

Prof. Edward Orton, the State geologist of Ohio, as president of the A. A. S. for 1899. Prof. Orton was born at Deposit, N. Y., March 9, 1829, was educated at Hamilton College, and at the Lawrence Scientific School, Harvard University. He was for a time professor of natural history in the New York Normal School, and afterward held a similar place at Antioch College, of which he was subsequently elected president. In 1873 he was made president of the Ohio State University. Since 1881 he has had charge of the Ohio State Survey.

The Integrity of the Spanish Dominions.

When Philip II. began to reign, Spain was the most powerful nation in the world. So vast were her possessions in Europe, Asia, Africa, and America, that "the sun never set on her dominions;" but with the beginning of the decadence, before his death and in the first years of the reign of his immediate successor, nearly all her possessions in North Africa, Burgundy, Naples, Sicily, and Milan were lost.

In modern times her losses have been as follows:

- 1628, Malacca, Ceylon, Java.
- 1640, Portugal.
- 1648, Officially renounced her rights over Holland.
- 1649, A number of strong fortresses in the Netherlands.
- 1659, Roussillon and Sardinia.
- 1648-1713, Flanders.
- 1697, Island of Hayti, except Santo Domingo.
- 1704, Gibraltar.
- 1795, Santo Domingo.
- 1797, Trinidad.
- 1800, Louisiana.
- 1819, Florida.
- 1810-21, Mexico, Venezuela, Colombia, Ecuador, Peru, Bolivia, Chile, Argentina, Uruguay, Paraguay, Guatemala, Honduras, Nicaragua, San Salvador, etc.
- 1898, Cuba, Porto Rico, Philippines, Marianas or Ladrone Islands.

What will remain for her to lose in the twentieth century? Perhaps the home country.—From Patria, the New York organ of the Cuban revolutionists.

Mountain Railway in the Tropics.

There have been many rack railways, but the one constructed in Sumatra is said to be the first of its kind, of any considerable length, that has been built for purely industrial purposes, says The Trade Journals Review. Like all other pioneer undertakings, its completion has not been effected without the usual accompaniment of difficulties, and these were not lessened by the fact that that part of the earth's surface traversed by the iron path was an almost unknown region when the enterprise was set a-going. This line crosses the Barisan mountain range and now forms part of the Sumatra state railways. The rack is of the Riggenbach type, made of two soft steel channels joined by riveted pins. The rack itself is bolted to cast iron chairs fastened to steel sleepers, which latter also carry the ordinary rails. The locomotives were built at Stuttgart. They are made to draw maximum train loads of 65 tons up the incline and 70 tons on the down grade of the steep western slope, but on the eastern side, 90 tons for the up trains and 110 tons down. The mean speed is 8 miles per hour. The total length of the railway is 19 miles, the greatest elevation overcome is 3,875 feet, the maximum rise being 8 per cent and the minimum radius of curve 492 feet. The railway is built for conveying coal from rich mines near the river Ombilien to the new port of Pedang.

Extent of the Yukon Gold Fields.

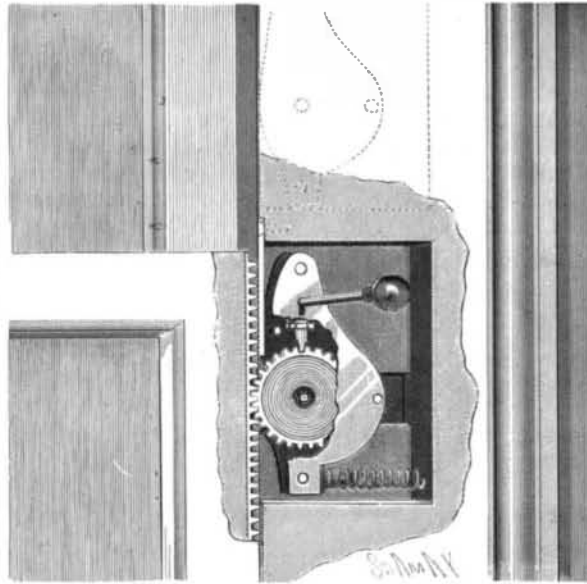
Mr. William Ogilvie, chief of the geographical survey of Northwestern Canada, and who, for six years, has been engaged in the Mackenzie and Yukon River districts, declares the Yukon gold fields extend over more than 125,000 square miles of territory. The fact Mr. Ogilvie is known to be most conservative in all his estimates, and not at all given to speculation and romance, gives additional weight to his assertions. Other precious metals are to be found in the same district; there is also coal, petroleum, and other products, awaiting only the means of securing and transporting to market. A system of thawing the frost-bound ground in winter, by the aid of electricity, is now said to be being experimented on in the gold fields.

