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PROPRIETORS AND FOREMEN.

A mechanic writes us: "I must caution all mechanics against using their inventive genius, if they have such a boss as I have got, lest they on Saturday night get a note in their book, informing them that they are no longer wanted."

Proprietors of manufacturing establishments sometimes imagine that because they purchase the intelligent labor of their operatives, and grudgingly dole out, at the end of the week, its moderate wages, they can lay claim, or ought to lay claim, to the private brain work of the individuals so unfortunate as to be under their employ. We advise every mechanic, who has such an employer, to leave him as soon as he can find another situation, for he certainly cannot make a change for the worse.

But, while there may be some such employers, we are glad that our experience warrants us in saying that they are exceptional. The majority would be glad to see a talented operative working his way from the ranks, and would (so long as he does not neglect the duties for which he is paid), encourage, rather than discourage, any effort he might make to that end. Cases are not rare where young mechanics have added their inventions to the capital stock of the firms in which they were employed, and become partners. Mechanics should, however, remember that they have no right to use the time of their employers in the furtherance of their own private interests, and that they deserve not only rebuke, but discharge, should they, without the full knowledge and consent of their employers, surreptitiously make models, or drawings, instead of attending to their proper work.

In many cases, the power to employ, or discharge, is vested in a salaried foreman, possessing no direct interest in the business which he superintends. Whenever this is the case, proprietors should recollect that a foreman will "bear watching," as well as his subordinates. It is to our knowledge, not without precedent, that foremen take a leaf from the book of municipal management, and make a trade of indulgences to the workmen under them. In other words, they roll a bribe like a sweet morsel under their tongues, and the man who refuses to pay tribute finds, after a while, that he must make way for perhaps some inferior workman, having less self-respect, and more love for unrighteous mammon.

In general, we believe proprietors of large establishments are too careless of the personal welfare of their employes, and might secure better service, and advance their own interests, by seeing that justice is impartially administered by their foreman. No man ever yet lost anything by showing his help that he had, at least, the regard for them which common humanity claims.

HOW VERMICELLI AND MACARONI ARE MADE.

Macaroni and vermicelli are articles of food originally, we believe, prepared in Genoa, in Italy. The former is a dough of wheat flour and water, made into a pipe-like form, a little larger than the barrel of a goose quill, and dried till it is hard. The latter is a simple dough of wheat flour and water, or a mixture of flour, water, eggs, sugar, and saffron, made into threads, and dried like macaroni.

Except in a few small establishments, where the work has been generally performed by hand, the manufacture of these articles has not until recently been prosecuted in this country.

The Mendelson Vermicelli and Macaroni Works is an extensive steam manufactory of macaroni and vermicelli, re-

cently established at Nos. 311 and 313, Avenue A, in this city. Feeling that a description of the processes employed would be of interest to our readers, we this week visited the works mentioned, and were rewarded by witnessing for the first time a very interesting series of manipulations, which, though extremely simple, require for their conduct great care, skill, and experience, to secure uniformly good results.

The first step in the manufacture of these articles, is the preparation of the dough. This is done in machines strongly resembling pug-mills for mixing clay for brickmaking. The tempering of the dough is not done by any particular formula, the variations in the quality of the flour used not permitting the use of a particular specified quantity of water. The tempering is a work of great nicety, as upon it depends the perfection of the subsequent processes.

The dough taken from the mixers is put into a press, and compressed into cylinders about seven or eight inches in diameter, and from twelve to fourteen inches in length. These dough cylinders have considerable consistency. They may be handled without detriment to their shape, which exactly fits the cylinders of powerful hydraulic presses of peculiar construction. Into these cylinders the dough is placed, and pressed through holes in former plates at the bottom of the cylinders.

For macaroni, the holes in the former plates have each a plug which is supported from the inside, and which is enough smaller than the hole to leave an annular space all around it. Through this annular space the dough issues in the form of long tubes, which are removed, cut into proper lengths, and placed on trays formed of cloth of loose texture, stretched on square frames of a convenient size for handling. These trays are placed in frames in a darkened room, where they remain till the macaroni is fully dried.

Vermicelli goes through the same operations as macaroni, until it reaches the hydraulic presses. In these presses the former plates used for vermicelli are made with concentric groups of holes, each group containing about forty-eight holes, and each hole being about one tenth of an inch in diameter. When the pressure is applied the dough issues through these holes in threads resembling catgut in appearance almost exactly. The pressure to which it is submitted causes it to become heated; and to cool it and partially dry it, a blast of cold air is made to play directly upon it, a fan blower being used for this purpose. The operation is completed by cutting the condles of forty-eight threads into proper lengths, twisting the lengths up into graceful coils, drying, and packing.

