

No. 820,157.

PATENTED MAY 8, 1906.

H. C. WARMUTH.
WAGON BRAKE.

APPLICATION FILED APR. 27, 1905.

2 SHEETS—SHEET 1.

Fig 1.

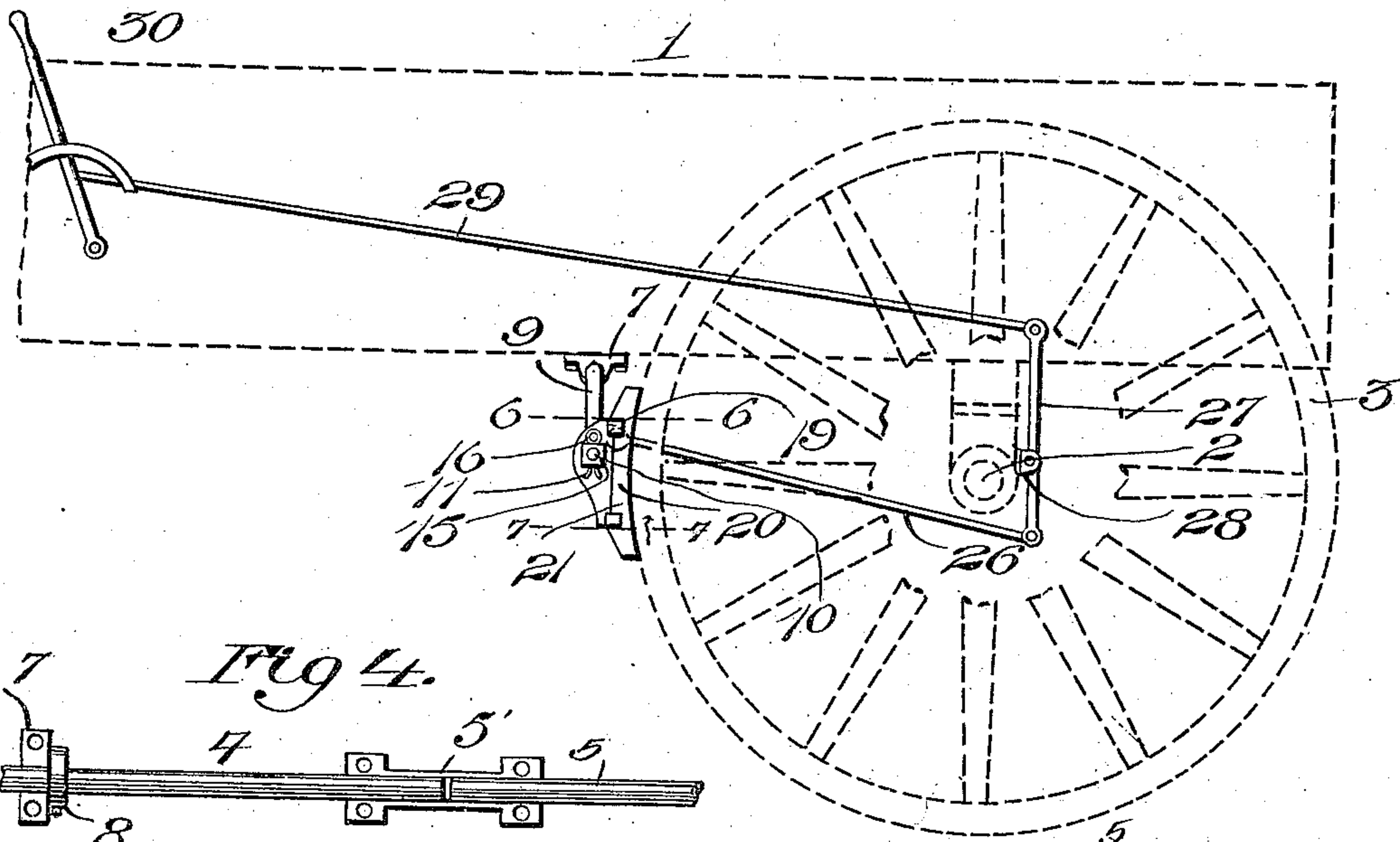


Fig 4.