A SPECIAL dispatch to The Daily Mail from Cape Town says that a meteor, that is described as being half the size of St. Paul's Cathedral, has fallen at Port Alfred. It made a hole in the ground 50 feet deep, 120 feet long, and 60 feet wide.

A NOVEL WINDOW RAISING AND LOCKING DEVICE.

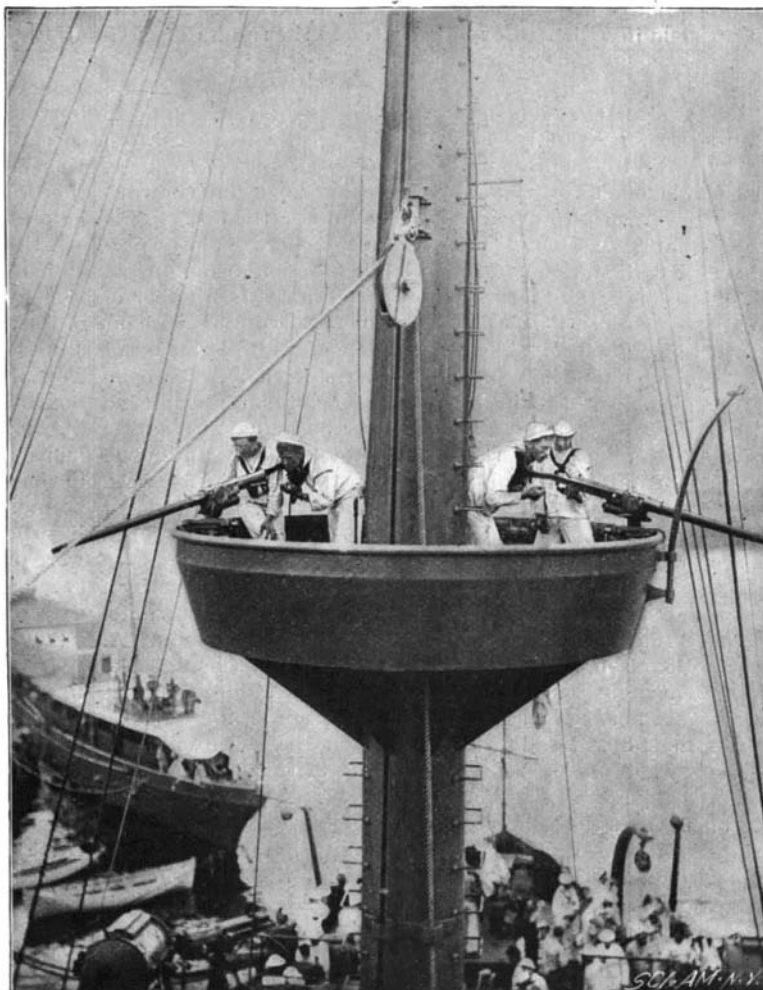
The device illustrated in the accompanying engraving embodies simple mechanism for raising and locking a window sash. The mechanism in question consists of a spring-motor that will be automatically wound or set by a downward movement of the sash, the usual weights being discarded.

The illustration represents the mechanism in par-



BRUNO'S WINDOW RAISING AND LOCKING DEVICE.

tial section as applied to a window sash and frame. It will be observed that the device comprises a rack on the window sash, which rack is engaged by a spring-operated gear-wheel mounted in a frame. The gear-wheel is held in engagement with the rack by means of the spring shown. When it is desired to increase the tension of the spring, the shaft of the gear-wheel is rotated in one direction, a dog preventing the backward movement of the wheel. When it is desired to decrease the tension of the spring, the frame in which the gear-wheel is mounted is swung aside on the pivot on which it is hung, so that the teeth of the wheel are disengaged from the rack; in this position the dog is lifted and the tension of the spring lowered to the required degree. A holding and locking device for the gear-wheel is provided, consisting of a slide-pin operated by a removable key, as shown in the illustration.



