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Contents:

(Illustrated articles are marked with an asterisk,)

We have a very large number of valuable communications from correspondents who have acted upon our suggestion to write upon practical subjects for our columns. We shall publish them as rapidly as possible. In this connection we wish again to thank our readers for the great interest which they have taken in promoting the circulation of our paper. The subscriptions are still coming in very rapidly and we are now printing 35,000 copies per week.

THE SOUTH AMERICAN MEDITERRANEAN.

Professor Agassiz, in his second lecture (Feb. 11) forgot or deferred the sequel of the interesting geological history of the continent, and devoted the evening to the history of his expedition and the present terraqueous topography of the valley; with both of which our readers are already somewhat acquainted. Certain points, however, struck us with a significance not brought out in former reports, and we shall therefore take occasion to review the ground in a few words.

The valley of the Amazon is no valley to the eye: its bounds are far too distant to be visible at any point in more than one direction if at all, and its slopes are altogether inappreciable by the senses. Even the current of its waters is imperceptible, and sometimes locally reversed; so that it presents to the voyager no other appearance than that of an inland sea with a long, low, distant shore. On either side, the tributaries have a similar appearance: they are themselves so enormous that the eye cannot span their breadth: for example, there are four rivers descending from the Guianas on the north, east of the Rio Negro, hardly noticed on our common maps by name, yet of a wonderful size, one of them being no less than thirty miles wide at the mouth. Not to speak of the "great" affluents, the Xingu presents at its junction with the main river a front of forty miles broad, and the Tocantins, of sixty; and of all of them, it must be remembered that you ascend from the junction from a hundred and fifty to hundreds of miles before any appearance of rising ground, rocks or minerals can be found. The front of the united rivers, with their nearly oceanic depth, at *one* of the final outlets, is 150 miles across, and its yellowish white hue (like coffee and milk) tinges the ocean far out of sight of land.

Nor is the Amazon, when you have imagined its to the eye shoreless breadth, to be conceived as a simple stream or belt of water. It is a water system, prevading the country with unnumbered channels and branches for hundreds of miles in breadth. Independently of the usual obstructions and partings of streams, this system has a structure peculiar to itself, resulting from remarkable causes. The swelling of the waters will amount to from thirty to fifty feet, every rainy season, and the remarkable fact is that this takes place from two opposite quarters, the north and the south, not at the same time, but alternately.

The snows of the Andes melt in August and September, and reach the Amazon by October or November. The rains also begin on the south side in September, and the swelling of the southern tributaries pours into the great bed about the last of November. Both inundations continue with increasing volume until March, when the entire sea rises sometimes at the rate of a foot in twenty-four hours. At the same time, the tributary rivers from the north are at their lowest stage; and bearing in mind the fact that the fall of their channels for a long distance hardly exceeds that of the Amazon, or ten feet in a hundred miles, it is evident that a rise of thirty to fifty feet in the main river must not only send a vast back water up the northern tributaries for hundreds of miles, but must follow the depressions of the ground in every direction, and create a network of innumerable water courses

At the hight of the southern freshet in March, the rains begin on the north. As the southern rivers subside, the northern rivers swell, and come down in full flood about June, to gorge in turn the channels of their southern rivals, and to press the swollen tide up the southern side of its basin in the summer, as it rose upon the northern side in winter. Thus the water system we are describing resembles an ocean not only in extent and evenness of surface, but also in its (semi-annual) tides.

The result is that all the roads in this wonderful country are ready made. They are water roads, or ship canals, on the grandest scale of nature, through which the united navies of the world might steam or sail in company, for 2,000 miles from east to west and 500 miles on each side, or 1,000 miles from north to south; freely penetrating every portion of the country through the profusion of cross courses by which the rivers, swollen on both sides as we have seen, twice a year, have overflowed and run into each other, and in short have divided up the whole land into islands. Taking this into view with the fact that nearly all the principal countries of South America—Brazil, Peru, Bolivia, Ecuador, New Granada, Venezuela—have their main drainage and the best portion of their domain either in this valley or in navigable connection with it; the importance and the justice of the late decree of the Emperor of Brazil, opening the Mediterranean of South America as a free highway for all nations, are seen at once in a conspicuous light. The Amazon by nature belongs to South America and mankind.