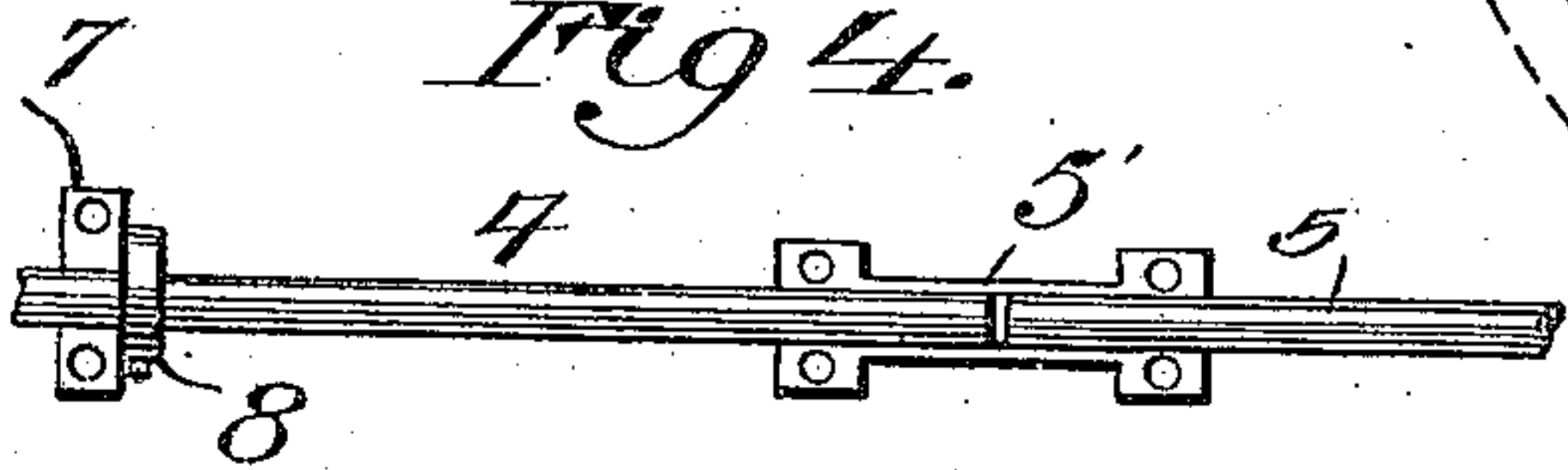


Fig 2.

