

New Inventions.

Electric Signals for Railroads.

The description of a new system of telegraph for railroads, devised by L. Solomons, of Savannah, Ga., has been furnished to the Washington Union by J. B. True, telegraphic engineer. These signals consist of lanterns placed at intervals of five or ten miles along the whole line of the road. The sides of the lanterns parallel with the road are closed so as to exclude the light. Revolving shades governed by an electrical current alternately shut off the light from the lamps or allow it to be reflected up or down the road. A single wire connects these revolving shades in a series of telegraphic circuits, which are completed only when an additional wheel, attached to a locomotive for the purpose, passes over a lever which is fixed with necessary insulation on the track near each signal lamp. As soon as this wheel presses on a lever its further end is thrown up, and the point of contact completes a telegraphic circuit of five or ten miles, and makes a magnet of a coil of wire, which moving or changing the position of the revolving shades, exposes the light of the lamp five or ten miles ahead, and warns engineers on trains moving in counter directions that they must go forward cautiously, if at all. When the train reaches the next signal lamp the wheel again depresses a second lever, which by a like operation closes the shade at the starting point or depot, opens at the second signal lamp, and also at the lamp five or ten miles in advance. The lights thus opened disclose the fact to one engineer that another train is within the section over which the light is shed, while the absence of light notifies him that the track is clear. During the day the same effect is produced upon the shades, and the same warning given, which engineers may as plainly learn from the position of the shades as they could from the light of the lamps at night. The shades stand upright when the track is clear, and lay horizontally when there is a train on the section to be passed.

This system of railroad signaling, it appears to us, must be somewhat expensive to operate, as an electro-magnet is required for each signal, and a very powerful battery must therefore be used. The plan, however, is perfectly practicable.

Improved Flour Packer.

The accompanying engraving represents a machine invented by Samuel Taggart, for compressing flour in barrels, an imperfect form of which has before appeared in our columns. Like most or all the flour packers which have been at all successful in practice, the compressing is performed by a broad thin bladed screw, analogous to the screw propeller employed on steam vessels. The peculiarity relates to the method of operating this device.

Fig. 1 is a perspective view, Fig. 2 a vertical section, and Fig. 3 a horizontal section of the principal parts. A is the barrel to be filled, represented as broken at the side, in order to show the interior. B is a conical base of the feeding trough, and D is a cylindrical portion or reservoir to contain the flour. This portion may be larger or smaller than represented, and may be of any height desired, so long as the shaft C, connected to the thin bladed screw is of sufficient length to extend through it.