The treasures of commerce to be directly drawn from nature here, have already been brought in a general way to the notice of our readers. We may add to the 300 kinds of choice timber, remarkable for their density and beauty of grain, which cover the entire country with dense forest, an endless variety of strong and light textiles, a variety of fruits of the myrtle family, as numerous and as fine as that of the rose family that embraces all the choice kinds of our northern climate, another family akin to the magnolia, embracing also a great variety of luscious fruits, and still another family of which the character was not defined, quantities of indigenous cotton, probably the greatest on the globe, the material of chocolate, caoutchouc, Brazil nuts, etc., in inexhaustible profusion everywhere, and finally the grand staples, drugs and dyes of the richest character and variety. Settlers would have nothing to do but to gather these stores from gorged nature in a perpetual harvest, and commerce, nothing but to load cargoes of treasure almost directly from the ground on which it grows. The aquatic vegetation is so luxuriant that it is never apparent where the land ends and the water begins, and the latter is often concealed completely by a prairie of rank vegetation and gorgeous flowers.

But there are not now 250,000 people in all this new world; and the bad reputation of the climate, which the learned professor stoutly combats—declaring it, from ten months' trial, most delightful and salubrious—is imputed to the unanimous hue and cry of the officials exiled from time to time to those wild though luxuriant solitudes, whose natural discontent has attributed to them every deadly evil that imagination can conceive. Of the temperature and other interesting matters of this lecture, we need not repeat what we have heretofore republished.

THE GLACIAL THEORY AND THE TROPICAL GLACIERS.

Professor Agassiz' third lecture in New York was a careful elucidation of the Glacial Theory, which he enjoys the honor of having developed and established; proving that a period of a much lower mean temperature than at present must have once existed in the now temperate and torrid portions of the globe, when that peculiar "current" known as the glacial structure crept over the whole surface of the continents, and performed an important part in preparing them for the habitation of man.

The first question is, What is the glacier? We have styled it a current, and such it is, as much as any that exists in the liquid form of the same element, governed in part by the same laws, but performing offices for which water is not adapted. Its law is motion under the influence of heat, in the direction of increasing temperature. Its formation is from snow, at such elevation as under existing thermal conditions permits an average temperature as low as 32°; but the comparative warmth of a lower elevation or of a warmer latitude, usually assists. By this means the snow is alternately softened in part to suspended water, and conglomerated by the freezing of the suspended water, until it forms a granulated ice.

Its law of motion is in substance the simple fact that water expands in freezing. When formed on a mountain side at a proper elevation for the required temperature—and equally when formed on a level, at the right latitude—the glacier is constantly expanding by the expansive congelation of suspended water or rains; and finding little resistance at its lower limit (of altitude or latitude as the case may be) but being more powerfully resisted in the direction of greater cold and rigidity, its horizontal expansion of course pushes in the former direction. In other words, it moves onward, by a simple and constant law, in the direction of warmer temperature; and will continue thus moving as far as that temperature is not warm enough to melt and destroy it entirely.

It is evident that the loose angular rocks constantly crumbled off in the path of the glacier must be carried or rolled along under it, and often embraced and frozen into it, in great numbers. Again, the great transparency of ice to heat, permits the sun's rays to pass through to the rocks beneath and within and comparatively to warm them. Thus the rocks rolled along under and those carried within the glacier cooperate in thinning by their comparative warmth the ice that separates them, while the grinding movement of the glacier also tends to break it, and thus the rocks practically attract each other, accumulate, and are passed onward until some obstruction arrests them or some cavity receives them. Not to particularize and explain here the very distinct and characteristic arrangement of these accumulations in the Alps, where the active process may be now observed, it will be evident to the reader that some of their peculiarities must be recognizable wherever the glacial drift has passed along, in the disposition of the fragments and in the effect of their tremendous attrition upon themselves and upon the surface of the underlying rock.

