## RATES OF ADVERTISING.

Thirty Cents per line for each and every insertion, payable in To enable all to understand how to calculate the an must send when they wish advertisements published, we will explain that ten words average one line. Engravings will not be admitted into our advertising columns; and, as heretofore, the publishers reserve to themselves the right to reject any advertisement sent for publication.

PORTER'S IMPROVED GOVERNOR.

The reputation of these governors is well established. Parties troubled with unsteady power may send for them in entire confidence. They never fail.

The numerous valves in use are all equally good, if well made; the form of the opening is immaterial. The governors are warranted to work perfectly with any and all valves, which move freely and close tolerably tight.

A style is made expressly adapted to waterwheels, to which they will give a perfectly uniform motion, under any variation of resistance.

I have long done with troubling my customers for certificates; but am able to refer to a large number of parties now using this governor in a majority of the States of the Union.

I will send a governor to any responsible party fortrial. If it does not operate perfectly it may be returned.

A liberal discount to the trade, whose orders will always be promptly filled.

CHARLES T PORTER

CHARLES T. PORTER,
No. 235 West Thirteentli-street, corner of Ninth-avenue,
New York City.

## SEMI-STEEL

SEMI-STEEL LOCOMOTIVE TIRES, FIRE-BOX AND Tube Sheets, and Roller Plates

Tube Sheets, and Boiler Plates.
Warranted fifty per cent stronger and more durable than the best
Low Moor qualities of firon.
TIRES—Rolled, blocked and welded to fit any given diameter of

PLATES—Rolled and cut to any pattern and size ordered.
Rolled and Hammered Bars, Axies and Forgings of same metal.
Any further information desired will be furnished, and all orders recomble axecuted. uson amplication.

Any turner men management of the manufactured by CORNING, WINSLOW & CO.,
Manufactured by CORNING, WINSLOW & CO.,
113\*

Albany Iron Works, Troy, N. Y.

WARREN'S TURBINE WATERWHEEL (WARREN & Damon's patent).—Cotton and woolen manufacturers, mill-wrights and millowners, and every mechanic who would conomize in water power, should investigate this wheel. Recent improvements are included and clearly illustrated in a late pamphiet of 51 pages. Applicants send two stamps. Special attention phild to Southern trade. They are arranged compact and portable, requiring no mechanical skill to set and operate them. Every wheel warranted. Address ALONZO WARREN, Agent, American Waterwheel Company, No. 31 Exchange-street, Boston, Mass.

40 SECOND HAND

A O SECOND HAND SAFES, for sale heap. Taken in exchange for different makers, for sale heap. Taken in exchange for dille's chilled and wrought iron des.

ares. Send for circulars of scales and safes.
JOHN HOWE, Jr., Maker. Brandon, Vt.
FRANK E. 110WE, No. 293 Broadway, first block below the Astor
100se, New York. 77\*

L'NGINE FOR SALE.—A 6-HORSE ENGINE, WITH Boiler and Pump complete; now in use at No. 306 Pearl-street; must be removed before the first of May.

HAYDEN, SANDERS & CO.

DOOK ON PORTABLE ENGINES—"PRACTICAL INstructions for the Portable Engine, Enabling Every One to be liis Own Engineer; by a Graduate of the Military Academy, and Former Member of the United States Corps of Engineers." A large illustrated pamphlet, sont by mail to any purt of the country, price 25 cents, by the WASHINGTON IRON WORKS, Newburg, N. Y.

"The above establishment manufactures Portable Engines of all sizes, having the latest and most valuable patented improvements, and being an excellent combination of known devices for the production of a compact, efficient and cheap Portable Engine."—Scientific American.

