

CORN PLANTERS.—J. S. Toan, of Venice, N. Y. : I do not claim the general construction and operation of the machine, and am aware that many of the devices employed have before been used as specified.
I claim the combination and arrangement for operation together, substantially as shown and described, of the lower striking tube, F, having a plow bit in front, and covering roller rigidly attached to it in the rear, with the secondary cross sliding valve, I, and its operative lever, J, arranged to form part of said sliding tube, F, the whole being supported by the covering roller and plow bit, for the more perfect and easy operation of the secondary valve and sliding tube, as specified.

PLANES.—Thos. J. Tolman, of South Scituate, Mass. : I claim the application to the common plane of the screw attachment and key through the same, thereby regulating the mouth and greatly increasing its value.

REAPING AND MOWING MACHINES.—David Watson, of Newark, N. J. : I claim the use and application of the adjustable curved flat springs, c, to the upper surface of the finger bar, B, when both are attached to the stirrup, A, for joint action, in the manner and for the purpose described.

[The cutters in this reaper are triangular in form and rotary in action; they are placed underneath the finger bar, and no obstruction is offered to the cut grass or grain as it passes over them and the finger bar: owing to the form of the cutters they are not liable to choke; and the finger bar is so hung that it accommodates itself to uneven ground, and the grain or grass is thus cut evenly.]

POWER LOOM.—Wm. Wild, of Manchester, England, Patented in England, March 7, 1856. I claim, when applied to looms, or machinery for weaving pile fabrics, &c. the arrangement of the wires in grooves or ridges, formed in a roller or cylinder, the wires being pushed into the "shed" never wholly leaving the grooves in the roller or cylinder.

I also claim as a peculiarity and novelty, the arrangement of the wires, so that the one to be inserted in the shed is opposite, or nearly opposite, and in a line with the fall of the fabric, or that point where the reed will leave the wire or beating up wire, when so arranged, having to be bent out of the straight line to present the points towards the widest part of the shed, the whole combined and arranged substantially as described.

[This improvement in looms for weaving cut pile and Brussels carpet, will weave from 45 to 50 yards of Brussels carpet per day, and is in general use in Kidminster and other places in England, and does weave 38 yards per day to the other next best loom 18 yards, both driven by the same shaft and having the same speed.]

RECIPROCATING SAWS.—Carlyle Whipple, of Lewiston, Me. : I do not claim the two levers, C, C', to which the saw, D, is attached, separately, for they have been previously used.

I claim the lever, C, C', two or more, when the upper lever or levers are attached to an adjustable shaft, B, and the levers driven by a crank pin, f, having the roller, i, j, fitted upon it, and working within a slot, e, in the lower lever, C, the saw, D, being attached to the end of the levers, the whole arranged as shown and described, for the purpose specified.

[There are two transverse shafts—an upper and lower one—in the saw frame; the upper one is secured in bearings, and can be raised and lowered by screws. The saw is connected to two levers, one on each shaft; therefore, by turning the screws to raise the upper shaft the saw is strained in a very simple and efficient manner.]

PARING AND SLICING APPLES.—D. H. Whitmore, of Chicopee Falls, Mass. : I do not claim the peculiar form of arrangement of the parts.

I claim, first, so arranging the slicing knife that it shall cut the apple into a continuous spiral slice, as set forth. Second, so combining the parer and slicer with each other that the operation of the two shall be simultaneous, as set forth.

CALENDAR CLOCKS.—M. J. Whitmore, of Potsdam, N. Y. (assignor to F. G. Johnson, of Brooklyn, N. Y., and M. J. Whitmore) : I claim placing the intermittent cog, D, upon the upper and lower faces of the calendar wheel, C, and giving said cogs the necessary movement for accomplishing the intended purpose by means of the sliding and stationary and intermitting pinions, E, E', on the shaft, B, all being combined together and operated in the manner and for the purposes set forth.

AXLE BOX ROLLERS.—G. W. Geisendorff, of Indianapolis, Ind., and J. C. Geisendorff, of Cincinnati, O. Patented Feb. 6, 1856. We give means to give motion to the lubricating roller, by mere contact of said roller, with the journal of the axle.
We claim giving a positive motion or rotation to the lubricating roller, by the axle of the car wheel, in the manner set forth.