The first suggestion of the glacial theory was due to the discovery from the kind of traces above referred to, that the glaciers of the Alps had once pushed out not less than twenty-five miles from their present habitat and extended their flow across the plain of Switzerland until they abutted upon the Jura. The same traces also gave proof that (as might indeed be presumed) they were then some 5,000 feet thicker than now. The inference was imperative, that a glacial temperature then prevailed at the moderate elevation of the plain of Switzerland, and hence must have prevailed in other parts of the world similarly conditioned. This led to examinations everywhere for traces of the glacial drift, and it needs only to be added that they have everywhere been found abundant. In the British Islands, in all parts of North America, and more lately in South America, near the equator,—here commencing on the Andes and moving across the continent eastward, far into the present domain of the ocean—the polished, scratched and furrowed surface of the rock, its grooves always running north and south, (except where the declivity of mountains had changed the direction) and the "drift" of rugged but tamed and abraded fragments, show the unmistakable action of those "mills of God" once built to grind the face of the earth smooth and pulverize materials for the plastic hand of Nature—now dissolved long since by the breath that built them, having served their end.

LETTER TO MECHANICS AND INVENTORS.

We notice in one of our Michigan exchanges that a stock association is about organizing in Detroit with a capital of $20,000, which is to be employed in defraying expenses of getting up models, obtaining patents, and for establishing agencies for the sale of patents throughout the country. The par value of the stock is fixed at $25, and persons becoming members are required to pay one dollar initiation fee, and a further fee of fifty cents per month, making a total tax of seven dollars which entitles him to a share of stock.

We presume that the parties to this organization are all respectable gentlemen, but it is evident that they are engaged in a business which they do not understand. Efforts have been repeatedly made in this country to organize similar associations and every time the attempt has been made it has failed. Protective or joint stock societies of this kind have also frequently started up in England and though backed by big names, failure has always been the result.

Inventors very naturally and very properly distrust an association that undertakes the double business of procuring and selling patents. The two operations cannot be successfully conducted jointly without causing suspicion. Some inventions will inevitably receive much more attention than others, and it is wholly impracticable to keep a stock of patents on hand for sale like merchandise. The very idea will suggest an absurdity to any practical mind. If the association should chance to get hold of one good invention which promised success they would be quite likely to employ their whole force of salesmen to push it forward in every direction, and thus less important and less easily-managed inventions would have to be suspended.

A member paying seven dollars for his certificate may never have occasion to employ the services of the association. But suppose he does seek their services, what pecuniary advantage does he gain? Nothing more than the facilities possessed by the association and for which of course he must pay extra charges.

We do not object to this scheme as a speculative enterprise, but we do not perceive that it possesses the merit of novelty or is likely to afford any advantage to either mechanic or inventor.

WHEN AND WHERE DOES THE DAY BEGIN?

As we travel eastward the day begins earlier: near the equator starlight appears an hour earlier for each thousand miles going east. When it is sunrise in New York, the people of Europe have had sunlight for many huors, and the Californians are still in their beds dreaming. Evidently the day has a first begining, and at the eastward. But how far and where? What are the people who first see the light of Monday morning?

It is the sun which brings the day; where does he first bring Monday? If we could travel with him we might find out. Let us suppose the case. We will take an early start: at sunrise on Sunday morning, with the sun just at the point of peeping over the horizon behind us, we travel westward. As we go, the people give us a Sunday greeting; we bring Sunday with us to Pittsburgh, St. Louis, Salt Lake, San Francisco. At San Francisco, our faithful chronometer informs us that we have been on the tramp about five hours. But we started on Sunday morning and it is Sunday morning still We go on, still on Sunday morning. Will this Sunday morning ever end? The quiet Pacific knows very little of Sunday or any other day, and our question scarcely receives an echo for reply. When we get to Yokohama in Japan, or Shanghai in China, we search for some Yankee, wide awake in the early morning, and we are told for the first time that Monday

has come. Everywhere now we bring Monday, and in twenty-four hours by the chronometer after starting, we are in New York again, and find the merchants taking down their shutters, and the Monday newspapers telling us what has happened during our absence.

