SCIENCE AND INVENTION.

Work of the World's Busy Brains in Discovering, Inventing and Creating.

WORK OF THE PATENT OFFICE.

For the week ended Sept. 26, 1905, the Patent Office issued 489 patents, six designs, 154 trade-marks, five labels and one print; making a total of 655. Of these 415 patents and designs and 160 trade-marks went to citizens of the United States, and 44 patents to citizens of foreign countries.

A great deal of interest was felt all over the world in the wreck of the British steamer Chatham, carrying 90 tons of dynamite, in the Suez Canal. It was admitted that she would have to be blown up, and what the effect of this explosion would have upon the Suez Canal and the adjoining country, including the railroad, was gravely feared by many. The explosion has taken place, being caused by mines of gelatine distributed around and inside her hull, and fired from a point five miles away. There was an immense flood of water thrown quite high in the air, but neither the canal, the railroad nor the surrounding country suffered any damage. This was anticipated by those who were most familiar with dynamite and gelatine. Dynamite is an explosive of the highest power, but being so its effects are very circumscribed. That is, it explodes so quickly that all the damage that it causes is in its immediate neighborhood. It is unlike gunpowder, which burns so slowly as to spread its destructive effects over a wide area by taking the path of the least resistance. Dynamite does its work so suddenly that it has not time to seek for easier paths, and it wrecks that which lies immediately adjoining it.

At the recent Convention of the Roadmasters' and Maintenance of Way Association it is declared that the railroad bed and track had not at all kept pace with the development of the railroad system in other directions. It was said:

"It is difficult to imagine a mechanical appliance more crude and at once more complicated than the modern railroad track. Two parallel bars of steel fastened upon blocks of wood, which are in turn imbedded in loosely broken stone, possibly gravel, often mother earth. The improvement of the locomotive's highway has certainly failed to keep pace with the rapid advance of the locomotive itself."

It was pointed out the enormous strains upon the railroad bed made by the modern train which subjects the rails to the most powerful blows, in four or five different directions, some of them simultaneously, and all rapidly successive, but no radical plan of improvement was suggested.

The Germans are making much greater use of their canals than any other country, and finding them a cheap and convenient means of transportation. It would be well if people in this country would study up their methods and make a greater use of our canals and our unrivaled river systems. Recently a train of boats was towed along the Rhine which carried 17,000 metric tons of Mainz coal, or sufficient to load 850 flat cars. This gives German manufacturers and others coal very much cheaper than they could obtain it by rail transportation.

The pay car, with its objections and inconveniences, has been abolished on all but one or two of the larger railroads in the country and but a few of the smaller ones. In its place has been substituted the check system, which the men like much better. Every man's pay is forwarded him on the same day from the office of the treasurer, and the checks are willingly received by the banks and the stores with which the men do business. This insures a promptness impossible with the pay car, the movements of which were uncertain, and it was not uncommon for it to be 15 days behind time.

The fashion of photographers now who are striving to make effective pictures is to secure for a model a man with flowing hair and a long, white beard. If one can be gotten with black eyes and black eyebrows, so much the better. This gives the artist a big chance to work up striking effects in light and darkness.

There is no question that there is danger in working with the X-rays, which produce serious lesions of the skin and atrophy of certain glands. A device has been successfully used in the Bordeaux University which consists in placing the patient under a screen below the level of the bulb and doing the work through apertures in the insulation.

It is found that a large loss in the working of steam plants is caused by insufficient-sized pipes and imperfect drainage. This is now being remedied by having large steam tanks to equalize the pressure and to collect the drainage water.

The practice of having the designs of bridges and other steel structures made by the engineers and letting the contract to a manufacturer on a ton-price basis is now becoming the prevailing one with the railroads and other large corporations.

The life of a locomotive boiler should be from 20 to 30 years. The quality of the water supplied it affects this life, and consequently there is an increased care taken in purifying the water.

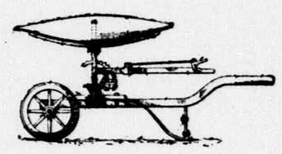
Since the introduction of the electrical furnace all of the oxids which were formerly regarded by chemists as irreducible have been successfully smelted.

Paper Clothing.

Paper fabrics are manufactured in several European countries, notably Saxony, where narrow strips of paper are spun into cloth. Paper and cotton spun together form a fabric suitable for Summer garments, while paper and woolen yarns are woven into heavier materials. The fabric is cream-colored, may be laundered without injury, offers remarkable resistance to water and is said to be low in cost. It is used chiefly for men's garments.

Wheelbarrow.