PRESSING BONNET FRONTS.—W. E. Kidd, of New York City Patented November 28, 1854. I do not claim broadly, the combination of a mold or matrix, for pressing bonnets or bonnet fronts.

But I claim the hollow metallic mold, substantially as described, of the form required to give the complete form required for bonnet fronts, and provided with a mode of imparting to it the required temperature, and the matrix of corresponding form to make pressure, by a motion in or nearly in the line of the axis, when the said mold and matrix are used in connection and in combination with the means described for controlling the position of the strip to be pressed, or any equivalent thereof, as set forth.

CLEANING THE TOP FLATS OF CARDING ENGINES.—Wm. H. Walton, of New York City Patented Dec. 9, 1856. I do not claim two sets of feed rollers combined with a carding machine, as they have before been made and used; nor do I claim the "lickers in," working directly on the main cylinder, as they are to be found on machines previously devised.

I claim stripping the top flats or lays, upon pivots in the center of the ends, by which they can be raised out of the way of the adjoining flats or lays, to be turned by means of a rack working on pinions upon their pivots, or the equivalent thereof, the whole being constructed and arranged substantially as described for the purpose set forth.

I also claim stripping the flats or workers by a rotating brush, so arranged that a card may, in turn, strip the brush and return the strippings to the main cylinder, substantially in the manner and for the purposes described.

DESIGNS.
PARLOR STOVE.—S. F. Pratt, of Boston, Mass., assignor to W. and J. Treadwell, Perry, and Norton, of Albany, N. Y.

COOKING STOVE.—N. S. Vedder, of Troy, N. Y., assignor to Newberry, Filley & Co.

More California Big Trees.

We are informed, says the *Mariposa Gazette*, that a grove of big trees has been discovered upon a branch of King's river, near the saw mill of O. K. Smith. The grove contains over 1,000 trees, by actual count, varying in size from eight to thirty-two feet in diameter. Many of them are from 325 to 375 feet high. The species of tree is the same as those in Calaveras county which attracted so much attention, and which was described in a paper read before the meeting of the Scientific Association held at Albany, N. Y., in August last.

[For the Scientific American.]
Muley and Circular Saws.

In No. 13 of the *SCIENTIFIC AMERICAN*, lately received, I see an article over the signature of "M. English," wherein the writer gives the preference to the muley over the circular saw. He also deals in a very harsh way with the statements of those who have cut more with the circular saw than the muley.

Although I agree with him that the muley possesses great advantages over every other straight saw; and I am willing to admit that it is, in some respects, superior to the circular saw, as generally constructed, yet I cannot go so far as he does, and claim for it a superiority over every other saw.

Mr. English assures us that his opinion is based on practical experience, yet it seems, from the succeeding sentence, that he has only seen the circular saw cut, in certain mills. They certainly were not the best mills in the United States, or Mr. E. would no longer have questioned the veracity of those who have sawed 12,000 or 15,000 feet in twelve hours.

I believe the circular saw is superior to all others, and base my opinion on the fact that every cause must be followed by its effect. The best mill is that which will cut the greatest amount of lumber in the best manner, and at the least expense, in a given time. Let us see what mill is best qualified to do this.

The circular saw will cut more than any other, because, first, it is constantly cutting, and second, the only limit to its speed is the rapidity with which the log can be fed to it.

The quality of the work done by the circular saw will compare favorably with that of any other saw, when an equal amount of work is done with the same power. On the score of economy, there is no reason why the straight saw should be preferred to the circular. In this region, those who have straight saws are rapidly exchanging them for the circular; but I do not know of any one exchanging a circular for a straight saw. This I consider good evidence that those who have tried both, regard the circular saw as the most economical.

J. W. GAREY.
Grenada, Miss., January, 1857.

The same Subject.

