



[Reported Officially for the Scientific American.]

LIST OF PATENT CLAIMS

Issued from the United States Patent Office FOR THE WEEK ENDING OCTOBER 9, 1853.

**PLOWS**—By C. R. Brinckerhoff, of Batavia, N. Y.: I claim, first, combining with the plow beam between the plow and the clevis, two wheels, one on each side of the beam and of different diameters, the one resting in the furrow, and the other on the land, as described.

Second, I also claim making the tread of the furrow wheel narrow for the purposes described.

I also claim making the said wheels, especially the furrow wheel, adjustable in the direction of its axis, for the purpose of adapting its position to furrows of different widths.

I also claim making the furrow wheel bevelling outward on the side which presses against the land, as set forth.

I also claim making the small wheel adjustable vertically with reference to the shaft and the large wheel, as described.

**HULLERS OF GRASS SEED**—By H. P. Byram, of Louisville, Ky.: I claim, in combination with the rubbing or scouring wheel, the method of feeding up and holding against the said wheel, the seed to be cleaned by a pressure which is unvarying, whether the hopper be full or not, as described.

**DETACHABLE LINING FOR THE FIRE BOXES OF STEAM BOILERS**—By John B. Collan, of Reading, Pa.: I claim a detachable lining for the sides and ends of fire boxes of steam boilers, consisting of one or more tubes connected with the adjacent water space by means of hollow bolts, or their equivalent, as set forth, so as to admit of the ready removal and replacement of the tubes.

**ASH PANS FOR LOCOMOTIVE ENGINES**—By Gilman Davis, of Roxbury, Mass.: I claim taking in the air in front of the ash-pan, and introducing it into the fire-box in a direction opposite to the furnace doors, to protect the fireman from the back lash of the fire when said doors are opened, by means as described.

**OPENING AND CLOSING GATES**—By S. G. Dugdale, of Richmond, Ind.: I claim, first, opening, closing, fastening, and unfastening the gate, by moving the bottom of the gate in an oblique direction from and to the post, upon which it is hung, as specified.

Second, I also claim the use of the pendulous and vertical levers and arms, in combination with the hinges of the gate, as set forth.

**COVERING IRON WITH GUTTA PERCHA**—By Chas. Good-year, of New Haven, Conn.: I claim the art or method of coating articles composed wholly or partly of metal, with compounds of caoutchouc or gutta percha, and subjecting the same to a high degree of artificial heat, or the process of vulcanization, as specified.

**HILL SIDE PLOWS**—By N. Harrison & J. W. H. Metcalf, of Ridgeville, Va.: We claim curving downward and inward the beam in the rear part, so as to cause it to support the rotary part of the plow, which it performs in combination with the standard, as set forth.

**DRIVING CIRCULAR SAWS**—By Joseph Harris, Jr., of Boston, Mass.: I do not claim driving pulleys by their surfaces coming in contact with each other, that method having been first used.

I claim, first, the method of hanging the arbor frame on journals, for its axis each side of the driving pulley bringing the axes of the arbor frame within the circumference of the driving pulley, or on a line passing through the driving pulley, in such a manner and at such an angle with a tangent to the driving pulley that the act of feeding the stuff to the saw or cutter, will press the arbor pulley against the driving pulley, as described.

Second, hanging the arbor frame on such an angle that the act of feeding the stuff to the cutter will press the arbor pulley against the driving pulley, in combination with a spiral spring, or its equivalent, for holding the arbor pulley firmly against the driving pulley, as described.

**ATTACHMENT OF A HARROW TO A LAND ROLLER**—By Daniel Hill, of Barton, Ind.: I claim the arrangement and mode of attaching the harrow to the forward axle of a roller, as set forth.

**COB AND STALK CUTTERS**—By T. B. Jones, of Carville, Ala.: I claim the combination of the feeding trough, its gauge disc, the tube, and its gauge-ring, with the knives, whereby the same knife will, at the same time, cut for coarse and cobs fine, and thereby improve the quality of the product as feed for animals.

**WINNERS OF GRAIN**—By H. M. Keller, of Newark, Ohio: I claim the trap door in combination with the screen, arranged and operated as set forth.

**STRAW CUTTERS**—By J. J. Parker, of Marietta, Ohio: I claim operating both the reciprocating gate and the feeding rake by means of the compound spring pitman, substantially as herein set forth.

**ROTARY ROOT-DIGGING CULTIVATORS**—By Samuel Snow, of Fayetteville, N. Y., and Alexander Hime, of La Fayette, N. Y.: We claim the combination of the two toothed cylinders with the receiving box, all being arranged and suspended on an adjustable frame in the manner set forth.