13 8

A YOUNG MAN, A COLLEGE GRADUATE, DESIRES employment with a Surveyor in his out-door duties; testimonials as to character, &c., can be given. Address SURVEY, Post Office Box. 1740, Pkiladelphia, Pa. 12

ATE AM ENGINES FOR SALE—NEW AND SECOND-hand, from 2 to 15-horse power, consisting of Horizontal, Uprights and Portables; also, a Machine Shop, now his successful operation, well stocked with tools and all that is required to conduct the business. Inquire at the MACHINE SHOP, No. 643 Water-street New York.

TO CANDLE AND SOAP MAKERS.—PROFESSOR II-DUSSAUCE, Chemist, gives advices and informations on the tabrication of Candles and Soaps of every description; Plans of Factories; Drawings of Apparatuses; Recipe to make Common, Adamantine and French Candles; Processes to purify Tallow and harden Greases; Recipe to make Leys, Hard, Soft, Fancy, Resin, Castile, Cocoa, Palm Soaps; Processes to bleach Palm Oil, and make Candles of it; Essays of Greases and Soaps. Address at New Lebanon, N. Y. 18

THE HERALD OF PROGRESS—A JOURNAL OF Health, Progress and Reform; Andrew Jackson Davis, Editor. This well-established Family Newspaper has entered upon its second volume, with an able array of contributors. The editor furnishes weekly contributions to the Medical Department; also, "Medical Whispers" and "Answers to Correspondents," with articles under the following and other distinct heads: "Teachings of Nature," Voices from the People,: "Doings of the Moral Police," "Tidings from the Inner Life," &c., &c. Terms—\$2 a year, or \$1 for 6 mouths, Sample-copies sent free. Address A. J. DAVIS & CO., No. 274 Ganal-street, New York.

WANTED—A SITUATION IN A MACHINE SHOP by a young man of steady habits. Address, with card, E THRANGER, Pavillion, Genesce county, N. Y.

MACHINERY.—S. C. HILLS, No. 12 PLATT-STREET, New York, dealer in Steam Engines, Boilers, Planers, Lathes, Chucks, Drills, Pumps; Mortising, Tenoning and Sash Machines; Woodworth's and Daniels' Planers; Dick's Funches, Presses and Shears; Cob and Corn Mills; Harrison's Grist Mills; Johnson's Shingle Mills Reliting. Oil. &C. 2\*etw

ANTERNS ARRANGED FOR THE NEW OXYGEN the finest magic iastern pictures ever produced. Catalogues sent by mail free. C. T. AMSLER, Optician, No. 635 Chestnut-Street, Philadelphia, Pa.

SULPHATE OF AMMONIA, SUITABLE FOR AGRI-cultural and chemical purposes, for sale by DODGE, COLVILLE & OLCOTT, No. 188 Pearl-street, New York. 12 5\*

A MESSIEURS LES INVENTEURS - AVIS IMPORTANT. Les Inventeurs non familiers avec la langue Anglaise et qui pre-1 Les Inventeurs non familiers avec la langue Anglaise et qui pré-reraient nous communiquer leurs inventions en Français, peuven ous adresser dans leur langue natale. Envoyez nous un dessin et ne description concise pour noure examen. Toutes communications

grout regues en confidence. MUNN & CO., Scientific American Office, No. 37 Park-row, New

Homes for the industrious,

IN THE

GARDEN STATE OF THE WEST.

THE

ILLINOIS CENTRAL RAILROAD COMPANY HAVE FOR SALE

1,200,000 ACRES OF RICH FARMING LANDS,

TRACTS OF FORTY ACRES AND UPWARD,

LONG CREDIT AND AT LOW PRICES.

MECHANICS, FARMERS AND WORKING MEN

### ILLINOIS CENTRAL BAILBOAD COMPANY

which, as they will perceive, will enable them, by proper energy, perseverance and industry, to provide comfortable homes for themselves and families, with, comparatively speaking, very little capital,

### LANDS OF ILLINOIS.

No state in the Valley of the Mississippi offers so great an inducement to the settler as the State of Illinois. There is no portion of the world where all of the conditions of climate and soil so admirably combine to produce those two great staples—corn and wheat—as the prairies of

THE SOUTHERN PART

of the State lies within the zone of the cotton regions, while the soil is admirably adapted to the growth of tobacco and hemp; and the wheat is worth from fifteen to twenty cents more per bushel than that raised further North.
RICH ROLLING PRAIRIE LANDS.

