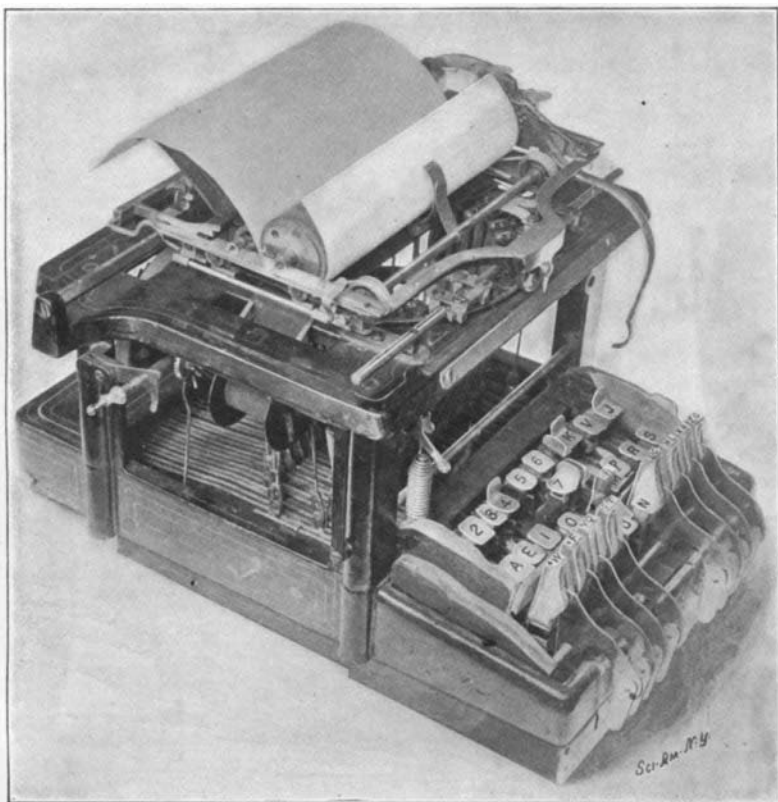


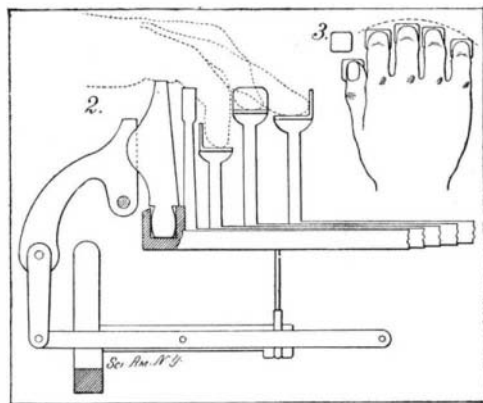
NEW TYPEWRITER KEYBOARD.

Notwithstanding the great number of inventors who have concentrated their minds on the improvement of typewriters, one important field for invention seems, up to the present time, to have escaped all. It has



1.—KEYBOARD CONFORMING TO THE ANATOMY OF THE HAND.

evidently been taken for granted that the present arrangement of the keyboard was the very best, and no study has been devoted to this part of the machine. Now comes forth an inventor from Cuba with a keyboard radically different, which is so arranged as to conform to the outline of the hand, as clearly shown in Diagram 3. The front tier of keys is adapted to be operated by the first or second phalanges of the thumbs or fingers, while the other two tiers, which



**2 — THE PHALANX MECHANISM.
3.—OUTLINE OF THE TIERS.**

are curved to the shape of the hand, are operated by the finger-tips. Each finger-tip operates two keys, the upper tier being engaged when the finger is distended, and the lower tier when the finger is bent at the first joint. L-shaped guides are provided on certain of the keys, to enable the more clumsy digits to instinctively find their proper locations.

