IMPROVED GANG PLOW SPRING.

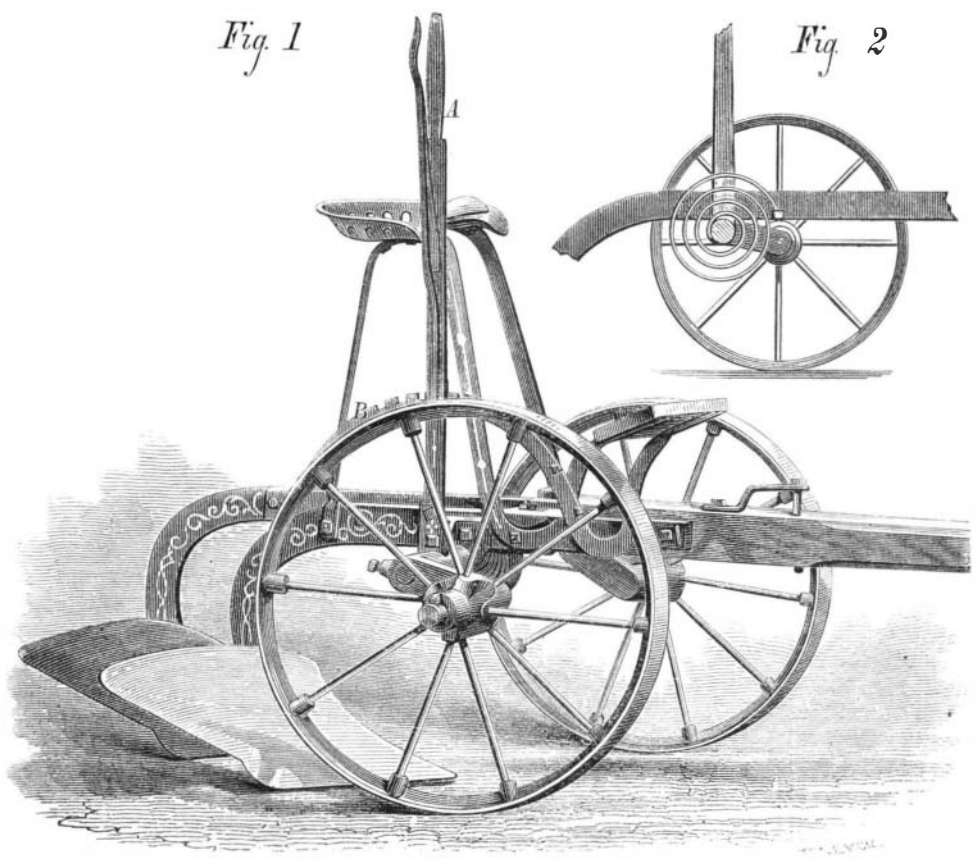
The object of this invention is to afford a simple means whereby the plows may be easily raised and lowered while at work. The essential feature of the device, which we illustrate in the annexed engravings, is a coiled spring which acts upon a crank axle, turning the latter so that the plow may work to a depth of nine inches into the ground or be raised seven inches above it. The inventor points out that plows at present cannot work to a depth of over four inches and a half without requiring changing in some manner, and that it is very difficult to lift them while in operation.

The general appearance of the machine is shown in Fig. 1. From Fig. 2 the arrangement of the spring will be more clearly understood. The ends of the spring are attached to the crank axle, and to the frame of the implement, so that, when the crank, and consequently the frame, is lowered, thus allowing the plows to enter the ground, the spring is caused to wind tightly about the axle. The parts are then held by the lever, A, which is attached to the crank and secured as desired by a simple spring stop in a notched arc, B. To raise the plows so that they may operate at any less depth, or be lifted entirely free of the ground, it is only necessary to release the spring through the medium of the lever, A.

The elasticity of the spring then revolves the axle in such a direction as to raise the frame, and with it the plows, more or less, according to the space through which the said axle is allowed to revolve.

A long crank axle can be used, and thus a wide range of depths in plowing gained. The general construction of the implement embodying the invention is of the most durable description, all parts being of iron except the pole, foot rest, and plows, the latter being of superior cast steel.

Patented through the Scientific American Patent Agency. For further particulars address the inventor, Mr. H. N. Dalton, Pacheco, Contra Costa county, Cal.



DALTON'S GANG PLOW SPRING.