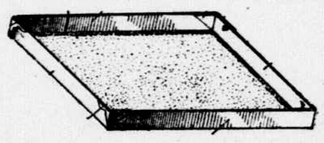
John Kaufmann, Prairie du Sac, Wis., has patented a wheelbarrow or hand-truck composed of a wheeled



frame with a stem to be rotated in a socket and a ratchet to raise the bed and dump it.

Sticky Fly Paper.

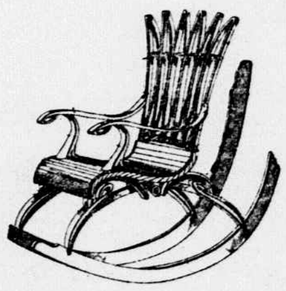
Stephen Boyd, York, Pa., has patented a sheet of fly paper which can be packed flat as usual, but when taken out for use has the edges arranged to



be turned up and the corners fastened together so as to form a flat dish or tray inclosing the sticky portion.

Chair.

John P. Hokans, Washington, D. C., has patented a bent-wood chair of peculiar design, and which is claimed to combine lightness with strength and comfort.



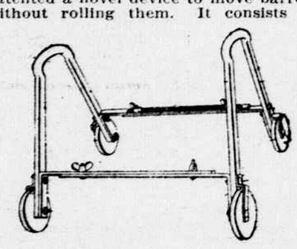
Mitten.

Lydia Frutchey, Martelle, Iowa, has patented a reversible husking mitten

having the thumb pieces adapted to be used alternately.

Barrel Roller.

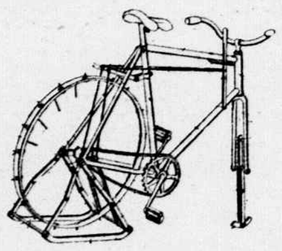
Clarence E. Bagford, Corwin, O., has patented a novel device to move barrels without rolling them. It consists of



A-shaped members resting on small wheels and adapted to grip the barrel, raise it and move it wherever desired with the least effort.

Ice Bicycle.

George W. Vaughan, Lenoir, N. C., has patented an ice bicycle which has runners at the rear, with a spur wheel between them operated by the usual



treadles and sprocket chain. The front bar carrying the handles ends in a small semi-circular device which rests upon the ice and by which the machine is steered.

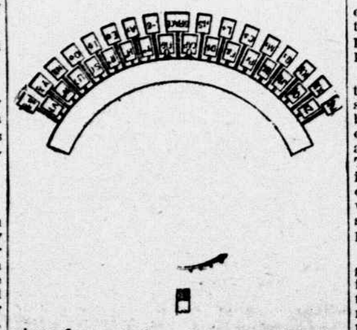
Metal Nut.

Daniel O. Ward, Oak Park, Ill., has patented a nut which has a flat working face and a groove extended through its

threaded opening and interrupted threads, so that those on one side are slightly offset from the plane of the other.

Typewriter for the Blind.

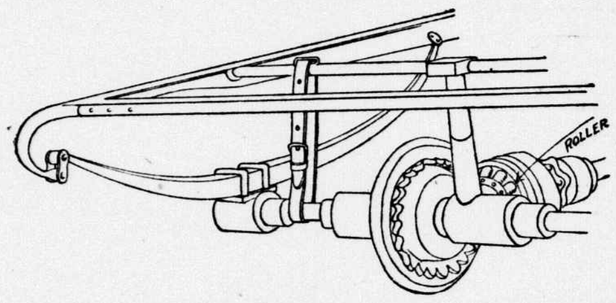
James B. Hammond, New York, N. Y., has taken out two patents for a typewriter for the blind, which has devices for a series of seven embossing characters which combined will form characters that can be read by the touch.



A NEW DRIVING GEAR.

A Device Which It Is Claimed Will Combine the Advantages of the Bevel Wheel and Sprocket Chain.

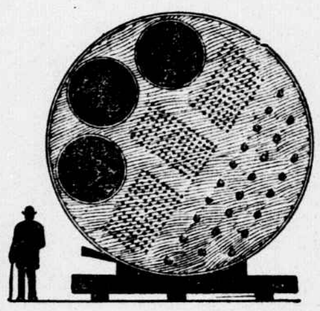
Neither the bevel wheel nor the sprocket and chain has been satisfactory as a driving device for bicycles and automobiles. The bevel gears have entirely too much friction, and other disadvantages have caused their abandonment for automobiles and prevented the extension of their use for bicycles. The Haynes-Apperson Co., of Kokomo, Ind., has brought out a device which, it is claimed, does away with the disadvantages of both the other systems and gives a minimum of friction in the working. It is styled the roller gear and sprocket. The sprocket is a modified bevel gear, avoiding the long, thin teeth found in ordinary bevel gears, and giving thereby much greater strength with a reduced tendency to break and an improved action. These teeth engage a bevel pinion on the driving shaft, which has teeth in the form of rollers. They are so planned that two rollers are always engaged with the sprocket teeth, giving the greatest amount of grip upon them. This gear is said to eliminate thrust and allow the force to be as directly applied to the driving wheel as by the sprocket and chain, without the disadvantages of the latter. The combination is enclosed in a dust-proof oil bath.