The deep rich loam of the prairies is cultivated with such wonderful facility that the farmers of the Eastern and Middle States are moving to Illinois in great numbers. The area of Illinois is about equal to that of England and the soil is so rich that it will support twenty millions of people.

EASTERN AND SOUTHERN MARKETS,

The se lands are contiguous to a railroad 700 miles in length, which connects with other roads, and navigable lakes and rivers, thus afording an unbroken communication with the Eastern and Southern mar-

## APPLICATION OF CAPITAL.

Thus far, capital and labor have been applied to developing the soil; the great resources of the State in call and iron are almost untouched. The invariable rule that the mechanical arts flourish best where food and fuel are cheapest, will follow at an early day in Illinois, and in the course of the next ten years the natural laws and necessities of the case warrant the belief that at least five hundred thousand people will be engaged in the State of Illinois in various manufacturing pursuits,

RAILROAD SYSTEM OF ILLINOIS.
Over \$100,000,000 of private sapital have been expended on the rail

roads of Illinois. Inasmuch as part of the income from several of these works, with a valuable public fund in lands, go to diminish the State expenses, the taxes are light, and must, consequently, every day

# THE STATE DEBT.

The State debt is only \$10,105,398. 14, and, within the last three years has been reduced \$2,959,746.80; and we may reasonably expect that in ten years it will become extinct.

PRESENT POPULATION.

The State is rapidly filling up with population; 868,026 persons having been added since 1850, making the present population 1,7 22,663-aratic of 102 per cent in ten years.

AGRICULTURAL PRODUCTS.

The agricultural products of Illinois are greater than those of any other State. The products sent out during the past year exceeded 1,500,000 tuns. The wheat crop of 1860 approaches 35,000,000 of bushels, while the corn crop yields not less than 140,000,000\_bushels.

# FERTILITY OF THE SOIL,

Nowhere can the industrious farmer secure such immediate results for his labor as upon these prairie soils, they being composed of a deep, rich loam, the fertility of which is unsurpassed by any on the globe.

# TO ACTUAL CULTIVATORS.

Since 1854, the company have sold 1,300,000 acres. They sell only to actual cultivators, and every contract contains an agreement to cultivate. The road has been constructed through these lands at an expense of \$30,000,000. In 1850, the population of the forty-nine counties through which it passes was only 335,593, since which 479,923 have been added, making the whole population 814,891—a gain of 143 per cent.

# EVIDENCES OF PROSPERITY.

As an evidence of the thrift of the people, it may be stated that 600,000 tuns of freight, including 8,600,000 bushels of grain and 250,000 barrels of flour, were forwarded over the line last year.

# EDUCATION.

Mechanics and working men will find the free school system encouraged by the State, and endowed with a large revenue for the support of schools. Their children can live in sight of the church and schoolhouse and grow with the prosperity of the leading State in the Great Western Empire.
PRICES AND TERMS OF PAYMENT.

The prices of these lands vary from \$6 to \$25 per acre, according to location, quality, &c. First-class farming lands sell for about \$10 or \$12 per acre; and the relative expense of subduing prairie land as compared with wood land is in the ratio of 1 to 10 in favor of the former. The terms of sale for the bulk of these lands will be

# ONE YEAR'S INTEREST IN ADVANCE,

at six per cent per annum, and six interest notes at six percent, payable respectively in one, two, three, four, five and six years from date of sale; and four notes for principal, payable in four, five, six and seven years from date of sale; the contract stipulating that one-tenth of the tract purchased shall be fenced and cultivated, each and every year, for five years from the date of sale, so that, at the end of five years, one-half shall be fenced and under cultivation.

