

**Bar Fixtures and Billiard Tables.**  
**BRUNSWICK-BALKE-COLLENDER CO.**  
 Have Re-established their business in  
**PORTLAND,**  
 at 49 Third Street.

A full stock of Bar Fixtures, Billiard and Pool Tables. Bowling Alleys and Supplies always on hand.

**EASY PAYMENTS.**  
**J. G. REDDICK, Manager.**

**The Reliable Loan Office**

Pawnbrokers and Jewelers  
**BARGAINS**  
 ...IN...  
**UNREDEEMED.**  
**PLEDGES**  
 Money Loaned on All Articles of Value.

**PRIVATE ENTRANCE ON PINE ST.**  
 All Goods Sold on Installments.  
 61 Third St., Cor. Pine, Portland, Or.

**LAWRENCE BROS'.**

**Towel Supply Co.**  
 Towels furnished to Barbers, Doctors, Offices and Business Houses, Etc. We also do First-Class Laundry Work.  
**OFFICE: PORTLAND, OR.**  
 Fourth and Couch Sts.  
 Oregon Phone 429. Columbia Phone 410.

**Old Kentucky Home Club Whiskey**  
 ...AND...  
**Shaw's Pure Malt**

**Blumauer & Hoch**  
 Wholesale Liquor & Cigar Dealers  
**SOLE AGENTS. 110 Fourth Street**

**EMPIRE**  
**Livery Feed and Sale Stable**  
**C. P. BARNARD, Prop.**  
 Saddle Horses, Single and Double Rigs At All Hours.  
 Transient stock given the very best of care. Rates always reasonable and satisfaction guaranteed.  
 Phone Main 51. Cor. Rose and Oak Sts.  
**ROSEBURG, OREGON.**

**EDWARD HOLMAN**  
**UNDERTAKER**  
 Fourth and Yamhill Sts.  
**BOTH PHONES NO. 507**  
 HENA STINSON, Lady Assistant.

**LIGHTNING WELL MACHY**  
 IS THE STANDARD  
**STEAM PUMPS AIR LIFTS**  
**CASOLINE ENGINES**  
 WRITE FOR CIRCULAR  
**THE AMERICAN WELL WORKS**  
 AURORA ILL - CHICAGO - DALLAS TEX

**Merchant Hotel.**  
 CORNER THIRD AND DAVIS STREETS  
**PORTLAND, OREGON.**  
 HOTEL IS NEWLY RENOVATED.  
 This is the best equipped moderate rate hotel on the Pacific Coast and has all the conveniences of high-priced hotels. Complete with electric lights and bells, and artesian water in each room. Bath room on each floor. Elevator for accommodation of guests. Rates \$1 and \$1.25 per day. Meals on coin. Special rates to families and theatrical parties. Free bus to and from all trains. 300 rooms. Only four blocks from Union Depot. Five Front Building.  
**F. K. HILL, Prop.**

**Electric Hotel**  
**OREGON CITY, OR.**  
**JACOB CASSELL, Prop.**  
 Strictly First-Class. Rates \$1.00 Per Day and Up.  
 Steam Heat, Electric Lights, Commercial Sample Room.

—THE—  
**Multnomah Trunk Co.**  
 MANUFACTURERS OF  
**TRUNKS**  
**TRAVELING BAGS**  
**AND SAMPLE CASES**  
 Salesroom 143-145 Sixth Street  
**PORTLAND, OR.**

**...THE OLYMPIAN...**  
 148 Fifth St., Near Morrison.

**BLUNDEN & VELTON, Props.**  
 THE FAMOUS  
**OLYMPIA BEER**  
 ON DRAUGHT

New Building, New Fixtures, Choice Goods.  
 W. L. McCABE, Seattle. E. S. HAMILTON, Tacoma.

**M'CABE & HAMILTON**  
**.. STEVEDORES ..**  
**PUGET SOUND**  
 Also Honolulu, H. I.  
 Head Office: Tacoma, Wash.  
 Cable Address: McCABE  
**GRACIE, BEAZLEY & CO., Agents**  
 14 Water Street, Liverpool.

**KRIEG & LEVY**  
 (INCORPORATED)

**GROGERS**  
 COFFEE AND TEA A SPECIALTY.  
 394 Washington Street, Corner Tenth  
 TRY OUR CELEBRATED COFFEE.  
 Both Phones 838. PORTLAND, OR.

