EVOLUTION OF MOTIVE POWER

Marvelous Display in the Transportation Building at the World's Fair.

THE PRIMITIVE AND MODERN LOCOMOTIVE

Progress Made in Marine and Italiway Loco motion Within a Period of Sixty Years Ship Models From England.

It is not too hard to say that the transportation building is a blotch on the architec tural splender that surrounds it. This important department of the exposition is housed in a huge structure 900 feet long. The exterior decorations are gaudy and vulgar. Most of the artists who have seen the extraordinary hodge-podge of tinsel and furid paint regard the whole thing as a huge joke. The building and its ornamentation are products of Chicago. No other city in America could originate such a laughable combination of cheap somp and ugliness. But the display inside of the hall is bewildering in its range and variety. The whole history of transportation, from birch bark canoes to steamships, and from pack horses to palace. curs, is unfolded in a manner never to be for-

Looking down from the galleries upon the acres and acres of exhibits, one sees a monster black steam hammer for forging armor plates which towers above the second story, a row of famous locomotives facing out from the annex like a herd of elephants. a full section of a colossal ocean steamship. and, scattered about here and there, thousands of objects that tell the story of how man has gradually annihilated space.

The invention and development of the locomotive and railway system is the nine teenth century wonder

Less than sixty-eight years since the first passenger railway ran its first crude train. Now the great civilizer has penetrated every

About ten acres of ground floor space are devoted exclusively to exhibits pertaining to railway construction, equipment, operation, management and development Sixty-four modern locomotives of all types and sizes from the two 100-ton Decapod engines which stand on the pedestals between the adminis tration building and the railway station, to the five-ton logging locomotives for use in the forests of Michigan.

Modern Eugene Exhibitors,

The exhibitors of modern engines are distributed as follows: Baldwin Locomotive works, Philadelphia, fifteen engines, raised from the rails and showing the machinery in operation by compressed air: Brooks Loco motive works, Dunkirk, N. Y., nine engines Baltimore & Onio railroad, three engines-one being attached to a complete "Royal Blue line train;" Cooke Lecomotive and Machine works, Patterson N. J., two engines; Canadian Pacific railway, one engine with complete vestibule train polished mabogany coaches; London Northwestern railway, one engine (Webb compound) and a train of two coaches Lima Locomotive works, Lima, O, one Shay engine; New York Central & Hudson river rallroad, two engines, each with complete passenger trains of Wagner vestibuled coaches, one the "Empire State Express," and the other the "Chicago Limited;" Old Colony railroad, one engine and coach; H. K. Porter & Co., Pitts burg, five engines; Pullman Palace Car com pany, one Baldwin engine and train of ves-tibuled coaches, showing the 'Pennsylvania Limited;' Pittsburg Locomotive works. Pittsburg, Pa., five engines: Richmond Lo-comotive works, Richmond, Va., one engine: Rhode Island Locomotive works, Providence R. L. three engines; Rogers Loomotive works, Providence, works, Paterson, N. J., three engines; Schenectady Locomotive works, Schenectady, N. Y., four engines; Westwood & Winby, London, England, one engine: France, four engines and cars; Germany, two engines, four passenger coaches and several freight cars, one being equipped as an ambulance car of the Red Cross society, with every appliance known to modern railway surgery. A handsome model of the railway station at Frankfort is also shown in the A handsome model of the railway German section. Magnificent Coaches.

Besides these cars there will be tweive magnificently equipped coaches and thirty-five freight cars, embracing every variety, by the leading builders in the country. The Pennsylvania railroad exhibit consists of a perfectly equipped station; it will contain a

Pennsylvania railroad; this company also exhibits a superb coach and three freight cars of its own build. Among the other attractions are two Leslie rotary snow plows, a centrifugal snow ex-

arge number of photographs of scenes on the

this company also

cavator and a Russell snow plow, four steam shovels and a locomotive traveling crane, a light and heat tender of the Chicago, Milwaukee & St. Paul railroad and the dyna-mometer of the Chicago, Burlington & Quincy All this represents steam transportation

as it is now, but the most fascinating part of the railway show—more so even than the mighty engines and the solid mahorany train from Canada—is the display of relics, models, old engines and cars and specimens of the quaint roadways of earlier days. It is the first time that such a work has been undertaken, and Mr. T. Hackworth of the railway department has gathered a complete

For instance, the Baltimore & Ohio railroad has for more than a year past beer making extensive preparations for its his torical exhibit, which includes about thirty full size wooden models of the earliest motives built in this country and in land, with samples of original tracks. Three of the Grashopper type of engine, the old locomotives "Samson" and "Albion," built in England and shipped to Nova Scotia in 1838, and other specimens of the very early locomotives are among the attractions. The models are all to be shown with machinery in operation. That is one of the delightful things about the section.

