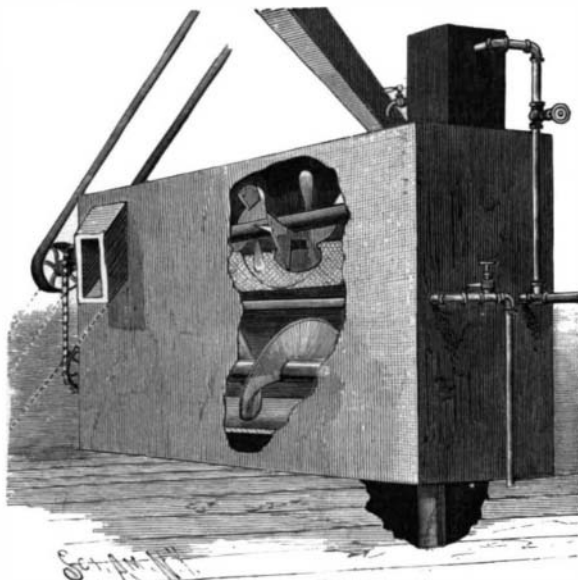


A NEW SWISS BICYCLE.

We present an engraving of a bicycle which has been invented in Geneva, and which is exhibited at the Swiss National Exposition. It is claimed for this machine that the position which the rider occupies upon it is not only infinitely easier, but that by means of the support for the back, his forces are far more effectively utilized and with considerably less fatigue. His position, as shown by the engraving, is held to be the normal position of a man in a sitting position, and the bicycle is therefore called "La Bicyclette Normale." The inventor, M. Ch. Challand, says in his prospectus: "The principle of the machine is the utilization of the considerable amount of force, very little known, which is afforded by a point of support. Without this point of support, the only force a man has is his own weight. On the other hand, if the back be well supported, he has in each leg a force more than treble his own weight, and which is, in fact, equal to the weight he is capable of carrying combined with that of his own body. The construction of the 'Normal Bicycle' is intended to make use of this considerable amount of wasted force. The point of support is the back of the seat, by means of which the cyclist's body is thrown back and his legs lifted up, owing to the position of the pedals. The body is thus placed in a 'normal' posture—hence the name of the machine—he is upright or leaning slightly backward. The 'Normal Bicycle' presents the advantages of greater safety, perfect comfort, healthy position, a greater power over the machine, greater speed, both up hill and on level ground, and less fatigue." It is also claimed for this bicycle that, being much lower than the ordinary so-called "safety" bicycle, it is much easier to mount. We are indebted for the cut which we have reproduced to the official journal of the exposition.

A WHEAT MIXER AND TEMPERER.

The illustration represents a machine designed to facilitate the thorough mixing and tempering of grain, using therefor pure water or water of condensation and live steam, a steam coil being also employed to partially dry the grain, as may be desired, or relieve it from excess of moisture. The improvement has been patented by William F. Cromwell and James Schoonover, of Morganfield, Ky. The box body of the machine has a curved bottom, and is divided into an upper and lower compartment by a curved wire screen partition. In the upper compartment or mixing chamber is a cut-



SCHOONOVER AND CROMWELL'S WHEAT MIXER AND TEMPERER.

flight conveyer, on the shaft of which is a flange that is cut, broken, or interrupted at various points to form opposite extending wings, there being also at various points mixing paddles, whereby a maximum of agitating or mixing capacity is obtained. Adjacent to the point where the grain-supplying chute enters the mixing chamber is a tank, from a faucet in which water is permitted to flow upon and mingle with the entering grain, the tank being supplied by water of condensation from a coil supported by suitable hangers below the sieve-like bottom of the mixing chamber, the coil extending the entire length and width of the body of the machine, and having one or more nozzles from which live steam is permitted to escape.

As the conveyer in the upper or mixing chamber conducts the grain to the discharge chute at the opposite end, the lower conveyer carries the material passing through the sieve in a contrary direction, to a discharge outlet in the bottom of the machine. The grain in its passage, after having been wet with the

water of condensation, is subjected to the action of live steam from the nozzles and is affected by the heat from the coils, each and every grain of wheat being thus tempered to the same extent, while the bran may be toughened without injuring the germ, the flouring qualities, or the granulations of the grains of wheat. The wire cloth forming the bottom of the mixing chamber may be of different meshes and of different sizes of wire to afford the most effective cleaning surface and



A NEW SWISS BICYCLE.

permit foreign substances to fall through, and the wheat is not fully dried before it is ground, but is carried directly to the rolls from the machine in a tough and damp condition, to be ground at once. It is apparent that in the working of the machine, the degree of heat and moisture may be regulated to get the best results for different qualities of grain.

Weather Proverbs.

Sure signs of approaching atmospheric changes, says the Boston Transcript:

If at sunrise there are many dark clouds seen in the west and remain there, rain will fall on that day.

If the sun draws water in the morning, it will rain before night.

When the sun rises with dim, murky clouds, with black beams and clouds in the west, expect rain.

If the sun rises pale, there will be rain during the day.

"A red morn; that ever yet betokened
Wreck to the seamen, tempest to the field,
Sorrow to shepherds, woe unto the birds,
Gust and foul flaws to herdsmen and to herds."

—Shakespeare.