**..OLYMPIC..**  
**Steam Laundry**  
 407 South J Street  
**MICHAEL J. BJORN & LOUIS J. BJORN**  
 PROPRIETORS  
**TACOMA, WASH.**

**TROY LAUNDRY CO.**  
 Are not'd for qua'ity of work and prompt service.  
**GENTLEMEN'S WORK A SPECIALTY**  
 101-5 E. Water St. Phone 5033.

**Portland DAIRY ASSOCIATION**  
 WHOLESALE & RETAIL  
**.Cream and Milk.**  
 DEPOT 203 SECOND ST.  
**JOHN P. HOFFMAN, Mgr.**  
 Milk Delivered to All Parts of the City.  
 Oregon Phone North 2011.

**Baggage and Omnibus Transfer**  
**...COMPANY...**  
 Office S. W. Cor. Fourth and Stark Sts.  
 Telephone 588. PORTLAND, OREGON.  
 Exchange Your Checks With Messenger on Trains and Order Carriages or Coupes.  
 Baggage checked at residence to any destination.  
 Branch Offices: Hotel Portland; United Carriage Co., seventh and Taylor.  
**L. H. ADAMS, Mgr.**

**OMAHA PACKING CO.**  
 The Popularity of  
**RED SEAL BRAND**  
 Hams,  
 Bacon,  
 Lard, Etc.,  
 Is Won on Merit.  
**TRY RED SEAL BRAND.**  
 56-60 E. Water St., Portland, Or.

**CARNEGIE RANKS FIRST AMONG PHILANTHROPISTS.**

These are the amounts donated for public purposes by America's most liberal persons:

Andrew Carnegie	\$21,898,252	State College, Bellefonte, Pa.	\$100,000
George Peabody	8,325,000	Lincoln (Nebr.) library	75,000
John D. Rockefeller (approximately)	8,000,000	St. Wayne (Ind.) library	75,000
Senator and Mrs. Leland Stanford (approximately)	20,000,000	Muncie (Ind.) library	50,000
Here is a list of Mr. Carnegie's donations:			
New York libraries	\$5,200,000	Marion (Ind.) library	50,000
Pittsburg pension and libraries	5,000,000	Ft. Worth (Tex.) library	50,000
Atlanta library	100,000	Oakland (Cal.) library	50,000
Atlanta library	20,000	Stevens Institute, Hoboken	50,000
Canton library	50,000	Connellsville, Pa.	50,000
Perth Amboy library	20,000	Keokuk, Ia.	50,000
Yonkers library	50,000	Houston, Texas	50,000
Tacoma library	75,000	Sedalia, Mo.	50,000
Greenville (S. C.) library	15,000	Clinton, Pa.	50,000
Sydney (N. S.) library	15,000	Lansport, Iowa	50,000
Newcastle (Pa.) library	40,000	Sandusky, Ohio	50,000
Ottawa (Ont.) library	100,000	Tyone, Pa.	50,000
Gloversville library	25,000	Duluth, Minn.	50,000
Fort Jervis (Mo.) library	20,000	Dallas, Texas	50,000
South St. Joseph (Mo.) library	25,000	East Liverpool, Ohio	50,000
Montgomery (Ala.) library	50,000	Steubenville, Ohio	50,000
Ashland (O.) library	15,000	Albany, Pa.	25,000
Carnegie Institute, Pittsburgh	2,000,000	Oakmont, Pa.	25,000
Carnegie Institute, Allegheny	1,000,000	Oklahoma City	25,000
Honestead Institute	300,000	Tucson, Ariz.	25,000
Johnstown Institute	300,000	Crawfordsville (Ind.) library	25,000
Bradock Institute	500,000	Peru (Ind.) library	25,000
Bradford (O.) library	40,000	Newport, Ky.	20,000
Duquesne Institute	500,000	Alameda (Cal.) library	20,000
Bellevue Medical College	76,000	Madison (Ind.) library	20,000
Greensburg library	60,000	X. N. L. Women's Club	17,000
Pittsburg observatory	20,000	Riversville, Pa.	15,000
Carnegie (Pa.) library	210,000	Portland (Ind.) library	15,000
Edinburgh library	250,000	Washington (Ind.) library	15,000
Edinburgh Technical School	50,000	Alameda (Cal.) library	10,000
Stirling library	30,000	Zoological Gardens, N. Y.	5,000
Aberdeen library	5,000	Hazewood, Pa.	4,000
Jedburgh library	10,000	Calcutta Club, N. Y. City	1,000
Inverness library	8,500	Dallas, Texas	1,000
Wick library	15,000	Seaboard Air Line	1,000
Peterhead library	5,000	Eastport, Me.	600
Dumfries library	50,000	Oil City	500
Carnegie Institute, Pittsburgh	1,750,000	Blue Rapids, Kan.	500
Public library, Washington	350,000	Montefiore Home	1,000
Birmingham (Eng.) Univ.	250,000	Syracuse library	20,000
Polytechnic library, Louisville	125,000	Upper Iowa University	20,000
Public library, Atlanta	125,000	Cooper Union	300,000
Dunfermline, Scotland	100,000	Richmond Free Library	100,000
Grand Total	\$21,898,252	Carnegie Laboratory	50,000
		Covington (Ky.) library	40,000

