2 Sheets--Sheet 1.

C. SCHOUBERSKY.

Railway Car-Brakes.

No. 151,719. Patented June 9, 1874.

Fig: 1.

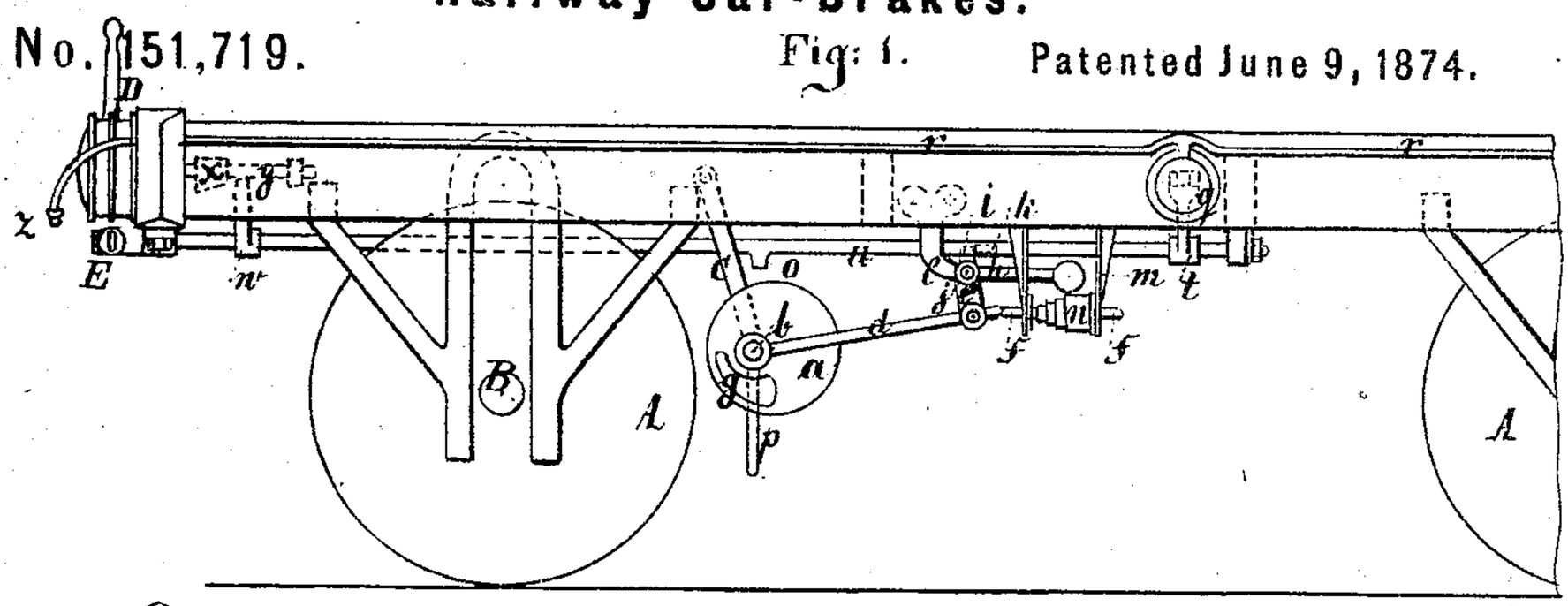


Fig: 3.