THE RIGHT TO FREE HIGHWAYS.

Why is it that in all the bills and bids we hear of for the construction of railroads or bridges in, above or under our streets and rivers, and among all the proposals or demands of compensation to the public for these lucrative public grants, the one thing we *never* hear of is that excessive profits shall be applied to the cheapening of fares for the million? Why is it that projectors propose to pay license fees into the public treasury, or to divide their profits with the school fund—interests already provided for and sure to be sustained—but shrink from the business-like and beneficent plan of reducing their fares and enlarging their traffic progressively, to any extent which will still yield lucrative returns.

Time is more than money: it is life: and rapid and cheap locomotion is life and money in a double sense, to the industrious and especially the industrious poor. They cannot always afford to pay twenty cents an hour for life; but it might and ought to be afforded them, though the medium of cheap and rapid locomotion, at five or ten cents an hour, with the blessings of pure air and moderate rents beside. The legislature which will provide for a system of rapid conveyance to and from and throughout this city and its suburbs, with a steady compulsory reduction of fares as fast and as far as consistent with a liberal but not inordinate profit and with due regard to safety and comfort, will do an amount of good and earn a grateful remembrance not often open to any body of men in the course of a century. Such a system, we believe, would speedily reduce all city fares to three cents, and all fares from the city to the remoter suburbs to six cents; while the improvements in economy of propulsion yet before us in the future may ultimately make one cent each a profitable fare for the daily moving millions of the city that is to be.

There can be no doubt that, on sound principles of political economy and philosophy, all private property in public highways ought eventually to be extinguished, and the use of them for public or private traffic thrown open on equal terms to all, taxed only with an equitable proportion of the cost of maintenance, in the same manner as common roads. The proper aim of a public work is not profit for a few, nor even wealth and honor to the whole, but to economize the time, strength and means of every individual: for of the gains of individuals all public wealth consists. In the infancy of our country, the resources of all its individuals were organized or incorporated in some sort for making the roads, bridges and other public works esteemed indispensable, and these became at once common property and free to all. A continuance of the same principle of action would have made the railroads, canals, bridges and colleges as free as the common roads and the common schools. In an ideal republic of good men, devoted to public rather than private good, this would be possible and incalculably profitable. But in a republic of men as they are, selfish, and only forced into union of interests and resources by extreme necessity, nearly all progress in public works and institutions is necessarily left dependent on selfishness, and in order to have better roads, bridges, etc., it is necessary to allow certain individuals enormous profit and wealth as an inducement to build them. Nevertheless an eventual return to the primitive ideal of free common wealth in all that is in its nature common to all, should be persistently kept in view. There is a proper and a practicable limit to all these public grants, which will be strictly insisted on by every legislator who is at all qualified by sense and honesty for his trust. The profit of the road company is to be regarded only as a means to the true end, public accommodation and economy, and is to be used only so far as necessary to attain that end; not carried so far as to interfere with it.

The present tendency toward a re-absorption of railroad, telegraph and bridge property by the public and for public benefit, through the agency of Government, is a hint which may yet become an assertion of the principle embodied in the limitations of every charter, that all such grants are but temporary concessions, for the ultimate benefit of the commonwealth, and that when they have served their purpose and repaid their beneficiaries, they must return as public property. We are not prepared to say that the resumption of these grants by Government, especially with its present corrupt and wasteful character, would be an improvement. Nor does it matter what any one may say about it; for these practical issues will work themselves out in their own time and way, little affected by theory and advice. There is one direction, however, in which we think we can discern a practical drift in the nature of things; and it is illustrated in the peculiar principle of the proposal on foot for a railroad from the Missouri river to Texas, to be open to all parties for their own cars and locomotives, by payment of tolls, in the same manner as canals usually are. There are reasons enough why railroads should eventually go the way that most turnpikes have already gone, becoming first toll roads, and eventually, in a distant future of greater common knowledge and wealth, free public roads. Monopolies are at best necessary evils, and that temporarily, and their manifest destiny in every case is to go down before the paramount rights and interests of the whole, sooner or later, after they have served their temporary purpose.