The company has secured many valuable original documents drawings, photographs. pictures of the early inventors, way time tables, tickets and passes indicating the method of transacting railroad business when railroads were still in their infancy. Some Old Engines.

Now comes the Chicago & Northwestern rallway with the 'Pioneer," built in 1835 by the Baldwin Locomotive works, the fourth engine built by that firm. The Pioneer came to Chicago in 1848 and was the first lo tive to penetrate so far west. This engine ran on the old Galena road, now a portion of the Chicago & Northwestern system, and is actually steamed into the exposition grounds

a few weeks ago.

A little further on the Old Colony railroad exhibit their first engine, the "Daniel Nason," and the first coach that ran between Boston and Providence and these, by the way of contrast, stand alongside of the

latest Old Colony engine and coach One of the most famous objects in the neighborhood is the seven-foot gauge locomotive "Lord of the Isles," belonging to the Great Western Railway of England, originally shown at the first great exposition in 1851 in London. She ran until 1882, when the change to the standard gauge laid her up. one of a class of engines designed by Brunel for high speed between London and Bristol and has made seventy-five miles an hour Engineers will look at this giant with affect

The London & Northwestern show Trevi-1829 in full sized wooden models. An op-portunity is here offered for comparison, as the Baltimore & Ohio exhibit models of the

the Baltimore & Charles Same engine.

Here the New York Central company shows the original "De Witt Clinton" on the strap rails of 1888, and there the Illinois Central company shows the "Mississippi," built in England in 1886 for the Natchez & Mississippi, now a portion of the Illinois Central railroad. The Nashville, Chatta-Central railroad. neega & St. Louis exhibit the historic enraiders on the Western & Atlantic railroad

It would take a page of THE BEE to enumerate in detail the systems of signaling, methods of track construction, engine and car equipment. The Westinghouse and and car equipment. The Westinghouse and New York Air Brakes companies have elaborate exhibits. Pumps and signaling appar-atus are shown in action. The Eclipse Wind Engine company of Hacine, Wis., long, speed twenty-two knots; Theseus,

show a complete water station. A sixty-foot iron turntable, a seventy-footelectric transfer table, track scales and pheumatic cross-ing gates are among the exhibits in operaoon. On the main floor the Rand-McNaily company has a ticket office and Thomas Cook & Sons a tourist office, both elaborately

Rapid Transit Exhibits.

tion, iron and steel wire cables, electric

street railways are practically demonstrated

A diminutive steam railway of eight inches gauge, with engines and cars complete, each car having a capacity of three passen-

gers, is shown in operation on tracks 500 fact long outside of the building. Several models

of clevated railway structures with electric trains are seen in different parts of the hall. Among the railway bridge models are

those of the Forth bridge, near Edinburgh, and the Mississippi river bridge at Memphis. In fact, the railway exhibit is replete with

the progress and development of the railway

In no previous marine exhibit has the

question of transportation on water ever been treated as a subject, but in this depart-

ment are shown, not only the triumphs of

naval architecture, ascillustrated by the mod-ern ocean greyhound and battle ship, but also

strange and curious craft from semi-civilized and barbarous tribes, showing how they solved problems of transportation by taking

advantage of the materials on hand, whether of bark or logs of wood or skins of animals.

There is a complete exhibit from Alaska and the Alcutian islands, consisting of two hatch bydarka, with complete hunting out-

fits, and from the sea coast of Norton sound a hatch bydarka, with the full outfit used in

both hunting and fishing; birch bark canoe from the upper Yukon river; sleds, dogs, har

ness and all that goes with them. The Hud-

son bay company shows all the methods of water transportation known in that country. From southwest Alaska or Queen Char-lotte's island are a tingit canoe and a large

An Australian Canoe.