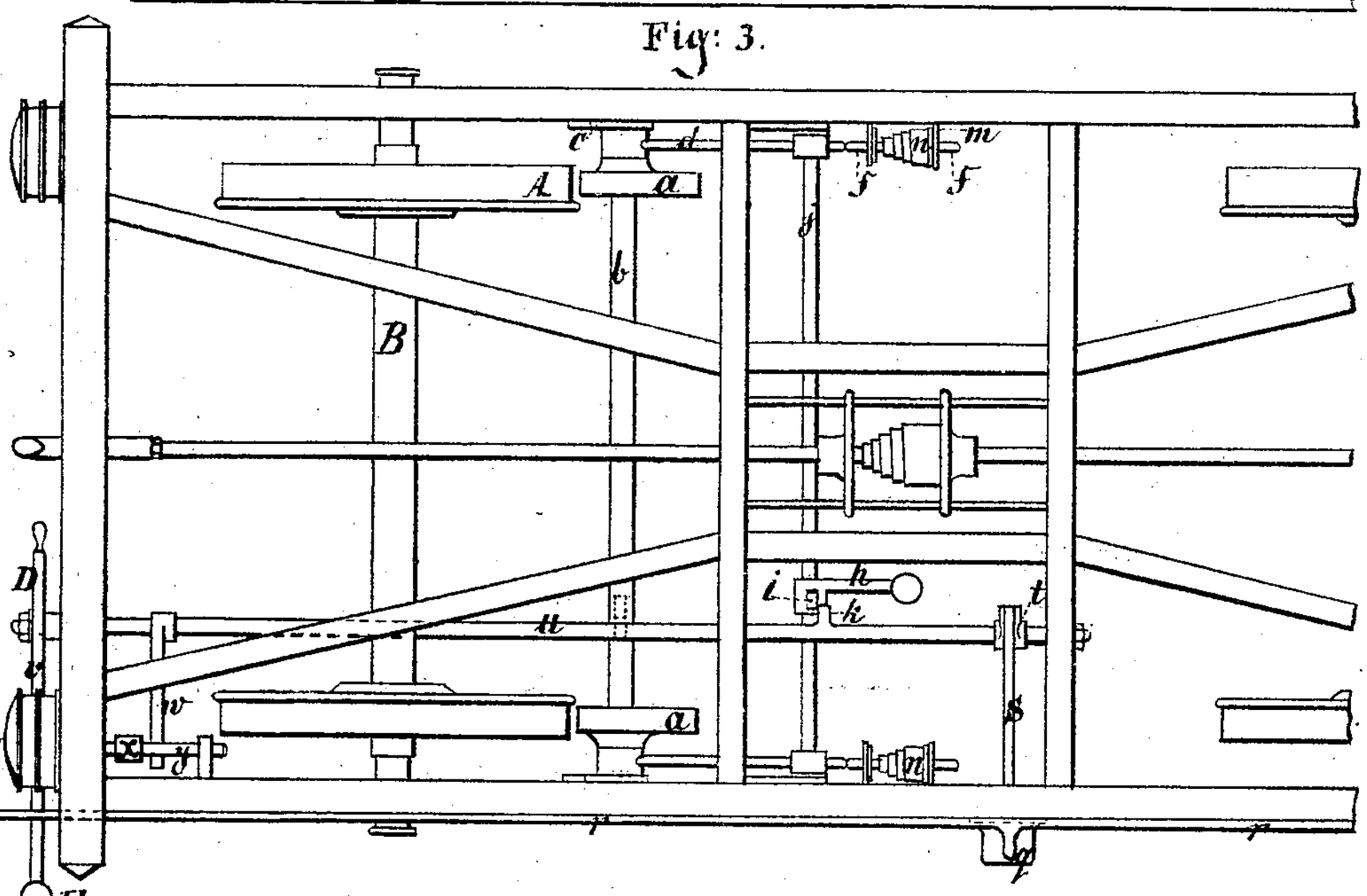
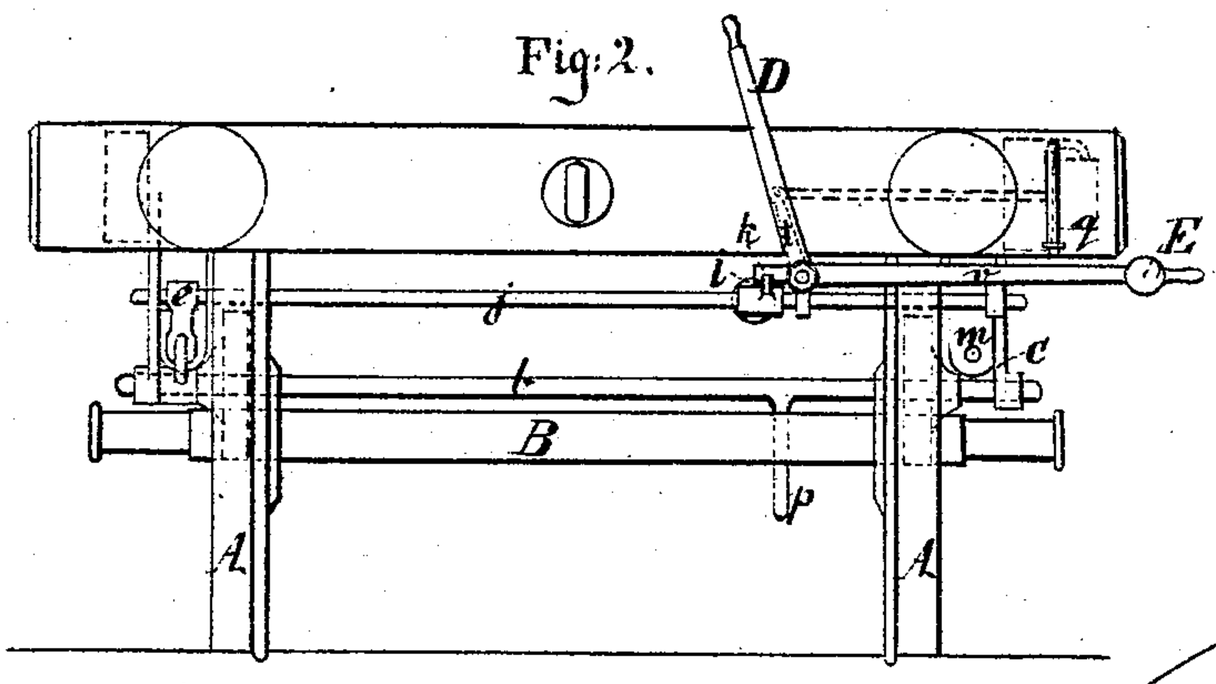