We understand the concern is now working about twenty-five barrels of flour per day, with city orders for all they can produce.

Mr. L. Mendelson, the head of this establishment was the originator of the Mendelson Bank-Note Reporter, and is well known as one of the many German citizens who have brought with them to this country rare business talents and great commercial enterprise.

CLOSE OF VOLUME XXIII.

The never-ceasing tide of time has brought us to the close of our twenty-third volume. The six months consumed in its publication have been months of steady progress and healthy growth, and have brought us many gratifying assurances that our efforts to please our patrons are successful and duly appreciated.

The contents of the volume are, we think, unprecedentedly rich and varied, and its numerous engravings maintain the standard of high excellence we have always sustained in this department.

The correspondence contains very much instructive practical matter, and constitutes a very valuable feature of the volume.

Towards the close of the volume we started a new feature, namely, a column of queries, wherein the information desired by our readers may be made known to practical men, and practical answers received from correspondents so situated as to be in possession of the information required. We think this column will call out a vast amount of practical information which will be placed at the disposal of all our readers.

Our miscellany has comprised the most instructive and popularly written articles on theoretical and practical subjects, obtainable from the best home and foreign sources, and the editorial articles have been written with a view to suggest thought, and to indicate the general current of progress in science and the arts.

That our efforts to keep ahead of all competitors in our peculiar field have been successful is indicated by the steady and healthy growth of our subscription list, and the unmistakable signs of satisfaction gathered from our extensive correspondence.

To the press at large, and our exchanges particularly, we are indebted for many favorable notices and warm commendations. Our articles have been extensively copied and credited, both at home and abroad.

We feel that we are justified in appealing to the friends of the SCIENTIFIC AMERICAN to aid us in increasing our circulation, and feel confident that the appeal will be responded to by a large accession of new subscribers for 1871.

Meanwhile we shall continue unabated our efforts to keep in the very front rank of popular scientific publications, and shall neglect no opportunity to add to the attractions, general interest, and value of our paper.

REMOVING STREET SNOW AND ICE.

On some of our thoroughfares, where rival horse-railway companies have adjoining tracks, the efforts which they make to remove the snow is sometimes ludicrous, if not foolish. The great scraper of the Third Avenue Company, for exam-

ple, will come along, sweeping the snow from its own track very nicely, but depositing it upon the track of its next neighbor, whose following machine chucks it back again where it came from. This sort of fun is sometimes kept up for a whole day; time and labor of man and beast are wasted; public travel obstructed, and the companies lose much money.

The draft of the large snow scrapers is very heavy, and quite ruinous to the health of the horses. We have seen the vapor of perspiration from some of the twelve-horse teams rise above the third-story window of our office, after the efforts of the poor animals to drag the machine.

The companies ought to join hands, and wholly remove the snow from all crowded places, either by carting or melting.

By the practice of a little common-sense and ingenuity it would be easy to clear, and keep clear the tracks throughout the whole length of every city line. The aggregate loss of the various companies from snow obstructions is enormous. On some occasions all travel is suspended, and the entire forces of men and animals, with extra laborers, are employed to dig the snow; but as it is not removed, the rails are soon again covered.

There is a grand opportunity for an ingenious person to make a fortune by the invention of an effective machine for doing the above work.

On Broadway they employ to clear the gutters, snow scrapers, consisting of planks set on edge, diagonally to the line of draft. Eight horses drag the machine along, and they succeed in throwing up a portion of the snow into a windrow, and temporarily cleaning the gutter. But the immense travel of vehicles soon rolls the snow back again.

The best method is to remove the snow altogether; and probably the best way to do that, is by the application of steam.

In London they employ old steam fire engines for this purpose. The snow is scraped up into great heaps near the sewer openings, and jets of steam are then applied, by which the mass is quickly melted, and disappears through the sewers. This is a very speedy and effective method of getting rid of street snow and ice. We hope that our city authorities will give it a thorough trial this winter.

SUCCESS AS THE MEASURE OF ABILITY.

The world usually accords the merit of ability to those who achieve success in any field of effort, and it is right. Success is the evidence of ability—ability to succeed—nothing more. Real mental caliber is not evidenced by success, unless that success is attained in some occupation or profession which requires great mental ability for its conduct.