From Australia comes an interesting canoe

monly known as the gum topped from bark or mountain ash (Eucalyptus Sieberiana), the ends being tied up. The natives in the

a croosed tree and stop the ends with a ball

of mad instead of tying them up. This

cance is called "gree," signifying "property," and comes from the Lake Tyers Aberiginal Station, Gippsland, Australia. It is used for

both hunting and fishing and for transporta-

China is represented by models of every

boat used on Chinese waters, both sea coast

and inland. These boats, authough the architecture seems to be grotesque, have

many peculiar points, such as the movable

sheet to the sail, making it possible to draw

the surface very flat.
The Straits Settlements and Ceylon will

also be represented by fantastic models. A peculiar boat in Ceylon is the machya, which is celebrated for its speed. It is the swiftest

of all East Indian boats. It cannot tack,

however, like an ordinary vessel, but must wear around to get the wind upon the op-

posite side. Its special feature is the keel, the shape of which is at variance with all

recognized rules of naval architecture. In-

stead of being straight or convex, the goed has an architice form, rising in the middle

and curving downward at the ends in deep

angular, finite projections, the forward one being deepest. This curious keel serves as

a double center board. Its object appears to be to carry sall well forward so that the

free for the stowage and manipulation of the net. The rig consists of a studie select sail bent to a long yard that is hoisted upon a

short mast stepped amidships and raking

A Ceylon Caramaran.

A catamaran is shown that has carried the mail between Ceylon and the main-land for a number of years, as

land for a number of years, as well as one of the celeorated outrigger

canoes. These boats carry an enormous sail

proczes are known as a one man, two man or

three man breeze, according to the quantity

of weight necessary to put on the outrieger

Mediterranean craft are represented by the Turkish caique, daigsa of Malta, gon-

dolas of Vennee and peculiar lateen boats, as well as the chiozzoto and the bracozzio of the Adriatic. And there are peculiar cances from the west coast of Africa as well as the

bimba, a curious development of the cata-

From South America comes the jangada, clarge balsa-shaped beat used in the vicinity

of Pernambuco; a war canoe from the Ama-zon; the cascarra, made from a single piece

of bark and entirely unlike all birch back

canoes, from the Origoco. There are also slender and swift dugouts from the same

locality; baisas from Lake Titicaca, made of

his birehbark cance are features not only

the Indian himself paddling.

2. Dugouts, hollowed trees.

frame work or inflated skins.

wood or grass.

and decks.

this building but also in the south pond, with

Primitive Water Craft,

ing boats are classified in the following order

Rafts, floating logs or bundles of reeds rushes or brushwood tied together.

4. Canoes or boats of pieces of wood

4. Vessels of planks stitched or bolted

together with treenalls, with inserted ribs

first set up and the planking subsequently

part of the world. Climatic influences of

All of these forms have survived in some

actal peculiarities have imparted to them peculiar characteristics, and with the choice of material necessitated by the product of

in the early days of the exposition Great

Britain was the friend of Cheago. Thanks to the energetic co-operation of the Ameri

an representatives abroad and the interest

taken by the British commission, the princi-

pal ship building firms have sent a magnifi

cent collection of models of all kinds. The period of from ship building is well repre-sented, both in the models of passenger and

freight steamers as well as in the collection

of the British men-of-war. Unfortunately the period after the restoration of Charles II, and through the Napoleonic wars is not

included, for with models of the great three-decked sailing battle ships, which were for so many years Fingland's bulwark of

strength, the history of the navy would be reasonably complete. At the same time Spain sends the treasures of the royal museum and the models of the invincible Armada, so that the ships of the time of the

The Thames from Works and Ship Building company trace the development of the iron

chal in the British mavy by means of models. The Warrior was the first war vessel built of iron. She was 180 feet long and was protected with four and one half inches of armor, which was sufficient in 1860 to resist

sixty-eight-pound solid shot, the maximum

consequently her steering gear was b exposed. The Minotaur represented

ns displacement, 7,500 horse power; draught

of water, twenty eight; speed fourteen knots; eighteen inches of armor; armed with

ten-ton guns; 10.6-inch, five-ton, fifteen quick

Some W r Vessels.

feet long, armament nine two-inch twenty

two-ton breech-loading rifles, ten six-inch quick firing guns, twelve six-pounder quick

guns, speed nincteen kno's; Sans Parell armored ship, 10.470 tons displacement in

dicated horse power 14,000, draught of water

twent; seven feet, speed seventeen knots,

armament largest guns, two lil-ton breech-loading rifles. And so on through the list. The Blenheim, first-class steel cruiser, 9,000

four three-pounder quick firing

Then come the Grafton, a first-class steel ruiser, 7,350 tons, twelve-horse power, 360

ship of the Warrior size, fully id armored. The Benbow, 10,600

Her ends were unprotected

famous battle will be shown.

much exposed.

firing guns.

firing guns.

rigged and armored.

