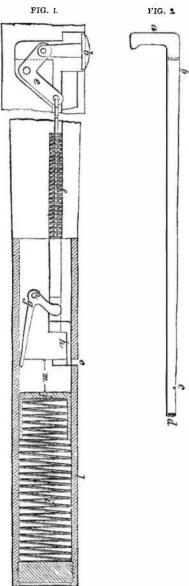
Scientific American.



Hew Inventions.

Francis' Omnibus Cane.

Fig. 1 is a general view of the cane, a being the handle, b a little knob to be pushed by the thumb, ca slot out of which two three cent pieces are made to project; d the bottom which is unscrewed to fill the cane. Fig. 2 represents a longitudinal section of the cane. Unscrewing the bottom, d, and taking out the spring, i, with the pusher, j, joined to it, the space m is filled with three cent pieces, and the bottom screwed on.



The operation is as follows:-Knob, b, being depressed, the bell lever, e, pulls the wire, f, and consequently the first movement is the slipping back of the cover, h, which confines the pieces and prevents their falling out of c. The latch, h, being removed, two three cent pieces are made to project through the slot, c, as they are pushed up by the long arm of bell lever, ng, whence they can be easily taken by the driver. I, the ferrule, holds 32 three cent pieces, sixteen rides.

It must be obvious to all persons who ride in omnibuses that some new means of paying their fare is demanded, thereby dispensing with the inconvenience of leaving their seats, crushing their hats, treading on crinoline, or otherwise rendering uncomfortable those who are their fellow passengers for the time being. This cane answers in every other respect the purposes of a walking-stick.

A patent was issued this week for this invention (see List of Claims), and any communication may be addressed to the office of S. W. Francis' Patent Printing Machines, 442 Broadway, New York.

Improved Cotton and Hay Press.

This cotton press belongs to that class wherein the power is obtained by a system of levers called "toggles." It is intended for horse or hand power; and the inventor states that with the one which was tried at Madison, is the coupling link, kept in its place and pre-

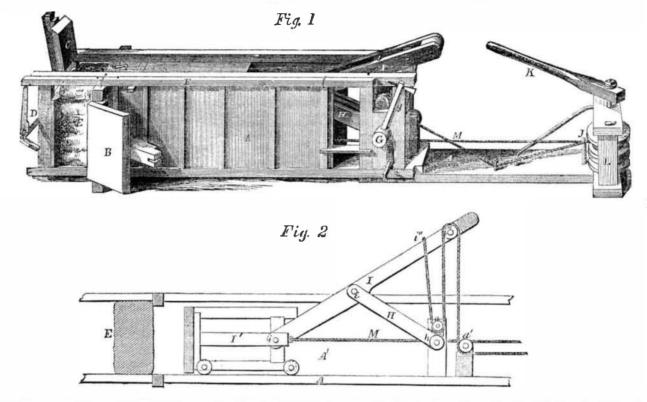
Ind., he put twenty-seven pounds of hay into a space of one cubic foot, and that he has a power of 300 tuns. It is equally applicable for hay or cotton, and the chief improvement is, that the horse only travels in one direction-one round in the same direction that pressed the bale rendering the press ready for the next.

In our engravings, Fig. 1 is a perspective view of the press, and Fig. 2 a section of its working parts. The same letters refer to similar parts in each.

A is a base or platform, quite level, and A' is the casing or frame. B is a door, there them both. E is the bale, and F is a bar that being a similar one on the opposite side. C is has a pendant from its end, which, when the

an upper door or shutter, which is held down by a catch when the bale is being pressed, and D is a bar, connected with the opposite door to B, having a catch on it, which fastens into a slit in a cross bar on B, and so fastens

PENNISTON'S IMPROVED COTTON AND HAY PRESS.



tent, releases D, and allows it to be bound and removed. G is an axle, having an arm, g, with a screw through it, that operates F by pushing it out, and being also connected with the toggle, H, which is hinged at i to the lever, I, which is hinged to the follower and carriage, I', by a pivot, i'.