In regard to the internal highways of a metropolis like this, we may assert as an axiom that there is no more reason for making the rails, tunnels and bridges private property than for providing the pavements, sidewalks, street crossings, lamps, sewers, Croton water, public parks, etc. etc., on the same principle. The evils of the private property system as applied to this class of public works (to which may be added the gas service) are such as the community literally groan under, without a hope of remedy. On the other hand, the beneficent success of the system of public works under which the Croton Aqueduct and Central Park were constructed, is a standing refutation of all arguments against the extension of such a system to the construction of a complete and satisfactory network of free public ways beneath or above our present crowded thoroughfares and rivers, and the equitable resumption of the much-abused privileges of all our city railroad and ferry companies. We invoke the attention of the legislature to some statesman-like and far-reaching measure of democratic progress; for which the people can afford to wait a little in preference to riveting tighter the bonds of the present undemocratic monopoly system for the sake of temporary convenience.

ISSUED FROM THE U. S. PATENT OFFICE

FOR THE WEEK ENDING FEB. 12. 1867.

Reported Officially for the Scientific American.

PATENTS ARE GRANTED FOR SEVENTEEN YEARS, the following being a schedule of fees:—

On filing each Caveat	$10
On filing each application for a Patent, except for a design	$15
On issuing each original Patent	$20
On appeal to Commissioner of Patents	$20
On application for Reissue	$30
On application for Extension of Patent	$50
On granting the Extension	$50
On filing a Disclaimer	$10
On filing application for Design (three and a half years)	$10
On filing application for Design (seven years)	$15
On filing application for Design (fourteen years)	$30

In addition to which there are some small revenue-stamp taxes. Residents of Canada and Nova Scotia pay $500 on application.

☞ Pamphlets containing the Patent Laws and full particulars of the mode of applying for Letters Patent, specifying size of model required, and much other information useful to inventors, may be had gratis by addressing MUNN & Co., Publishers of the SCIENTIFIC AMERICAN, New York.

61,914.—ARM FOR CAR SEATS.—Albert L. Babcock, New Haven, Conn.

I claim the seat-arm herein described as an improved article of manufacture.

61,915.—DEVICE FOR OILING SPINDLES, TOP ROLLS, ETC., OF SPINNING AND OTHER MACHINERY.—Samuel H. Barber, East Greenwich, R. I.

I claim the combination of the tubes, constructed and operating substantially as described, with the various machines used for manufacturing cotton, wool, and other material, for the purpose and substantially as herein set forth.

61,916.—STEAM ENGINE.—John S. Barden, Providence, R. I.

I claim the improved steam engine, constructed not only with the two connected heads, C D, to its piston, and with the exhaust passage, d, extending from the steam chest, laterally, into the space between the said two heads and out the side of the cylinder, but as provided with the lever, G, to extend between the two heads and into the slide valve, H, such lever being for operating with such slide valve, in manner substantially as explained.

I also claim the combination of the mouth piece, L, with the force pump and steam engine, arranged and so as to operate substantially as specified.

61,917.—MODE OF TREATING SACCHARINE MATTERS.—Edward Beanes, London, England.

I claim subjecting saccharine matters to the action of ozone, substantially as and for the purpose described.

61,918.—APPARATUS FOR CARBURETING GAS.—W. W. Bierce, Cleveland, Ohio.

First, I claim the float, D, perforated tin, F, and covering, F', as arranged, in combination with the sleeve, G, tube, B, and slot, C, for the purpose and in the manner substantially as described.

Second, The shield, K, pipe, B, and sleeve, G, in combination with the case, A, for the purpose and in the manner as herein set forth.

61,919.—BLOWER.—George W. Bigelow, New Haven, Conn.

