

## The Johnson Interlocking Machine.

We described this machine, with illustrations of details, in the *Railroad Gazette* of Jan. 18, 1890, but the elegance of the entire design, and the extent to which it has been introduced during the last year or two, justify the illustration now given of a 40-lever machine recently built, with the following brief description:

This machine was designed in 1884 to avoid certain defects in earlier interlocking machines and to give a simple, strong and easily accessible locking. The designer, Mr. Arthur H. Johnson, has secured the following letters patent in connection with the interlocking parts, viz.: No. 317,137, of March 19, 1885, and No. 302,794, of Aug. 17, 1888. Messrs. H. and A. H. Johnson have also made ap-

This movement also brings the curved slot in the rocker radial to the centre of the main lever, so that the result of reversing the lever is nil as regards the locking tappet. As the latch is dropped in the reversed position of the lever, the tappet is raised further and effects the necessary releasing of those levers which should be released when that lever is reversed. The action of one tappet is made to release or lock other tappets, by transverse connections and dogs, carried by a rigid locking plate, which also serves to guide and retain the tappets.

The manufacturers wish to point out that the Johnson machine embodied the first successful combination of Stevens' locking and latch actuation. The good points of the machine were at once recognized by Mr. Charles R. Johnson, to whose skill and energy the present com-

had just started, was run into at the rear by a following freight which approached at high speed and one passenger car and six other cars were badly wrecked. Nine passengers were killed and 32 injured. There was considerable fog at the time. It appears that the freight ran past an automatic danger signal. This accident was reported in the *Railroad Gazette* of Sept. 16. It will be necessary to await the investigation of the Massachusetts railroad commissioners to learn the true cause of this collision.

11th, 3 a. m., on Central of New Jersey, at Springtown, N. J., a freight train ran into the rear of an empty engine which had been stopped by a preceding train, wrecking both engines and a dozen cars; one engineer was killed and the other injured. It is said that the fireman of the empty engine went back to signal the freight, when he heard it, but that his light went out.

13th, on New York & New England, near Boston, Mass., a train of empty passenger cars running west was

stopped by the bursting of an air brake hose, and immediately after was run into by a following passenger train, wrecking the rear car, which was empty. There was considerable fog at the time. It is said that the brakeman of the foremost train started back promptly, but had gone but a very short distance before he met the following train.

13th, on Delaware & Hudson, in Scranton, Pa., a passenger train ran over a misplaced switch and into some freight cars standing on the sidetrack. The engine and several freight cars were badly damaged; conductor and fireman injured.

14th, on Chicago & Alton, at Nameoki, Ill., a passenger train ran into a pay car, badly damaging the latter. One passenger and a trainman injured. The pay car had encroached on the time of the passenger train.

14th, on Pennsylvania road near Painesboro, N. J., a freight train ran into the rear of a preceding freight, wrecking the engine, caboose and 5 freight cars. The wreck took fire and a portion of it was burned up. One report says that the engineer of the hindmost train was injured by jumping; another says that he was asleep.

18th, on Pittsburgh & Western, at Kent, O., an east-bound passenger train was run into at the rear by a following passenger train, badly damaging 2 sleeping cars and injuring two passengers.

18th, on Wheeling & Lake Erie, at Lodi, O., a passenger train ran into the rear of a preceding freight, and the engineer was injured by jumping. There was a dense fog at the time.

18th, on New York Central & Hudson River road at St. Johnsville, N. Y., a freight train ran into the rear of a preceding freight, killing a driver. The wreck took fire and several cars were burned up.

20th, on New York, Pennsylvania & Ohio, at Cortland, O., a work train ran into the rear of a passenger train, injuring engineer, conductor and 4 passengers.

22d, on East Tennessee, Virginia & Georgia, near Calera, Ala., a passenger train ran over a misplaced switch and into some cars on the side track, doing slight damage; the engineer was injured.

23d, on Northern Central, near Hanover Junction, Pa., a train of empty passenger cars ran into the rear of a freight train, wrecking the caboose and 1 car; engineer and fireman injured.

24th, on Chicago Great Western, at New Hampton, Ia., a local freight train standing at the station was run into at the rear by a through freight, wrecking the caboose and 3 cars. In the caboose of the work train were 6 trackmen and two passengers, of whom 6 were killed and the other two injured. The second train was not running very fast, but the car next ahead of the caboose was a platform which was broken and penetrated the caboose above the floor line.

27th, 2 a. m., on Western of Alabama, near Opelika, Ala., a passenger train ran into some freight cars which had escaped from a freight train which was switching and run uncontrolled down a grade, making a bad wreck, which caught fire and was mostly burned up; engineer and fireman killed, 2 postal clerks and 3 passengers injured.

28th, on Toledo & Ohio Central, at Alexandria, O., a freight train standing at the station was run into at the rear by a following freight, and a passenger in the caboose was injured.

