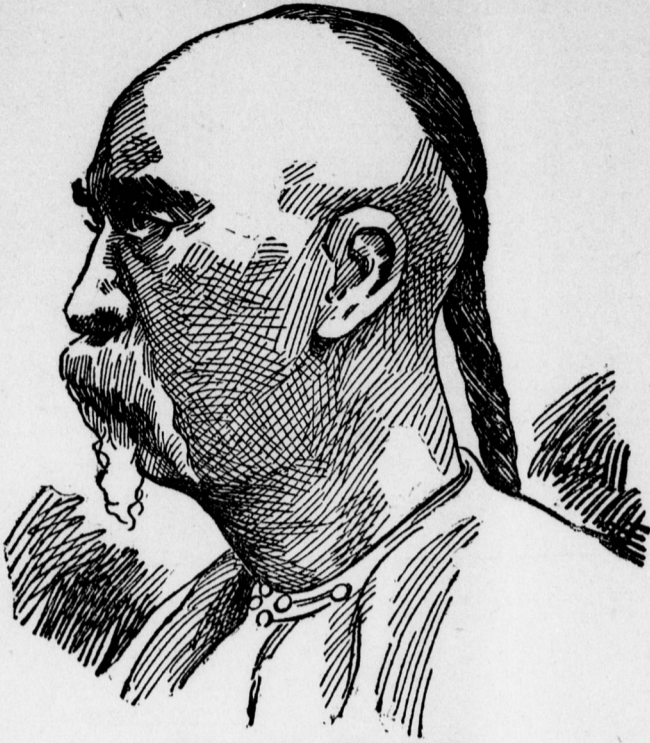


THE PASSING OF LI HUNG CHANG.



BORN IN 1823; DIED IN 1901.

When General Grant was returning from his famous journey around the world, he said: "I have met on this journey four great men—Bismarck, Beaconsfield, Gambetta and Li Hung Chang. I am not sure, all things considered, but Li is the greatest of all the four." John Russell Young, one-time Minister of the United States to China, has made this fine wood picture of the wonderful one-man power in the Chinese nation: "I see in him an historical figure of the century—the one Chinese statesman with the presence and courage to lead his people toward what is best in our Western civilization; a masterful, intrepid spirit, who has done his work with fortitude."

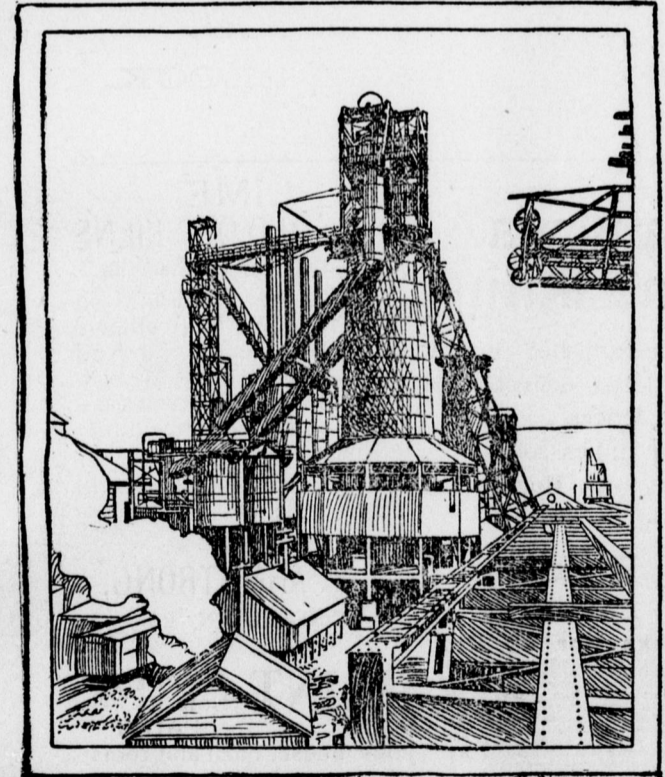
American Steel.

By Waldon Fawcett.

STEEL, that most useful and, after all, the most valuable of metals, is so pre-eminently the most important of the products of Uncle Sam's energy, that its superiority has come, of late years, to be universally recognized.