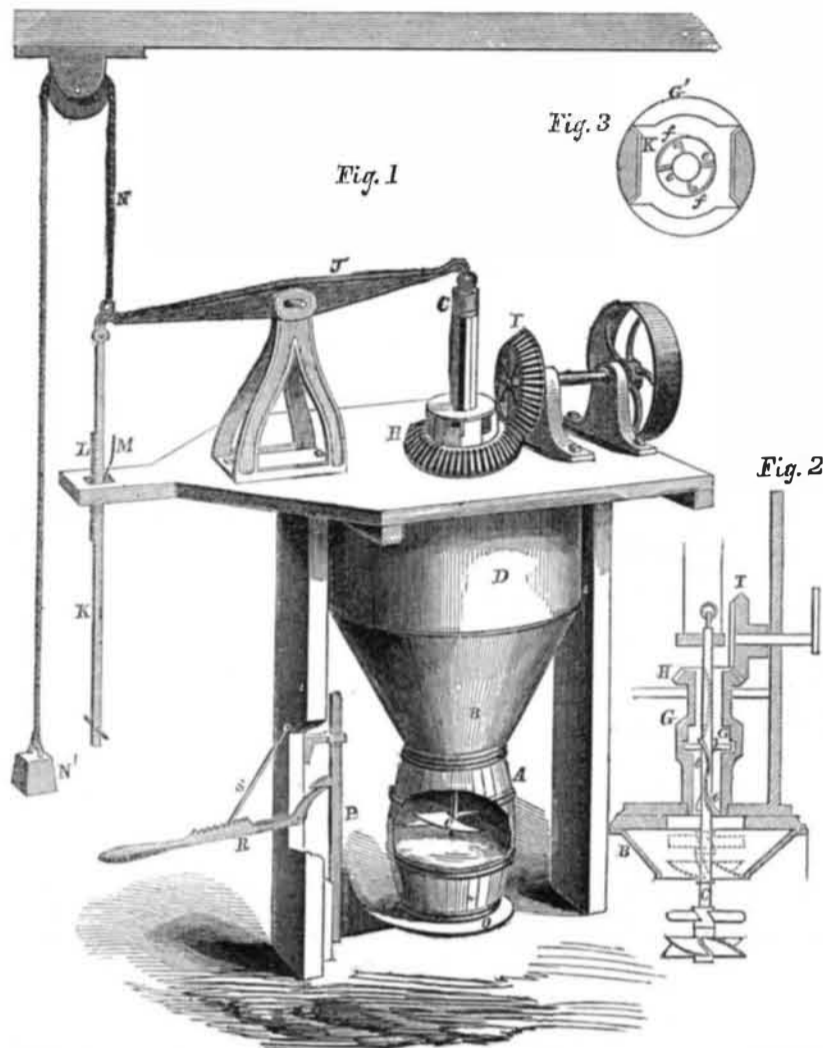
On the shaft C is fixed, at a proper elevation, four screw threads, represented in Fig. 2 by *ee*. The shaft C at this part, is enclosed in a stout sleeve G of cast iron, within which there is liberty for the enclosed casting K to slide vertically, to a small extent. From the interior of K project points *ff*, which act on the threads *ee*. At the top of the sleeve G is a bevel gear wheel H, which receives motion from a vertical bevel wheel I, driven by any convenient power. The bevel wheel I revolves continuously, as also does the sleeve G, and the interior casting K. The threads *ee* are so located on the shaft C as to receive motion from the points *ff*, only while the screw C is below the mouth of B.

The vertical shaft C, if of any considerable length, necessarily presses downwards on the

screw C, with considerable weight. To raise it, when necessary, the lever J is mounted in suitable bearings above, and provided with a rod and transverse handle passing downwards through an aperture in the floor, and provided with the rack L and the spring M, to enable it to hold in any position where it may be left. It is desirable that the screw C, when in action, be pressed down with considerable

force, in order suitably to compress the fine material, and the screw and shaft C, when in action, are allowed to rise only in proportion as the flour below becomes compressed sufficiently to sustain it. As it may be desirable to add somewhat to the weight of C, the rope N is attached to J as represented, and passing over a pulley, sustains, at its other extremity, the weight N'. The gravity, then, of N' con-

TAGGART'S FLOUR PACKER.



tributes, with the gravity of C, to compress the flour.

The barrel A rests on a platform O, which is capable of vertical movement by connection with the vertical rod P, as represented. R is a lever capable of being worked by hand, to raise or lower P. S is a pawl, hinged to the framing, and allowed to catch, at pleasure, in the rack represented on R. By means of this apparatus, the platform O may be very

readily lowered, the barrel A removed, an empty barrel supplied in its place, and the whole again raised into tight contact with B as represented. This flour packer was patented Feb. 20th, 1855, and was awarded diplomas as the "best flour packer" by both the State Fair of Indiana and the Fair of the American Institute in 1856.

For further information, the patentee may be addressed, S. Taggart, Indianapolis, Ind.

Bradley's Puppet Valve.

A valve is one of those mechanical devices which is exceeding simple in theory, but difficult to make absolutely perfect in practice. Self-acting valves are usually constructed either in the form of a flap, to turn on a hinge,

still more difficult to make them fit tightly to their seats, after having been for some time in use.

To ensure the tight fitting of puppet valves to their seats, or rather, to prevent the gradual wearing of channels across where there should

puppet valves, in a manner which seems almost entirely to relieve them from the difficulties incident to such constructions. It has been tested in practice, and found very successful under the most severe tests, such as in the pumps of hydraulic presses, under pressures of many hundred pounds per square inch.