NEW ROLLER GEAR.

Largest Marine Boilers on the Great Lakes.

The largest marine boilers ever built for use on the Great Lakes have been recently completed at Toledo, O., and sent to Detroit, Mich., to the vessel for which they were intended. A special track had to be built to carry them to the pier. They are each 15 feet in diameter by 12 feet long, and



ONE OF THE 15-FOOT BOILERS.

contain three corrugated furnaces 44 inches in diameter by nine feet four inches in length, and containing 368 three-inch tubes. The shells of the boilers are 1⅝ inches, the heaviest iron ever put in marine boilers, and are riveted with 1⅜-inch rivets driven with 150 tons hydraulic pressure. The boilers are tested to 315 pounds, which gives them a safe working pressure of 210 pounds of steam.

INFORMATION BUREAU.

Balloon Varnish.

Editor National Tribune: I have some idea about building an airship. Can you tell me how to make the varnish they put over the gas-bag?—A. E. Withers, Muncie, Ind.

Boil together two gallons linseed oil, six ounces copperas, six ounces sugar of lead and one pound litharge, stirring constantly. When it strings well, remove from fire and when cold thin, if necessary, with drying oil.

Editor National Tribune: Can you give me a good recipe for a harness dressing?—Edwin A. Staples, Loogootee, Ind.

The following is the one adopted for harness by the Quartermaster's Department, U. S. A.:

One gallon neatfoot oil, two pounds mutton tallow, two pounds beeswax, two pounds beef tallow. Put the above in a pan over a moderate fire. When thoroughly dissolved, add two quarts of castor oil; then, while on the fire, stir in one ounce of lamp-black. Mix well and strain through a fine cloth to remove sediment; let cool, and you will have as fine a dressing for harness or leather of any kind as can be had.

Information Wanted.

A. W. Chapman, Box 263, Greenwich, N. Y., wants the name of the maker or makers of the three-wheeled gasoline runabout. That is, the model which has a detachable wheel to add to the ordinary motorcycle.

SCIENTIFIC NOTES.

Fifty years ago it took seven tons of coal to make a ton of iron. Mr. Carnegie has made a ton of iron with 1,500 pounds of coal.

The Government of Switzerland has planned to apply electricity to all the Government railway lines and to operate these lines from water-power plants, utilizing the mountain streams as a source of energy. Two experts have been sent to the United States to study electric-railway methods.

The Suez Canal is now twice as deep and wide as it was 20 years ago. The work of deepening the canal will continue until a depth of 30 feet throughout is attained. From Suez to El Ferdan, 28 miles, the bottom width is 126 feet instead of 118 feet, its former width. The bends of the canal have also been corrected, so that the width of the water surface of the northern half is 295 to 350 feet, and of the southern half 230 to 300 feet.

Mr. J. K. Hill, an Englishman, found a piece of iron between two stones while blasting in the pyramid of Cheops. It is the oldest piece of iron in existence, and is preserved in the British Museum.

The United States produces the largest amount of silver of any country in the world. The famous Comstock Lode produced ore containing from 60 to 80 per cent pure silver.

In a lecture before the Royal Institute in London, an English scientist showed a new exact way of timing the boiling of eggs. The egg was suspended from the beam of a pair of scales and dipped in a pan of boiling water. The sand from an hourglass trickled into the scale which hung from the other end of the beem until the egg was cooked. Then the weight of the sand lifted the egg out of the saucepan and rang an electric bell.

The entire modern steel industry has grown out of the application of chemistry to the mechanical arts. You can tell the steel manufacturers that you require a thousand tons of pig iron 2 per cent carbon, less than 0.1 per cent phosphorous, 2½ per cent silicon and no sulphur. He can make it with the accuracy of a chemist mixing a patent medicine.

WAR OF THE REBELLION.