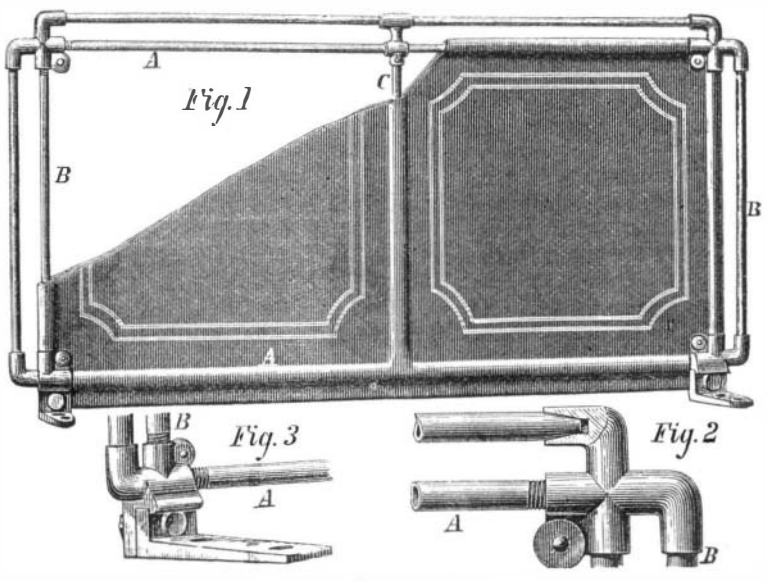
IMPROVED DASHBOARD.

The novel feature, in the improved dashboard represented in the annexed illustration, is found in the construction of the frame, whereby the latter may be contracted or expanded should the leather cover be made too tight or too loose, and which, besides, enables all the stitching to be done before the cover is applied to the frame. The iron work, the inventor states, can be made for half the cost of the old welded frame, and the leather can nearly all be sewn by machine, the ends and tops only requiring hand-stitching. A good workman, we are informed, can, through these advantages, produce thirty or forty dashboards in a day, as against three, which would be considered fair work in the same space of time, if boards constructed in the usual manner were made. The inventor is a practical saddle and harness manufacturer, and has submitted the device to the test of experience, on the results of which he bases the above claims and statements.

From Fig. 1 it will be seen that the frame is composed of iron rods united by T and elbow couplings, and that the construction of the latter enables a rail above and two handles at the sides of the board to be added. The opposite ends of the horizontal bars, A, and of the vertical bars, B, are screw-threaded in reverse directions, so that, by turning said bars in one direction the couplings will be drawn toward each other, and the frame will be contracted; by turning the bars in the other direction, the couplings will be pushed from each other, and the frame will be expanded, so that the leather or cloth cover can be adjusted as required. The center bar, C, may be secured to the top and and bottom bars by T couplings, and the ends of the upper rail and the handles may be conical in shape and held in recesses in the elbows of the corner couplings, as shown in Fig. 3. The last mentioned figure represents an upper coupling, and Fig. 4 shows the shape of a lower coupling, with the manner of attaching the iron which secures the dashboard to the body of the wagon. The bars may be either solid or hollow, as desired.

In constructing the board, the cover is, as above noted, first partly stitched; the bars are then inserted, the couplings are put on and adjusted to give the proper tension. In case of breakage, the entire frame can be removed by ripping the end and top seams, and the device may afterwards be put together. With the old form of dashboard, in such case, it would be necessary to rip every seam, and to replace the cover would involve more labor than the making of a new one. Sheet metal may be used for covering instead of leather, if desired.

Patented through the Scientific American Patent Agency, February 16, 1875. For further information relative to royalties, price, etc., address the inventor, Mr. C. C. Schwaner, P. O. Box 153, Winterset, Madison county, Iowa.



SCHWANER'S DASHBOARD.

India Rubber Sidewalks.

The *National Car Builder* says: India rubber sidewalks are coming into fashion out West. For small towns they are admirable, combining economy with durability. The first experiment was made in Danville, Iowa, where 300 yards were put down on one of the principal streets. All the boys in the place ran over it, but there was no noise. A leading merchant stopped in front of his house, then jumped on his heels. The elastic forces hidden in the rubber threw him over the gate to the roof of the piazza. But after a few trials he was able to alight on the steps with the graceful accuracy of a flying squirrel. The chief drawback to the walk is its odorous familiarity in hot weather, but it can be neutralized by a weekly wash of borax and coal tar. Its principal advantage is that it can be stretched. As the town grows, it is pulled out towards the suburbs. Two yoke of cattle can lengthen it three miles a day.

Window Ventilation.