Vessels of which the framework is

stitched or fastened with sinews or fibers of

Primitive efforts in the direction of build-

maran, which is used in the interior waters

whole of the craft aft of amidships may

starply forward.

rudder and the fashion of attaching

from a single sheet of what is com-

dugout and haida cance.

ery appliance known to modern railroad s, besides being an illustrated history o

otor trucks and everything pertaining to

same as former, 7,330 tons, speed twenty knots Superb, armored ship very like the Sans Parell, though smaller.

Following those are the Water Witch, Serapis, Swift, Linnet, German ironciad Koenig Wilhelm, torpedo cruiser Zieten, Turkish armorelads Mesondye, Aomi Illah, Portuguese war vessels Vasco di Gama, Al-Portuguese war vessels Vasco di Gama, Al fonza de la Alberquerque, Spanish frigate Victoria, cruisers Gravina, Velasco, Russian paddle sloop Vladimie, armoreiad Perventez, No topic is so widely discussed in American cities today as the question of rapid transit through the streets of cities and Greek ironclad King George, Danish gun boats Absolom, Esperne, Spare, Mosquito sailing yacht, screw yacht Fairy, the Sul towns, and this subject is completely illustrated. There are twenty cars by leading builders with many varieties of motive power—horse, cable, steam, electric, gas and compressed air. The original cable car, by A. S. Hallidie of San Francisco, is among tan, Brazilian troop ship Purius, tur, mail and other special service boats. United States competitive designs for armores ruiser and armored battle ship will also be the exhibits. Street railway track constru-

same as former, 7,350 tons, speed twenty

The James & George Thomson company shows models of the first-class battle ship Ramillies, 14,150 tens, eighteen inch armor, need 17.5 armed with four sixty-seven-tobreech-loading rittes, ten six-inch quick-firing guns and eighteen other quick firing guns second class cruisers Terpsichore. Thetis Tribune and the tornedo cruiser Reina Re genta, torpedo catcher Destructor and screw

steamer America.
The Armstrong Mitchell company shows a model one-twelfth full size of the armored ship Victoria, 360 feet long. The model is probably the largest and most complete that has ever been constructed and shows most minute detail every fitting on board of

the magnificent ironctad. Yurrow & Co. show models of torpedo boat catchers, speed twenty-seven knots; loaded first-class torpedo boats, speed twenty-three loaded second-class torpedo boats speed eighteen knots. There is a model of the Opale, ballt for service in Danomey on Yarrow's system of floating sections, by which means the vessel was shipped in sections and united affort in a few days, draught eighteen inches, speed ten miles

Cunard Company's Exhibit. In the merchant marine section the Cunard Steamship company shows models of the Umbria, Etruria (8,000 tons) and the new ships built and engined in 1892, while the royal mail service between England and South Africa is shown by Donald Currie &

The Laird Brothers of Birkenhead exhibit a collection of models and pictures illustrat ing the progress of iron shipbuilding from 1834 to the present time—paddle steamers screw steamers and a full line of models. A most interesting exhibit will be made by the Peninsular and Oriental Steam, Naviga tion company. The Atlantic Transport Line shows models of the screw steamers, Mass-achusetts, Manitoba, Mohawk and Mobile, furnished with all appliances for the car-riage of passengers, live stock, dead meat and cargo of all descriptions. There is also an interesting model sent by Furness, Withy & Co. of a steamer 400 feet, long, forty-eight beam, thirty feet draught, built of steel on a web frame system, with cellular double bot tom, capable of carrying 6,500 tons of dea

This is only an indication of what th narme exhibit from Great Britain is to be No such display has ever been attempted in the United States, and especially in an in land city like Chicago. Many of the models have figured in various naval exhibitions in Great Britain and are familiar to those especially interested in naval architecture But the general public will be surprised upor entering the golden door of the transporta tion building to see near the entrance on th main court a collection of models the like o which has never been brought together in

A striking feature has been furnished by the International Navigation company, which built on the main court a section of one o their new steamers. Imagine the longitudi-nal and transverse section of a ship abaft the smokestack sixty-nine feet long and 38.6 in beam. The interior fittings, furnish-ings and decoration will be the same as used on the magnificent steamers of that line. This is the most interesting exhibit showing fully the facilities of these vessels

or the comfort of ocean travelers.