The age of iron has passed and the industrial and commercial world now lives in the age of steel. The latter metal is, of course, an outgrowth of that which was once supreme in the manufacturing world in that the iron ore must first be converted into pig iron ere it can attain to the dignity of classification as steel; but the latter commodity is tougher and more elastic, and so it is preferred for the construction of buildings and bridges and ships and, indeed, everything where great strength is required. When steel first came into popularity it cost much more to produce a ton of steel than to turn out the same amount of iron, but a gradual cheapening of processes has been going on, and now the disparity is not nearly so great.

To follow a car of ore in its journey through the modern steel making plant is to witness a constant succession of the most stirring incidents and the most dramatic pictures to be found anywhere on the globe. The iron ore, arriving from Nature's wonderful storehouses in the Northwest, a train load at a time, is unloaded by means of iron buckets, each holding more than a ton of ore, which spin back and forth along structures that resemble miniature suspension bridges and carry the



A MODERN BLAST FURNACE. (Stoves in the background.)

dark red material to the foot of the blast furnaces. Here small cars running on an inclined railroad take the ore and ascend with it to the top of the blast furnace and, upon reaching the summit, an ingenious mechanical device overturns the car and tumbles its contents into a great fiery pit which yawns below.

a ton and a quarter of coke and half a ton of limestone are required for each ton of molten metal produced, it will be appreciated that the operation of a single blast furnace is no inconceivable enterprise.

In the tapping of a blast furnace there is presented the first of those thrilling pictures which have no coun-

terpart in any other field of activity. A handful of men, pitifully pigmy in appearance beside the towering furnace with its tiny, glowing white eyes, thrust and wrench and pound until an incision is made low down in this great tank of burning metal, and then spring quickly out of the way in order to avoid the stream of scalding metal which spurts from the opening, looking for all the world like a luminous porridge.

This liquid iron, newly escaped from the boiling pot, is a deceitful quantity. Apparently it is slow and sluggish in its movement, and yet it burns its way forward with insidious and surprising rapidity. The workmen in charge, black, half-naked figures silhouetted against a glowing background, either guide the furious stream into ponderous kettles which stand awaiting it on the railroad cars near by, or else they allow it to furrow its way to little channels cut in the sand.

A few years ago all the iron from a blast furnace ran into the hundreds of little troughs, each about three feet long, which dotted the sand floor all about the flame-spitting tower, and when the metal had become quite cold each tiny trench contained an unsightly bar of iron appropriately designated as a "pig." However, inasmuch as the very next step in steel-making is to get this metal back into the molten shape, the shrewd ironmongers who were ever seeking every possible way to save money in the process, concluded that it was simply a waste of time and money to let the pig-iron cool at all, and now the molten metal

ladles hoisted hither and thither by long, gaunt arms of steel, may slip from its place and drown hapless victims in a molten cataract; or some wriggling, snake-like cable of burning steel may snarl and tangle and,

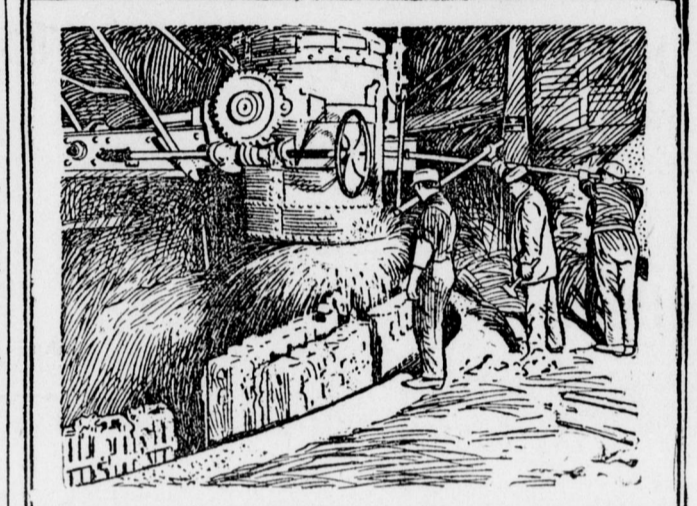


ROLLING IRON.

without an instant's warning, wrap itself around some bystanding workman before he can even turn to escape.