(Continued from page 1.)

defend the road leading across the Big Black from Hall's and Baldwin's Ferries; with Stevenson's Division on his right to oppose any advance up the river and Bowen's sent to Bovina Station to defend the important railroad bridge there. It was possible that Grant might make a raid against Jackson, and the troops which were being ordered from more remote points were to stop there and defend that city.

Pemberton Proposes, Grant Disposes.

While Gen. Pemberton was occupying the time with these futile dispositions Grant was rapidly maturing his plan. He sent a letter from Grand Gulf to Banks telling him not to expect help from him to reduce Port Hudson, but to come on himself with his troops and join the Army of the Tennessee, when, after disposing of Vicksburg, the army would return and take Port Hudson.

Sherman's Corps had come across the river from Hard Times Landing, its place guarding the line of communications having been taken by troops sent from Memphis by Gen. Hurlbut, who stripped the defenses of his division to the last degree of prudence in order to reinforce Grant. Sherman brought forward some 200 wagons loaded with coffee, sugar, hardtack and ammunition. These were distributed in proper proportion to the various commands, and the line of supplies to the rear was abandoned, the army being instructed that it must for a while get all that it needed in addition to these from the surrounding country. The men found no difficulty in doing this, because hogs, cattle, sheep, poultry and forage abounded, and as they moved constantly forward they found every day fresh supplies and left an exhausted country behind them.

Gen. Grant sent a message to Halleck from Grand Gulf informing him of what he had done and that he had cut off his communications for the time being. The receipt of the message created not a little consternation in Washington, where the Administration was deeply depressed by the unfortunate issue of Hooker's battle at Chancellorsville, and Gen. Halleck hurried a message back ordering Gen. Grant to withdraw from his advanced position and unite his army with that of Gen. Banks.

With his three corps now well in hand Gen. Grant pushed forward for Jackson, 50 miles east of Vicksburg, to strike Joe Johnston and crush him before he could collect a formidable force. It was reported that Beauregard was arriving with heavy bodies of troops.

As Gen. Grant moved he kept up the show of striking at Vicksburg, to confirm the impression that dominated Pemberton's mind. Gen. McClernand, having so often disappointed Gen. Grant's expectations, was not allowed to take the right of the army in the advance upon Jackson, but this was entrusted to the more energetic and reliable McPherson. Gen. McClernand, with his corps, was to have the general left of the army, moving up the Big Black, cover the ferries and prevent any raid across that river toward the rear, and to generally act as if he were moving against Vicksburg. Gen. McPherson was to move out strongly to the right, taking the most direct road to Jackson through Rocky Springs, Utica and Raymond. Sherman was to follow McClernand, moving generally so as to keep in touch with McPherson on the right and McClernand on the left, the expectation being that he would eventually join with McPherson in the attack upon Jackson.

There was much natural anxiety as to what might be encountered at Jackson, as it was a great railroad center, and the maneuvers of the army had developed far enough to give widespread alarm to the Confederates. No doubt Jefferson Davis and Joseph E. Johnston would hurry to Jackson troops from as far east as Georgia and Florida. Jefferson Davis had said that he would save Vicksburg, even if he had to abandon Tennessee; and this meant that the whole of Bragg's army might be rushed down to overwhelm Grant. Some troops were, in fact, sent from Bragg's army, and Gen. Joe Johnston, who had been upon a sick-bed at Chattanooga for some time, was peremtorily ordered to proceed to Jackson and take command in the field.

The Battle of Raymond.

On the night of May 11, 1863, Gen. Grant had his army well in hand, with the Thirteenth Corps (McClernand's) at Five Mile Creek threatening Pemberton, whose advanced forces were behind Fourteen Mile and Baker's Creeks as outposts for those at Edward's Station. It was Grant's policy to keep Pemberton in this position, and McClernand had advanced until his skirmishers were in touch with those of the enemy; Sherman, on McClernand's right, at Auburn, and McPherson with the Seventeenth Corps on the road from Utica and Raymond, having advanced five miles from Utica.

At 1 o'clock of May 11, 1863, Grant sent to Gen. McPherson the following order, which as a model of the clearness and explicitness of Grant's orders to his subordinates during this campaign is worth reproducing entirely. It read:

"Cayuga Post Office, Miss.,
"May 11, 1863; 1 p. m.

"Maj.-Gen. J. B. McPherson, Commanding Seventeenth Army Corps:

"Move your command tonight to the next crossroads, if there is water, and tomorrow with all activity into Raymond. At the latter place you will use your utmost exertions to secure all the subsistence stores that may be there, as well as in the vicinity. We must fight the enemy before our rations fail, and we are equally bound to make our rations last as long as possible. Upon one occasion you made two days' rations last seven. We may have to do the same thing again. I look to you to impress the necessity of this upon your Division and Brigade Commanders and through them upon the troops.