A man may succeed in wearing a very small pair of boots, if his understanding is sufficiently narrow; and men succeed as often through deficiencies as through proficiencies. A man sits daily in front of the Tribune office in this city who makes a living by whittling with his feet. This man has no arms and has by long practice acquired the power to hold a piece of wood with the toes of one foot, while he whittles with a knife held in the toes of the other foot. It is quite doubtful judging from the appearance of this individual, whether, had he been endowed with arms, he would have achieved either the notoriety he now enjoys, or have made half the money he now pockets from the wonder-loving groups who gather about him. Such success as he has attained has been won through virtue of his deficiencies.

We recollect reading some years ago an account of a wonderful dancer whose chief attraction was that he had but one leg. With this leg he did what single legs had been deemed incapable of doing, and though his dancing fell short of a first-class two-legged performance, yet it was really wonderful for one leg, and so one leg drew houses where probably two would have failed to please the public.

As with physical defects so with mental. The piano playing of the blind negro idiot (?) "Tom," whose performance is certainly wonderful for a blind idiot, would lose a great portion of its charm if he were once understood to be in full possession of the intellect allotted to ordinary mortals. He succeeds in making a great impression because he has, or is supposed to have, two great defects.

It often is the case, on the other hand, that men fail because they have minds too large for their business. These minds will be, *must be*, occupied with higher things than the trivial details of business, and the petty cares, to neglect which is to insure failure in most commonplace vocations.

Success, then, unless measured by the character of the field in which it is achieved, is no measure of mental or physical power. Is a man successful? In what is he successful? Is he a successful dandy like Beau Brummel; a successful knave like a modern railroad grabber well known in this metropolis; a successful dry-goods clerk; or a successful lawyer and statesman, like Clay and Webster; a successful divine, like Whately; or a successful teacher, like Arnold?

Success is, it is true, a measure of ability, but of *great* ability only when it is itself tested by the higher measure of lofty aims, wise purposes, and good deeds.

THE RELATION OF MINERALOGY TO CHEMISTRY.

It is related of the famous Abbe Hüay that while examining a fine specimen of calc spar on one occasion, he accidentally let it fall, and it broke into a hundred pieces. He was horrified at his carelessness, and, after making due apology, began to gather up the fragments. He soon observed that every piece had the same shape, and that the calc spar was made up of an infinite number of rhombic crystals. This circumstance led to the examination of many other minerals, and the result was the foundation of crystallography, and the

reference of all crystalline substances back to six primitive forms. The science of crystals soon commanded the attention of chemists, and an instrument was invented, called the goniometer, for measuring the angles, and for deciding to what class each mineral belonged.

Later researches seem to point out that there is an intimate relation existing between the crystalline form and the composition of a body, and we may some day discover the law by which we can arrive at the composition of a mineral or other salt, by measuring its angles, and without the necessity of subjecting it to analysis. But this is at present mere speculation.

The peculiar luster, cleavage, hardness, and other physical properties of minerals, have been studied, and something like an independent science has been established, founded upon these external properties. As our knowledge of chemistry has increased, and better methods of analysis have been invented, we are ceasing to lay so much stress upon the outward forms of minerals, and have commenced arranging them with reference to the bases and acids they may contain. Chemists have found that all minerals are composed of well-known elements combined according to the laws of atomic weights, and that they are in every sense chemical salts. For example, feldspar is a double silicate of potash and alumina, and can be made in the blast furnace and porcelain oven as readily as chloride of sodium or saltpeter in the laboratory. Calc spar and arragonite can be made, the one from cold, the other from hot solutions. Every year witnesses the artificial manufacture of minerals, and there is a fair prospect of our ultimately being able to make every stone there is on the earth.

The time does not appear to be very far distant when we shall make even the precious stones, the diamond, the ruby, or the emerald, as readily as we now do glass and porcelain. Professor Dana, in his unsurpassed book on mineralogy, gives the formula of all minerals so far as is known, and classifies them according to their chemical constitution, and thus virtually hands the science over to the chemist. It was not until minerals were made artificially that we were able to form a rational theory of their probable origin in the rocks. Nature's laboratory does not differ from man's inferior imitation, and as the laws of combination are constant, it is safe to infer that the same agencies were employed in producing the native minerals that we pursue in making them artificially. It is only when we treat minerals as true chemical salts that we can assign them their proper place in the universe.

