

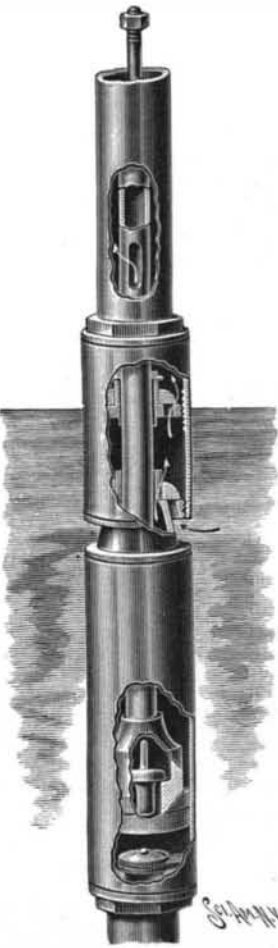
A NEW DOUBLE-ACTING PUMP.

An efficient double-acting pump has been invented and patented by Mathias L. Koogler, of De Graff, Ohio, which presents various novel features of construction, chief among which is the ready accessibility to all working parts.

The pump-barrel is made in two sections, which are joined together by a suitable connection, and which communicate with each other. The lower barrel-section is provided at its lower end with a valve controlling the admission of water to the barrel. The connection between the two barrel-sections carries a joint ring having orifices communicating with the exterior; these orifices are commanded by a valve seated on the joint ring. Above the joint-ring valve a check-valve is mounted on an adjustable gland.

The pump-rod is hollow and extends longitudinally through the barrel-sections. At its lower end the rod carries a plunger provided with a valve controlling the admission of water. At its upper end the rod is formed with apertures opening into a conduit-pipe secured on the upper barrel-section.

In operation the pump is so placed within the water to be raised that the valve on the joint-ring will be below the surface of the water. On the up-stroke of the pump-rod, the plunger valve will be closed and the valve in the lower barrel-section opened, thereby drawing water into the pump-barrel. The subsequent down-stroke of the rod will open the plunger-valve and close the barrel-valve, thus causing the water to be forced through the plunger-valve into the rod. After one or two reciprocations the rod will be filled, and the water discharged into the conduit pipe through the apertures in the upper portion of the rod. The down-stroke of the rod will produce a partial vacuum in the barrel-sections, thus causing the valve on the joint-ring to be lifted and drawing water down into the lower barrel-section. The next up-stroke will close the joint-ring valve and open the check-valve, to force the water out, the check-valve being closed on the next down-stroke of the rod. A continuation of the operation will cause a large amount of water to be elevated in a short time.



KOOGLER'S DOUBLE-ACTING PUMP.

Poisonous Clothing.

A number of laborers employed on the street cleaning force of Birmingham, England, were provided with new overalls and overcoats. The men were employed one day in cleaning away snow, and some seventy of them began to experience a severe itching of the skin and a general irritation, and this outbreak was soon traced to the clothing, says The Druggist Circular. Owing to its deliquescent nature, chloride of zinc is not a substance one would expect to find used as a filler of clothing, but it was found that the fabric contained a liberal amount of this salt, and on account of moisture present in the air on the day referred to, it was freely dissolved, for the solution had reached the skin. About one-half of those who were made ill by the clothing soon recovered, but the remainder received injuries of a very painful character. It has also been found that a sample of flannelette was examined and it was found to be loaded with zinc chloride.

Discoveries About Jupiter.

Prof. George W. Hough, astronomer at the Dearborn Observatory, Evanston, Ill., has made public a new discovery in regard to the surface rotation of the planet Jupiter which is at variance with existing beliefs. It is the general tenet of astronomers that the surface rotation of the planet Jupiter is similar to that of the sun, being quickest near the equator and slowest in the higher latitudes near the poles. Prof. Hough, basing his observations over a period of twenty years, announces his belief that the surface of the planet Jupiter rotates upon its axis in separate envelopes or strata. He has further discovered, by a long series of observations, that the spots shift in longitude as well as having a rotary movement, and this also supports the ring or strata theory, evidencing the great instability of the surface, and strengthening Prof. Hough's belief of many years, that Jupiter is in a gaseous or plastic state.