**SHAKING SHOES FOR WINNERS**—Jacob L. Van Valkenburg, of Ogdensburg, N. Y.: I do not claim the use of sieves in cleaning grain, but the communication of reciprocating motion to the said sieves or separators, and also the construction of the machine in the manner set forth for separating grain from cackle &c.

**TREATING METALS WHILE IN THE MOLTEN STATE**—By Horace W. Woodruff, of Watertown, N. Y.: I claim treating metals while in the molten state, to expel impurities therefrom, by immersing therein some porous or cellular non-conducting substance or substances containing liquid matter substantially as specified.

**VEGETABLE CUTTERS**—D. H. Whittemore, of Chicopee Falls, Mass.: I claim the combination of the long and short knives on the periphery of the cylinder with the hopper arranged and described as represented.

**WASHING MACHINES**—H. G. Robertson, of Greenville, Tenn.: I claim the employment of the double-chambered slatted bottom tub in combination with the vibrating or rocking frame constructed with two hinged slatted wash boards, which have cords passing under the bottom of them for holding the clothes against their bottoms while washing, the said boards being made removable or swinging, so that the clothes can be easily laid on the cords, and also being set in such a position that they and the clothes will always be caused to strike parallelly the slotted bottom and the hot suds in the tub, and force the latter through the pores of the clothes, and cause them to be washed clean, the whole being constructed and arranged and operated in the manner described.

This is a very novel arrangement, and is capable of operating well.

**GRIDDLES**—By Banford Gilbert, of Pittsburgh, Pa.: I claim constructing griddles of two pieces, separated by flanges furnished with openings to admit of the passage of cool air between the upper and lower pieces of the griddle, which openings may be closed at pleasure, as described.

**OSCILLATING ENGINES**—By A. B. Latta, of Cincinnati, Ohio: I claim the mode of arranging the valve chambers, outside of the barring or trunnion on which the cylinder oscillates, in such a manner as to allow the wrist pin of the eccentric rod to move equally across the center of the trunnion and moving equally above and below, and hereby giving motion to the valve or valves

by said eccentric, independently of the oscillating of the cylinder.

I also claim the sliding bar or bars to which the eccentric is attached and passing up the whole length of the valve chambers to the end or ends, as the case may be, and attached to the valve rods, thereby giving motion to the valves.

I claim these arrangements or their mechanical equivalents.

**LIFE BOATS**—By Lelland Foreman of New York City: I claim constructing the body of my life-boat wholly of metallic tubes, brazed or similarly united throughout, thus affording a water-tight and solid metallic connection, and a mutual bracing of every part, as shown, whereby are attained the objects explained in a compact and generally advantageous manner.

I further claim, in combination with such boat, the detachable tubular seat, as described.

**VALVE MOTION OF OSCILLATING ENGINES**—By Wm. Stephens, of Pittston, Pa.: I claim, first, the combined arrangement of the slide valve and the guide, which assists the oscillation of the engine in producing, and directs the motion of the said valve, as described, to wit, the valve being arranged to work transversely to the cylinder, and the guide being in the form of part of a helix or screw, concentric to the axis of the cylinder's oscillation, and receiving an arm or cross-head, attached directly to the rod or stem of the valve, whereby the intermediate mechanism usually employed is dispensed with.

Second, giving the valve the necessary or desired lead, by means of the adjustable sliding lining pieces which line the sides of the guide, and are furnished with projecting or rising parts, which will give the necessary lead in working the engine in either direction, as set forth.

[A notice of this invention is published on page 372, Sci. Am.]

**CUTTING BINDERS' BOARDS**—By John A. Elder, of Westbrook, Maine, (assignor to John E. Coffin, of Portland, Me.): I claim, first, the arrangement of machinery for cutting pasteboard into strips, and those strips a given length at the same time.

Second, the arrangement of the rocker shaft, roll, and shears, as described.

Third, I also claim the series of shears, or its equivalent, for the purpose described.

**CULTIVATING PLOWS**—By L. M. Whitman (assignor to S. G. Wise), of Weedsport, N. Y.: I claim the employment of the long inclined spring wings, secured at their front ends to the share and main standard, and turning upon the pin, in combination with the mechanical contrivances shown, for expanding and contracting the wings, or setting them more particular nearer together, for the purpose of throwing more pulverized soil against or up to the hills, or setting them less inclined to the horizontal plane, and further apart for the purpose of allowing the pulverized soil, weeds, &c., to pass over them into the board open spaces in the center, the effect being to cut up the weeds and pulverizing the soil, as set forth.

[We should think this an excellent machine for cutting weeds.]

DESIGN.