It is by the conduct of steel-making on so heroic a scale that the United States is being enabled to capture the steel markets of the world. Last year she sent abroad nearly \$118,000,000 worth of iron and steel, an increase of one-fourth over that of the two previous years, and it was distributed amongst all the countries on the globe.—The Book World.

Safety Blind For Horses.
When you want to get a frightened



POURING MOLTEN IRON INTO MOULDS.

is trundled away in broad-mouthed kettles to the steel-making plant. It is essential at this juncture to introduce the reader to the two different methods of steel-making—the Bessemer and the "open-hearth" processes, as they are respectively termed. Up to this point the transformation of the iron is invariably exactly the same, no matter what its ultimate destination may be; but with the end of the journey of the railroad train loaded with half a dozen kettles each containing full twenty tons of the bubbling, red-tinted mass, comes the parting of the ways.

From a spectacular standpoint, the Bessemer process is the more interesting. Each kettle of molten iron, as it arrives from the blast furnace, is poured into a still larger caldron known as the "mixer," where it boils and sizzles in company with the contents of other kettles for quite an interval of time. Next it comes to a "converter," an egg-shaped receptacle of herculean size and strength, and here once more it undergoes purification by means of another terrific blast of air, forced upward through the mass with such violence that the top of the "converter" literally resembles a volcano in action. When the purification by this heroic method is completed, the molten mass is ready to be poured into the ingot moulds, where it hardens in the form of blocks, each weighing five tons.

The "open-hearth" method is less impressive in the eyes of the onlooker, but it results in the production of a better grade of steel. Formerly it was so much more expensive than the Bessemer process that few consumers of steel could afford to pay the price exacted, but here, as in all other branches of steel making, costs have been shaved very heavily of late years. In the open-hearth plant, instead of a "converter," there are long lines of furnaces that look like bake ovens and in which miniature seas of white metal, so intensely hot that you cannot gaze upon it save through blue glasses, boil and bubble, like lime in the mortar box before some building in course of erection.

Cast into ingots, these are allowed to cool in their moulds, and are then once more thrust into a bath of flame and for the last time reheated. Thence the metal may be fed into the enormous jaws of giant rolls which flatten it into plate of various size; it may be pressed into armor for battleships by means of huge presses, or it may be squeezed into long slender strands that are ultimately cut into bars or railroad rails. All the while it remains red hot and water must be continually poured over the machinery, with the result that every time the rolls "bite" a slab of iron to force it into some thinner form, there is a report like the discharge of a cannon.

It may be stated advisedly that nowhere among the world's workers are there men who hourly brave death in such terrible form as it is presented to the steel workers. A blast furnace may "break-out" and engulf the poor, helpless mortals at its base in an ocean of annihilating flame; one of the giant

horse out of a burning stable a blanket thrown over its head renders it as docile as though there were no fire, and why shouldn't the same idea be applied to a runaway horse on the road? In the illustration we show this idea carried out under the invention of Daniel Connerth and Josef Rothweiler. In order that the appliance for manipulating the blinds may not interfere with the control of the horse on ordinary occasions a separate pair of cords is provided, leading back to the carriage. The blinds are held normally open by springs on the bridle,

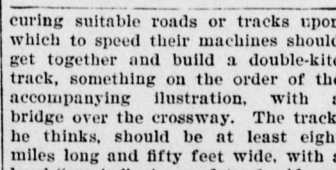


COVERS THE EYES OF A RUNAWAY ANIMAL

being hinged to the side straps. A pull on the cords throws a lever out from the rear portion of the hinge and presses the blinds over the eyes, thus shutting out the vision of whatever has frightened the animal. As soon as the pressure is released on the cords the blinds resume their normal position by the action of the springs.—Philadelphia Record.

Automobile Racing Track.

A correspondent in the Horseless Age suggests that some of the rich automobile owners who are constantly grumbling at the impossibility of securing suitable roads or tracks upon which to speed their machines should get together and build a double-kite track, something on the order of the accompanying illustration, with a bridge over the crossway. The track, he thinks, should be at least eight miles long and fifty feet wide, with a level "run-in." A grandstand midway, he says, would give a commanding view of the whole course.