In a recent German work on chemistry, by Professor Geuther, of Jena, we find a tolerably full list of chemical compounds, and among them a large number that occur native, and are known as minerals; for example, under magnesium, potassium-magnesium chloride is described as carnalite; calcium-magnesium chloride as tachydrate; calcium-magnesium carbonate, as dolomite; calcium-magnesium silicate, as augite, and so on through a long catalogue of substances. The crystalline form, solubility, hardness, specific gravity, general properties, and formulas of all salts are given with the occasional observation that this or that compound is found in nature as a mineral, but without any break in the order of discussion on account of that fact.

In this way mineralogy becomes incorporated with chemistry, and rocks may be defined to be chemical compounds that occur ready made in nature, just as carbonaceous substances are traced back to living organisms, and are treated of under the head of organic chemistry. It would not occur to any one to bottle up gases and to regard them as entitled to found a separate science, or to speak of metals, gases, or liquids as we do of chemistry and physics. Gases are a part of chemistry, and so are metals and minerals.

We have called attention to this subject in order to afford our readers some knowledge of the great progress made in the extent of our acquaintance with the crust of the earth, and of the formation of minerals, since chemistry was impressed into the service of explaining the nature of the forces that must have been at work to produce what we see around us. It was not until the acid character of silica was made known by Berzelius that we were able to manufacture glass in a rational and scientific manner, and glass is in fact an artificial mineral very much like what we find ready made in volcanic craters.

The manufacture of porcelain, of soluble glass, of saltpeter, and of many other useful compounds, is conducted in imitation of what is going on in nature, and is now founded upon strictly scientific principles. The total number of minerals thus far described does not exceed 700, while the different salts of potash alone amount to nearly as many, so that the study of potash in all of its relations involves nearly as much labor as the examination of all the minerals that have thus far been found. It will thus appear that the relation of mineralogy to chemistry is of the most intimate character, and that minerals can only be studied philosophically when regarded as chemical salts.

AGRICULTURAL pursuits are beginning to absorb the attention and energies of the population of Colorado, which is favorable to the development of the resources of the territory. That prosperity which depends upon the hazards and uncertainties of mining is at best but spasmodic, and it is only where agriculture is made the fundamental interest that the population assumes a settled character and industry is attended by permanent rewards.

SUBSCRIBERS whose term expires with the year will take note that this is the last number, and will oblige the publishers by remitting for the new year immediately.

## SCIENTIFIC AMERICAN.

1871.

## Special Club Premium.

A New Volume of this journal will commence on the first of January next. Any person sending us yearly clubs for ten or more copies will be entitled to receive, free of postage or express charge, one copy of the celebrated engraving, "MEN OF PROGRESS," for every ten names.

This large and splendid Steel Plate Engraving is one of the finest art works of the day, possessing a rare and peculiar value over ordinary pictures, by reason of the life-like accuracy of the personages it represents. The scene of the picture is laid in the great hall of the Patent Office, at Washington. The grouping is spirited and artistic. Among the persons represented are the following eminent inventors:

S. F. B. MORSE,.....Inventor of Electric Telegraph.  
CYRUS H. MCCORMICK,.....Inventor of Reaper.  
THOS. BLANCHARD,.....Inventor of Lathe for Irregular Forms.  
WILLIAM T. G. MORTON,.....Inventor of Chloroform.  
SAMUEL COLT,.....Inventor of Revolving Fire-Arms.  
CHARLES GOODYEAR,.....Inventor of Rubber Fabrics.  
FREDERICK E. SICKLES,.....Inventor of Steam Cut-Off.  
HENRY BURDEN,.....Inventor of Horse-Shoe Machine.  
JOHN ERICSSON,.....Inventor of the first Monitor.  
JAMES BOGARDUS,.....Inventor of Iron Buildings.  
JOSEPH SAXTON,.....Inventor of Watch Machinery.  
PETER COOPER,.....Inventor of Iron-Rolling Machinery.  
JOSEPH HENRY,.....Inventor of Electro-Magnetic Machine.  
ISAIAH JENNINGS,.....Inventor of Friction Matches.  
RICHARD M. HOE,.....Inventor of Fast Printing-Presses.

