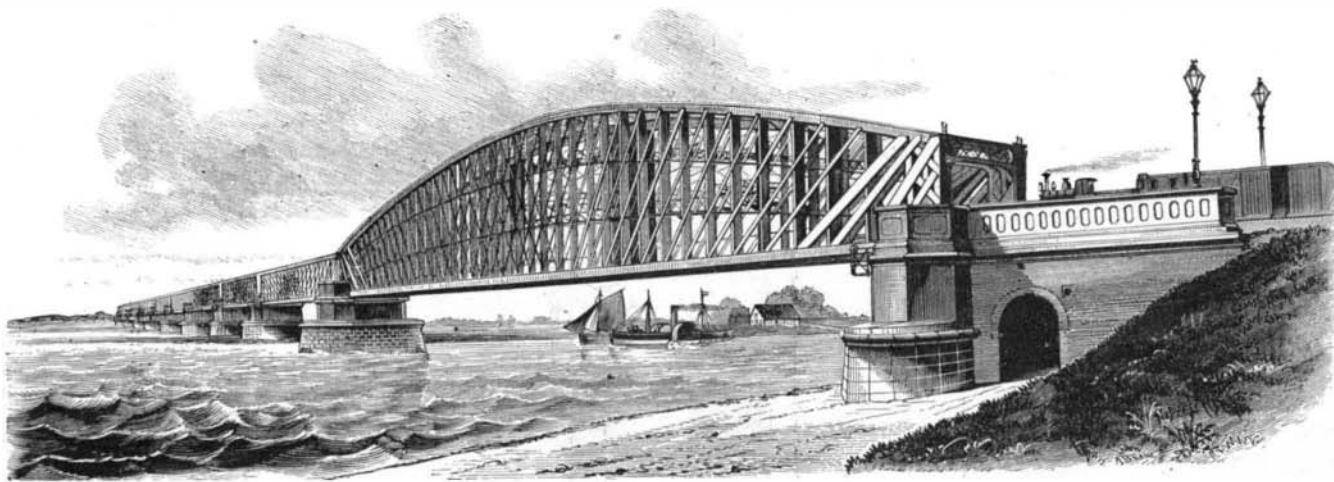


THE KUILENBURG BRIDGE.

The Utrecht Boxtel line of State railways in the Netherlands crosses three large rivers, the Lek, the Waal, and the Maas, within a distance of ten miles, the bridges at these points being known by the respective names of the Kuilenburg, the Bommel, and the Crèvecoeur viaducts. The great lengths of these bridges, the nature of the streams that they cross, and the local circumstances necessitated engineering skill of a high class. The conditions of the foundations were such as to require piling. The piles varied from twenty-three to fifty-three feet in length, being driven in some cases by the ordinary pile-driving engine, and in others by a steam ram. After the piles were cut off to a level below water, the space between them was filled with beton or concrete, projecting from three to five and a half feet beyond the footings of the masonry above, and varying from eleven to twenty-one feet in thickness. The tops of the piles were completely floored over, and masonry built up, well bonded on to the floors to prevent sliding by longitudinal and cross walings of oak, and the faces of piers and ice-breakers were finished in Belgian ashlar. The footings of the piers were thoroughly protected by a close row of long piles to each, and heavy rip-rapping of rough stone.

lateral and diagonal bracing. The span of 492 feet has a parabolic upper member, the depth of truss in center being 35'6 feet, and at the ends 26'24 feet. The other spans have rectangular trusses of the same depth as the ends of the parabolic truss.

**BRIDGE AT KUILENBURG, DEPARTMENT OF THE NETHERLANDS.**

All holes for riveting were drilled, no punching being allowed in the work. The bridge is built for double track, there being only a single track placed on at present. Two footpaths are provided for the service of administration. The total weight of material in the structure is as follows:

Wrought iron.....	4,394 $\frac{1}{2}$ tons.
Bessemer steel.....	610 $\frac{1}{16}$ "
Cast iron.....	30 "
Lead.....	3 $\frac{1}{2}$ "

There were also 8,000 cubic feet of oak, 9,500 cubic feet of timber used, and 350 tons of plates placed between them of fir to form the floor of the bridge. The total cost of the structure was upwards of \$1,187,100.

SAFETY APPLIANCE FOR RELEASING HORSES.

We give an engraving of a new safety device to be applied to the manger or some part of the stall to which horses are usually hitched. It consists in a device for cutting the halter should the horse become entangled in it.