**METALLIC COFFINS**—By T. J. Gillies, of Williamsburgh, N. Y.

**CORRECTION**—COOKING RANGES—In our list of patents last week, a mistake inadvertently occurred in the claim of Geo. S. G. Spence, as sent to us. Before the words "I do not claim to so combine," there should have been inserted the following:

"I claim the arrangement of the openings, Y Y, and damper, Z, with respect to the arrangement of smoke flues above and below them, as specified, by which combined arrangement I am enabled, when desirable, by the direct draft, to cause the heat to pass under the back half of the bottom of the oven up alongside the entire back of the oven, and up the rear portion of the left side of the oven, and over the top of the oven into the chimney, instead of carrying it entirely around the oven, as set forth.

Also insert the word, "chamber," between the words "boiling" and "is," in the sentence "but the bottom plate of the boiling is also made to impart heat thereto," which occurs near the end of the claim as received and published by us.

Bonnell's Patent Flouring Process.

[As stated by us last week, we commence to publish the full specification of David P. Bonnell's patent process for manufacturing flour. The information contained in it is valuable to every person in our country—miller, farmer, chemist, &c. It will be completed in about three numbers.]

Before describing my improvement, I will briefly explain the process now practiced, which is as follows, to wit: the grain after being cleaned is passed between the surfaces of the mill stones, and by the friction imparted by them pulverized and sent to the cooler, or "first bolts," for the purpose of separating the flour from the "offal." In ordinary flouring mills it usually passes through two bolts, called "superfine" or first "merchant bolts." The flour produced by this bolting is generally divided by means of conveyors under them, into "superfine flour," and what is termed "returns." That part first produced at the head of the "bolts" is sent to the packing chest or barrel, for packing, the remainder produced, towards the "tail," is sent back or "returned" to the "cooler" or head of the superfine bolts, to be again re-bolted, with the view of mixing and sifting through with the "superfine flour."

The "residium" or "offal" then passes from the first bolts to the lower merchant or return bolts, which are generally covered in part or entirely with coarser cloth than is generally used on the "first bolts," for the purpose of sifting out the particles of flour which is found too coarse to pass through the meshes of the fine cloth on the first bolts. The flour from these bolts is also sent back or returned to the "cooler" or "first bolts," with a view to incorporate it with the superfine flour. The offal is again passed into succeeding bolts, and the flour produced is sent back or returned as above to the superfine or first bolts, and this process is continued until the offal reaches the bolts with suitable coarse cloth or wire adapted to them,

for separating it into "middlings," "ship stuffs," "shorts," and "bran" or into 2, 3, or more qualities of "stuffs" as may be desired. If separated into two qualities, it is generally denominated "shorts" and bran, or "middlings" and bran. Since the introduction of what is well known as "Patent Dusters," the offals are submitted to the action of them, generally after having passed through all the ordinary bolts in the mill, when the work is regarded as perfected, with the exception of the middlings, which, it will be seen by their title, are not regarded as offal feeds or residuum until after being re-ground, which is usually done at "slack times," or intervals between the regular flouring season, after which, the flour being bolted from them, they are denominated "finished middlings," "offal," or "feeds."

By this process of flouring, the quality of bolting cloth used on the various bolts, though often differing in quality, and the relative proportion of each, is usually about No. 9 or 10 for the superfine bolts; Nos. 6, 7, or 8 for the lower merchant or return bolts, and Nos. 3, 4, or 5 for middlings, with such other coarser quality as may be suited for separating the coarse feeds, as ship-stuffs, shorts, or feeds, &c.

Occasionally, with good machinery and perfect skill, the flouring process is regarded as finished without re-grinding the middlings, which is then separated with the ship-stuffs and shorts, and regarded as feeds. But in most cases that material which is bolted through Nos. 3, 4, and sometimes 5 cloth, being a coarse partially ground flour, is submitted to a second grinding after being carefully separated from the ship-stuffs, shorts, and bran.

The ship-stuffs were formerly used for navy or ship bread, but with the improved machinery now in use, it is regarded as useless for every purpose save feed for cattle, as used occasionally for distilling.

By this mode of flouring, and with the most improved machinery managed with the best skill, the barrel of superfine flour is seldom produced from less than 4 15-60 bushels wheat, and is rated to be, on an average, in first class mills, from 4 1/2 to 4 3/4 bushels to the barrel, and by a chemical analysis of various samples of wheat flour it appears to contain about from 10 to 12 per cent. of gluten, the amount of which is generally regarded as a good indication of the nutritive value of flour.