These noble men, by their own efforts, raised themselves from the depths of poverty, and by their wonderful discoveries, conferred incalculable benefits upon the human race, entitling them to rank among its greatest benefactors. It is but fitting that the remembrance of their achievements, and the honored forms of their persons, as they lived and walked among us, should be perpetuated by the highest skill of art. The picture, which is three feet long and two feet high, forms an enduring and desirable object for the adornment of the parlor. It was engraved by the celebrated JOHN SARTAIN, from a large painting by SCHUSSELE, and all the portraits were taken from life. Every lover of Science and Progress should enjoy its possession. Single copies of the Engraving \$9; Three copies, \$25.

One copy of the SCIENTIFIC AMERICAN for one year, and a copy of the Engraving, will be sent to any address on receipt of \$10.

MUNN &amp; CO.,

37 Park Row, New York City.

## TIMELY SUGGESTIONS.

**Every Employer** should present his workmen and apprentices with a subscription to the SCIENTIFIC AMERICAN for the coming year.

**Every Mechanic and Artisan** whose employer does not take the SCIENTIFIC AMERICAN, should solicit him to subscribe for 1871.

**Now is the time** for old subscribers whose subscriptions expire with the year, to renew.

**Now is the time** for new subscribers to send \$3 and commence with the new year.

**Now is the time** for forming clubs for the new year.

**It will pay** any one to invest \$3 for himself, his sons, or his workmen, for one year's subscription to the SCIENTIFIC AMERICAN.

**It is easy** for any one to get ten subscribers at \$2.50 each, and for his trouble obtain the splendid large steel plate engraving worth \$10.

**It is easy** for any old subscriber to get a new one to join in taking the paper.

**It is no more trouble** to remit \$6 for two subscribers than \$3 for one.

**If any mechanic** whom you ask to subscribe says he cannot afford it, tell him he cannot afford not to.

**If any one** wishes specimens of the paper to examine before subscribing, tell him to write to the publishers and they will cheerfully mail them.

**If any one** wishes an illuminated Calendar for 1871, to hang in his office or shop, he can have it sent free on sending request to this office.

**If handsome illuminated posters** and prospectuses are wanted to assist in obtaining subscribers, send to the publishers of this paper.

**It is the intention** of the publishers of the SCIENTIFIC AMERICAN to make the paper next year better and handsomer than any previous year during the last quarter century it has been published.

**It is the intention** of the publishers to illustrate by superb engravings all new and practical inventions and discoveries that may be developed during the year.

**For terms to Clubs,** see special premium notice given above

In accordance with a long established rule, all subscriptions terminating with this volume will be discontinued at that time. We trust that all our subscribers will not only renew, but that they may find it convenient to induce some of their neighbors to join them. We intend to give our readers full measure and running over, in return for their money. That the publishers may calculate the quantity of paper to print on the new volume; and that none may be disappointed by not getting back numbers, we would impress upon all the importance of renewing their subscriptions and sending new names as early as possible.

## NEW BOOKS AND PUBLICATIONS.

**THE CABIN ON THE PRAIRIE.** By Rev. C. H. Pearson, Author of "Scenes in the West," etc. Illustrated. Boston: Lee & Shepard.

This is one of a series of stories called the "Frontier Series," now issuing by the above-named firm. It is a graphic picture of prairie life, full of varied stories, and to those unfamiliar with the scenes it delineates, unique incident. As a specimen of good healthy reading for youths of both sexes, it is unexcelled, while adults may peruse its instructive pages with pleasure and profit. The book is one calculated to secure a wide popularity.

**MANUAL OF SOCIAL SCIENCE: Being a Condensation of the Principles of Social Science of H. C. Carey, LL.D.** By Kate McKean. Philadelphia: Henry Carey Baird, 406 Walnut street.

We shall in a future issue review his book editorially.

We are indebted to the Hon. Horace Capron, U. S. Commissioner of Agriculture for a copy of his report for 1869. It contains a large mass of carefully compiled and valuable statistics, and many important papers on various subjects relating to American agriculture.

## Sensible Holiday Presents.

No present can be more acceptable to a wife, mother, sister, or lady friend, than a DOTT WASHING MACHINE, price \$14, and a UNIVERSAL WRINGER, \$9, which are warranted to give entire satisfaction. Mr. R. C. BROWNING, Gen'l Ag't, 82 Cortlandt street, N. Y., will, on receipt of the price, send either or both Machines, free of freight, to places where no one is selling; and, after using them a month, according to directions, if not entirely satisfactory, they may be returned, free of freight, and the money will be refunded. Can anything be more fair?