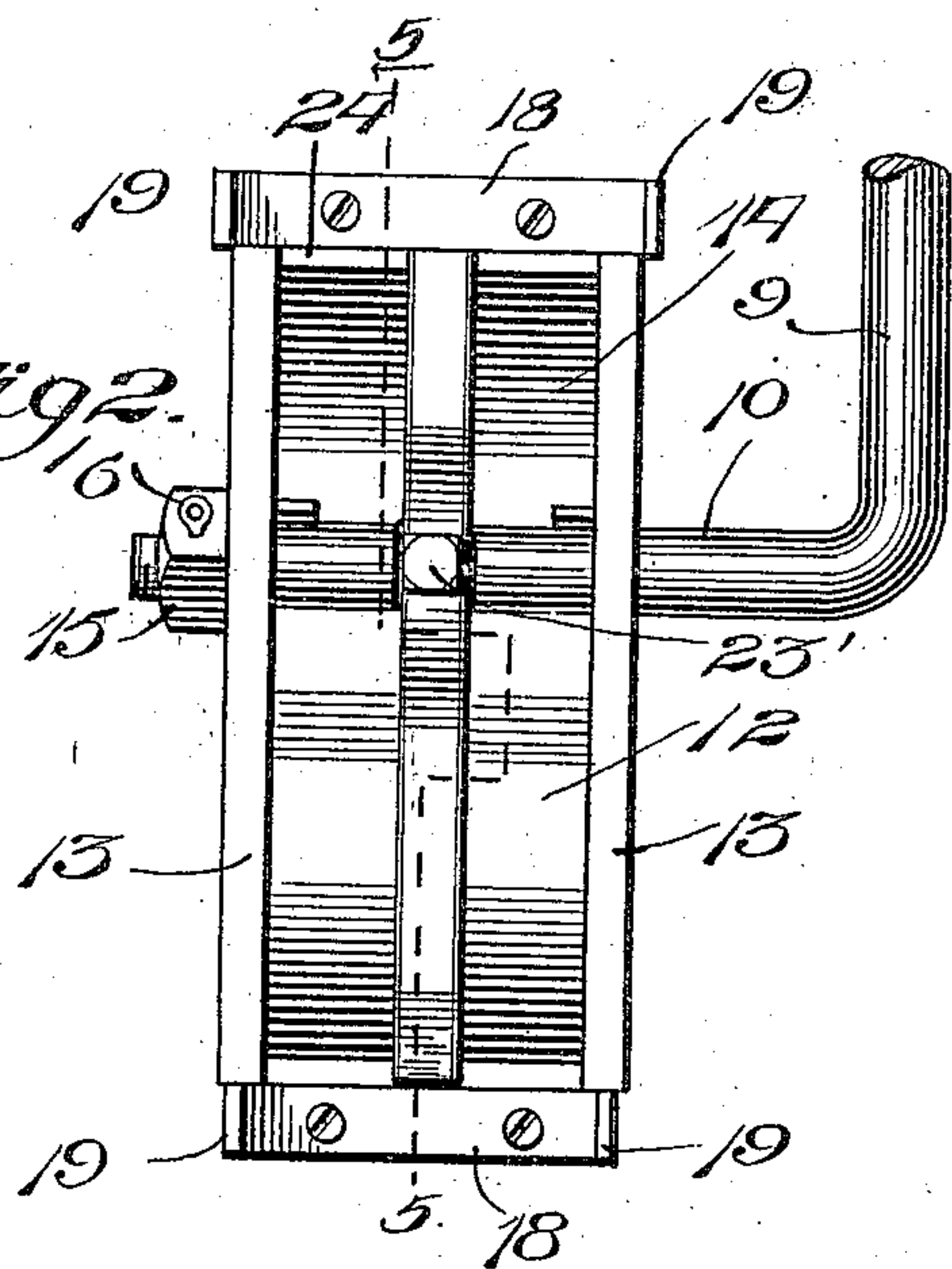