The Bethlehem Iron company have reproduced their enormous 125-ton hammer, and at its base will be displayed armor plate, guns, shafting of vessels, steel ingots and so on. The Gas Engine and Power company of New York will show a number of beautifu naphtha launches. The Harlan & Hol limrsworth company of Wilmington, Del. will make an exhibit of models of differen types of ships, steamboats, steam, and sailing yachts, built from the commencement o its foundation-1836-down to the present They will also exhibit a v model of a typical engine. As a frieze above the model will be shown a marine nainting and the men climb out on the outrigger to prevent the boat from capsizing, and its on which forty-two boats are to be seen, showing the progress made in ship, yacht and steamboat building by this firm

Waccled Vehicles of Every Kind, But if railways and ships are interesting what is to be said of the wheeled venicles The floor space occupied by this division embraces 130,000 square feet, and it is all fitted up with wood carpet in white oak strips, laid out in handsome patterns and finished in oil. Each space is surrounded with handsome ornamental brass railing and posts. The ex-hibit occupies the entire north end of the main building and the annex and about one half of the north gallery in the main

On the first floor are exhibited carriages wagons and vehicles of every description. In the gallery are displayed bleycles, carriage and wagon hardware and saidlery goods There is a historical array of vehicles, sad diery goods and nicycles. An effort has been made to show the evolution of these industries from their primitive origins down to

straw and bound together by wisps-the the people of that region. Here you find bungos, curious shaped canoes from the Istnmus of Panama, and many others quite the present time. For this purpose a large collection has been made by Chief Smith in foreign lands, from the ancient chariot that antedates Christ to the latest thing out. as interesting.
Of course, the North American Indian and

In modern carriages there is everything rom a baby carriage up to the finest carri age that has been built. Some of these wehicles cost \$10,000 each and are really works of art. Foreign countries contribute to this division, France having sent fifty carriages from her best builders. Austria sent eighteen carriages from six of her best manufacturers. England and Germany also make large exhibits, so that the industry of

both continents is well represented In the foreign collection of historical ex-cibits from London is a lord mayor's state oach, a drag that belonged to the prince o Wales and an old chariot. A sedan chai from Colombia stands besite one from one from Turkey and near by are a jinrikisha from Japan, a carriage once owned by President Polk and the coach of Daniel Webster,

Inthe saddlery department a display of saddles, bits, stirrups and trappings of the sixteenth and seventeenth centuries col ected throughout Europe, including a pair f silver spurs taken from the feet of Sir homas Pleton when he was killed in the sattle of Waterloo. In the bicycle divisio

resented an extraordinary dis-The fittings alone cost more than \$100,000 nd some of the pavilions cost exhibitors from \$10,000 to \$12,000 each. played in this exhibit not only the finest bicycle that has ever been produced up to the present time, but bicycles representing wheels that date back to the first machine built, showing the complete evolution of the industry.

DRINK IN KANSAS.

Something Akin to Perjary Necessary to Procure One Down There.

While walking down Kansas avenue, Popeka, says a writer in the Popeka Call. I passed a large and very brilliantly lighted drug store. Remembering that the little Kansas drug store was the home of the jim jams, I entered and watched to see the bacteria of this affair get in its work. I had not long to wait. soon a seedy looking individual, who looked as though he feared the very sight of water, entered and, walking up to a little desk in one corner, began to write out his "application." When it was finished the druggist swore him to the truthfulness of the statements made therein, gave him the red liquor, took his money, and the seedy individual departed. I then walked over to the little desk myself, and, pretending to be making an "application" for myself, I copied his. Here it is:

State of Kansas, Shawnee county, April No. 11. I, the undersigned, do solemnly swear that my real name is Phil Meyers, and that I reside at Shawnee county, state of Kansas, that whisny of one-half pint is necessary and actually needed by me to be used as a medicine for the disease of bathused as a medicine for the disease of bath-ing, that it is not intended for a neverage, nor to sell nor to give away, and that I am over 21 years of age. I make this applica-tion to G. W. Flad, druggist, for said liquor. Phil. Merens, Applicant. Subscribed in my presence and sworn to before me this 12th day of April, 1853. Gronce W. Flad, Pharmacist.

A Syracuse, N. Y., Journal Representative's Description of a Leading Industry.

'IMPROVEMENT THE ORDER OF THE AGE

He Says it is Reliable, Durable, a Rapid and Easy Running Machine-Excellent Material and Workmanship - The Most Compact and Best Made.