**ABOUT WEATHER KITES.**

The Taking of Meteorological Observations at a Great Distance.  
 In 1885 Prof. Willis L. Moore, the present chief of the Weather Bureau, decided to undertake by means of kites the most complete survey of the upper air. The plan adopted was to equip with kites a given number of stations



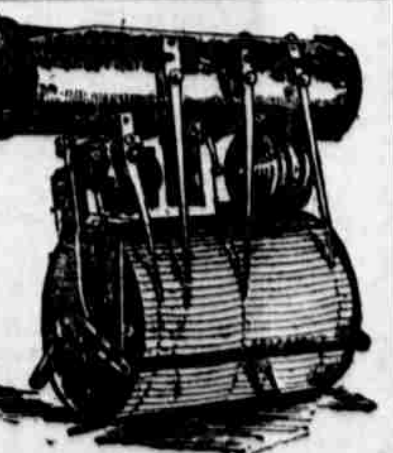
PROF. W. L. MOORE.

distributed over the United States, and to make daily ascensions, sending up automatic instruments to the nearly uniform height of a mile, if possible, the object being to secure a record of the meteorological conditions in the air. Earlier experiments made in the Weather Bureau and elsewhere had demonstrated the possibility of using kites for such a purpose, but much remained to be done to bring the whole kite apparatus to that state of efficiency required in securing a successful execution of so difficult an undertaking.

While the Weather Bureau has been doing this work of daily observations a mile high above the earth, independent kite ascensions have been made by several private individuals, the most important of which in the United States are the ascensions made at the Blue Hill Observatory, near Boston.

The results from a single station of this sort serve to show only the change in atmospheric conditions as the kites pass up or down through successive strata; or, if the kites are kept continuously at a fixed elevation, the observations show the change in conditions from hour to hour.

The modern scientific kite is a far more efficient structure than any of the well-known toys, but its construction is correspondingly complicated, and, in most cases, somewhat more than the average mechanical skill and facilities are required to build one. The illustration of the kite printed herewith is of



STANDARD FORM WEATHER KITE.

the record sheet corresponding to every two miles of wind movement.

The Weather Bureau kites attain an altitude of a mile and a half in some cases, and frequently reach 7,000 feet in height.

When flying at an elevation of from 5,000 to 7,000 feet one of the Weather Bureau kites, supporting its instrument, will pull from 60 to 80 pounds, if not more, and from 8,000 to 10,000 feet of wire will be out.

The great importance in meteorological studies and weather forecasting of such observations as can be obtained by means of kites is apparent. These give the conditions prevailing in the free atmosphere, often in and above the clouds themselves, at points far removed from the disturbing effects of great cities, forests, the earth's surface, etc. In fact, observations thus obtained are characteristic conditions of great masses of the atmosphere, and when determined regularly and completely they afford far more exact and probably earlier indications of important forthcoming atmospheric changes than the most elaborate observations taken at the surface. The tops of our highest buildings, after all, are only an insignificant distance up in the free air, and all surface conditions always are modified as a result of the actual contact of the air with the earth and the immediate effect of the latter upon adjacent portions of the air.

**Oil in Fishing Boats.**  
 The fishermen of Iceland now regularly carry oil in their boats to smooth the waves, which enables them to continue at work in weather that before they would not have dared to face.

A good way to do reform work is to lead such a clean, useful, sober life that others will try to follow your example.

**Jefferson Garden Saloon.**  
 DAVID THOMAS, Prop.  
 Wines, Liquors, Cigars. Weinhard's Beer.  
 'PHONE, RED 1818. FAMILY RESORT.  
 Cor. Chapman and Jefferson Sts., Portland, Or.