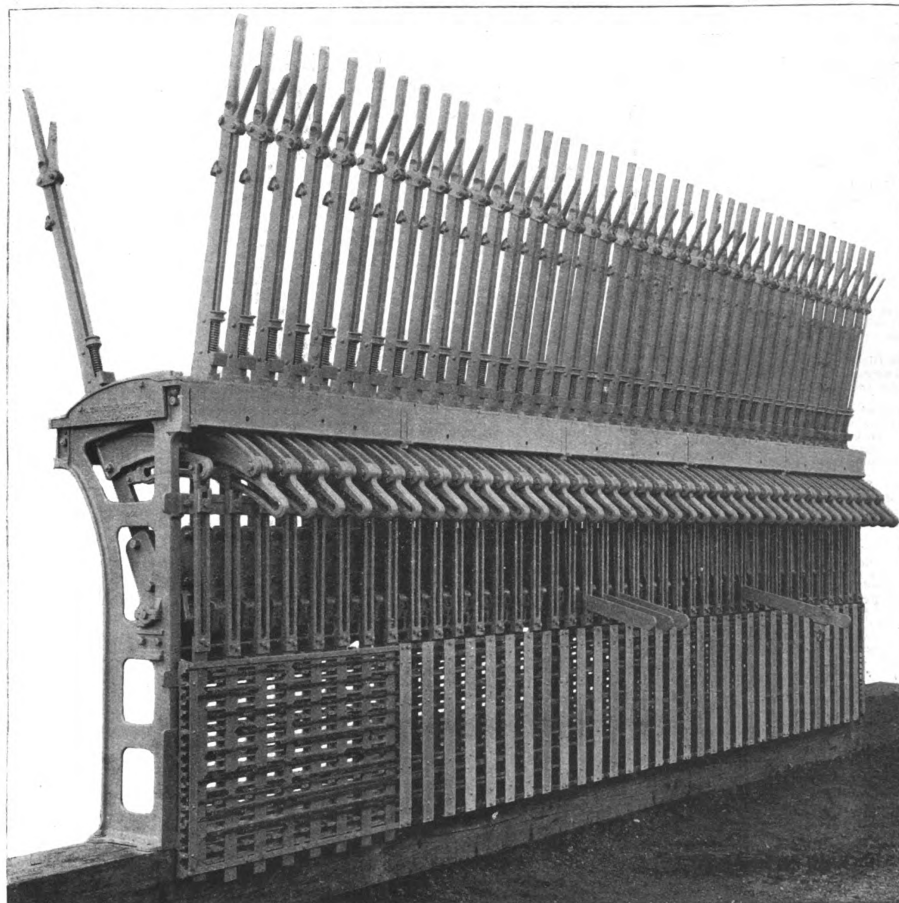
30th, 3 a. m., on Fitchburg road, at Waltham, Mass., a freight train broke in two and the rear portion afterward ran into the front part, wrecking several cars of live stock and merchandise. A man in charge of horses was injured.

And 23 others on 21 roads, involving 6 passenger and 37 freight and other trains.

## BUTTING.

2d, on Long Island road, near Winfield, N. Y., butting collision between a freight and a work train, making a bad wreck and injuring 1 fireman.

2d, on Louisville Southern, near Acton, Ky., butting collision of freight trains, wrecking both engines. One engineer was killed and both men on the other engine injured.



THE JOHNSON INTERLOCKING MACHINE.

Made by THE JOHNSON RAILROAD SIGNAL COMPANY, Rahway, N. J.

plication for patents in connection with the improved construction of the locking plate, etc. The locking system is one of the oldest, viz., the Stevens, but is actuated by the latch rod. All the locking is arranged in a single tier, and in a vertical plane, thus making the examination of the locking a very easy matter. There are only three styles of locking dog and these accomplish, very simply, all ordinary and special locking. Any part of the locking may be removed or altered without disturbing locking having no relation to the alteration.

The various wearing parts are of cold rolled iron and steel. As regards the latch actuation, the manufacturers claim that this machine has the simplest and most durable movement extant. They also claim that this machine has a considerable advantage over other machines in the accessibility of the locking for repairs or changes, and in the simple and strong form of the locking dogs.

It is generally acknowledged that the locking should be actuated by the preliminary action of the spring latch rod, and one of the most important reasons for this conclusion is that with direct attachment of the locking to the lever, it is often difficult to determine, when a lever cannot be moved, whether the working connection or the locking is holding it. In busy places unnecessary strain is often brought to bear on lever locking in such a case. By reference to the cut it will be seen that the intention of moving the main lever, as expressed by grasping the handle and raising the latch, will raise the tappet and effect all the locking of other lever latches necessary to the safe movement of the lever in question.

mercial success of this machine is to be attributed. As is well known by railroad men, the said combination of Stevens' locking with latch combination has been recently adopted by most of the signal companies, both in this country and abroad, and some of the railroad companies specify this pattern of machine for all contracts.

The Johnson Railroad Signal Company, of Rahway, N. J., will be glad to furnish drawings and complete information upon application.

## Accidents in the United States in September.

## COLLISIONS.

## REAR.

5th, on Western New York & Pennsylvania, near Avon, N. Y., a passenger train which had stopped to take on some cans of milk was run into at the rear by a freight, wrecking the rear car and damaging several others. Three trainmen and 1 passenger were injured.

7th, on New York, Lake Erie & Western, near Chester Hill, N. J., a passenger train ran over a misplaced switch and into some cars of stone standing on the side track, and 3 men working about the cars were injured, 1 fatally.

9th, on Lake Shore and Michigan Southern, in Toledo, O., a Michigan Central Passenger train ran into the rear of a Lake Shore freight, doing considerable damage and injuring the passenger engineer.

9th, on Savannah, Florida & Western, near Waveross, Ga., a passenger train ran into the rear part of a freight train which had become detached as the train started away from a wood station. The conductor of the freight and the engineer and fireman of the passenger train were injured.

10th, on Fitchburg road, at West Cambridge, Mass., a passenger train which was standing at the station or