The phenomenal success of the Smith-Premier typewriter is one of the astonishing things of the present day. It is not surprising that Syracusans are deeply interested in this concern, says a Syracuse (N. Y.) Journal reporter, masmuch as this celebrated writing machine is made in our city, and that they are justly proud of the industry is not to be wondered at-

The Smith-Premier typewriter has won a deserved success, and is destined to far more wonderful things, for the business is now simply in its infancy. The Journal takes advantage of this opportunity to present to its readers a few interesting facts relating to the Smith-Fremier factory, and also Mr. L. C. Smith, a most successful business

For some years prior to becoming interested in typewriters Mr. Smith was engaged in the manufacture of the Barker breech-loading gun, and later the L. C. Smith gun, in this city, which business was sold to the Hunter Arms Co., now of Fulton. Alexander T. Brown of this city was the inventor of the L. C. Smith gun and the Smith-Premier typewriter; also, of the American Dunlap pneumatic bicycle tire, for which patent he, W. L. Smith, and a Boston party, received \$106,000. Experimental work on the typewriter was begun in May, 1886, and in 1889 the manufacture was commenced. The production in 1890 was 2,900 machines; in 1891, 7,300 ma chines; in 1892, 12,000; and this year will be about 18,000. The concern now employs 460 men at the works here and 200 people outside of the city. The main building of the factory is 60x130 feet and eight stories high; the next is 40x100 feet and five stories high, and there are a number of annexes, the largest of which is 30x45.

A Journal reporterwas privileged the other day to inspect these works, and he learned some facts about the manufacture, which are here presented. In the beginning, the raw material used in the manufacture of a typewriter is purchased of various manufacturers-in many instances in car-load lots-in the shape of steel wire, steel bars, gray iron castings, etc. This material is put into shape at The Smith-Premier Typewriter works, and in due time comes out a perfect typewriter.

It is impossible to here explain from beginning to end the manufacture of a single typewriter, for the work is done in sections and pieces, and a large number of machines are under headway at once. The visitor, as he passes through the mammoth factory observes on all floors machines in various stages of completion. There may be from 4,000 to 6,000 machines going through the works all the time. From the time the raw material goes into the works until it passes out a complete machine ready for shipment, from four to six months are consumed. Every part of the typewriter is made at the works. It is the policy of the company not to buy that which it can manufacture to profit.

There are 200 machines in the depart ment for manufacturing the smaller pieces of the typewriter, and in the department for he vy work there are 125 more. In the whole works there are 350 machines of various kinds, and all of the very latest pattern.

The upper three floors of the main building are now being prepared for occupancy. The elevator and stair shaft of that building are entirely cut off from the structure. In the electroplating department there may be found what is considered one of the finest plants of that kind in the country. In it 100 machines a day can be nickeled. The work is known as the electro-nic kel plating. The polishing department has a capacity of seventy-five machines a day, there being thirty polishing wheels. When the works are occupied to their fullest extent 150 finished typewriters can be turned out per day.

Among the other machinery may be mentioned three cushioned hammers. Power is supplied by a new 150-horsepower engine of the Corliss pattern, and the boiler is of 100-horse-power. Another boiler will shortly be placed in position. The alligning department is interesting. Here forty-five persons are employed to see that each machine does its work nothing short of perfect. The best of workmen are put in this department because the work must be exceedingly well done.

The Smith-Premier Typewriter Co. never close a season with its orders filled. There are twenty-four branch offices under the personal direction of L. C. Smith, as follows:

Corner Seventeenth and Farnam-sts., Omaha Neb

Lincoln, Neb., 131 N. 9th street. Sloux City, Iowa, Mass. block. Des Moines, Iowa, Youngerman block. No. 154 Monroest., Chicago, Ill.

Nos. 293 and 295 Broadway, New York

No. 25 School-st., Boston, Mass. No. 723 Chestaut-st., Philadelphia, Pa. No. 166 Walnut-st., Cincinnati, O. No. 208 North Seventh-st, St. Louis,

No. 306 Wood-st., Pittsburg, Pa. No. 114 West Ninth-st., Kansas City, Mo.

Chamber of Commerce building, St. Paul, Minn.

No. 1627 Champa-st., Denver, Colo. No. 101 Griswold-st., Detroit, Mich. No. 61 Niagara-st., Buffalo, N. Y. No. 407 Powers block, Rochester,

No. 116 St. Paul-st., Baltimore, Md. No. 82 Wisconsin-st., Milwaukee, Wis. No. 9 Fourth-st., South, Minneapolis,

No. 47 South Illinois st., Indianapolis,

No. 512 Main-st , Peoria, Ill. St. Joseph, Mo.