"One train of wagons is now arriving, and another will come with Blair, but withal there remains the necessity of economy in the use of the rations we have and activity in getting others from the country.

"Sherman is now moving out on the Auburn and Raymond road, and will reach Fourteen Mile Creek tonight. When you arrive at Raymond he will be in close supporting distance.

"I shall move McClernand to Fourteen Mile Creek early tomorrow, so that he will occupy a place on Sherman's left. I will either see you myself tomorrow at Raymond or send you further instructions to that place.

"U. S. Grant."

Pemberton made another of his errors in sending Gregg with a brigade to Raymond to cover Jackson and strike Grant in the flank and rear when he attacked Edward's Station. Other troops were sent to Gregg until he had some 6,000 men. McPherson moved promptly at 4 o'clock on the morning of May 12, with Logan's Division in the lead and Crocker's following. Gen. Gregg had taken up a strong position behind a branch of Fourteen Mile Creek, which had now about two and a half feet of water in it, with steep banks on the sides and the ravine heavily wooded with dense undergrowth. The enemy's pickets were soon encountered, and about 9 o'clock considerable bodies of the enemy appeared on the road to dispute the advance. Logan formed Dennis's Brigade across the road with the other two brigades marching in support, while McPherson went with the only cavalry regiment to reconnoiter the country on the flanks. About 11 o'clock Logan came in sight of Gregg's position, and discovered that he had two batteries so posted as to enfilade the road and the bridge.

Logan's Second Brigade, which he had placed across the road, was commanded by Brig.-Gen. Elias S. Dennis, who had recently been assigned to it, and consisted of the 30th Ill. and the 20th, 68th and 78th Ohio. For the battle Logan formed on the right of Dennis his First Brigade, commanded by Brig.-Gen. John E. Smith, who had succeeded Brig.-Gen. I. N. Haynie. It consisted of the 20th, 31st, 45th and 124th Ill. and the 23d Ind. Battery H, 1st Mich. L. A., commanded by Capt. Samuel DeGolyer, took up its position on the road to engage the rebel battery which commanded the bridge and the road. Brig.-Gen. Stevenson's Brigade—the 8th and 81st Ill., 7th Mo. and 32d Ohio, was deployed on the right of Smith. The line advanced and gained the possession of a piece of woods on the creek bank within range of the enemy, where a sharp fight opened, lasting two or three hours, with the line gradually working forward until in the afternoon Crocker's leading brigade arrived on the field and deployed to the left in support of Dennis. This struck the enemy's flank and Gregg had to give way and retire, which he did in good order and was pursued by Logan through Raymond to some distance beyond the town, where night stopped further advance. Logan lost 65 killed, 335 wounded and 32 missing out of his division, a total of 432. Crocker's Brigade lost but two men. Gregg reported his loss as 73 killed, 229 wounded and 204 missing, a total of 505, which speaks well for the superiority of the fire of the Union troops, inasmuch as the Confederates had greatly the advantage of position.

McPherson Cuts the Railroad.

The sharpness of the fight induced Grant to modify his plans somewhat, and instead of advancing directly upon Jackson he ordered McPherson to turn north and cut the railroad at Clinton, so as to make sure of no interference by Pemberton. He therefore sent out orders to Sherman to move to Raymond and thence by Mississippi Springs directly upon Jackson, while McClernand was to follow with three divisions and send his Fourth Division back to Auburn to guard the trains and to occupy Pemberton's mind and keep him at Edward's Station.

After cutting the railroad at Clinton McPherson was to turn eastward and join with Sherman in the attack upon Jackson.

On the morning of the 13th McPherson pushed forward briskly, as was his wont, reached Clinton about 2 o'clock, tore up the railroad and captured important messages and letters giving valuable information as to Pemberton's movements and dispositions and that Johnston had arrived at Jackson and was making energetic efforts to meet the situation.

The capture of Clinton was an exceedingly important move, as it cut off Johnston and Pemberton from ready communication and defeated Johnston's efforts to get Pemberton to march at once to him at Jackson with 35,000 or 40,000 men, which Pemberton could have done, and the consequences would have been serious to Gen. Grant's army. Pemberton had probably more men well in hand at Edward's Station and immediately around it than Gen. Grant had in his three corps, and if at that time Pemberton had attacked with resolution it would have made a very critical situation. He kept vacillating, however, at one time being persuaded that Grant's movements on Jackson were merely a feint to cover a heavy blow at him and Vicksburg, and at the next trying in a half-hearted way to obey Johnston's orders to join him. He held councils of war, at which the confusion of his mind was increased. His last decision was to hold the position at Edward's Station against the division which McClernand had thrown forward as if threatening an attack.