The rope that pull the lever down, and so moves the follower, is fastened at i", then passing round a pulley, a, goes over another pulley, i''', on I, and passing under the pul- | tated; this pulls down I, and consequently |

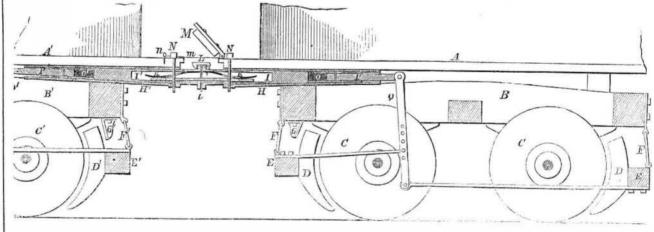
follower has pressed the bale to its full ex- | ley, a', is wound round J. This pulley is so | arranged on an axle that by raising or lowering it, it can be thrown in or out of gear with the axis, so that the lever, K, will either turn it or allow it to rest, and instead, turn the lower pulley that contains the rope, M, which draws back the follower carriage, I'.

The operation is simple; the follower being drawn back, A' is filled with hay or cotton, and the ropes adjusted; the doors, B and C, are shut and secured, and the lever, K is ro-

forces in the follower, and when the cotton or hay is fully compressed, the screw stop on g, pushes F, the pendant on which releases the catch, D, the doors open, and the bale can be be bound and drawn out; the top wheel of J in the frame, L, is then slightly raised, another turn given to the handle, K, and the follower drawn back, ready to repeat the process.

This press was patented December 1, 1857, by the inventor, G. W. Penniston, North Vernon, Jennings co., Ind., from whom all further particulars can be obtained.

BRAUER'S SELF-ACTING CAR BRAKE.



charge of a train of cars has often caused the loss of many valuable lives, and it is desirable to, as far as possible, make the braking operation, on which frequently the safety of a whole train depends, automatic. This has been done by the inventor of this system, our illustrations giving a side view of the car and forms, springs, and coupling link, and thus section of the working parts of the brake.

A and A' are the platforms of two cars, B and B' being the trucks on which they are supported, and C and C' are the wheels. D D' are the brake blocks attached to bars, E E', that swing by links, F F', from the cars. G G' are stops to prevent the brake blocks from going too far back. HH' are two cases or square tubes suspended by braces underneath the platform, and in these again are placed hollow frames, II', which meet in a flanch at i. J

keeping them in contact, while the space between the two cars is filled by a door, M, wound round the axle of which is a cord, m, tied to a small pin, n, that fits in a hole in A'. N are the two pins that pass through the platfasten together the two cars; the slot in the link and springs allowing an horizontal play

The pieces, I I', are connected with the bars, P P', by a hinge, and the joint is made elastic by placing between them pieces of india-rubber, O O', or similar elastic substance. The bars, P P', are pivoted to the levers, Q Q', that operate the brakes.

The operation of this brake is as follows:-So long as the cars are being pulled by the locomotive, the tension of the cord, m, keeps M

Inattention on the part of the person having | vented from shaking up by the springs, K. L | in the position shown in the engraving, but is a hook passing over the flanches, i, and | the moment the speed is slackened gradually. that is, by means of the pistons of the locomotive and not by its brakes, and the train left to run out its momentum, the door or shutter, M, drops down and keeps the cars at brakes operating. Should it be required, however, to stop the train suddenly, and the driver not only shuts off steam but applies his brakes, the suddenness of the jerk loosens m so quickly that M drops down, and rests on the platform, A', and thus does not prevent the action of the brakes. The cars pushing one against the other compress the pieces, I I' in H H', and they push back the bars, P P', and these by operating the levers, Q Q', bring the brake blocks, D D', in contact with the wheels, and so apply a braking force on the wheels exactly in proportion to the speed o