Minn.

In this connection mention may be made of the exhibit to be made at the World's fair by the Smith-Premier Typewriter company. The company pays \$2,500 for the erection and fitting up of a booth 15x15 feet. This will unquestionably be one of the finest displays at

The following extract from the New York World is of interest:

WASHINGTON, March 27.-The War department of the United States at Washington desired to purchase 150 typewriters, and established a board of experts to pass upon all the typewriters in competion, and after a thorough examination it was decided that the Smith-Premier Typewriter, manufactured at Syracuse, N. Y., was the machine that stood the highest in point of improvements and mechanical construction, consequently the order for 150 typewriters was awarded to the Smith-Premier Typewriter company,"

The Associated Press of the state of New York has adopted the Smith-Premier typewriter, to the exclusion of all others, to be used in their telegraphic ervice in taking dispatches direct from the wire. Seven Smith-Premier typewriters are used daily in The Journal office. The first desideratum in a typewriter

is that it shall do good work at the highest practicable speed.

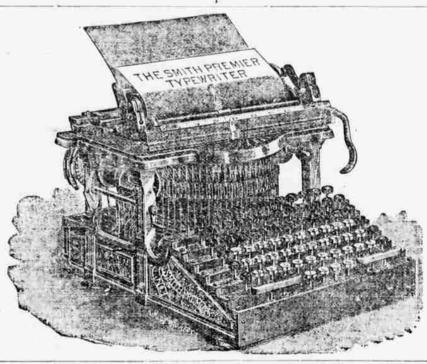
Second. It must be constructed of uch materials and in such a manner

are arranged identically the same as the lower-case, so that only one set of keys has to be learned, removing the only objection that has been persistently urged to a machine having a full complement

of keys. Other machines have a series of levers, made of wood, arranged side by side, with each key attached to a particular lever, which has made it impossible for other makers to produce a keyboard with the admirable arrangement which the Smith Premier Typewriter company has adopted. The keys have celluloid tops serewed upon a steel disc, which is rivited to a steel stem and will never become loose. The characters are inlaid in the keys, are thoroughly durable and present a very fine appearance. Two space keys are used, so that either hand may be employed in spacing.

The ribbon feed of this typewriter is a radical departure from old methods. A compound feed is used which feeds a ribbon one and one-hali inches wide squarely across its width at each line of printing. When the carriage is drawn back to commence another line, the ribbon is drawn lengthwise about the width of one type, consequently the entire surface is used. The time required to transfer or feed the ribbon from one spool to another is from two to four days of continuous writing. By thus using the entire surface of the ribbon, the center is not hammered more than the edges which is the cause of the ribbon curling on other weiting machines, and the color of the written sneets is kept uniform.

The type-cleaning device is a radical departure in the typewriting art, and it will be found to be the greatest labor saving invention which has been applied to typewriters since since introduction. The cleaning of the type of a type-bar machine is the most laborious and disagreeable work pertaining to its use. consequently they are run many times without cleaning, to the detriment of clean-cut work. With this device it is



that it will continue to do good and rapid work for a sufficient length of time to make it a profitable investment

it may be run a full day without excessive fatigue. Fourth. It must be simple in construction and not liable to temporary de-

Third. It must operate so easily that

rangement. Fifth. Its operation must be easily learned and require as few motions as

Sixth. Its type must be easily cleaned as good work is impossible when the type are filled or gummed with ink.

Seventh. Its ribbon, if it has one, must have a reliable feeding mechanism which will bring the whole surface of the ribbon in contact with the type with as little tension as possible.

Such are the essentials, and the machine which in the highest degree excels in these particulars is, in our opinion. the most desirable to use, the most profitable to buy, and the most readily sold. In the production of the Smith-Premier the manufacturers have tried to make it conform essentially to all the features enumerated above.

VALUABLE POINTS.