Gen. Joseph E. Johnston had arrived at Jackson on May 13 and found there Gregg's and Walker's Brigades arriving from Raymond. Johnston had brought with him two brigades from Bragg's army, and other troops made a total which has been variously stated from 11,000 to 20,000 effectives.

Grant at once closed McClernand up on Sherman and McPherson, withdrawing even the last division from the front of Pemberton, which fired a few volleys into Pemberton's lines by the way of a farewell and to express their sentiments as they bade good-by.

The night of April 13 was a tempestuous one, with the rain coming down in torrents; but the Army of the Tennessee had become accustomed to marching through that sort of weather, and pressed on unmurmuringly and with the swift, certain step that they had learned in years of experience with those conditions.

The rise of the sun on May 14 gave Gen. Joseph E. Johnston the heart-sinking revelation that no time was to be allowed him for preparations, since the hills to the west and south of Jackson were swarming with Sherman's and McPherson's men, batteries were coming into position, and there was every indication of a prompt attack upon him. He telegraphed to Richmond: "I am too late."

(To be continued.)

Naval Veterans at Denver.

There was a large attendance of the Naval Veterans at a Reunion held at Denver during the G.A.R. Encampment. All the different Squadrons were represented, and nearly every vessel in the Western Flotilla.

The local Committee provided headquarters, also a band for our parade, and extended other courtesies to our people. Comrades Francis B. Allen, of Hartford, Conn.; W. F. Comstock, of Denver; W. L. Palmer, of Carthage, S. D., and J. W. Hammond, of Louisville, Ky., were conspicuous in their interest for the success of the Reunion, which was held under the auspices of the Flying Squadron of Naval Veterans, and to which all naval veterans are eligible for membership.

Officers elected: Commander, William Simmons, Philadelphia; Lieutenant-Commander, John W. Don, Morocco, Ind.; Secretary, John Black, Cincinnati, Ohio; Treasurer, W. F. Comstock, Denver, Colo.; Chief of Staff, Wm. L. Palmer, Carthage, S. D. Headquarters will remain at Philadelphia, where arrangements will be made for a Reunion at Minneapolis next year during the G.A.R. Encampment.

Too Much Cornstarch.

(Lippincott's Magazine.)

Little Johnnie doesn't like to be kissed, but sometimes he is compelled by some gushing friends of his mother to submit to the ordeal. The last time they called he went through the operation as gracefully as possible, but after their departure he remarked, vigorously rubbing the powder from his face meanwhile: "Mamma, I don't like to have them kiss me. It tastes just like kissing a marshmallow."

The Argumentative Man.

"But, my dear fellow, I tell you it's impossible for the moon to be inhabited. When it is full it is all right, but when it wanes down to a little crescent, where the deuce would all the people go to?"

How a Woman Paid Her Debts.

I am out of debt, thanks to the Dish-washer business. In the past three months I have made $60.00 selling Dish-washers. I never saw anything sell so easily. Every family needs a Dish-washer and will buy one when shown how beautifully it will wash and dry the family dishes in two minutes. I sell from my own house. Each Dish-washer sold brings me many orders. The dishes are washed without wetting the hands. That is why ladies want the Dish-washer. I give my experience for the benefit of any one who may wish to make money easy. I buy my Dish-washers from the Mound City Dish-washer Co., 3685 A O La Clede Ave., St. Louis, Mo. Write them for particulars. They will start you in business in your own home. L. A. C.

I Print My Own

Cards, circulars, etc., with a $5 press. Small newspaper press $18. Money saved. Money making business anywhere. Type-setting easy by the printed instructions sent. Write to factory for illustrated catalog of presses, type, paper, etc. THE PRESS CO., Meriden, Conn.

VENTRILOQUISM

Learned by anyone at home. Small cost. Send 2c stamp for particulars and proof. O. A. SMITH, Box W, 2840 Knoxville Ave., Peoria, Ill.

$35 A WEEK AND EXPENSES to men with rig to introduce our Poultry Goods. THE ORWON CO., Dept. 25, Parsons, Kans

A Truss Free Send your waist measure and a stamp for particulars. DR. FLANDERS, Burlington, Vermont.

ONECO

The Great Natural Remedy—A Sure Relief and Cure for Indigestion, Dyspepsia and All Stomach Trouble.