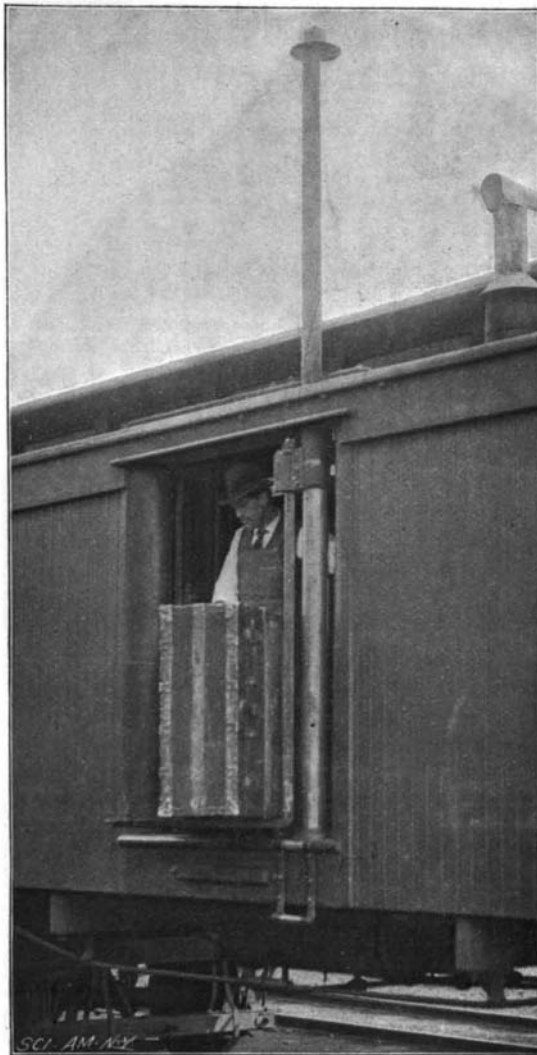
Hotel Accommodation in Porto Rico.

United States Consul Hanna, of San Juan, Porto Rico, is constantly in receipt of letters from citizens from all parts of the United States, regarding hotels and hotel accommodations in Porto Rico. He concludes from these letters that many people have their eyes turned toward Porto Rico as a desirable winter resort. He feels compelled to state that hotel accommodation is quite limited and that accommodations are far from first-class. The hotels are few in number and are generally run on the Spanish plan. The hotel rooms are, as a rule, small, plainly furnished, and are generally lighted from the inside courtyard, with no outside windows, and only a few rooms in each hotel front on the street. The cuisine is usually in Spanish style. The present rates are moderate. Before the Americans went to the island, family boarding houses were unknown, but now they are springing up in all parts of the island. Some of them have American cooks and claim to serve their meals in American style. Porto Rico is in need of some good American hotels, and doubtless they will be built as soon as the heavy duty is removed from American building material.

The winter climate of the island is delightful and, combined with the tropical scenery and healthy location, the new possession of the United States cannot fail to become a most attractive winter resort, if good hotel accommodations are provided, and doubtless this will come in a short time.

A PNEUMATIC BAGGAGE HANDLER.

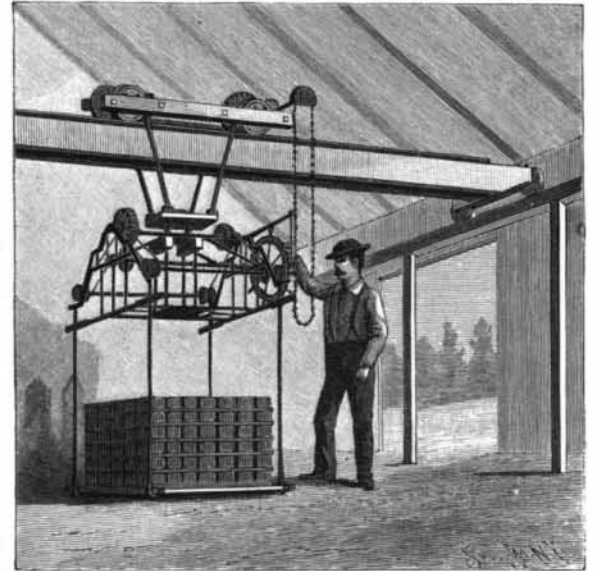
When we see heavy trunks by the truckload brought up to the side doors of baggage cars, and the hurried work of transferring them begun, we have often wondered why practical mechanical devices had not been invented to facilitate this transfer. Baggage men in this country have attained an unenviable reputation as destroyers of trunks, but after all it may be questioned if they are so much to blame, when we consider the enormous weight and size of some trunks of the so-called "Saratoga" order. The device which we illustrate is of considerable general interest, and would certainly do away with the evils of baggage smashing, and, of course, heavy baggage could be handled much more rapidly by means of this device than by hand. The device consists of a hoist which can be thrown into action from the door of the baggage car. It consists of a hoist operated by compressed air which is drawn from the trainline to a special reservoir, and is handled by train baggagemen by means of suitable cocks on the inside of the car; it has a lifting capacity of 500 pounds and is operated with an air pressure of 70 pounds to the square inch. Our engraving represents a 218 pound trunk being raised by it. An auxiliary spring scale device is located at about the center of the vertical length of the baggage support. This provides for weighing the baggage as it is handled. The device is in use on the Grand Rapids and Indiana Railway, and we are indebted to the inventor, M. G. H. Wall, of Cadillac, Michigan, for our photograph and the foregoing particulars.