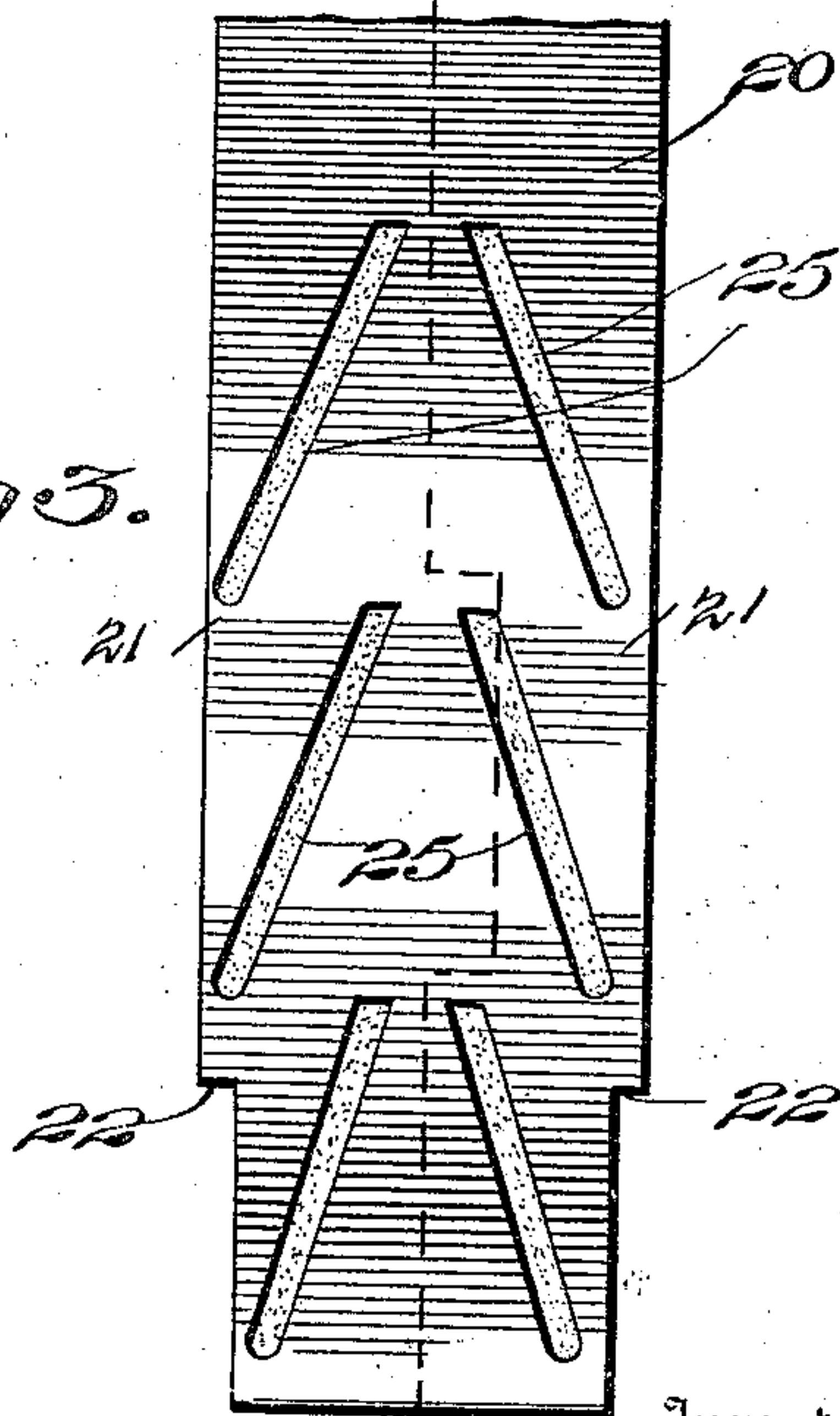