A recent number of the London *Times* contains a glowing account of a new invention, just brought out in London, whereby it is alleged that apartments of all kinds can be ventilated by a contrivance placed at the window for the admission of air in upward currents. The air so admitted is intended to blow up against the ceiling, and thence spread throughout the apartments without creating drafts injurious to the health of occupants. Our British cousins think that this improvement is the greatest thing out in the ventilation line, and so new that they devote much space to its discussion in their leading papers. Mr. Tobin, a retired merchant of Leeds, is credited with the origination of the improvement.

We should be sorry to detract from the just claims of Mr. Tobin as an inventor, but the truth in such matters is always in order. Our readers will find on page 403 of the SCIENTIFIC AMERICAN, for December 23, 1871, an engraving and description of this method of ventilation, which was patented here in 1870 by S. C. Maine of Massachusetts. This device is extensively used in this country. It consists of air pipes set in a board placed under the window sill. The inner mouths of the pipes are bent upward, so that the inrushing air impinges against the ceiling and spreads without creating drafts.

Prizes for a New Method of Preserving Plaster Casts.

The Prussian Government has offered two prizes of the value of about $750 (3,000 marks) and $2,500 (10,000 marks), respectively, for the discovery of a new method of cleansing plaster casts, statues, etc., and for the invention of a new material possessing the advantages of plaster, but which will not deteriorate by repeated washings.

The first prize of $750 is offered for a method which will give plaster casts the power of resisting periodically repeated washings, without injuring in the least the delicacy of the form or the tint of the plaster.

Special conditions.—(*a*) The method must be applicable, in equal degree, to all kinds of plaster occurring in trade, and must not diminish the hardness of the cast. (*b*) In order to entirely preserve the delicacy of the form, those materials are absolutely excluded which do not soak into the plaster. (*c*) It is not necessary to preserve the original color of the plaster; a yellowish tint, or any warmer tint, may be allowed; but the evenness of the color is, at any rate, indispensable. (*d*) Plaster casts prepared according to the method must stand repeated washings with soap and lukewarm water. (*e*) The method must be applicable to plaster casts of any size and shape. (*f*) Competitors for this prize are to prove the practicability of their respective methods by sending samples, and, if desired, by preparing casts placed at their disposal

The second prize of $2,500 is offered for a material for making casts of art works possessing the advantages of plaster, but which, without any special preparation, will not deteriorate by periodically repeated washings.

Special conditions.—(*a*) The new material must easily allow casting in original molds without their becoming more injured than with plaster, and it must reproduce the mold as exactly as plaster. (*b*) It is not required that the material should have the color of plaster; a yellowish tint, or any warmer tint, may be allowed, but the evenness of the color is indispensable. (*c*) The solidity of the material must not be less than that of plaster, so that it may be used for the largest casts. (*d*) Casts made of this material must stand repeated washings with soap and lukewarm water. (*e*) The price of the material must not considerably exceed that of plaster, and the price of the molds for casting must likewise not considerably differ from that of plaster molds. (*f*) Competitors are to prove the practicability of their material by sending samples in applied and unapplied states, and also to give proof, if required, by the actual execution of casts.

General conditions referring to both of these prizes.—The Ministers reserve to themselves the nomination of a committee of experts, in order to examine the consignments which may be received. Competitors are to send with their consignments sealed envelopes, provided with mottoes, and containing the names of the senders. On the outside of these envelopes also is to be written the address to which the returned samples or any communications are to be sent. The consignments which have been found to correspond with the conditions stated above will become the property of the Government, and the names of the successful competitors will be published. The remaining consignments will be returned to the addresses given on the envelopes. Competitors are to forward their consignments to the Royal Prussian Ministry of Public Worship, Instruction, and Health, not later than 31st December, 1875.

Decolorising Property of Ozone.

One of the most striking properties of ozone, says M. A. Boillot, is its bleaching power. The effects ascribed to chlorine are really due to ozone. Ozone employed directly acts as an oxidizing agent laying hold of the hydrogen of the substance with which it is in contact, whence results bleaching, if the body is colored. On allowing chlorine to act upon any animal or vegetable matter, it decomposes a certain quantity of water and seizes its hydrogen, forming hydrochloric acid. The oxygen set free by this reaction is transformed into ozone, which, in its turn, lays hold of hydrogen present in organic matter.

Memory in Birds.

A carrier pigeon which was captured in a balloon during the siege of Paris, and sent by Prince Frederick Charles to his mother, recently escaped from captivity and returned to the house of its former owner in the French capital. This is certainly a remarkable instance of the exercise of memory in the lower animals, to which it would appear difficult to find a parallel case. The bird must have kept its former haunts in its recollection for nearly five years.

TO DETECT sulphuric acid in vinegar, put in a little starch. Then add a minute portion of iodine. If sulphuric acid be present, the starch will not take a blue tint.