A PNEUMATIC BAGGAGE HANDLER.

A NOVEL METHOD OF CONVEYING FREIGHT.

The device illustrated in the annexed engraving is a freight-conveyer which may be readily operated by a single man to transport loads from one place to another, and which is especially designed to be used in connection with the handling of building material, in brick and stone yards. The conveyer consists of a traveling crane carrying a truck, from which the freight-transporting devices are suspended. One wheel-shaft of the truck is provided with a gear-wheel meshing with a pinion on a shaft projecting from the truck, and carrying a wheel about which there passes an endless chain. By pulling upon the chain, the truck can be moved to any point upon the crane. On the truck a frame is hung by means of a swivel-connection



A NOVEL METHOD OF CONVEYING FREIGHT.

or vertical pivot, and upon this frame, inclined tracks are arranged. Rollers provided with carrying-rods run upon these tracks, the carrying-rods being formed with hooks at their lower ends, to sustain the freight which is to be transported. Upon the frame a windlass is mounted. Cables surround the windlass and pass about the rollers of the carrying-rods. By means of the cables and the windlass, the rollers are caused to travel up and down the inclined tracks. The windlass is operated by a handwheel through the medium of gearing, and is provided with a brake whereby the load may be gradually lowered. When the hand wheel of the windlass is operated, the cables will be wound up; the rollers will run up the inclined tracks; and the carrying-rods will elevate the load. By pulling upon the endless chain previously mentioned, the truck will be moved to the desired position upon the crane. When the crane has carried the freight-conveyer to the desired spot, the load can be gently deposited by means of the windlass and brake. The device is not limited to any special purpose, but is adapted for use in any place where large quantities of material are to be handled. The inventor of the conveyer is Mr. Michael Butler, of Austin, Tex.

The "Reina Mercedes" Floated.

The "Reina Mercedes," which was sunk in the channel of Santiago Harbor during the bombardment of Santiago by Admiral Sampson's fleet on June 6, 1898, has been raised and pumped out, the government tugs assisting the wrecking company. She was brought to Santiago on the afternoon of March 2. Such repairs as can be readily effected will be made at that city, and she will then probably be towed to Havana. Final orders for her movements have not as yet been received.

The "Reina Mercedes" is a steel cruiser of 3,000 tons displacement; she was built in Cartagena in 1887; she is 278 feet 10 inches long; beam, 42 feet 7 inches; draws 16 feet 5 inches of water; her engines are 3,700 indicated horse power. Prior to the bombardment her boilers had given out and were practically useless. Of late years the "Reina Mercedes" was used as a transport. She had no protective deck and her armament consists of six 6.2-inch Hontoria guns; two 2.7-inch Hontoria guns; three 6-pounder quick-firing guns; two 4-pounder quick-firing guns; six 3-pounder quick-firing guns; two machine guns and four torpedo tubes.

The Care of Children in German Schools.

A resolution has just been passed by the City Council of Wurtzberg, Bavaria, which is worthy of emulation. According to this resolution, the teeth of poor pupils of public schools of the city are to be examined and cared for free of cost, provided their parents give their consent. It is intended to treat diseases of the ear and throat in a like manner, should the first experiment prove successful. It is probable that with slight expense the teeth of the children may be attended to so that if the latter live they will not suffer from dyspepsia owing to improper mastication.