Fig 3.



Witnesses

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2 SHEETS—SHEET 2.

Fig 5.

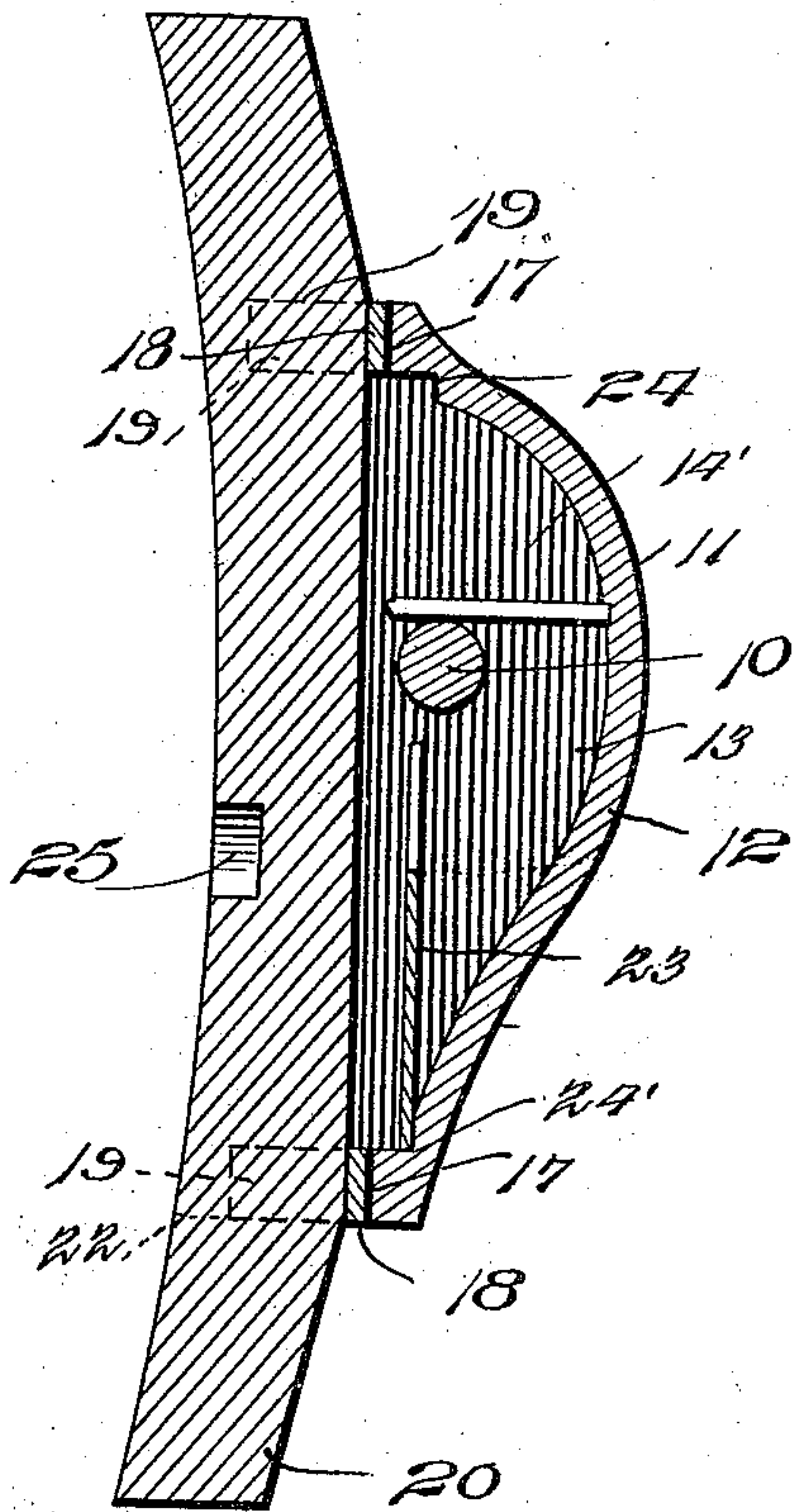


Fig 6.