MESSRS. EDITORS.—A communication headed "Which is the Best Saw?—The Muley," on page 99, present volume of the *SCIENTIFIC AMERICAN*, deserves notice. The fling of Mr. English at the circular, evinces a want of knowledge of the machine, and of the principles of sawing. He remarks, "I have no faith in the statement of a circular saw cutting from 12 to 15,000 feet in twelve hours—oak logs eight feet long at that. . . . It would take about 75 logs, or between 600 and 700 cuts with the same number of runs back, and sets, with 75 stoppages, to put on and take off logs in 12 hours. There are but 720 minutes in 12 hours," &c.

Certainly, he could never have witnessed a well-constructed saw cut. But let us review his figures. If we take from the 720 minutes one hour for breakfast and another for dinner, we will have 600 minutes left. 75 logs are to be put on—not taken off, each plank is taken away as sawed—and one minute is more than sufficient time to put on a small log, but say 75 minutes, and we have 525 minutes left to cut 700 lines. Now a good circular saw will cut a line 24 inches deep and 12 feet long, back and start again in 20 seconds—or cut three lines per minute. But say it takes 30 seconds to cut a line in an 8 feet log, and we will have 175 minutes—near three hours—of the twelve left, after finishing the work.

Most circular saws are driven by engines inadequate to force them forward with sufficient speed, and few sawyers are capable of putting them in order to bear feed if they had the power. Of all machines, the circular saw requires less practical and more theoretical knowledge to put them in order than any other. Hence so few good sawyers, and so many who, not having seen one conducted by one who understood his business, condemn them.

A little reflection will convince any intelligent scientific person, that the circular saw surpasses all others, so far as fast cutting is concerned. A tooth of a saw can be made to cut only a certain distance forward each time it passes through the wood, no matter whether it be on a reciprocating or on a cir-

cular saw. And if it be driven with sufficient force, it will cut that quantity, and no more; which quantity depends on the order the saw is in. Now, a five feet circular saw is near 16 feet in circumference, and if it make 600 rotations per minute, over nine thousand feet of its edge will pass through the wood in that time. A muley saw is not cutting more than one foot each stroke, and, at 300 strokes per minute, 300 feet of the edge will pass through the wood per minute—only one-thirtieth of that of a circular saw. But, although there is no good reason for it, the circular saw has only one tooth in the space that a muley saw has three; therefore only ten teeth of the circular saw pass through the wood to one of the muley. Hence, when the power is not limited, if a tooth of a circular saw can cut as deep as a muley, and there can be no reason assigned why it should not, a circular saw can be made to cut forward ten times as fast as a muley.

J. E. CONGER.
Jackson, Tenn., January, 1857.

Mammoth Cave Pit.

MESSRS. EDITORS.—In No. 16, *SCIENTIFIC AMERICAN*, there is an article on the Bottomless Pit of the Mammoth Cave of Kentucky. Persons are liable to be deceived regarding deep pits by mere sound. I have a well, only 82 feet deep, of large diameter, and walled with thin shelly limestones. Now, while a tube of smooth interior is a good conductor of sound to a vast distance; it is very difficult to understand what a man says who stands at the bottom of my well. Apply this to the shelving surroundings of the Bottomless Pit, and it may be, that it is not quite bottomless.

A large salt spring in this County (Saline) was said to be bottomless, by the early surveyors, who could not fathom it with the length of four of their chains—264 feet—but a friend of mine, with a lead and line, found only 15 feet. The surveyors only dropped their chains, link by link, into the bubbling sand, and might have so disposed of half the chains in the United States. The spring is 30 feet across, and affords water to turn a mill (salt) 80 to 1, or more properly 1 bushel of salt to 80 of water.

J. L. H.
Arrow Rock, Mo., 1857.

Dr. Livingstone Discoveries in Africa.

The celebrated traveler, Dr. Livingstone, has been lecturing since his return to England, as we learn by recent news. His adventures have been of the most dangerous and thrilling character. He traced by himself the course of the great river Zambesi, in Eastern Africa, extending two thousand miles.

This immense stream, whose discovery is the great fruit of the journey, is in itself an enigma without parallel. But a small portion of its waters reach the sea coast. Like the Abyssinian Nile, it falls through a basaltic cleft, near the middle of its course, which reduces its breadth from 1000 to 20 yards. Above these falls it spreads out periodically into a great sea, filling hundreds of lateral channels; below it is a stream of a totally different character. Its mouths seem to be closing. The southernmost was navigable when the Portuguese first arrived in the country, 300 years ago, but it has long since ceased to be practicable.