A very important feature of this keyboard is the

peculiar construction of the front tier, whereby each key is adapted to print either of two characters. This construction is shown in Diagram 2, and it will be seen that each phalanx-piece is directly connected by a socket joint to one of a pair of key-levers, and indirectly connected to the other key-lever by secondary levers and links. Operation of the latter mechanism is accomplished by drawing the phalanx-piece backward. A slot in the phalanx-piece receives the upper end of a curved lever, which is so connected by a link to a secondary lever below that any backward movement of the phalanx-piece will result in the depression of the latter lever. Thence connection is made to the proper key-lever above, but not directly, for the depression would be insufficient for the purpose. A third lever loosely pivoted to the front of the machine is connected near its center to this secondary lever and at the end to the key-lever. By this arrangement the leverage is increased and proper depression can be made to operate the type-bar. The directly-connected key-lever is operated by the mere depression of the phalanx-piece, and we, therefore, have an effective mechanism for operating two type-bars by the manipulation of a single key.

A very complete keyboard is thus afforded, which comprises but three tiers of keys, and which is further augmented as in the standard machine, with a shift mechanism for obtaining the upper-case characters. This keyboard can be easily applied to nearly all the typewriters now on the market, and a few lessons will teach anyone to operate the machine rapidly. Great speed may be obtained, for every digit is brought into play, and each finger, with the exception of the thumbs, has four distinct movements, each of which produces a different character. The possibility of printing a wrong character is remote, for the hand is not moved during the writing, even for printing capitals or spacing, and each finger is continually in engagement with its individual set of keys. A typewritist can therefore perform his work without looking at his machine. Patents for this keyboard have recently been granted to Mr. Juan Vidal, care of his agent, Delgado de Lemos, 44 W. 10th Street, New York city.

A RECENT REAR-END COLLISION ON THE NEW YORK CENTRAL RAILROAD.

A collision similar in its effects to the horrible tunnel disaster in New York city last January, occurred on the New York Central Railroad at Peekskill early on the morning of June 14. A passenger train standing at the station, luckily having two trailing empty passenger cars, was run into at the rear about 3 o'clock in the morning by a night fast freight train. Either the engineer or fireman failed to heed the block signal set against them, or the block signalman failed to set the signal, about which no explanation is given. Had the rear cars contained passengers there would have been a great loss of life.

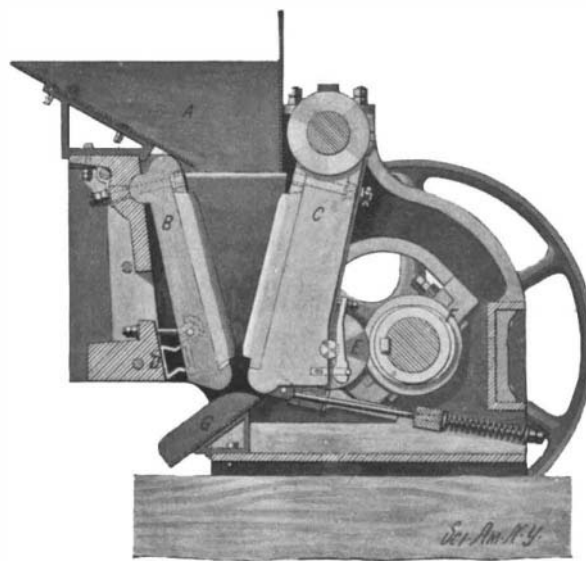
As it was, the freight engine plowed right through the passenger car, the roof sliding over the top of the engine, as shown in one of the illustrations, the

sides of the car also passing over the sides of the engine. The other illustration shows the effect of the concussion in telescoping the following freight car with the tender. The car being filled with soft material prevented serious damage to the tender. Strange to say, neither the freight locomotive engineer nor fireman was seriously injured.

The collision emphasizes the need of automatic safety appliances for stopping trains when signals are ignored.