FORWARD FIGHTING-TOP OF THE "TEXAS."

As indicated in the figure, raising and lowering devices are arranged one on each side of the window.

When it is desired to raise the sash, the holding pins are moved out of engagement with the gear-wheel by means of the key. When the gear-wheels are thus released, the springs operate to rotate the wheels, the movement being communicated to the window sash by means of the racks. By permitting the holding pins to fall back

into engagement with the teeth of the wheels, the sash may be locked in any desired position. It is evident that when moved downwardly the sash, by means of the racks, will operate the gear-wheel to wind up the spring and place the mechanism in adjustment for raising the window again.

The device has been patented by the inventor, Frans Bruno, of 78 Herkimer Street, Brooklyn, N. Y.

RETURN OF THE VICTORIOUS FLEET FROM CUBA.

Saturday, August 20, was a red-letter day in the history of New York city, for when the seven armored warships of Admiral Sampson's fleet, fresh from the smoke of battle and bearing the scars of a victorious struggle, steamed in stately line up the North River, New Yorkers gazed upon a sight the like of which no city has ever witnessed before.

True, there have been other naval parades signaling the close of successful wars. Victors in even greater numbers had dressed ship, and bells had swung and trumpets blared at triumphal naval parades long before the Dutch founders of New York set foot upon Manhattan Island. But never before has such a fleet of armored battleships and cruisers, representing the latest ideas of warship construction, come home to parade in triumph with the scars of a victorious struggle fresh upon it.

Immediately after the signing of the Peace Protocol orders were given for the battleships and cruisers of Sampson's squadron to come north to be docked and overhauled at the Brooklyn navy yard.

In agreement with a popular wish, while the ships were coming up the coast, instructions were given for the fleet to parade from Tompkinsville, on its arrival at New York, up the North River to Grant's tomb and return. The instructions to this effect were delivered to the incoming fleet as it was working its way up the Jersey coast in the gray dawn of the morning. The photograph showing the flagship "New York" with the other vessels astern was taken while approaching the "New York" at 5 A. M. by our artist on the government boat "Nina." The dispatches were handed aboard, and by the time the fleet reached Staten Island, the ships were in trim for the parade, and the crews, dressed in their picturesque white duck, were formed up on the upper decks and superstructures in the picturesque grouping shown in the illustrations.

The flagship "New York," with Admiral Sampson on board, led the way. The sight of this handsome vessel, whose outline is perhaps the most familiar to the public of all the ships of the navy, recalled the many incidents of the war in which she has figured: The blockade of Havana, the bombardment of Matanzas, the cruise to Porto Rico, ending in the attack on San Juan, in which she was struck by a shell and one of her seamen killed, and finally her long stern chase at Santiago, where the chances of war had decreed that she should only be "in at the death," missing the great fight that preceded it.

A few hundred yards astern loomed up the "Iowa," bigger than the "New York" (8,200 tons) by 3,140 tons, and looking especially formidable with her lofty spar deck and its forward 12-inch guns, carried 26 feet above the water line. The "Iowa" bore the marks of the San Juan and Santiago engagements. Forward on the starboard bow two square patches of plate showed where a couple of big shells had entered when the "Iowa" was exposed to the first rush of Cervera's fleet at Santiago. A score of holes on the berth deck show where the flying fragments of one of the shells tore through the tough steel plating. On the spar deck, holes big and little testify to the slaughter which another bursting shell would have caused among the 6-pounder batteries had the men not been sent below decks during the San Juan bombardment.

Next came the "Indiana," one of the famous trio of which the "Oregon" is just now the most popular member. She lay to the eastward of the harbor when the Spanish fleet came out, and it was only the unfortunate fact that her boilers were in trouble that prevented her from joining in the chase.

Although not the largest in displacement, the "Brooklyn," with her lofty bow, towering smokestacks, and great length, was, perhaps, the most impressive vessel in the fleet. The comparative inaction of this vessel in the earlier stages of the war was more

than atoned for in the splendid opportunity which she was given in the Santiago fight. When the Spanish fleet headed for the west, the "Brooklyn" was the only vessel that lay directly in their path. They were all headed directly for her (the captured Spaniards say with the intention of crippling her by their concentrated fire, and so escaping from the slower battle ships). As the "Vizcaya" drew near, the "Brooklyn"