

IMPROVED AUTOMATIC SKATE

The skate here illustrated is fastened to the sole of the boot or shoe, has a creeper or ice-check which is secured in a similar manner, and is an adjustable combination of the grooved or sharp with the flat or smooth-faced runner, presenting at once the most important improvements in a simple combination, and making it altogether a most complete invention.

The metal plates, *a a a*, are screwed to the sole of the boot, their beveled edges being inside or facing each other, and the surfaces made flush by letting them into the sole. The elastic struts or braces, *b b b b*, are cast in the runner or firmly fastened thereto, each pair diverging, so that, when the wearer stands upon the skate, their ends are spread apart and pressed forcibly under the beveled plates, forming a dovetail fastening. The wedges, *c c*, are drawn towards each other by the spiral spring, *d*, at the same time that the struts are forced apart, which are thus prevented from springing back to their original position when the foot is lifted from the ice. The rods, *e e*, serve to keep the wedges in the proper position. To remove the skate, it is evident that the wedges have only to be drawn back so as to permit the struts to spring towards each other, when the skate drops off.

The creeper is an elastic ring with a sharp edge, having lugs or projections at the upper edge and on opposite sides, which fit the inclined edges of the plates, *b b*, and may be attached to the boot at the heel or ball of the foot by springing the lugs towards each other, and is removed by a similar operation.

The runner has a deep furrow, into which the bar, *f*, is inserted and secured by pins, *g g*, at the ends. The thumbscrew, *h*, in the runner is used to regulate the distance which the bar may project. Thus, by permitting the smooth surface of the bar to project slightly beyond the sharp edges of the runner, a very keen lateral hold upon the ice is attained, while the smooth bar affords the most perfect surface to slide upon. Any degree of adhesion may be obtained in this manner, according to the nature of the skating.

It is said that remarkable precision and celerity of movement are attainable in using this skate, and that great comfort and sense of security result from this method of fastening. Indeed, it is so much like magic and so nearly automatic that it holds with a firmness exactly proportionate to the weight of the wearer; and is automatic in its action, fastening itself by simply stepping upon it.

A patent for this invention was issued May 3, 1859, and parties desiring to obtain rights or further information should address the inventor, Uriel Josephs, Quincy, Mass.

DURABILITY OF CAR WHEELS.—In the report of R. A. Wilder, Engineer and Superintendent of the Mine Hill and Schuylkill Haven Railroad, he says:—"The total number of cars hauled both ways over the road during the year is 729,186, and out of this great number moved, only 151 have been thrown from the track and injured so as to require the aid of a wrecking engine to bring them in. Some of them were badly broken, while others were but slightly injured. The average cost of repairing them has not been very heavy. Great care has been used by the employees of the company in handling the cars, and in nearly every instance the accidents have been traced to causes independent of the

agency of the crews. The plate wheel has been the principal cause of damage; every accident resulting in serious loss has been caused by the breakage of plate wheels in descending steep grades. Where the trains must be regulated by the constant application of the brakes, in order to prevent their too rapid descent, these

of the levers, so that the strain of these keeps it in position. The sloping bottom extends on each side, a few inches past the sides of the car, so that the gravel or earth may be shot clear of the wheels.

This car is particularly adapted to filling embankments, being discharged, as will be seen, with the greatest possible facility.

The patent for this invention was obtained Dec. 13, 1859, through the Scientific American Patent Agency, and persons desiring further information in relation to it will please address Thos. C. Hendry & Co., Conyers, Ga.

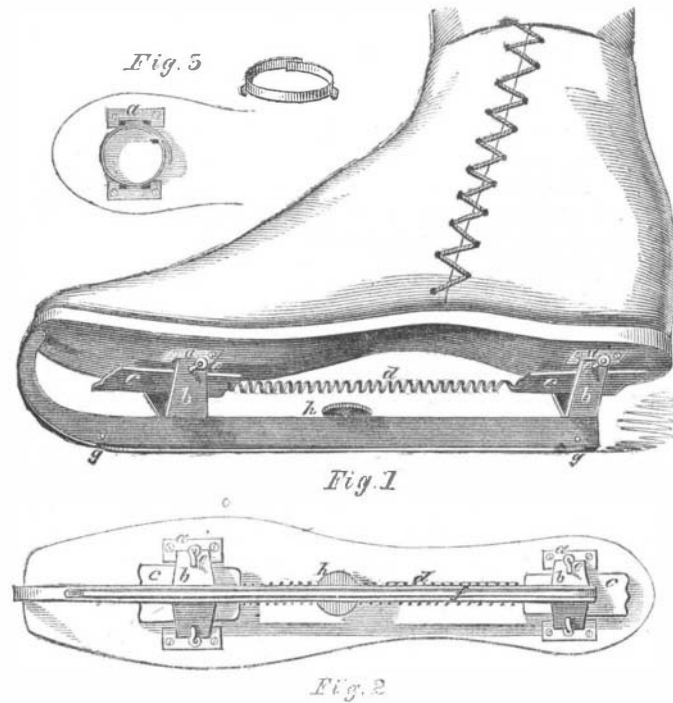
AMERICAN BASKET WILLOW.