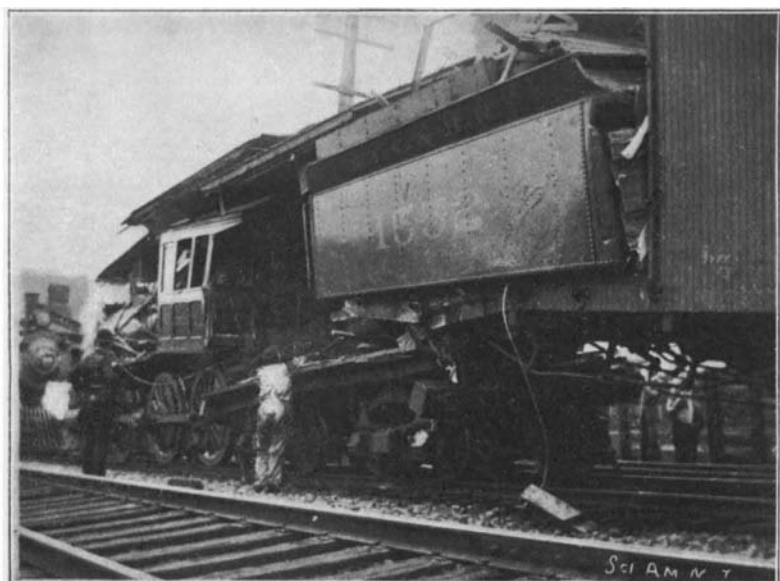
CRUSHER.

Mr. Alexander G. Morris, of Tyrone, Pa., is the inventor of a new crusher which we show in sections in the accompanying illustration. The machine is designed to crush rock, ore and other like material, which is broken into fine particles between powerful jaws operated by suitable mechanism. The material to be crushed is poured into the feed hopper, A, and falls between a series of open jaws, B and C. The jaws, B, are stationary, while the jaws, C, are oscillated toward and away from the jaws, B. Each jaw, C, carries a roller wheel, E, loosely mounted therein and adapted to bear under spring tension

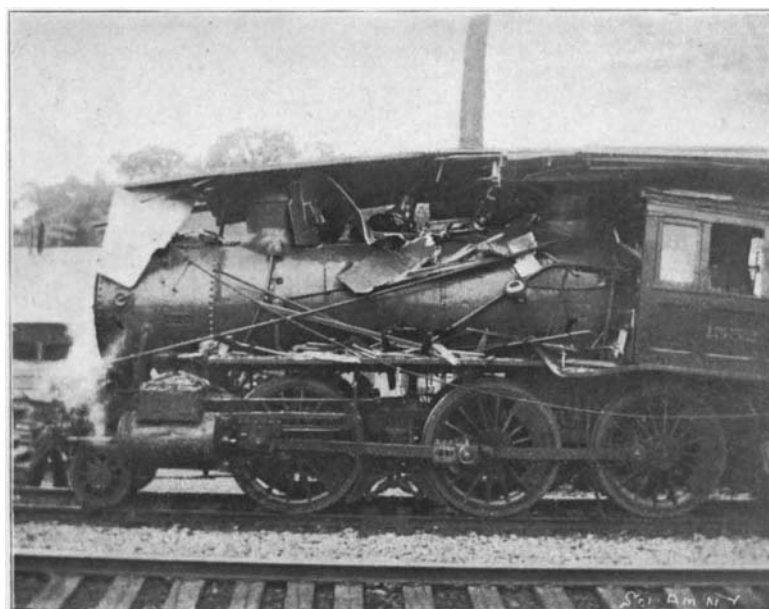


SECTION OF AN ORE-CRUSHER.

against the periphery of its respective cam, F, on the main shaft, thus imparting an oscillatory motion to the jaw. The ore is thus intermittently crushed and allowed to drop between the inclined jaws until sufficiently reduced in size to permit of its falling onto the chute, G, arranged to direct the crushed rock toward the front of the machine. Each jaw is provided with a wearing surface which may be readily removed, when worn out, and replaced by a new one. The jaws, B, are provided with transverse extensions which are held in corresponding cavities in the frame by bolts slightly movable therein to permit the jaws to swing. The proper inclination of the jaw, B, is maintained by hook-bolts working in connection with spacers, D. By placing spacers of various sizes in position, the jaws may be regulated to crush ore to different degrees of coarseness. Furthermore, the spacers act as safety devices to prevent the destruction of the machine by overloading it, for they are made of such strength as to stand the strain of the load which it is desired they should bear. If the crusher be overloaded, these spacers will fracture and give way, thus relieving the machine of its strain, and preventing the destruction of other and more expensive parts of the apparatus.



TELESCOPED TENDER AND FREIGHT CAR.



THE LOCOMOTIVE THAT CAUSED THE WRECK.