TWENTY PER CENT WILL BE DEDUCTED

from the valuation for cash, except the same should be at six dollars per acre, when the cash price will be five dollars.

Pamphlets descriptive of the lands, soil, climate, productions, prices,

and terms of payment, can be had on application to

J. W FOSTER, Land Commissioner

Illinois Central Railroad

Chicago, Ill.
For the names of the towns, villages and cities situated upon the Illinoi's Central Railroad, see pages 188, 189, 190, Appleton's Railway Quide.

ACHINE BELTING, STEAM PACKING, ENGINE
HOSE.—The superiority of these articles, manufactured of vulcanized rubber, is established. Every belt will be warranted superior
to leather, at one-thref less price. The Steam Packing is made in every
variety, and warranted to stand 300 degs. of heat. The Hose never needs
oiling, and is warranted to stand any required pressure; together with
alvarieties of rubber adapted to mechanical purposes. Directions, prices,
&c. cau be obtained by mail or otherwise at our warefouse. NEW
YORK BELTING AND PACKING COMPANY.

JOHN H. CHEEVER, Treasurer,
Nos. 37 and 35 Park-row, New York.

THE GREAT WONDER OF THE AGE.—SEAMLESS HOSIERY.—Manufacturers of hosiery are requested to examine the new machine for the manufacture of perfect hosicry with caif, heel, foot and toe at one and the same operation. This invention having been fully completed and in practical operation, the proprietors of the patents are now prepared to grant licenses to a limited number of manufacturers to manufacture under their patents. The licenses will be issued upon such terms as to insure great economy of time and money, besides giving an article far superior toany other in the market. Adverse, for information, the President of the McNary Knitting Machine Company, No. 25 William-street, New York.

SCIENTIFIC REPORTING.—PATENT SUITS, INVOLVing questions of science or mechanics, reported verbatim: scientific lectures, or the proceedings of scientific screeties, either reported in full or condensed, by HERRY M. PARKHURST, of the firm of Borr & Lord, Short-hand Writers and Law Reporters, No. 121
Nassaulstreet, New York.

UILD & GARRISON'S STEAM PUMPS FOR ALL kinds of independent Steam Pumping, for sale at Nos. 55 and 57 First-street, Williamsburgh, L. I., and No. 74 Beckman-street, New York. 126] GUILD, GARRISON & CO.

CLINTON WIRE CLOTH COMPANY—MANUFACTURers of Power Loom Wire Cloth, for threshing machines, fan mills,
grain assorters, rice mills, locomotive spark-arresters, and all other
uses, of a superior quality. Contracts made with the trade and large
consumers, on such terms that they will find it to their interest to take
their supply from us. Outrademark—'Power Loom Wire Cloth.'
C. H. WATERS, Agent and Treasurer,
Clinton, Mass.

OLID EMERY VULCANITE.—WE ARE NOW MANUfacturing wheels of this remarkable substance for cutting, grind ing and polishing metals, that will outwear bundreds of the kind commonly used, and will do a much greater amount of work in the same time, and more efficiently. All interested can see them in operation at our warehouse, or circulars describing them will be furnished by

NEW YORK BELTING AND PACKING CO., Nos. 37 and 38 Park-row, New York

IL! OIL! OIL!—FOR RAILROADS, STEAMERS, AND for Machinery and Burning.—Pease's Improved Machinery and Burning oil will save fifty per cent, and will not gum. This Of possesses quadries vitable sesential for lubricating and burning, and found in no other oil. It is offered to the public upon the most reliable, thorough and practical test. Our most skillful engineers at a machinists pronounce it superior to and cheaper than any other, and the only oil that is in all cases reliable and will not gum. The Scientific American, after several tests, pronounces it "superior to any other they have ever used formachinery." For sale only by the Inventor and Manufacturer F. S. PEASE.

used formachinery." For sale only by the Inventor and Mainfacturer
F. S. PEASE,
No. 61 Main-street, Buffalo, N. Y.
N. B.—Reliable orders filled for any part of the United States and
Europe.
18 13