I claim the combination of the revolving valve, E, with the vibrating piston, D, substantially as and for the purpose herein set forth.

61,920.—DIE FOR FORMING SPIKE HEADS.—Reuel Blackwood, Philadelphia, Pa.

I claim a die consisting of the parts, A and B-D B-D, constructed substantially as described, and operated by any suitable machinery, substantially as and for the purpose set forth and described.

61,921.—CAP FOR PRESERVING JARS.—Joseph Borden, Bridgeton, N. J., assignor to F. & J. Bodine, Philadelphia, Pa.

I claim a cap, consisting of a disk, B, and arms, b b, the whole being constructed and adapted for attachment to a jar, substantially as described.

61,922.—COAL STOVE.—Albert Brown, Troy, N. Y.

I claim, in combination with a fire-box and combustion chamber of stoves, a fuel magazine or reservoir, A, as provided with lateral vents or apertures, a a a, substantially in the manner as herein described and for the purpose set forth.

61,923.—SASH-SPRING HOLDER.—Reuben F. Brown, Lewisburg, Pa.

I claim as a new article of manufacture, the arrangement and combination of the casing, A, its solid base, H, and notches, a a', latch, B, spring, D, covering plate, C, all constructed and operating in the manner and for the purpose specified.

61,924.—CLOTHES-LINE REEL AND HOUSE.—M. H. Card and A. Sallee, Fulton, Ill.

We claim, in a clothes-line reel, the combination and arrangement of the flanged drum, G, the spring, C, house, J, and stop, L, all operating as and for the purpose specified.

61,925.—CHURN.—William L. Card, Gardiner, Ill.

I claim, the combination of the revolving churn and stationary dashers, the hollow shaft, a, and removable spindles, F, arranged and operating substantially as and for the purposes specified.

61,926.—SCREW GAGE.—J. S. Copeland, Bridgeport, Conn.

I claim a screw gage constructed substantially as described.

61,927.—HYMN AND TUNE BOOK.—Ebenezer Curtice, Yonkers, N. Y.

I claim, First, In singing books having their leaves cut, as herein described, the use of whole leaves, intervening the cut leaves, for the purpose mentioned herein.

Second, The application of a holder, in the manner and for the purpose herein specified.

61,928.—CARPET STRETCHER.—George O. Dunlap, Chicopee, Mass.

I claim, First, The spring, D, arranged upon the plate, A, in combination with the projections, b b', substantially as herein shown.

Second, The claws, E E, in combination with the carpet stretcher, substantially as shown.

61,929.—WRENCH.—Timothy Earle, Valley Falls, Smithfield, R. I.

I claim the invention in wrenches, described, consisting of a movable jaw, C, provided with a serrated or equivalent, roughened surface, a a', in combination with a spring clamp, F, or its equivalent, substantially as set forth.

61,930.—MACHINERY FOR DRYING PAPER IN PAPER-MAKING MACHINE.—Oliver Ellsworth (assignor to himself and Richard Smith), Boston, Mass.

I claim graduating the supply of steam to the cylinders which dry the paper by the expansion and contraction or tension of the paper made and dried.

Also, in combination with the drying cylinders, the movable roller over which the paper passes, and the link and lever which connect it to the valve in the steam pipe which supplies the drying cylinders.

I claim making the link which connects the movable roller with the regulating valve detachable and connecting it to a roller held in place by the paper, by the mechanism described, or its equivalent, so that when the paper breaks and releases the roller, the connecting mechanism will detach the link so that it will cease to operate the valve in the steam pipe.

I also claim making the link, x x', adjustable in its length, by means of a slotted slide an screw, or other equivalent device.

61,931.—PREPARING SOLUBLE SILICA, AND IN APPLYING THE SAME TO USEFUL PURPOSES.—Anthony L. Fleury, Philadelphia, Pa. Antedated Dec. 28, 1866.

I claim the process, herein described, for preparing hydrated silica.

I also claim, as a new manufacture, hydrated silica, prepared substantially as described and set forth.

I further claim the improvement, herein described, in the manufacture of artificial stone, marble, paints, cements, and the like, substantially as described.