Fig: 2.



Witnesses
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2 Sheets--Sheet 2.

C. SCHOUBERSKY.

Railway Car-Brakes.

No. 151,719. Patented June 9, 1874.

Fig 4.

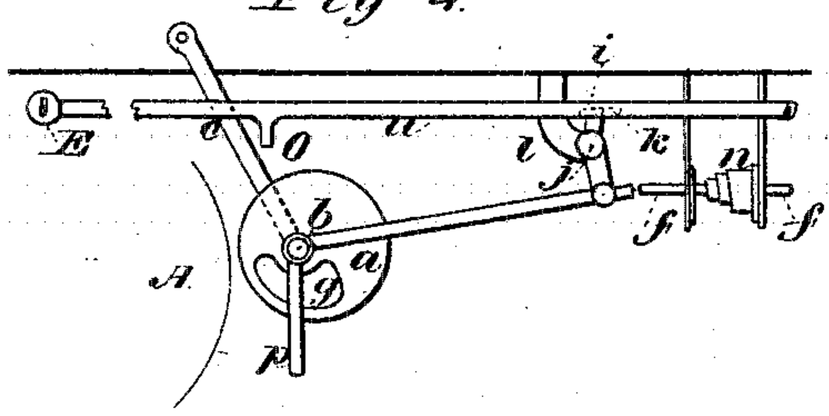


Fig 5.

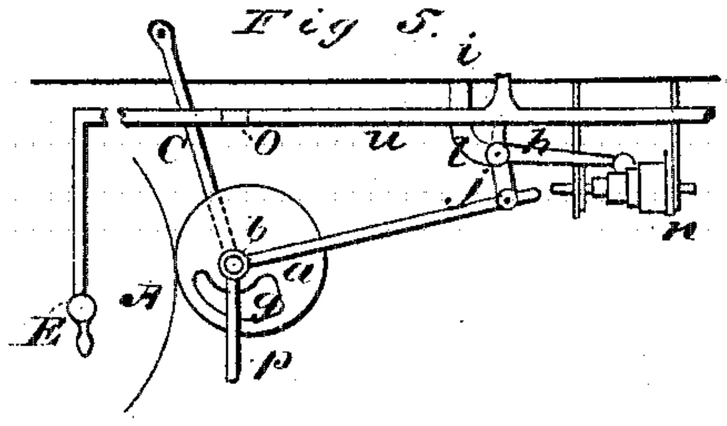


Fig 6

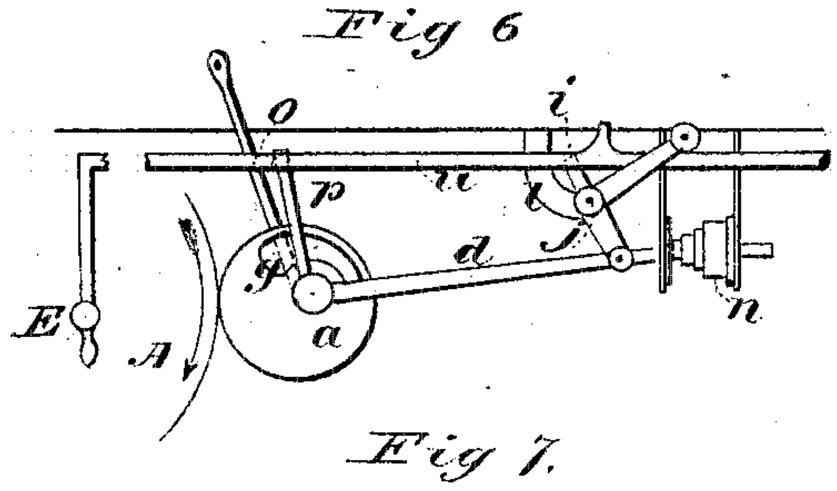


Fig 7.