During his unprecedented march, alone among savages, to whom a white face was a miracle, Dr. Livingstone was compelled to struggle through indescribable hardships.—The hostility of the natives he conquered by his intimate knowledge of their character and the Bechuana tongue, to which their is related. He waded rivers and slept in the sponge and ooze of marches, being often so drenched as to be compelled to turn his arm-pit into a watch-pocket. Lions were numerous, being worshiped by many of the tribes as the receptacles of the departed souls of their chiefs; however, he thinks the fear of African wild beasts greater in England than in Africa. He has memoranda of the latitudes and longitudes of a multitude of cities, towns, rivers, and mountains, which will go far to fill up the "unknown regions" in our atlases.

Toward the interior he found the country more fertile and more populous. The natives worshiped idols, believed in transmi-

grated existence after death, and performed religious ceremonies in groves and woods. They were less ferocious and suspicious than the sea-board tribes, had a tradition of the Deluge, and more settled governments. Some of them practiced inoculation and used quinine, and all were eager for trade. Their language was sweet and expressive. On the arid; lateau of the interior, water melons supplied the place of water for some months of the year, as they do on the plains of Hungary in summer. A Quaker tribe, on the river Zanga, never fight, never have consumption, scrofula, hydrophobia, cholera, smallpox, or measles.

Dr. Livingstone is nearly forty years old. His face is furrowed by hardships and thirsty fevers, and black with exposure to a burning sun. His left arm is crushed and rendered nearly helpless from the embrace of a lion.

Dr. Livingstone's discoveries, in their character and commercial value, have been declared by Sir Roderic Murchison to be superior to any since the discovery of the Cape of Good Hope by Vasco de Gama. But greater than any commercial value is the lesson which they teach—that all obstacles yield to a resolute man.

Louisville Mechanical Institute.

This Institution is in a very flourishing condition, as we learn from the report of its able actuary, D. McPherson, Esq. The library is in a promising condition, the rooms are better attended, and more volumes have been circulated than during any previous year.

Since the 1st of May, 1,065 persons have drawn books from the library. Of this number 523 were members, 807 ladies, and 235 minors. Many ladies and minors get books on members' account.

In the same time, 10,523 volumes have been circulated, averaging 1,403 per month—an increase of nearly 300 volumes per month over last year.

The Annual Exhibition was very successful. The building was well filled, principally with the manufactures of Louisville, and the receipts were larger than they were last year, under more disadvantageous circumstances. The expenses were greater, on account of the removal of the building; but, exclusive of the expenditures attendant upon the removal, they were not so great, while there was an increase in the receipts. The community looks upon these expositions now with a more favorable eye than ever before, and seems to appreciate more correctly their importance.

A fine class in mechanical drawing has recently been established, and is now in successful operation, under a competent and successful teacher. It promises to be one of the most interesting and beneficial features of the Institution.

The total amount of receipts were \$7,309.42. Expenditures, \$5,706.92, leaving a balance of over \$1,600 in the treasury. This Institute is, no doubt, under able management, and does great credit to the mechanics of Louisville.

Spinning on Cotton Plantations.

We have seen in several of our cotemporaries long and favorable notices relating to the improvement that would be secured by spinning the cotton into rovings direct from, and in connection with the ginning of it. Upon the same principle of reasoning it would also be an improvement to manufacture the cotton into cloth on the plantation. The question is, what end will be secured thereby? Will it be profitable for each planter to get up carding and spinning machinery in order to spin his cotton into yarns before leaving his plantation? in other words, to have a cotton manufactory attached to it? We are of opinion that on a very large plantation it might be profitable to erect a cotton mill, just as it might be profitable to erect a grist mill to grind the wheat of a large farm, but not otherwise.

A Steam Whaler.

A screw steamship, according to the *New Bedford Mercury*, is being fitted out at Providence for the northern whale fishery. This shows the right kind of enterprise among our whalers; the present high price of oil will enable them to employ steam with profit.