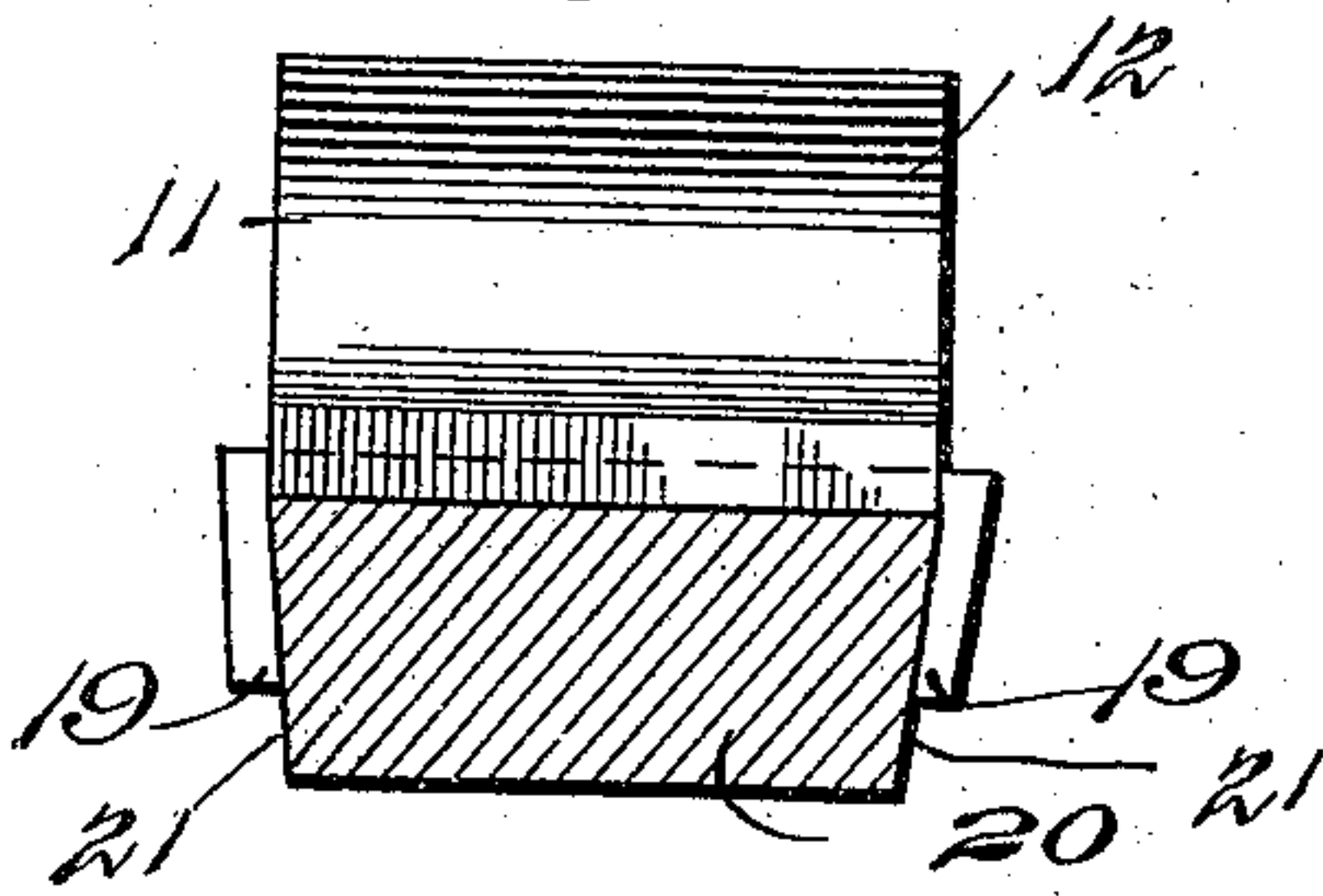
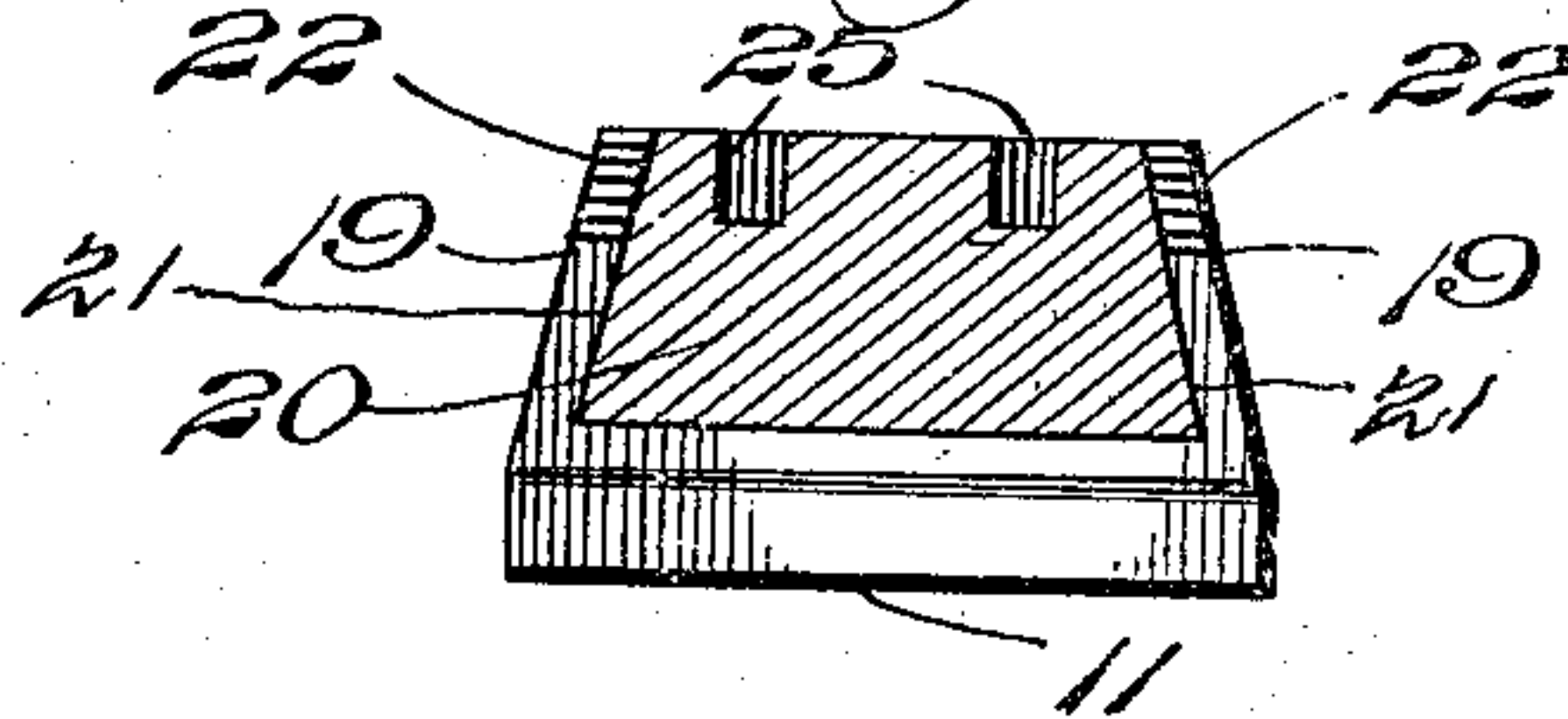


Fig 7.



Witnesses

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WAGON-BRAKE.

No. 820,157.

Specification of Letters Patent.

Patented May 8, 1906.

Application filed April 27, 1905. Serial No. 257,974.