Persons Intending Purchasing a Good Type writer Should Carefully Read the Following. The mechanism of the Smith Premier

typewriter for transmitting the power from the key to the type-bar is entirely different from anything ever used on any other typewriter, and is pre-eminently superior to any other device ever invented for the purpose. It makes it possible to arrange the keys in straight rows in all directions; it makes it possible to arrange the upper-case or cap ital letter keys, in exact duplication of the lower-case or small letter keys; also makes it possible to use steel in the place of wood, as is practiced by other manufacturers. It is the most scientific manner for transmitting power, and it is the most durable arrangement possible. Each key of this machine has the same leverage as every other key, which is not the case with any other mechanism used for the purpose. It is the only arrangement yet known whereby it would be possible to make a double case typebar machine with a full complement of keys in as compact form as in this typewriter, and it does not necessitate superfluous room either in front or in the rear The Smith Premier typewriter has

shape of the keyboard is a regular rect- arrangement has the merit of simplicity,

the work of but a few seconds to clean the entire set of type perfectly. The work may be left in the machine, and by drawing the platen forward and introducing the crank, all the type may be brushed simultaneously by turning the crank a few turns in both directions, with no soiling of the hands, or any of the annoyance which follows the old process of benzine and tooth-brush application. The type-bars of this machine, in their normal position, form a circle, with the type facing inword. Just below is located the brush, which is fitted with a threaded shaft, and upon being turned with a detachable crank, rises up in contact with the type, and brushes the entire set. When the brush is in its normal position it is below and entirely out of the way of the type-bars in writ-

At five letters from the end of the line the alarm-bell rings as in other typewriters, the machine will then print Ive more letters or characters, when he entire system of keys is locked, and no more impressions can be made on the came line without releasing the lock. This prevents blotting the last word by striking several letters, one upon the other, and rulning an otherwise perfeet page.

The line space mechanism is different from others and more convenient. The lever for drawing the carriage back projects forward and downward, and is attached to a rock shaft which runs backward through the carriage frame. At the other end of the rock shaft is a pawl which engages with the annular rachet. wheel on the end of the platen. When taking hold of the lever and drawing the carriage back to commence a new line, the shaft is rocked and the pawl at its end turn the platen automatically a single or double line space, as may be desired, thus reducing the number of motions required in manipulating the

The printing mechanism of the typewriter is the foundation on which its success or its fallure depends. Any machine, however perfect the remaindero its parts may be, or how finely it is finished, if defective so far as its printing mech mism is concerned, will be a source of annoyance to its owner or user and to those who are compelled to decipher its work. By far the mo e successful printing mechanism for typewriters consists of a series of type-bars arranged in a circle, with type attached to their free seventy-six character keys arranged in ends, and so prvoted that they will all straight rows in all directions; the strike at a common printing point. Such

angle, and the lower-case letters are ease of operation and rapidity, but d white, while the upper-case letters, nu- ing to the inefficiency of the support merals and character keys are black. Its type-bars the allignment has be-The capital letter or upper-case keys far from perfect after having been particles. jected to steady work for any conside, ble time. However, its advantages ov balanced this defect to such an enter that it has been successfully manufe tured and used, but to those who he made the improvement of the Aypewria a study, this one defect has received large amount of thought, and many ventions have been made and patent to overcome it. This would be a vesimple matter if it was not for the for that friction must be almost entired climinated, and many devices have bed made which work almost perfectly u der favorable conditions and fail entire when slightly gummed by oil or cloggs by dust, cor osion or any of the nume ous causes known or unknown which prevent its successful operation.

A series of type-bars mounted up pivots, meet the requirements of an ear running and rapid mechanism, and to shorter the type-bar and the greater to distance between the bearings, the mo accurately they will strike after becoring worn; besides, the shorter bar wa work more rapidly and with greate case. With the old construction the length of the bar is determined by th number of bars to be used in the circle as the circle (of which the bar is th radius) must be large enough to receiv all the bars, consequently the distance between the bearings or pivots of th type-bars could be no greate than the circumterence of the circle di vided by the number of bars arrangearound that circle. The printing mechanism of the Smit

Premier typewriter, while consisting of a series of type-bars distributed in a chi cle and pivoted to strike at a commo printing point, is otherwise very differ ent from anything heretofore used, and a careful examination must convince any one of its superiority. The type-bar are mounted on hardened steel contest bearings 1 5-8 inches apart, as compare with 1-4 to 3-8 of an inch in other ma chines, making 41-8 times wider bear ings than its nearest competitor, while its type-bar is the shortest ever used on a double case machine. With the ole arrangement a series of type bars, 76 1 number, with bearings as wide apart a this machine, would require a type-ba ring over 39 inches in diameter wit type-bars 19 1-2 inches in length, whil' with the Smith Premier arrangemen the bars are but 2 7-16 inches in length With this short bar, with its bearing so far apart, the wear of years of stead use should not materially affect its al lignment; but if it should the user, with no other tool than a screw-driver, car eliminate all looseness occasioned by

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