We should be pleased to send you a trial with full particulars for ten cents to pay postage and to advertise; perfectly harmless; try it. UNCAS REMEDY CO., D, 28 School Street, Boston, Mass.

PATENTS==PENSIONS

Consultation Free. Contingent Fees.

Solicitors wanted.

"The firm is worthy of confidence upon the ground both of competency and honesty."—THE NATIONAL TRIBUNE, April 1, 1897. Founded 1864 by Milo B. Stevens, 14th Ohio Battery. MILO B. STEVENS & CO., 839 14th St. N.W., Washington, D. C. Branches at Chicago, Cleveland, Detroit.

Get This Gold Pair FREE

Listen! In the past year I received thousands of letters from spectacle-wearers all over the world, expressing their thanks and appreciation, and the one I give here is a good sample of what they all say. The Reverend O. C. Clark, one of the most prominent ministers in the State of Illinois, says: "I highly appreciate your famous "Perfect Vision" spectacles, for I can honestly and truthfully say that with them I now read the finest and smallest print both day and night, just as well as I ever did in my life. Your spectacles are truly marvelous." Now I have no doubt but that the testimony of this noted minister of the gospel is sufficient proof to every fair minded spectacle-wearer that my famous "Perfect Vision" spectacles are really THE BEST IN THE WORLD, as I claim.

But I Want YOU to Judge Them For YOURSELF

and thereby get YOU to send me YOUR testimonial also. Hence, before placing them on the market for sale at their regular price of $5 per set, I make you the following special offer which will actually save you $4 cash: Just write me your name and address and I will mail you my Perfect Home Eye Tester, free, with which you will be able to test your eyes at your own home, perfectly. Then when you return me the Eye Tester with your test, I will send you a complete five dollar family set of my famous "Perfect Vision" spectacles for only $1 (which is an actual saving of $4 to you), and this will include a pair of my handsome Rolled Gold Spectacles absolutely free of charge. This set will last yourself and family a lifetime. With these famous "Perfect Vision" Spectacles of mine you will be able to thread the finest needle and read the smallest print, both day and night, just as easy as you ever did in your life, and this even if your eyes are so very weak now that you cannot read the HEADLINES in this paper. I also hereby agree to return you your dollar cheerfully if you YOURSELF don't find them to be the most perfect-fitting, clearest and best you have ever bought anywhere, at any price. Write today for my free Home Eye Tester. Address my company as follows:

DR. HAUX SPECTACLE COMPANY, Haux Building, ST. LOUIS, MO.

I WANT AGENTS ALSO And any man or woman (also storekeepers), without any previous experience whatever, can fit the weakest eyes with my improved Home Eye Tester. This is so simple that any one can work it with perfect satisfaction and easily earn from $25 to $100 weekly selling my famous Perfect Vision Spectacles, either in their own homes, traveling or in stores. My agents need no license as I furnish necessary documents with the Agent's Outfit.

(NOTE.—The above is the largest Mail Spectacle House in the United States and perfectly reliable.)

I CURED MY RUPTURE

I Will Show You How To Cure Yours FREE.

I was helpless and bed-ridden for years from a double rupture. No truss could hold. Doctors said I would die if not operated on. I fooled them all and cured myself by a simple discovery. I will send the cure free by mail if you write for it. It cured me and has since cured thousands. It will cure you. Write to-day. Capt. W. A. Collings, Box 23 Watertown, N. Y.

Memorial Records.

Soon after the close of the war of the rebellion a patriotic Philadelphian, Mr. W. C. Strickler, commenced the collection and the systematic arrangement of data concerning the war, giving particular attention to facts that do not appear in official reports. This work was continued, diligently and conscientiously, for more than 25 years, and the collection is now simply wonderful in its extent and accuracy.

Mr. Strickler's collection embraces all the official information to be found in the U. S. War Department and in possession of the different States, and in addition, and just as valuable, the many important facts omitted, by mistake or haste, from official reports. Mr. Strickler's collection is, in fact, the most valuable collection that has been made.

The practical use that has been made of all this information has been in the preparation of accurate and full records of service. Mr. Strickler organized the Army and Navy Record Co., of Philadelphia (with a branch office at times in Washington), and for many years has been a busy man in preparing the only complete and satisfactory Memorial Records that we know of. Thousands of comrades have them. Prominent officers ordered them, as well those in the ranks.

Following will be found copies of a few letters that Mr. Strickler is very proud of:

From President Grant:

They will be a satisfaction to the family and descendants of the soldier or sailor, and a positive benefit to himself while living, and I give to the system my unqualified approval. U. S. Grant.

From President Hayes:

Your design for expressing, and method of preserving, the items of military service, meets with my hearty approval.