**HISLOP'S**  
**Triumph Roasted Coffees**  
 The Most Sparkling, Delicious and Aromatic COFFEES Ever Placed on this Market.

Ask Your Grocer for Them  
**..Four Blends..**  
 A FULL LINE OF  
**Electrical**  
**Supplies**

Lighting of Buildings, Stores and Residences—arc and incandescent. Electric Power for Elevators, Pumps and all kinds of Machinery.

**Portland General Electric Co.**  
 SEVENTH AND ALDER STREETS.  
 Both 'Phones 385.

**BAR AND BILLIARD**  
 Furniture and Fixtures  
**ROTHSCHILD BROS.**  
 Wholesale Liquor Dealers.  
 22, 24, 26 First St., Cor. Burnside.



**HOTEL OSBORN**  
 CLEAN, AIRY OUTSIDE ROOMS  
**REASONABLE RATES**  
**Transient Solicited**  
 ...BOTH PHONES...  
 Travelers should take "B" Street Car at Union Depot and transfer at Yamhill Street to East Ankeny Car.  
**A. W. HEWETT, Prop.**

**GROSS, WEITZEN & LIPPMAN**  
 —Manufacturers of—  
**LADIES' TAILOR MADE SUITS**  
 Separate Skirts and Waists  
 The Best Made Goods on the Pacific Coast  
 214 First Street, Corner Salmon,  
**PORTLAND, OREGON.**

**CHARLEY**  
**THE PIONEER RESTAURANT**  
 Now on Johnson Street, Opposite Union Depot.

**LUNCHES PUT UP FOR TRAVELERS**  
**Oregon Made Umbrellas**  
**..C. M. MEREDITH..**  
**UMBRELLA MANUFACTURER**  
 Repairing and Recovering of Fine Umbrellas a Specialty.  
 312 Washington Street.  
 Three doors above Olds & King  
**PORTLAND, OREGON.**

**Union Depot**  
**..Restaurant**  
 173 Sixth St., PORTLAND, OR.  
**Regular Dinner at Noon - 25c**  
 Lunch Put Up for Travelers.



**E. H. MOOREHOUSE & CO.**  
 INCORPORATED.  
 Wall Paper, Frame and Room Mouldings, Paints, Oils, Varnishes, Glass, Brushes, Etc.  
 305 ALDER ST., Near Fifth,  
 Both 'Phones. Portland, Oregon.



**Hatters and Furnishers**  
 Sole Agents for **KNOX HATS**  
**BUFFUM & PENDLETON**  
 94 Third Street.  
**PORTLAND, ORE.**  
 (Established 1852.)

**F. B. DALLAM & CO.**  
 Wholesale Dealers In  
 Wooden and Willow Ware  
 Brooms, Brushes, Twines, Paper, Paper Bags, Tinware, Granite ware, Etc.  
 222, 220, 228 Front St.,  
 San Francisco, Cal.  
 and 77 Front Street,  
 Portland, Oregon.

Write for Catalogue.  
**MAIL ORDERS FILLED PROMPTLY**  
**GOLDEN WEST**  
**BAKING POWDER**  
 It is PUREST  
 It is CHEAPEST  
 It is BEST  
 If You Are Not Satisfied Your Money Back  
 CLOONEY & DEVERA, Portland, Or.

**LIPPINGOTT'S**  
**MONTHLY MAGAZINE**  
 A FAMILY LIBRARY  
 The Best in Current Literature  
 12 COMPLETE NOVELS YEARLY  
 MANY SHORT STORIES AND PAPERS ON TIMELY TOPICS  
 \$2.50 PER YEAR; 25 CTS. A COPY  
 NO CONTINUED STORIES  
 EVERY NUMBER COMPLETE IN ITSELF

**50 YEARS' EXPERIENCE**  
**PATENTS**  
 TRADE MARKS  
 DESIGNS  
 COPYRIGHTS & C.  
 Anyone sending a sketch and description may quickly ascertain our opinion free whether an invention is probably patentable. Communications strictly confidential. Handbook on Patents sent free. Oldest agency for securing patents. Patents taken through Munn & Co. receive special notice, without charge, in the Scientific American.  
 A handsomely illustrated weekly. Largest circulation of any scientific journal. Terms, \$3 a year; four months, \$1. Sold by all newsdealers.  
**MUNN & Co.** 361 Broadway, New York  
 Branch Office, 62 1/2 St., Washington, D. C.