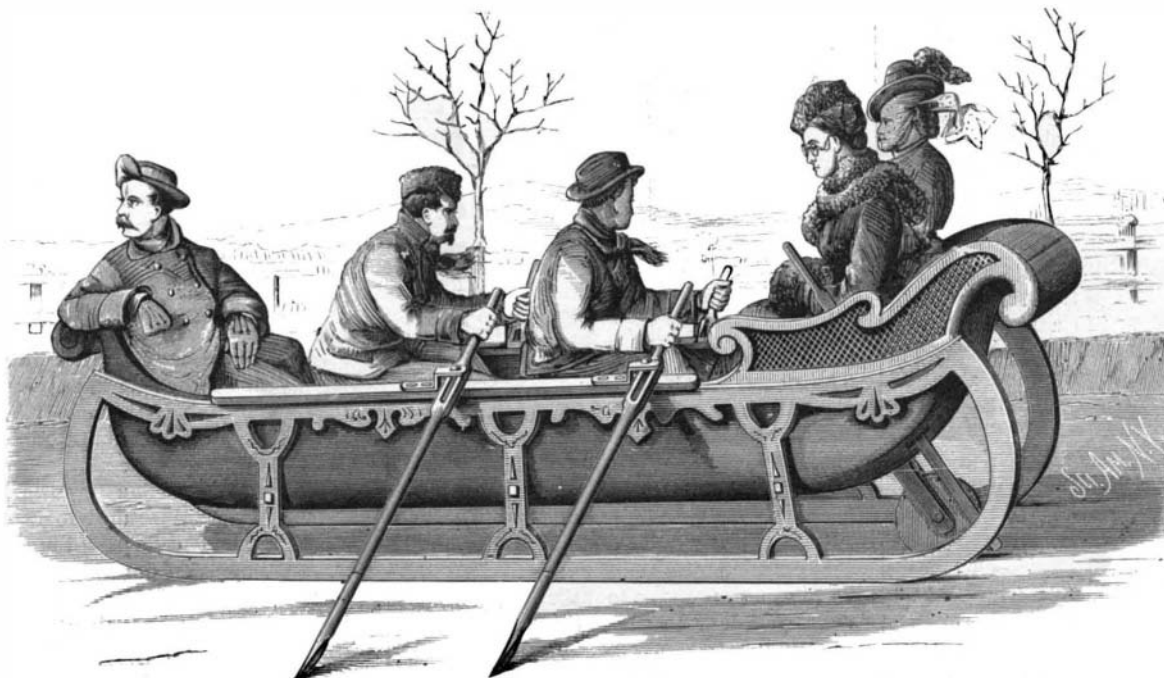
Fig. 1 is a perspective view showing the exterior of the appliance, and Fig. 2 is a vertical section showing the arrangement of the several parts.

A hollow casting, A, is secured to the manger, and contains a spring-acted follower, C, which supports the halter and prevents it from coming into contact with the sharp edges of the casting, A, when no extraordinary strain is put upon the halter. The end of the halter is attached to a ring capable of sliding up and down on the rod, B. Should the horse become entangled so as to press down upon the halter, the follower in the casting, A, will be pressed down, allowing the halter to come into contact with the sharp edges of the casting and be instantly severed. It will be seen that so long as the halter fulfills its regular office it will not be cut, as the spring follower then holds it away from the cutting edges.

This invention was recently patented by Mr. Benjamin F. Strange, of Corvallis, Montana Ter.

SLED AND BOAT COMBINED.

The annexed engraving represents a novel gondola sled lately patented by Mr. James H. Dennis, of Newark, N. J. It is in reality a combined sleigh and boat, well adapted to both sleighing and boating purposes. Its construction will be readily understood from the engraving. The body or boat is similar in form to that of an ordinary row boat. It is provided with transverse seats, and may be made of sufficient size to contain several persons.

**DENNIS' GONDOLA SLED.**

The sled is propelled by a set of sweeps arranged in rowlocks and operated like oars. The sweeps are slotted to receive the pins of the rowlocks, and the ends of the sweeps are provided with serrated steel ends or claws which engage the surface of the ice as the sled is propelled. When the device is used as a boat these serrated ends may be removed and paddle blades attached in their stead.

At the rear of the boat there is a wheel used for steering the sled on the ice, and it answers equally well for a rudder for the boat when it floats in the water. A brake is attached to the rear to retard the motion of the sled; it may also be used to assist in steering.

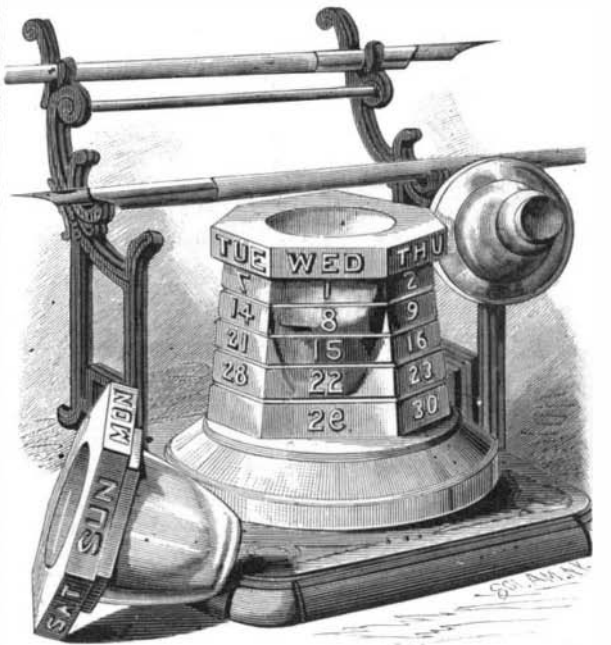
This gondola sled affords a means of

enjoyable winter exercise which may be participated in by a party of persons, and no very great exertion is required to get up an astonishing speed on smooth hard ice. The double character of the sled renders it perfectly safe even on thin ice, as it answers the purpose of a boat as well as of a sled.

Further information may be obtained by addressing Mr. James H. Dennis, care of O. B. Wilson, 22 Cedar street, New York city.

CALENDAR INKSTAND.

The engraving represents an inkstand provided with a

**PERPETUAL CALENDAR INKSTAND.**

calendar that requires changing but once a month to render it perpetual. It makes a handsome article of desk furniture, and as a calendar it is always in the right place. To change the adjustment is but the work of a moment; it is done by unscrewing a nut at the bottom of the stand, and

turning the ink fount around until the days of the week are directly over the spaces containing the figures representing the proper days of the month. For example, if Tuesday is the last day of September, then Wednesday being the first day of October, the ink fount is turned until Wednesday is over the column beginning with figure 1. This useful article may be made either wholly of glass or partly of glass and partly of metal or wholly of metal.

For further information, address Mr. S. M. Howard, administrator, 1207 Main street, Wheeling, W. Va., and see advertisement in another column.

THE result of the great English Derby race was cabled from London to New York in just twenty-five seconds. Tolerably quick work even for lightning.