According to Davy's Agricultural Chemistry, English Middlesex wheat contained 19 per cent. of gluten, Silician wheat 23-90, Poland 20, and North American 22-50 per cent.—or about double the amount found in the American flour. It is also shown by chemical analysis of that part of wheat, which we term bran, that it contains much more of the nutritive property of the grain than is found in the superfine flour. Professor Johnston, showing the amount of gluten to be more than double, while by an analysis by Millen, there were shown to be, in 100 pounds of bran as follows, to wit:—

Starch, dextrine and sugar	53,00
Sugar of liquorice	1,00
Gluten	14-90
Fatty matter	3-60
Woody matter	9-70
Salts	50-00
Water	13-90
Aromatic principles, &c.	3-40

This analysis was made with 100 pounds of bran from soft French wheat, which it is well known does not contain the amount of nutritive matter that is found in the harder varieties, yet it shows that over two-thirds of the whole amount is of a valuable nutritive material, susceptible of being made into flour, and more than one-half is the very material of which the superfine flour is composed, to wit, starch and gluten, and that the amount of the latter surpasses the average of that found in the best quality of superfine flour. Many experiments in the analysis of wheat, of flour and bran show the same general results, only varying in proportion according to circumstances, all proving conclusively that a large proportion of valuable nutritive matter, which is readily digestible, and which contains a large amount of the fat-forming matter as well as bone and muscle material, goes off with the bran and offal by imperfect manufacturing.

There seems to be considerable contrariety of opinion among chemists as to bran being a nutritive matter; analysis, however, clearly shows that what the miller puts into bag, and calls bran, is highly nutritive, the only question to be settled is whether what custom has designated as bran may not have associated with it a material that is not bran proper, and which contains the nutritive matter found in bran as it is. This might be decided by an analysis of 100 lbs., of the outer coating of wheat, or bran, taken off by Bentz's process, which, if done, it would undoubtedly show that it is not, of itself, very highly nutritious, as an indispensable article for the sustenance of human life.

(To be Continued.)

(For the Scientific American.)  
Auriferous Discoveries in Maine.

As your paper is a repository of improvements and discoveries, I wish to contribute to its columns a few particulars in reference to the recent discovery of gold in this vicinity. The auriferous character of this region was first noticed, or at least made known, by returned Californian miners. One of these, Mr. Hankerson, with his party, have been digging and washing for the metal at Madrid, on Sandy River, in this county, for some time; but of the results of their labors we have not been authentically informed. I have seen about twenty-five small pieces of gold, and had an opportunity of testing some of it, which was washed from the sand of their locality by gentlemen visiting the place. Many who have visited their "diggings" think that the gold is not found in sufficient quantities for profitable working.

A few days since I visited, (in company with two friends,) a saw-mill in the south-western part of "Phillips," and washed out a small quantity of this metal. The pieces procured were small, only about the 55th of an inch across. When viewed with the microscope, their surfaces appear very uneven; numerous indentations peculiarly mark them, which are evidently the marks of the matrix in which they were consolidated. It was found in coarse gravel and sand which had been washed from the wheel-pit of the mill. The gravelly soil contains numerous quartz, and a considerable quantity of black ferruginous sand. The black sand is slightly magnetic. The gold must have been carried from its primitive position by water, and lodged in the diluvial deposits. The land is very uneven in the vicinity, rising into little eminences or mounds, and characterized by a profusion of erratic boulders. The soil is sterile, and in places strewn with fragments of quartz rocks.

We cannot judge, at present, to what extent the metal may be found; but it is very improbable that it can be obtained so as to compensate, reasonably, the miner for his labor. That it is found in minute grains at several places in this section, I cannot doubt.

The principal advantage which will arise from its discovery, I think, will be in the determining of the mineralogical character of the country.  
STILLMAN MASTERMAN.

Weld, Me., Oct. 4, 1853.

Our Navy Steamers.

The U. S. Steamship Allegheny has returned from her trial trip disabled, and the engineer pronounces her unfit for service, not having been able to get more than four and a half knots per hour with the aid of sails. The engine frame, being of cast iron, was split by the expansion of the vessel, which is also of iron. The fissure spread open an inch wide, causing a general smash of the machinery.

Since the Princeton's return to New York a survey has been held on her machinery—engineers Copeland, Martin, and Shock held it.—They report that but slight alterations, which may be made in six weeks at the farthest, will be necessary to render her probably quite as good a vessel for the service required of her, as was originally expected by the Navy Department.

[The above we copy from our dailypapers.—It fully confirms everything we have said about the disgraceful state of our naval steamers. A reform is certainly demanded in our Navy.]

The "Argane," a tree, the fruit of which (after furnishing an abundant oil) is excellent food for cattle, is now introduced into France.