DUMPS! PUMPS!! PUMPS!!!—CARY'S IMPROVED Rotary Force Pump, unrivaled for pumping hot or cold liquids Manufactured and sold by CARY & BRAINERD, Brockport, N.Y. Also, sold by J. C. CARY, No. 2 Astor House, New York City. 11 13

AYDEN SANDERS & CO., NO. 306 PEARL-STREET

New York, Manufacturers of Brass Work for Steam, Gas and
9 13\*\*

NEW SHINGLE MACHINE—THAT WILL RIVE A Shave 24,000 Shingles in a day, for sale by S. C. HILLS, New York.

TRAVELING AGENTS WANTED—TO SELL A NEW and valuable machine on commission and and valuable machine on commission or salary. For instructions and terms, address, with stamps, J. W. HARRIS & CO., Boston, Mass. 8 10\*

PECK'S PATENT DROP PRESS.—THE MOST PERfect machine in use for the manufacture of silver, copper or tinware, spoons, jewelry, forging, &c. Manufactured by the patentee.

MILO PECK & CO., New Haven, Conn.

THE AMERICAN ENGINEER—A WEEKLY JOURNAL, devoted to the interests of Marine, Locomotive and Stationary Engineers. This paper, now in its second volume, contains full reports of the American Engineers' Association, and original articles upon steam and steam machinery. It is published by a large house in New York, and will be permanent, whether pecuniarily successful or not. It is now the only engineers' paper in the United States.

John C. Merrian, Eclivor, No. 2 Nassaulsteet.

W. H. GILSON, Publisher, No. 86 Cedar street, States.

C. L. GODDARD, AGENT, NO. 3 BOWLING GREEN Packing Burring Machines and Feed Rollsfor Wool Cards, &c. 25 26\*

TRON PLANERS, ENGINE LATHES, AND OTHER Machinists' Tools, of superior quality, on hand and finishing, and for sale low; also Harrison's Grain Mills. For descriptive circular address New Haven Manufacturing Company, New Haven, Conn. 1 26\*

WOODWORTH PLANERS—IRON FRAMES TO PLANE 18 to 24 inches wide, at \$90 to \$110. For sale by S. C. HI

PORT'ABLE STEAM ENGINES—COMBINING maximum of efficiency, durability and scores POWI ABLE STEAM ENGINES—COMBINING THE maximum of efficiency, durability and economy with the minimum of weight and price. They received the large GOLD MEDAL of the American Institute at their late Fair, as the "Best Portable Steam Engine." Particularly adapted to railway purposes, as repair sloop and station engines. Every engine warranted satisfactory, or no sale. Descriptive circulars sent on application. Address J. C. HOADLEY, Lawrence, Mass. THE

# Bur Beachtung für deutsche Erfinder.

Die Unterzeichneten haben eine Anleitung, die Ersindern das Berhalten angibt, nun sich ihre Patente zu sichern, b: ausgegaben, und verahfolgen solche gratis an dieselben. Ersinder, welche nicht nuit der englischen Sprache bekannt sind, können ihre Mittheilungen in der deutschen Sprache nachen. Stiszen von Ersindungen unt kurzen, deutlich ge schriebenen Beschreibungen beliebe man zu abdressiere an Munn & Co., Angeber der Bentich gesprochen.

Auf der Office wird deutsche gesprochen.

Daselbst ist zu haben:

Die Gafent-Gesetz der Bereinigten Staaten, nebst den Regelu und der Erstätztsornung der Patents-Office und Anleitungen sitr Ersinder, um sich Patente zu sichern, in den Ber. St. sowohl als in Europa. Ferner Auszusche aus den Anent-Gesetzen fremder Länder und darauf bezäusiche Rathfoliszer ebenfaks mitsliche Winte für Ersinder und solche welche patentiven voollen.
Preis 20 Cis., per Post 25 Cts.