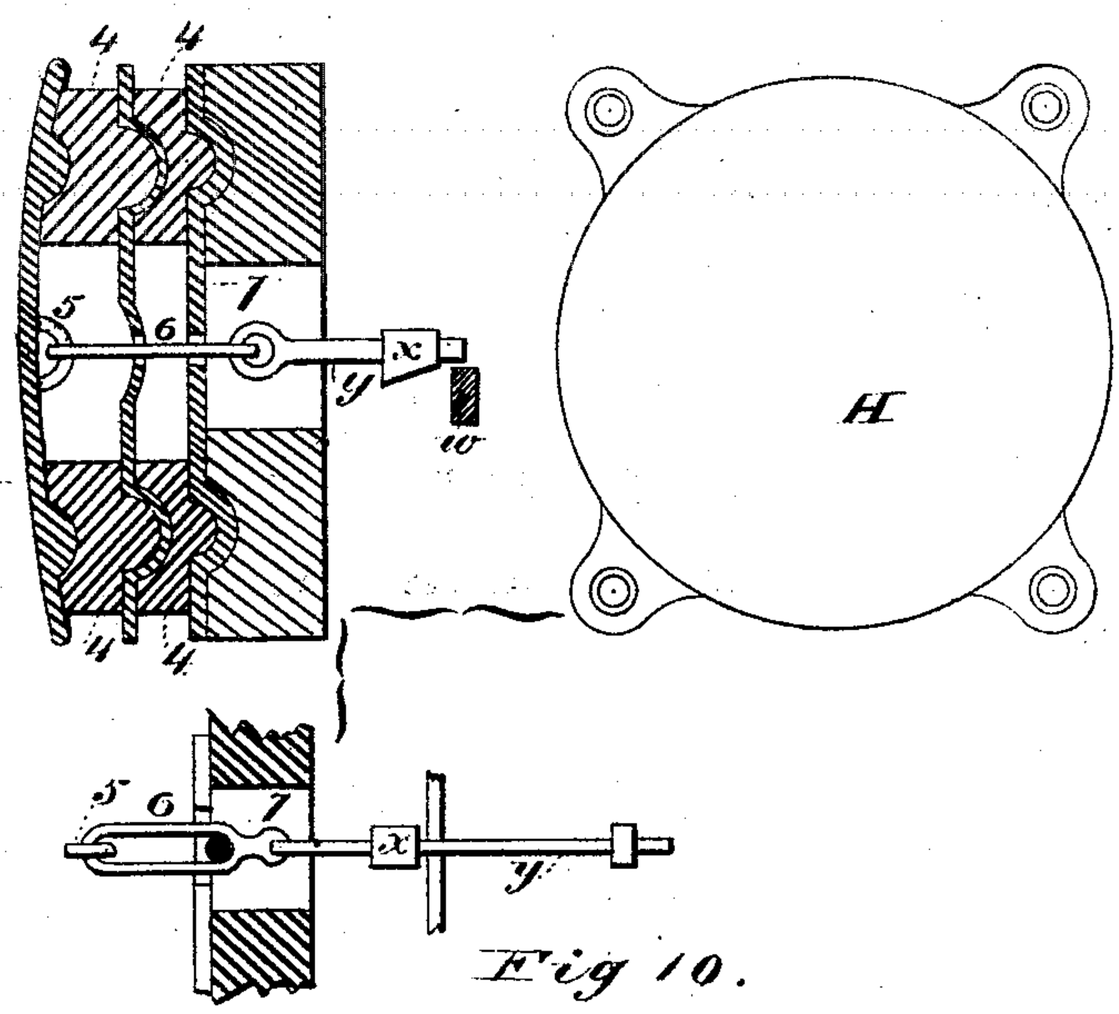


Fig 8.