To all whom it may concern:

Be it known that I, HENRY C. WARMUTH, a citizen of the United States, residing at Landis Store, in the county of Berks and State of Pennsylvania, have invented new and useful Improvements in Wagon-Brakes, of which the following is a specification.

This invention relates to wagon-brakes; and its object is, first, to provide brake-operating mechanism which will apply the brake-shoe in such manner as to relieve the vehicle-body or its running-gear from some of the strain produced by the back pressure of the shoe when brought into engagement with the wheel; second, to provide a novel construction of brake block and shoe whereby the shoe is permitted to have limited independent movement to contact throughout with the wheel-tire notwithstanding varying positions of the brake-supporting arm under different loads, and, third, to provide a brake-shoe which is readily removable and interchangeable, so that a shoe in use when worn or injured may be conveniently replaced by a new one which is provided with a braking-surface of maximum efficiency and which is adapted to prevent unequal wear upon the wheel-tire.

With these and other objects in view the invention consists of the features of construction, combination, and arrangement of parts hereinafter fully described and claimed, reference being had to the accompanying drawings, in which—

Figure 1 is a side elevation of a vehicle, shown in dotted lines, equipped with my invention. Fig. 2 is an inner face or rear elevational view of the brake-block, the brake-shoe being removed. Fig. 3 is a face view of the brake-shoe. Fig. 4 is a view illustrating the mode of mounting the sections of the brake beam or shaft. Fig. 5 is a vertical section through the brake block and shoe on the irregular line indicated by the line 5 5 of Figs. 2 and 3. Fig. 6 is a section through the brake block and beam on line 6 6 of Fig. 1, and Fig. 7 is a similar section on the line 7 7 of Fig. 1.

The numeral 1 of the drawings represents a vehicle-body, 2 its rear axle, and 3 one of the rear wheels, which parts appear in Fig. 1 in broken lines. Extending transversely across the under side of the body 1 are brake-shaft sections 4 and 5, which are journaled at their

inner ends, as shown in Fig. 4, in a bearing 5', applied in practice approximately at the center of the body. The said inner ends of the two shaft-sections are arranged in proximate relation and are free from connection and adapted to turn independently in the bearing 5'. These shaft-sections carry the two sets of brake blocks and shoes which in practice are employed to act upon the rear wheels of the vehicle. As the construction of each set of brake-blocks, brake-shoes, and operating connections is the same, I have shown but one set of these devices in the drawings, and the description of one will suffice for both. Each shaft-section, as shown in connection with a shaft-section 4 in Fig. 4, is journaled near the side of the body in a bearing 7 and is provided with a collar 8, secured thereto by a set-screw or other fastening and adapted to engage said collar to hold it from outward endwise movement. From the bearing 7 the shaft 4 extends outward and is bent downwardly to form a cranked arm 9, terminating in a brake-supporting shank or spindle 10, lying in a plane parallel with but below the body portion of the shaft 4.

Mounted on the shank or spindle 10 is a brake-block 11, comprising in its construction a curved rear wall 12 and side walls 13, which project forwardly therefrom and form a chamber or recess 14, the said rear and side walls being preferably composed of an integral casting. The shank or spindle 10 projects through the side walls 13 and at its outer end is threaded to receive a nut 15. A cotter-pin 16 passes through the threaded end of the shank and nut and prevents the latter from loosening and working off. The side walls 13 are somewhat shorter than the rear wall, and the extended ends of the latter form seats or abutting surfaces 17 for transverse hard-metal wear-plates 18, secured thereto by suitable fastenings and provided at their ends with right-angularly bent lugs 19. These lugs are bent slightly inward or tapered on their inner sides to form dove-tailed faces, which serve to hold the brake-shoe in the manner hereinafter described. The brake-shoe 20 consists of a block or casting of oblong rectangular form and having its working surface suitably curved to conform to the curvature of the rim of the wheel against which it is adapted to bear. The shoe is made of a length greater than the

block, so as to project at its ends beyond the same, and its sides 21 are outwardly and rearwardly inclined, forming dovetailed portions. By this construction the shoe may be slipped from above down into engagement with the lugs 19, and the dovetail construction of said sides 21 and the lugs will hold the brake-shoe from forward movement. To hold the brake-shoe from downward movement, the lower end of the shoe is reduced to form side shoulders 22, which are adapted to rest upon the lower set of lugs 19, which will support the shoe in applied position. By the dovetailed arrangement of the sides of the shoe and the lugs it will be readily understood that the brake-shoe is made easily detachable and may be removed whenever worn out or injured to permit of the substitution of a new shoe.