## Facts for the Ladies.

Her Royal Highness the Princess of Wales has appointed Messrs. Wheeler & Wilson "Sewing Machine Manufacturers to her Royal Highness"—the only honor of the kind ever conferred upon a sewing-machine house.

## In the Advertising Agency

Of Geo. P. Rowell & Co., No. 40 Park Row, New York, everything is so systematized that their immense business is conducted without confusion or delay. They have regularly on file over 5,000 newspapers.

Back Numbers, Volumes, and Entire Sets of the SCIENTIFIC AMERICAN are for sale at low prices, by Theo. Tusch, 37 Park Row, New York.

## Recent American and Foreign Patents.

Under this heading we shall publish weekly notes of some of the more prominent home and foreign patents.

**COMBINED LOCK AND LATCH.**—F. M. Ranous, Yreka City, Cal.—This invention has for its object to improve the construction of an improved gate latch, patented October 26, 1869, and numbered 96,147, so as to make it more convenient in use, and more effective in operation, enabling it to be used as a lock without interfering with its operation as a latch.

**SAFETY VALVE.**—J. Armstrong, Brookfield, Missouri.—This invention relates to a new and useful improvement in safety valves for locomotive and other steam boilers.

**ANIMAL TRAP.**—Ebenezer Oliver, New York city.—This invention has for its object to improve the construction of the wire trap, known as round or bee-hive traps, so as to make them better adapted for use.

**MODE OF SECURING SHIPS' ANCHORS.**—William Henry Barker, Windsor, Nova Scotia.—The object of this invention is the construction of some simple apparatus, by which the anchor can be hung to the catheads and instantaneously let go when necessary, and avoiding all the principal objections to any of the machinery now in use for that purpose.

**METHOD OF COUPLING PIPES.**—George C. Germain, Cuyahoga Falls, Ohio.—The object of this invention is to so connect gas and water pipes, made of asphaltum or other suitable material, that the joints will be entirely water or gas proof, and readily applied.

**CHAIR.**—C. R. Long, Louisville, Ky.—This invention relates to a new and useful improvement in chairs, and consists in the mode of securing the seat to the legs, whereby the ordinary upper rounds and stretchers of the chairs are dispensed with, while the seat is made detachable, and the chair strong and durable.

**WATER WHEEL.**—Daniel W. Case, Garden City, Minn.—This invention relates to improvements in water wheels, and consists in the construction and arrangement of the bearing for the shaft, and adjusting apparatus therefor in the top of the case of the wheel; also, in certain improvements in the construction and arrangement of the chutes leading the water to the wheel and the gates therefor, and also in an arrangement for discharging the water from the wheel, partly through central and partly through vertical discharges.

**CULTIVATOR.**—Freeman C. Jewell, Rahway, N. J.—This invention has for its object to furnish an improved cultivator, simple in construction, easily operated, and effective in operation, and which shall be so constructed that it can be readily and quickly adjusted, as circumstances may require.

**EXHAUST VALVE.**—W. A. Carns, Malden, Mass.—The object of this invention is to prevent sparks and cinders from entering or being drawn into the cylinders of locomotive engines, when the motion is reversed.

**WASHING MACHINE.**—D. C. Harlow, Hannibal, Mo.—The object of this invention is to provide a simple and cheap apparatus to be used in connection with the common wash-tub for washing clothes, and consists in revolving a spring cylinder above a concave formed of rollers.

**DRESSING AND FURROWING MILL-STONES.**—James Lee Norton, London, England.—This invention has for its object improvements in apparatus for dressing and furrowing mill-stones.

**CAR-COUPLING.**—A. F. Street, Zanesville, Ohio.—This invention relates to a new and useful improvement in couplings for railroad cars, whereby strength, durability, and certainty of operation are secured.

**SHOVEL PLOW.**—Isaac A. Benedict, West Springfield, Pa.—This invention relates to a new and useful improvement in winged shovel plows, and consists in attaching the wings to adjustable arms and making the wings adjustable on the arms.

**CLOCK-ALARM.**—J. H. Davis, Chillicothe, Mo.—This invention has for its object to provide means whereby alarm attachments can, whenever desired, be secured to or connected with clocks of suitable construction. At present some clocks are provided with alarm attachments and others not. Those which have no attachments cannot, at present, be changed into alarm clocks. By the aid of this invention clocks of all kinds can be readily converted into alarm clocks, without the aid of experts.