SUGGESTED AUTOMOBILE TRACK.

Paris has always paid \$13,500 a year to the detectives who guard the President of France, but has refused to do so longer, and the national government has assumed the task. Twelve detectives are hired for the purpose.

The present growth of London's population is 2500 a month.

DR. TALMAGE'S SERMON

SUNDAY'S DISCOURSE BY THE NOTED DIVINE.

Subject: The Power of Hope—No Better Medicine Did a Man Ever Take—Forgive the Repentant—The Perfect Life to Come—Cultivate Hope.

[Copyright, 1901.]
WASHINGTON, D. C.—In this discourse Dr. Talmage would lift people out of depondency and bring something of future joy into earthly depression; the text is Hebrews vi, 19, "Which hope."

There is an Atlantic Ocean of depth and fullness in the verse from which my text is taken, and I only wade into the wave at the beach and take two words. We have all favorite words expressive of delight or abhorrence, words that easily find their way from brain to lip, words that have in them mornings and midnights, laughter and tears, thunderbolts and dewdrops. In all the lexicons and vocabularies there are few words that have for me the attractions of the last word of my text, "Which hope."

There have in the course of our life been many good angels of God that looked over our shoulders, or met us on the road, or chanted the darkness away, or lifted the curtains of the great future, or pulled us back from the precipices, or rolled down upon us the rapturous music of the heavens, but there is one of these angels that has done so much for us that we wish throughout all time and eternity to celebrate it—the angel of Hope. St. Paul makes it the center of a group of three, saying, "Now abideth faith, hope, charity." And, though he says that charity is the greatest of the three, he does not take one plume from the wing, or one ray of luster from the brow, or one aurora from the cheek, or one melody from the voice of the angel of my text, "Which hope."

That was a great night for our world when in a Bethlehem caravansary the Infant Royal was born, and that will be a great night in the darkness of your eyes when Christ is born. There will be chanting in the streets and a star pointing to the Nativity. I will not bother you with the history of a definition and tell you what hope is. When I sit down hungry at a table, we do not want an analytical discourse as to what it is. Hand it on; pass it round as a slice of it. John speaks of it as a "pure hope;" Peter calls it a "lively hope;" Paul styles it a "good hope," a "sure hope," a "rejoicing hope." And all up and down the Bible it is spoken of as an anchor, as a harbor, as a helmet, as a door.

When we draw a check on a bank, we must have reference to the amount of money we have deposited, but Hope makes a draft on a bank in which her benefit all heaven has been deposited. Hope! May it light up every dungeon, stand by every sickbed, lend a helping hand to every orphanage, loosen every chain, caress every forlorn soul and turn the unpicturesque rooms of the house into the vestibule of heaven. How suggestive that mythology declares that when all other deities fled the goddess of Hope remained!

It was hope that revived John Knox when on a shipboard near the coast of Scotland he was fearfully ill, and he was requested to look shoreward and asked if he knew the village near the coast, and he answered: "I know it well, for I see the steeple of that place where God first opened my mouth in public to His glory, and I am fully persuaded how weak that ever I now appear I shall not depart this life till I shall glorify His holy name in the same place." His hope was rewarded, and for twenty-five years more he preached the Bible in the face of the persecutions of Mr. Morrell of Norwich when departing this life at twenty-four years of age he declared, "I should like to understand the secrets of eternity before to-morrow morning." That was the kind of hope that the corporal had in the battle when, after several standard bearers had fallen, and turned to a lieutenant-colonel and said, "If I fall, tell my dear wife that I die with a good hope in Christ and that I am glad to give my life for my country." That was the good hope that Dr. Goodwin had in his last hour when he said: "Ah, is this death? How have I dreaded as an enemy this smiling friend!"

No better medicine did a man ever take than hope. It is a stimulant, a febrifuge, a tonic, a cathartic. Thousands of people long ago departed this life would have been living to-day but for the reason they let hope slip their grasp. I have known people to live on hope after one lung was gone and disease had seemed to lay hold of every nerve and muscle and artery and bone.

Alexander the Great, starting for the wars in Persia, divided his property among the Macedonians. He gave a village to one, a port to another, a field to a third, and all his estate to his friends. Then Perdicas asked, "What have you kept for yourself?" He answered triumphantly, "Hope."