61,932.—STRAW CUTTER.—Warren Gale, Chicopee Falls, Mass.

First, I claim the pressure cylinder, A, constructed substantially as described, and geared to the cutting cylinder, B, in such a manner that the edge of the knife or knives shall, at the point of contact with the pressure cylinder, move at equal speed therewith, when the said pressure cylinder is constructed of disks of wood, rawhide, leather, or other similar material, not including metals of any kind, and is of full cylindrical form, substantially as set forth.

Second, In combination with the above claim, sliding box, A, screws, E E, spring, D, operating as described and for the purposes set forth.

61,933.—STRAW CUTTER.—W. Gale, Chicopee Falls, Mass. Antedated Aug. 12, 1866.

First, I claim the pressure cylinder, B, constructed as described, and having its entire periphery covered with a surface of soft metal, in combination with a knife-cylinder, provided with oblique of spiral knives, when the said cylinders are constructed and operated so that the edge of a knife, at the point of contact with the soft metal, shall move at the same speed as the pressure cylinder, substantially as and for the purposes specified.

Second, The sliding boxes, c, springs, S, and screws, E, in combination with the devices claimed in the first claim.

Third, The spiral knives, K, when secured in spiral grooves, h, in the cylinder, G, when the said cylinder is geared to the pressure cylinder, B, all constructed and arranged substantially as above described.

61,934.—MACHINE FOR STRAIGHTENING THE WEFT OR FIGURES OF TEXTILE FABRICS.—James Greenwood, Clinton, Mass.

I claim the machine, substantially as and for the purposes described, that is, as composed not only of a straightening roller, made expansible and contractible, as set forth, but of rollers, or their equivalents, for presenting the cloth to the action of such roller and moving such cloth with respect to it, substantially as explained.

I also claim the combination of the adjustable lever, or its equivalent, with with the straightening roller, supported as described, and combined with rollers, or their equivalents, for presenting a piece of cloth to the action of such roller, in the manner and for the purpose as set forth.

61,935.—BELT CLASP.—Philander Harlow, Hudson, Mass., assignor to himself and Asa F. Hall.

I claim the belt fastening, composed of the two plates, A and C, constructed and operating together in the manner and for the purpose substantially as described.

61,936.—EDIBLE PREPARATION FROM INDIAN CORN.—J. W. Haskins, Charlestown, Mass.

I claim the improved edible composition, as made of maize and gum acacia, or the same and one or more sweetening or flavoring matters or substances, substantially as set forth.

61,937.—STEERING APPARATUS.—Horatio F. Hicks, Grand View, Ind. Antedated Jan. 28, 1867.

First, I claim the arrangement of the pistons, S S, rods, L, index, M, and pointer, d, substantially as and for the purpose specified.

Second, The arrangement of the levers, H H, with levers, a a, and rods, K, by means of which the boat may be steered from forward or aft, substantially as set forth.

61,938.—MACHINE GEARING.—Alonzo Hitchcock, New York City. Antedated Jan. 30, 1867.

I claim distributing the power around the shaft to be driven so that the tendency to displace the shaft on one side is counteracted by that on the other by the means and in the manner substantially as described.

61,939.—HARNESS CLAMP.—Thomas B. Hodge, Francistown, N. H., assignor to himself and D. McCaine, Groton, Mass.

I claim the above described arrangement and combination of the clamp, D, the looped straps, C C, the bed piece, A, the rod, E, and the ratchet, F, and catch, H.

Also, the combination therewith of one or more of the auxiliary bed pieces, I, made substantially as described.

61,940.—SORGHUM STRIPPER.—A. D. Huff and L. D. Huff, Clinton, Iowa.

We claim the knife, C, provided with two cutting edges, d e, the first for topping with an endwise thrust, and the other for cutting when drawn back, when combined with the forked guides, b b, of the stock, A, and solid curved stripper, F, arranged and operating substantially in the manner and for the purposes described.

61,941.—ANIMAL TRAP.—Henry Lee, Oberlin, Ohio.

