dropping to the track.

Another object of the invention is to separate the shoe proper from the head sufficiently to avoid danger of wearing into the head even though the shoe wear unevenly.

Still another object of the invention is to cause accidental breakage of the shoe to occur at a predetermined point where such breakage is immaterial, thereby lessening the likelihood of breakage at material points.

My invention is illustrated in the accompanying drawings, in which—

Figure 1 is a side elevational view showing the invention in one form. Fig. 2 is a plan view from the outer or back side of the shoe. Fig. 3 is a longitudinal section showing a slightly different form of inner retaining-lugs, and Fig. 4 is a cross-sectional view on the line 4-4 of Fig. 3.

Referring to the drawings, 5 may designate the brake-head, in the usual standard form, having the forked ends 6 and the intermediate inner apertured lugs 7.

8 designates the tread or body portion of the shoe. On the back of the shoe-body 8 are cast integrally therewith a series of members designed to cooperate with the head in guiding and holding the shoe relatively to the head and also in spacing the shoe from the head, so that the former may be entirely used up and worn out without danger of wearing or injuring the head. Referring to these members more particularly, 9 designates each of a pair of filling and spacing lugs on the opposite ends of the outer side of the shoe, on which members 9 are cast apertured

fastening-lugs or keepers 10, receiving the key 11. On the filling members 9 inwardly of the keepers 10 is cast a guide-lug 12, which lies between the forked ends 6 of the head, thus preventing relative lateral displacement between the head and shoe.

On the intermediate part of the outer side of the shoe is cast a pair of filling and spacing lugs 13, on which rest the inner ends of the lugs 7 of the head and also apertured fastening lugs or keepers 14, through which the key 11 passes. It will be observed that the filling or spacing projections 9 and 13 on the back of the shoe perform the important function of separating the shoe-engaging members of the head from the normal back line of the shoe, so that the body of the shoe proper may be entirely worn out in service, while still leaving the spacing and filling lugs to protect the head against wear, even should the shoes be worn unevenly—that is, more on one side or at one end than the other.

A brake-shoe made in a single piece sometimes wears unevenly and is often subjected to strains tending to break the same transversely by reason of lack of support at the ends and intermediate parts of the head. To remedy these conditions, it has heretofore been proposed to make the shoe in two longitudinal halves.

My invention contemplates the use of a single integral shoe, but so constructed as to cause any transverse break which may occur to take place centrally of the shoe in order to prevent the shoe from breaking at other points and to give the separated parts a substantially uniform and equal support upon the head. For this purpose the intermediate apertured lugs or keepers 14 are separated by a V-shaped space, (indicated at 15,) which extends substantially to the line of the back of the shoe, and the two sides and face of the shoe are transversely scored, as indicated at 16 and 17, respectively, to render that point the weakest point of the shoe. The formation of the shoe in a single piece reduces the number of parts to be handled in the assembling of the shoe on the head.

In order to prevent possible dropping off or dislocation of the parts of the shoe in case of breakage, I preferably cast on the back of the shoe, between the filling and spacing members 9 and 13, apertured lugs or keepers 18, the outer ends of which preferably extend toward the inner face of the head, as shown, the key 11 passing through said keepers. From this

construction it will be seen that should the shoe break in two, or should either half thereof break in two, the broken-off portion will remain in place until worn out, and danger of wrecks by reason of dropping to the track is avoided.

So far as I am aware the provision of the inner and outer keepers 18 and 10, respectively, in association with the key or pin 11 is entirely new, and hence not limited to the precise forms and relative arrangements shown.

In Fig. 3 I have shown a modification of the inner keepers, wherein these parts comprise lugs 18^a, notched on their outer ends to receive the key 11, these lugs being set farther out toward and on their outer surface fitting the inner end portions of the head.

It is evident that variations and modifications in respect to the details of structure from the invention as described and shown may be made by those skilled in the art without departing from the principle of the invention or sacrificing any of the advantages thereof. Hence the invention is not limited to the particular embodiments thereof selected for purposes of illustration and description.