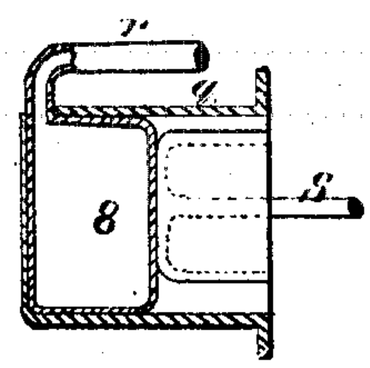


Fig 9.

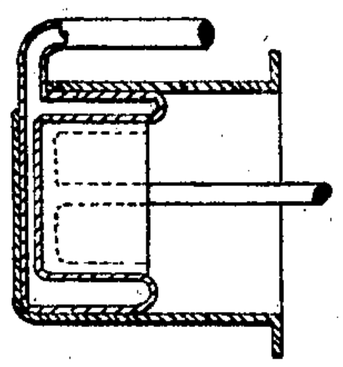
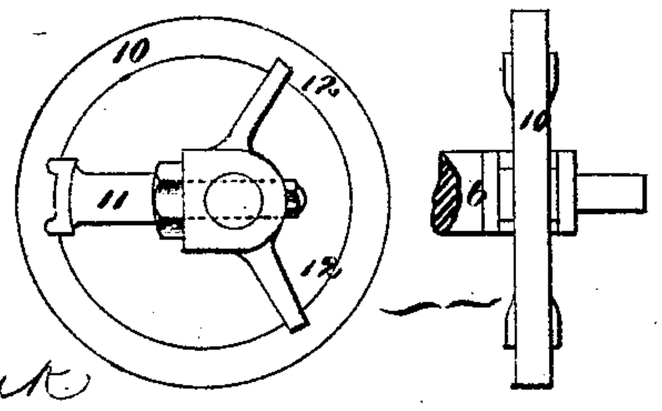


Fig 10.



Witnesses;
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H. E. Matthews.

Inventor.
Charles Schonbersky
by Dyer Beadle & Co
Attys

UNITED STATES PATENT OFFICE.

CHARLES SCHOUBERSKY, OF ST. PETERSBURG, RUSSIA.

IMPROVEMENT IN RAILWAY-CAR BRAKES.

Specification forming part of Letters Patent No. **151,719**, dated June 9, 1874; application filed June 9, 1873.

To all whom it may concern:

Be it known that I, CHAS. SCHOUBERSKY, of St. Petersburg, Russia, have invented certain Improvements in Railway-Brakes, of which the following is a specification:

This invention relates to improvements in brakes for railway-cars in which the ordinary brake-blocks are replaced by eccentric disks, which are so arranged that as soon as they touch the wheels the motion of the train brings them automatically into a position corresponding with the maximum resistance required for stopping the train. The braking, therefore, takes place without the direct action of human power on the eccentric disks.

In the accompanying drawings, Fig. 1 is a side view, Fig. 2 a front view, and Fig. 3 a plan, of a four-wheeled car provided with this brake. Figs. 4, 5, and 6 are separate views of the apparatus in different positions. Figs. 7, 8, 9, and 10 are separate views of details.

The eccentric disks *a* are fixed to a swinging axle, *b*, hung in front of the wheels, and parallel to the axle of the wheels. On the ends of this axle *b* connecting-rods *d* are fixed, which are pivoted to levers *h*, which, by their weight, constantly tend to turn this brake-shaft *j* with the levers, and consequently to push the swinging axle toward the wheels, and so to press the eccentric disks against the same. A projection, *i*, on the brake-shaft *j*, acts against this tendency by locking against a stop, *k*, on another shaft, *u*, which is arranged at right angles to the brake-shaft, and serves for putting the brake into action, and which shall be called here the locking-shaft.

In order to prevent the eccentric disks from accidentally turning with their axle, and so coming into contact with the wheels, they are provided with counterpoises *g*, which preserve them in the proper positions with the shortest radiuses toward the wheels until they are put into action.