Very truly yours, R. B. Hayes.

The Memorial I ordered from you gives entire satisfaction to myself and friends. It gives me pleasure to commend it as a compact and pleasing method of transmitting to my children the record of military life.

Very truly yours,
P. H. Sheridan, Lieutenant-General.

I am very much pleased with the Memorial and I would not part with it under any circumstances.

Very truly yours,
Anson G. McCook, Secretary U. S. Senate.

From the U. S. Senator of Michigan:

I received the Memorial of army service and am delighted with it. I never paid a bill more cheerfully.

Yours truly, J. C. Burrows.

You have beautifully epitomized the Admiral's naval career.

Mrs. Virginia L. Farragut, Widow of the Admiral.

Gentlemen: It is with pleasure I add my testimony to those of many of my comrades to the merits of the "Memorial of Service" I ordered of you. It is entirely satisfactory in all particulars, the workmanship and design are of the highest order, and the statistics accurately compiled. It is something every honorably discharged soldier or sailor should have in his home, that the loyal service he gave his country in the trying days of the rebellion may not be lost to his descendants.

Robert B. Beath, Past Commander-in-Chief, G.A.R.

Mr. Strickler is still a vigorous man, but no longer young. In recent years he has shown great solicitude as to the fate of his collection and records—the work of a lifetime—when he is gone. We have shared that anxiety, in fact, for it would be a great loss if they were divided and dissipated.

The outcome has been that The National Tribune has purchased the collection and records, and with it they have secured the services of Mr. Strickler. The National Tribune will continue to supply Memorial Records, such as have been supplied by the Army and Navy Record Co., under the direction of Mr. Strickler.

The following copy of a record will show how complete these records are:

CHARLES REICHMANN.

Entered the service as a private of Co. E, 128th Pennsylvania Infantry Volunteers, Aug. 10, 1862.
Promoted to Corporal, April 1, 1863.
Wounded at Chancellorsville, Va., May 3.
Mustered out May 19, 1863—expiration of term.
Moved to Washington, D. C., Aug. 17, 1862.
Duty on Arlington Heights, Va., to Aug. 21.
At Fairfax Seminary, D. C., to Aug. 29.
At Fort Woodbury, Defenses of Washington, to Sept 3.
Served in the First Brigade, First Division, Twelfth Army Corps, Army of the Potomac, September, 1862, to May, 1863.

Service.

Maryland Campaign, Sept. 3-20, 1862.
Marched to near Rockville, Maryland, Sept. 3-5.
In line of battle near Rockville, Sept. 6-9.
Marched to South Mountain, Sept. 9-14.
In line of battle on Antietam Creek, Sept. 16.
Battle of Antietam, Sept. 17.
In line of battle, Sept. 18.
Marched to near Sandy Hook, Sept. 19-20.
Duty on the Upper Potomac River from Harper's Ferry, W. Va., to Antietam Creek, Md., and fatigue duty on Maryland Heights, to Dec. 10.
Marched to Fairfax Station, Va., Dec. 10-14.
Duty at Fairfax Station, Dec. 29, 1862, to Jan. 19, 1863.
Picket and fatigue duty at Stafford Court House and garrison of the post at Dumfries, Va., Jan. 22 to April 23.
Chancellorsville Campaign, April 27 to May 9.
Crossed the Rappahannock River at Kelly's Ford, and took the advance of the column to the Rapidan, crossing it April 29.
Advanced to Chancellorsville, skirmishing through the Wilderness, April 30.
Battle of Chancellorsville, May 1 to 3, 1863.
Duty in the intrenchments, May 4 to 6.
Relieved from duty, May 9, by special order No. 105, Headquarters Twelfth Corps, and ordered home to be mustered out.

If Comrade Reichmann had preferred it he could have had the roster of his company in place of the service of his regiment.

We have the complete records for 1,600 regiments and the data for completing all the others. We have complete records for all vessels.

The record for each soldier or sailor is specially written in a center panel, the lettering in aluminum. The borders of the record show all corps badges, also flags and the American eagle—all very tastefully printed in 10 colors.

The price for a record is $5, and we wish to say that this is a very reasonable price. Each record has to be specially prepared and represents a lot of careful labor.

We have so much confidence that comrades will be pleased that we are free to say that if the Memorial Record sent to any comrade is not satisfactory he can have the return of his money.

To any comrade who would like the Record, but cannot spare the money, we propose that he send us a club of 10 yearly subscribers at $1 each, and receive the Record as a premium.

Address THE NATIONAL TRIBUNE, Washington, D. C.