And, whatever else you and I give away, we must keep for ourselves hope—all comforting, all cheering hope. In the heart of every man, woman and child that hears or reads this sermon may God implant this principle right now!

Many have full assurance that all is right with the soul. They are as sure of heaven as if they had passed the pearly portals of the gates, as though they were already seated in the temple of God unrolling the libretto of the heavenly chorister. I congratulate all such. I wish I had it, too—full assurance—but with me it is hope. "Which hope," sinful, it expects forgiveness; troubled, it expects relief; bereft, it expects reunion; clear down, it expects wings to lift; shipwrecked, it expects lifeboat; bankrupt, it expects eternal riches; a prodigal, it expects the wide open door of the father's farmhouse. It does not wear itself out by looking backward; it always looks forward. What is the use of giving so much time to the rehearsal of the past? Your mistakes are not corrected by a review. Your losses cannot be brooding over them, be turned into gains. It is the future that has the most for us, and hope cheers us on. We have all committed blunders, but does the calling of the roll of them make them any the less blunders? Look ahead in all matters of usefulness. However much you may have accomplished for God and the world's betterment your greatest usefulness is to come. "No," says some one, "my money is gone." "No," says some one, "the most of my years are gone and here I am." "Why, you talk like an infidel. Do you suppose that all your capacity to do good is fenced in by this life? Are you going to be a longer and a do nothing after you have quit this world?"

It is my business to tell you that your faculties are to be enlarged and intensified and your qualifications for usefulness multiplied tenfold, a hundredfold, a thousandfold.

Is your health gone? Then that is a sign that you are to enjoy a celestial health compared with which the most jocund and hilarious vitality of earth is invalidism. Are your fortunes spent? Remember, you are to be kings and queens unto God. And how much more wealth you will have when you reign forever and ever! I want to see you when you get your heavenly work dress on. This little bit of a speck of a world we call the earth is only the place where we get ready to work. We are only journeymen here, but will be master workmen there. Heaven will have no loafers hanging around. The book says of the inhabitants, "They rest not day nor night." Why rest when they work without fatigue? Why seek a pillow when there is no night there? I want to

see you after the pedestrianism of earth has been exchanged for power of flight and velocities infinite and enterprises interstellar, interworld.

I suspect that the telescope of that observatory brings in sight constellations that may comprise ruined worlds which need looking after and need help saintly and missionary. There may be worlds that, like ours, have sinned and need to be rescued, perhaps by our Christ or by some planet that God has thought out for other worlds as wise, as potent, as lovely as the atomism is for our world.

The laziness which has cursed us in this world will not gain the land of eternal activities—so much to think work air, so much inspiration in the society, so much achievement after we get the shackles of the flesh forever off. Do not dwell so much on opportunities past, but put your emphasis on opportunities to come.

Am I not right in saying that eternity can do more for us than can time? What will we not be able to do when our powers of locomotion shall be quickened into the immortal spirit's speed? Why should a bird have a swiftness of wing when it is of no importance how long it shall take to make its aerial way from forest to forest and we, who have so much more important errand in the world, get on so slowly? The roebuck outruns us, the hounds are quicker in the chase, but wait until God lets us loose from all limitations and hindrances. Then we will fairly begin. The starting post will be the tombstone. Leaving the world will be graduation day before the chief work of our mental and spiritual career. Hope sees the doors opening, the victor's foot in stirrup for the mounting. The day breaks—first flush of the horizon. The mission of hope will be an everlasting mission, as much of it in the heavenly hereafter as in the earthly now. Shall we have gained all as soon as we enter realms celestial—nothing more to learn, no other heights to climb, no new anthems to raise, a monotony of existence, the same thing over and over again for endless years? No! More progress in that world than we ever made in this.

Hope will stand on the hills of heaven and look for ever brightening landscapes, other transfigurations of color, new glories beaming over the ocean, new celebrations of victories in other worlds, heaven rising into grander heavens, seas of glass mingled with fire, becoming a more brilliant glass mingled with a more flaming fire.