I claim—

1. A separable brake-shoe provided with spacing and filling means on the back thereof to engage the head, said means allowing the shoe-body to be entirely worn out without danger of wearing the head even under uneven wear of the shoe, substantially as described.

2. A separable brake-shoe provided with spacing and filling lugs on the back thereof to engage the head, said lugs being of sufficient thickness to protect the head against contact with the wheel after the shoe-body proper has been entirely worn away even under uneven wear of the latter, substantially as described.

3. A separable brake-shoe provided with spacing and filling lugs projecting beyond the back line of the shoe a sufficient distance to protect the head against wear even under uneven wear of the shoe, and further provided with one or more apertured lugs on said spacing and filling lugs for the purpose of connection with the head, substantially as described.

4. The combination with a head having one or more apertured lugs on the face thereof adjacent to the brake-shoe, of a brake-shoe having spacing and filling lugs between the back of the shoe and the head of sufficient thickness to permit the shoe-body to be entirely worn out without danger of wearing the head even under uneven wear of the shoe, one or more apertured lugs on said spacing and filling lugs, and a key engaging said apertured lugs of the head and shoe, substantially as described.

5. The combination with a head having

one or more apertured lugs on the face thereof adjacent to the brake-shoe, of a brake-shoe having integral spacing and filling lugs between the back of the shoe and the head, said brake-shoe also having at each end integral apertured lugs disposed both outwardly and inwardly of the end of the head, and a key engaging said apertured lugs of the head and shoe, substantially as described.

6. The combination with a head having forked ends and one or more apertured lugs on the face thereof adjacent to the brake-shoe, of a brake-shoe having integral spacing and filling lugs between the back of the shoe and the head, said brake-shoe also having on its back integral apertured lugs and guide-lugs engaging the forked ends of the head, and a key engaging said apertured lugs of the head and shoe, substantially as described.

7. A separable brake-shoe transversely weakened at a point between its ends, substantially as and for the purpose described.

8. A separable brake-shoe transversely scored at a point intermediate its ends, substantially as and for the purpose described.

9. A separable brake-shoe transversely weakened at its longitudinal center, substantially as and for the purpose described.

10. The combination with a head, of a brake-shoe separably connected thereto, said brake-shoe being transversely weakened at a point between its ends, substantially as and for the purpose described.

11. The combination with a head, of a brake-shoe separably connected thereto, said brake-shoe being transversely weakened at its central part, substantially as and for the purpose described.

12. The combination with a head, of a brake-shoe separably connected at each end to the head, said brake-shoe being transversely scored at its central part, substantially as and for the purpose described.

13. The combination with a head, of a brake-shoe separably connected to the head, said brake-shoe having filling and spacing lugs between its back and the adjacent face of the head and being transversely weakened at its central part, substantially as described.

14. The combination with a head, of a brake-shoe having on each longitudinal half thereof a plurality of devices whereby it is separably connected to the head, said brake-shoe being transversely scored at its central part, substantially as and for the purpose described.

15. A brake-shoe having on its back a keeper for each outer end of the shoe, a pair of central keepers, and a keeper disposed between the central keepers and the end keepers, substantially as described.

16. A separable brake-shoe provided with spacing and filling lugs projecting beyond the back line of the shoe sufficiently to permit the shoe-body to be entirely worn out without

danger of wearing the head even under uneven wear of the shoe, and further provided with one or more apertured lugs on the back of the shoe-body for the purpose of connection with the head.

17. A separable brake-shoe provided with spacing and filling lugs projecting beyond the back line of the shoe and adapted to engage the head, and further provided with one or more apertured lugs on the back of the shoe-body and on said spacing and filling lugs for the purpose of connection with the head, substantially as described.

18. A separable brake-shoe provided with

spacing and filling lugs projecting beyond the back line of the shoe and adapted to engage the head, and further provided with two or more apertured lugs on the back of the shoe-body proper for the purpose of connection with the head, substantially as described.

19. A brake-shoe having on its back one or more combined spacing, guiding and fastening lugs.

CHARLES W. ARMBRUST.

Witnesses:

SAMUEL N. POND,
MATTIE B. BLISS.