A great amount of willow-work is manufactured and sold in our country, but the willows from which it is made have been chiefly imported from Europe. This should not be, as they grow well in any climate, and they may be cultivated on wet soils near running streams, and profitable crops obtained annually from soils otherwise worthless. We are pleased to learn that considerable attention has been lately devoted to the cultivation of the willow, and Col. Colt, of Hartford, Conn.—the noted inventor of the repeating firearms which bear his name—has showed an example worthy of copying by all who have land similarly situated. His farm is on the Connecticut river bottom, about a mile from the city of Hartford, and is inclosed by a heavy dyke, to prevent the overflow of the river. This dyke is protected by thick-setrows of willow. The crop of the past season amounted to forty tons. Offers were made by dealers in New York, for the purchase of the whole of it; but Colonel Colt, concluding to add to his other manufacture that of willow-ware, is about erecting buildings for the purpose. Besides the willow grown upon the dykes, he has seventeen acres of land established in this crop, and in the Spring will add fifty more, and will give employment to from eighty to one hundred men in its manufacture. For coarse baskets, the unpeeled willow is superior to any other material; while the finer portions of the crop can be peeled and wrought into baskets of a better quality.

The increased culture of fruit for transportation by railroad requires an immense number of baskets, and this demand will continue to increase as this important branch of horticulture increases with the demands of the population in our cities.

PROTECTING YOUNG TREES WITH BLOOD.—With regard to the protection of young trees against the attacks of rabbits, mice, and other animals obnoxious to the vitality of vegetation, a Missourian correspondent (Dr. J. Dinkley) says:—"I will give you a much better remedy than any previously proposed. Rub the trees, from the ground upward to about 18 inches, with a piece of raw bloody meat—liver is the most convenient thing; or blood may be put on with a brush. If this be done late in the Fall or beginning of winter, no animal will touch the bark during that season. I have tried this plan for thirty years, and have never known it to fail. Let horticulturists try it."

On the Western Railway of France there is, in addition to the engine-driver and fireman, an inspector who rides upon the engine, and who attends, as far as possible, to the general observance of signals or accidents made from or happening to the train.

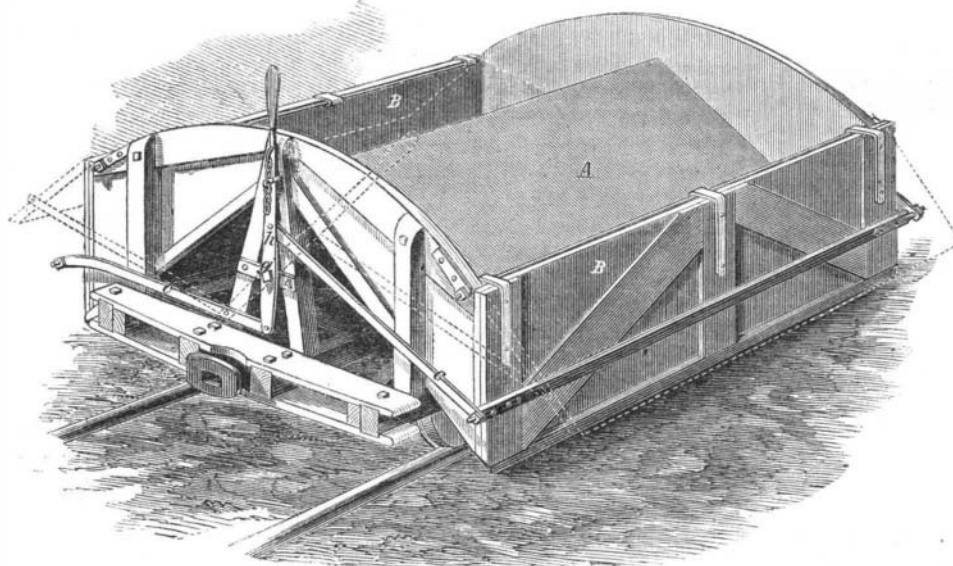


JOSEPHS' AUTOMATIC SKATE.

wheels cannot be used with safety. The safest and most durable wheel for all kinds of service is one formed with spokes, and having a divided hub secured by wrought iron bands. I have known this kind of wheel to be subjected to the severest tests without breaking where plate and spoke wheels with solid hubs would be sure to give way."

IMPROVED GRAVEL CAR.

The accompanying cut represents an improved dirt car used in the construction and repair of railroads, the



HENDRY'S IMPROVED GRAVEL CAR.

peculiarity of which consists in the arrangement for discharging the load.

The bottom, *A*, of the car is made sloping from the middle downward to both sides, and the sides, *B B*, are hung on hinges at the top. The sides are opened and closed by means of the rods, *c c*, and lever, *h*, the full black lines showing the position of the parts when the sides are closed, and the dotted lines when they are opened. When the lever is upright, it is held in place by the pin, *i*, and when it is turned down to open the sides for discharging the load, it passes a little beyond the line

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