The block 11 is adapted to have a limited tilting movement on the shank or spindle 10 of the shaft 4, and to limit this movement a plate-spring 23 is secured between its ends, as shown at 23', to said shank and occupies the chamber 14 of the brake-block, and its ends are arranged to engage stop-shoulders 24 at the top and bottom of the block to allow the block to have a limited yielding independent pivotal movement in either direction, or, in other words, to oscillate to a restricted extent on the shank or spindle. This permits the block to adjust itself to adapt the shoe 20 to contact throughout with the wheel-tire notwithstanding the varying positions of the brake-supporting shank 10 under different loads or pressures. As shown, the face or bearing-surface of the shoe 20 is provided with a series of sand-pockets 25, arranged in pairs in divergent relation, the proximate ends of each pair being spaced apart a short distance near the central line of the shoe and thence diverging outwardly and downwardly and the proximate ends of the next adjoining pair being disposed substantially on a line between the lower extremities of the pair above, so as to increase the friction-surface of the shoe, while maintaining a solid central portion throughout the length of the shoe, which central portion is adapted to bear upon the central portion of the tire and increase the braking pressure thereon, thus preventing the tire from being worn down at its edges and distributing the wear evenly across the same. When the brake is first put on the wheel, the pockets are filled with sand, after which they will not need refilling, as the mud and dirt scraped off from the wheel will always keep them filled up. When the brake-shoe is in rubbing contact with the wheel, a rubbing surface consisting partly of sand and grit and partly of iron is presented, thus materially increasing the efficiency of the shoe.

The arm 9 is connected to the forward end of a rod 26, which is attached at its rear end to the lower end of a lever 27, which lever 27

is pivoted upon a bracket 28, suitably fastened to the rear axle 2, and is connected at its upper end by a rod 29 with an operating-lever 30, mounted upon the front portion of the body 1. When this lever 30 is swung forwardly, the lever 27 will be rocked to draw the rod 26 rearwardly, which will in turn swing the shaft-section 4 in a rearward direction and bring the shoe 20 into engagement with the wheel-tire. From this operation it will be seen that a direct backward pull is exerted upon the brake-shoe, thus relieving the body of the vehicle and its riding-gear from some of the strain ordinarily produced by the back pressure of the shoe when brought into engagement with the wheel when the shoe is thrown into operation by pushing the same toward the wheel, as in ordinary brake mechanisms.

It will be understood that the lever mechanism before described for operating the brake-shoe 20, carried by the shaft-section 4, may be duplicated on the opposite side of the vehicle to operate the brake-shoe carried by the other shaft-section 5, so that the brake-shoes may be simultaneously or independently operated, or that the operating devices may be connected so that both brakes may be moved through the action of the single lever.

From the foregoing description, taken in connection with the accompanying drawings, the construction and mode of operation of the invention will be understood without a further extended description. Changes in the form, proportions, and minor details of construction may be made within the scope of the invention without departing from the spirit or sacrificing any of the advantages thereof.

Having thus described the invention, what is claimed as new is—

1. In combination, a brake-block having a curved rear wall and sides forming a chamber open at the front, the sides terminating respectively below and above the upper and lower ends of the rear wall, wear-strips secured to said upper and lower ends of the rear wall and extending beyond the sides and provided with forwardly-projecting inclined or dovetailed lugs, and a brake-block seated against said strips and closing the open side of the chamber, said block having inclined or dovetailed sides engaging said lugs, said sides being cut away adjacent their lower ends to form stop-shoulders resting upon the lower set of lugs.

2. The combination with a supporting-spindle, of a hollow or chambered brake-block comprising a rear and side walls, said side walls having openings for the passage of the spindle, wear-strips at the top and bottom of the block and having forwardly-projecting inclined or dovetailed lugs, a brake-shoe having inclined or beveled sides slidably

engaging said lugs, said sides being cut away adjacent their lower ends to form shoulders resting on the lower set of lugs, and a spring disposed in the block and fixed intermediately to the spindle and having its ends bearing against the shoe above and below said spindle.

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

HENRY C. WARMUTH.

Witnesses:

WILSON K. HOCH,
CHARLES F. REICHERT.