If the sun rises clear, then shadowed by a cloud, and comes out again clear, it will rain before night.

"In fiery red the sun doth rise,
Then wades through clouds to mount the skies."

Red skies in the evening precede fine morrows.

A red sun indicates fair weather.

A red evening indicates fair weather, but if the red extends far upward, especially in the morning, it indicates wind or rain.

A very red sky in the east at sunset indicates stormy winds.

If the sun sets in dark, heavy clouds, expect rain the next day.

A bright yellow sunset indicates wind; a pale yellow, wet.

If the sun sets pale, it will rain to-morrow.

"The weary sun hath made a golden set,
And by the bright track of his fiery car
Gives token of a goodly day to-morrow."

—Shakespeare.

A halo around the sun indicates the approach of a storm, within three days, from the side which is more brilliant.

If there be a ring or halo around the sun in bad weather, expect fine weather soon.

Haze and western sky purple indicate fair weather.

A blur of haziness about the sun indicates a storm.

If the sun burn more than usual, or there be a halo around the sun in fine weather, expect rain.

When the sun in the morning is breaking through the clouds and scorching, a thunder storm follows in the afternoon.

"Sunshining shower won't last half an hour;
Sunshine and shower, rain again to-morrow."

Pale yellow twilight, extending high up, indicates threatening weather.

"As the days begin to shorten,
The heat begins to scorch them."

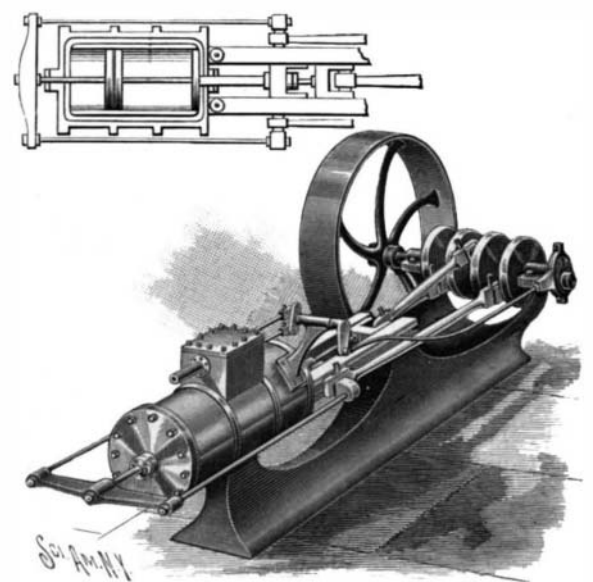
Sun dogs in summer indicate a storm.

New Use for Old Horse Cars.

A novel but very sensible use is made of old horse cars in Connecticut. When the trolley system was introduced in the various cities in that State, says the Electric World, the problem as to what should be done with the old horse cars remained unsolved until some enterprising genius suggested using them for summer cottages, hunters' camps, lodges, etc. The public readily fell in with the idea, with the result that all of 600 old cars that went into disuse are now being utilized for these novel purposes. It is stated that along the coast of Long Island Sound, from Watch Hill to Larchmont, these cars may be seen perched up on top of some breezy bluff on the sandy shore, or in some quiet, shaded nook, affording temporary habitation for families, fishermen, hunters, etc. The demand for old horse cars has greatly increased in consequence of this new use. One woman recently asked the station agent at New London for his lowest prices for passenger cars, also a list of the various styles. A Norwich party has arranged four cars in the form of a hollow square and erected a canvas awning in the square. One of the cars is used as the kitchen and the others as sleeping rooms, dining room, parlor, etc. One gentleman has five cars on Block Island, which he has placed end to end like a train. The supply of old cars in this one State has thus suddenly become exhausted.

A NOVEL STEAM ENGINE.

An engine in which the steam acts on two pistons in the same cylinder at one time, so that the steam is utilized expansively and to the fullest advantage, is shown in the accompanying illustration, and has been patented by William A. Jordan, of Mulvane, Kansas. The cylinder is connected at its open ends with a steam chest, with which it is also connected by ports at points approximately one-third the length of the cylinder from its ends. A slide valve, reciprocated from the main driving shaft, operates over the live steam ports and the exhaust port, and a sliding seat is provided for this valve. As may be seen in the small sectional view, the cylinder has three pistons, the outer one of which is on a piston rod extending through the outer head of the cylinder to a transverse beam connected by rods with a crosshead connected by pitmen with crank arms on the main driving shaft. The middle piston of the engine is on a piston rod which passes through the other end piston and its hollow piston rod to connect with another



JORDAN'S STEAM ENGINE.

crosshead connected by a pitman with a crank on the main driving shaft. The hollow rod of the inner end piston is connected with the first crosshead, so that the inner and outer pistons move simultaneously in the same direction, and in opposite directions to the movement of the middle piston, the cranks on the main driving shaft being diametrically opposite each other. As the open ends of the cylinder are connected with the interior of the steam chest, there is no vacuum formed in these ends on the inward movement of the outer pistons, and the steam jacket surrounding the cylinder holds up the temperature of the cylinder walls to prevent undue condensation of the steam which is being expanded, giving a higher average pressure. The cut-off may be regulated as desired by the sliding valve seat.

ELEPHANTS in Africa are becoming so scarce that it is proposed to establish protected reservations for them on territory under British protection, like Somaliland.