I claim the fall, F, armed with teeth or points, F', standard, G, and yoke, H, in combination with the post, B, baited lever, D, and staple, I, as and for the purpose set forth.

61,942.—FENCE.—J. C. Leonard, Union City, Mich.

I claim the combination of inclined stakes or pickets with a horizontal supporting wire or rod when said stakes are slotted or kerfed to receive the wire, are prevented from spreading apart at their base, all substantially as herein described and illustrated.

61,943.—CULTIVATOR.—Ivory Lord and Sewall Woodman, Saco, Me.

First, We claim the shank, s, as shown in all the figures of the drawings, elongated, and perforated as described, and the brace, b, connected therewith.

Second, The attachment of the teeth by the rods or arms at a distance from the wood, as shown in Figs, 1 and 4, and secured in place by nuts and keys, as described.

Third, The mode of widening or narrowing the machine by sliding the teeth on the arms, r r h h, in Fig. 4, and the combination of all, forming the cultivator as represented and described.

61,944.—HARVESTER.—James S. Marsh, Lewisburgh, Pa.

First, I claim casting the platform, C, in one piece with a tool box on its upper surface to give the required strength to this platform, and with recesses in its outer corner for gears, c2 c3, substantially as described and shown in Fig. 2 of the drawings.

Second, The double-hinged joint platform supported upon inner and outer caster wheels, H H, in combination with the adjustable transverse bar, D', and drag bar, E, substantially in the manner and for the purpose described.

Third, In combination with the hinged platform, caster wheels, H H', suspending devices, D' and E, I claim the lever, F', and link, d', substantially as and for the purposes described.

Fourth, The combination of the lever, F2, with the hinged cutting apparatus and draft frame, transverse bar, D', link, d,, drag bar, E, and transverse, D2, all arranged and operated substantially in the manner and for the purpose described.

Fifth, The combination and arrangement of the forward adjusting device, F', with the rear adjusting device, F2, each having a separate axis whereby the ordinary adjustment is retained and the adjustment of the pitch of the points of the guard fingers to suit the condition of the grass to be cut, substantially as described.

61,945.—COOKING STOVE.—James Marshall, New Orleans, La.

I claim the combination of the columns, b, and ledges, a, with the oven, A, hollow grate bars, the oven, B, a d openings, C, when covered by a cast cross bar, D, when these several parts are constructed and relatively arranged with respect to each other, as described for the purpose set forth.

61,946.—APPARATUS FOR EXTRACTING PARAFFINE, ETC., FROM OIL.—J. B. Meriam, Cleveland Ohio.

First, I claim the stanchions, G, pulleys, d N and O, as arranged in combination with the frames, A, and pan, B, for the purpose and in the manner as set forth.

Second, The cross head, D, friction rollers, c', in combination with the stanchions, G, as arranged and operated by the link, K, and levers, L, for the purpose in the manner specified.

Third, The cylinder, P, as constructed with ribs or corrugations, b, on the inner surface, as and for the purpose specified.

Fourth, The follower, E, with the dependent arms, C, in combination with the cylinder, P, for the purpose and in the manner as substantially as described.

Fifth, The arrangements of the cases, S, bucket, U, pipe, T, in combination with the tank, Q, provided with the perforated bottom, R, as and for the purpose set forth.

Sixth, The cases, S, buckets, V, in combination with the tank, Q, and freezing mixture, for the purpose and in the manner as described.

61,947.—CASTER FRAME.—Frederick J. Miller, Brooklyn, N. Y.

First, I claim the caster frame whose base is provided with receptacles or compartments for salt, sugar, etc., when constructed in the manner described and shown.

Second, I claim the combination of the base, a, and the spring or holder, f, when applied to a caster frame, in substantially the manner described and shown.

61,948.—DUMPING WAGON.—George N. Munger, New Orleans, La.

I claim the frame work, D and E, which supports the body, the one part being fixed to the body and the other to the forward axle, and the two parts hinged together and combined with a device for securing the two axles in