Hope only, though you may never have your son's reformation and others may think he has left this life hopeless, who knows but that in the last moment, after he has ceased to speak and before his soul launches away, your prayer may have been answered and he be one of the first to meet you at the shining gate. The prodigal in the parable got home and set down at the feast, while the elder brother, who never left the old place, stood peering at the back door and did not know of it.

To another class of persons I introduce the angel of hope, and they are the invalids. I cannot take the diagnosis of your disorder, but let hope cheer you with one of two thoughts. Such marvelous cures are being wrought in our day through medication and surgery that your invalidism may yet be mastered.

Persons as ill as you have got well. Cancer and tuberculosis will yet give way before some new discovery. I see every day people strong and well who not long ago saw pallid and leaning heavily on a staff and hardly able to climb stairs.

But if you will not take the hand of hope for earthly convalescence let me point you to the perfect body you are yet to have if you love and serve the Lord. Death will put a prolonged anaesthetic upon your present body, and you will never again feel an ache or pain, and then in His good time you will have a resurrection body, which we know nothing of except that it will be painless and glorious beyond all present appreciation. What must be the health of that land which never feels cut of cold or blast of heat, and where there is no east wind sowing pneumonias of death, and where the water than the foot of deer, your eye-sight clearer than eagle in sky, perfect health, in a country where all the inhabitants are everlastingly well!

You who have in your body an encased bullet which the Civil War you who have kept alive only by precautions and self denial and perpetual watching of pulse and lung; you of the deafened ear and dim vision and the severe back-ache; you who have not been free from pain for ten years; how do you like this story of physical reconstruction, with all weakness and suffering subtracted and everything jocund and bounding added?

Do not have anything to do with the gloom that Harriet Martineau expressed in her dying words: "I have no reason to believe in another world. I have had enough of life in one and can see no good reason why Harriet Martineau should be perpetuated." Would you not rather have the Christian enthusiasm of Robert Anderson, who when some one said, "I will be satisfied if I manage somehow to get into heaven," replied, pointing to a sunken vessel that was being dragged up the River Tay: "Would you like to be pulled into heaven with two tugs like this vessel?" "I tell you I would like to go in with all my sails set and colors flying."

Again, let me introduce the element of hope to those good people who are in despair about the world's moral condition. They have gathered up appalling statistics. They tell of the number of divorces, but do not take into consideration that there are a thousand happy homes where there is one of marital discord.

They tell you of the large number in our land who are living in afflictive lives, but forget to mention that there are many millions of men and women who are doing the best they can.

They tell you the number of drunkeries in this country, but fail to mention that thousands of men and women with two doors—one door open for all who will enter for pardon and consolation, and the other door opening into the heavens for the ascent of souls prepared for translation.

From this hour cultivate hope. Do so by reading all the Scriptural promises of the world's coming Edenization, and doubt if you dare the veracity of the Almighty when He says He will make the desert blossom, and the leopard and the lion shall dwell in the same pasture field, and the lion, ceasing to be carnivorous, will become graminivorous, eating "straw like an ox," and reptilian venom shall change into harmlessness, so that the "weaned child shall put his hand on the cockatrice's den; and there shall be nothing to hurt or destroy in all God's holy mountain, for the earth shall be full of the knowledge of the Lord as the waters cover the sea." So much for the world at large.

Then cultivate hope in regard to your own health, your own financial prosperity, your own longevity, by seeing how in other people God mercifully reverses things and brings to pass the unexpected, remembering that he who has lost more battles than he has gained, but triumphed at the last, and, further, by making sure of your eternal safety through Christ Jesus, understand that you are on the way to palaces and thrones. This life is a span long, ending in duration of bliss that neither human nor archangelic faculties can measure or estimate—redolence of a springtime that never ends and fountains tossing in the thrill of a sun that never sets. May God thrill us with anticipation of this immortal bliss. "Which hope."

I said in the opening of this subject that my text was only the wave of the beach, while the whole verse from which it is taken is an ocean. But the ocean tides are coming in and the sea is getting so deep that many a back, wading out and waded in, for what mortal can stand before the mighty surges of the full tide of eternal gladness? "Eye hath not seen nor ear heard; neither hath entered into the heart of man the things which God hath prepared for them that love him."