As soon as the before-mentioned projection *i* on the brake-shaft *j* is freed from the stop *k* on the locking-shaft, by the latter being turned, the eccentric disks are pressed into contact with the wheels by the action of the counterpoising-lever *h*, as shown in Fig. 5. These eccentric disks are then drawn round by the friction of the moving wheels until a locking-lever, *p*, fixed on the disk-axle *b*, strikes against a stop, *o*, on the locking-shaft *u*, which stop has been brought into the proper position by the before-mentioned turning of this shaft *u*. The eccentric disks have then assumed a position with their longest radiuses directed against the wheel, as shown in Fig. 6. By the rotation of the eccentric disks the disk-axle *b* is pressed away from the wheels, so that two pivoted bars, *d*, connected at each end of the axle therewith, are pushed against two bars, *f*, acting upon coiled springs *n*, which, by their resistance, create the pressure required for braking. The brake can be at once put out of action by turning the locking-shaft *u* so far as to free the locking-lever *p* from the stop *o*, fixed on the locking-shaft. The eccentric disks are then turned further round by the friction of the wheels, and leaving the wheels assume their first position.

For putting the brake into action by means of human power a hand-lever, D, fixed to the locking-shaft, is provided, which lever can be very easily moved by the guard.

Compressed air may be employed for putting all the brakes used in one train into action from any one suitable place in the train. For this purpose an expansible air-receiver, 8, of india-rubber, or similar material, is provided, which is held in a cylindrical case, *q*, and communicates, by means of a piston and piston-rod, *s*, with a lever, *t*, fixed to the locking-shaft *u*. All the air-receivers of all the cars are connected with air-conducting tubes *r*, suspended along the cars. Compressed air being let into these tubes *r* the expansible air-receiver *s* becomes enlarged, and consequently pushes the piston and piston-rod out of the cylindrical case, and so moves the lever *t* connected therewith. By this motion the locking-shaft *u* is turned into a position corresponding with the distance of the eccentric disks from the wheels; but as soon as the air is let out of the tubes the pressure in the expansible air-receivers ceases, the piston and piston-rod go back, and the locking-shaft *u* is turned by the action of a weight, E, on a lever, *v*, arranged outside the car, and the braking then immediately takes place in the manner described.

The escape of the air from the tubes can be effected by any of the valve-cocks provided on each car.

Another brake, of the same construction, and with a separate expansible air-receiver and tubes, is arranged on the other side of the car, in connection with its second axle.

After the escape of the compressed air the air-receiver assumes the position shown in Fig. 9.

In order to make the brake self-acting in case of the train running off the track the buffers H are so arranged that they will be unusually powerfully compressed when such an accident takes place, thereby causing a buffer-rod, *y*, to pass so far into the carriage that a lever, *w*, fixed on the locking-shaft *u*, is moved by means of a wedge, *x*, arranged on the end of the buffer-rod *y*, thus turning the locking-shaft *u*, and causing the braking to take place in the manner described.

As in this case it is of importance to make the buffer so as to act even when not struck straight, which is not the case with ordinary buffers, a peculiar arrangement, shown in Fig. 7, is employed. The buffer consists of an iron convex disk, underneath which embossed india-rubber rings 4, separated by metallic washers 3, are arranged. The connection of the buffer-disk with the parts for working the brake takes place by means of a link, 6, passed through an eye, 5, connected with a bar, 7, which is supported by a back-plate, 2.

By this construction the buffer is made capable of resisting any indirect thrust, as the buffer-disk, and consequently, also, the bar *y*, connected with the link, has a universal motion.

The eccentric disk, which forms an essential feature of the improved brake, may be either a full disk, or, as shown in Fig. 10, a block, 11, provided with a double arm, 12, supporting a ring, 10. On such an eccentric being brought against the wheel for the purpose of braking the ring is turned round, the circumference of the circular block thus transferring the braking-friction from the circumference of the wheel to the inner surface of the ring.

I claim—

1. In a car-brake, the combination of an eccentric swinging disk, a weight adapted to move the disk against the wheel, and a spring adapted to resist the tendency of the disk to move away from the wheel as the pressure is increased by its revolution, all combined substantially as described.

2. In a car-brake, the combination of an eccentric swinging disk, a weight adapted to move the disk against the wheel, a resisting-spring, and a locking-shaft, provided with stops, substantially as described.

3. The combination of the disk, shaft, and stop *p* with the locking-shaft and stop *o*, as described.

4. The combination of an eccentric disk, shaft *b*, stop *p*, and locking-shaft, with an expansible air-receiver, substantially as described.

5. The combination of an eccentric disk and the locking-shaft with the buffer H and rod *g*, as described.

6. The ring 10, combined and adapted to turn upon the disk-arms 11 and 12, as described.

CHARLES SCHOUBERSKY.

Witnesses:

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