Fig. 1 is a vertical section through the casing alone, Fig. 2 is a plan view of the valve, and Fig. 3 is a vertical section of a casing adapting the valve to a different arrangement of the passages. A represents the casing, and B the main body or cylindrical portion of the valve. E is the lower portion, or accurately finished face, which makes a tight contact with the casing below, so as entirely to stop the aperture H. There are ribs or guides, *b b*, extending along the exterior of B, and making the diameter of the whole valve nearly equal to that of the interior of A. These ribs *b b* extend almost vertically up the sides of B, but are slightly inclined, so as to form portions of spirals, as represented. Across the top of B, which is hollow, are constructed in the form shown in Fig. 1, grooves *d*, and between each of the ribs *b b* are holes *c*. The object of *c* and *d* is to provide perfectly free avenues of escape for the water arising around B, even when the upper surface of B is tightly driven against the cover of the casing.

It receives the water in the ordinary manner: its pressure lifts the whole valve B E from its seat, and allows the water to flow past in the ordinary manner. So soon as the flow through H is stopped, the valve descends by gravity, the action being precisely similar to the ordinary puppet valve, except that the wings B guide it perfectly, and yet almost without friction, in the casing A while the spiral position of *b b*, under the influence of the ascending current of water through the grooves thus provided, rotates the whole valve on its seat, to a greater or less extent, with each motion. All tendency, therefore, to the wearing of a channel across the acting surfaces, in consequence of any very slight leakage, is effectually prevented by this rotation, and the working surfaces are kept perfectly tight.

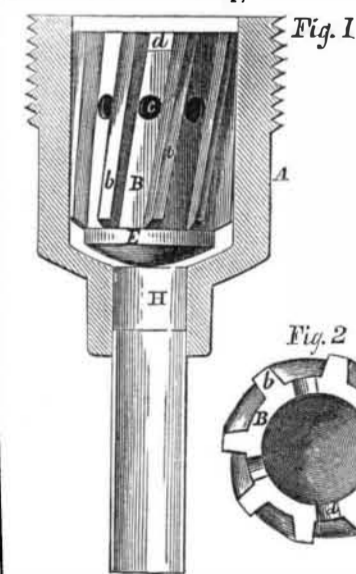
Fig. 3 shows a similar form, except that the water discharged or drawn through, escapes at the opening G, in the side of the casing, rather than the top. To facilitate the discharge through G, the ribs *b* are nearly or quite removed along their central portion, as represented, and a corresponding semicircular groove is constructed in the interior casing, so that both together form a liberal passage *f*, through which the water or other fluid may circulate. The action is, in every respect, similar to the more common form, in Fig. 1, except that the discharge is at the side.

This valve is the invention of R. P. Bradley, of Cuyahoga Falls, Ohio, from whom any further information may be obtained. It was patented October 28th, 1856.

Notice to Inventors.

Within the past three weeks, about fifty patents have been issued to inventors whose specifications and drawings were prepared at the SCIENTIFIC AMERICAN PATENT AGENCY. The assistance of this Agency is sought for from all parts of the country; and we feel justified in asserting that if a case has any chance at all for a patent, we can secure it. Through our Washington office, we are prosecuting rejected applications with great success. We invite inventors who have such cases, to correspond with us in regard to them. So far as our own clients are concerned, we wish it distinctly understood that if their cases are rejected, the reasons will be thoroughly investigated by us at the Patent Office, and a careful report made upon them. They can have no possible reason for consulting any other agent, until we notify them that we cannot succeed.

M. De la Rue, a celebrated manufacturer of envelopes in London, has got an injunction against W. Dickinson, his rival in trade, restraining him from using an envelope-folding machine, on the ground that it is an infringement of De la Rue's patent.



or of a ball, to move at pleasure within a cage, or of a puppet, to jump vertically. The last named form is very popular for pumps or other apparatus working at very high pressures; but it has always been found quite difficult to guide and control such valves perfectly, especially one of small size, and

be tight surfaces, complex inventions have been introduced or proposed, at various times to give a slight rotary motion to the valve at each lift. The invention represented in the accompanying engravings is designed to perform this automatically, and is, in short, an admirable method of guiding and revolving