Scientific American

NEW YORK, MARCH 22, 1851.

A Word to All.---The Scientific American.

We send four thousand copies of this number of our paper to those who are not subscribers, in order to let them see what kind of a paper it is; and to those who do not know us, we say, read the paper throughout—if you like it, subscribe; if you don't, or if you cannot, then hand your number to a neighbor, and be sure that he is fond of mechanical or scientific pursuits, or has a taste for such matters.

The Scientific American is now in its Sixth Volume, and from a small beginning it has attained to the extensive circulation of 16,000 copies weekly. It has taken much money and application to bring about this result. Since we commenced its publication, many papers of the same kind have been started, but not one has been successful; they have all failed. At present we remember no less than six papers which have "come and gone." It is very difficult to establish a scientific paper, devoted, as our is, more especially to the practical arts.

Many who receive this number may be somewhat suspicious, as a great number of papers are got up for the mere purpose of catching transitory subscribers. Our character is so well known, that any one who has such a suspicion is requested to remember that this is our 6th Volume, and to make personal inquiry about us.

It is a leading part of our policy to keep improving every volume. Those who have taken the Scientific American from its first volume, well know how much we have improved. In order to keep improving, it is necessary to keep on extending our circulation. Our friends who have the spirit of progress, have hitherto assisted us to do this, until we have attained to a circulation far greater than that of any periodical of the kind in the world. We still trust to our readers in endeavoring to get neighbors to subscribe, by putting specimen numbers into their hands, and lending them a number sometimes to read.

At the present day no one can pretend to be intelligent, and be ignorant of what is passing in the world of science and art. The Scientific American is the only weekly source, in our country, to obtain the greatest variety and most particular descriptions of all new and useful inventions and discoveries. From five to seven good engravings illustrate every number, and at the end of the year this makes an illustrated volume respecting useful things, which has no equal, and which, if in a book, would cost from eight to ten dollars.

Those who wish to subscribe for the back numbers of this volume, can be furnished with them.

Cast Iron Pavements.

On page 108 we commented, in an article on pavements, upon a pamphlet published by Mr. Thomas A. Davies, of this city, describing a method of employing cast iron plates with rough surfaces, as a superior substitute for all other kinds of pavements heretofore used. We objected to this kind of pavement, and stated that we believed it was not so good as small granite blocks. We have paid considerable attention to, and have examined a great variety of pavements. Our unfavorable opinion was a candid one, but rather hasty. Mr. Davis called upon us the week after, as stated on page 197, and wished us to make a full personal examination for ourselves, saying "he was convinced that we would come to the same conclusions to which he has come." He also stated that he was convinced that we possessed a great deal of information on the subject, and if the plan proposed by him was good, it would be a general benefit, and that being the case, it was against our good practice to exert any influence, by opinions expressed, contrary to the general good. When we find that we have held a wrong opinion, it is just to say so, and we conceive it to be the only honest plan to pursue. Since that time we have had a letter from Mr. B. G. Brooks, of Holyoke, Mass., on the same subject. He has sent us a drawing of a plan for a cast-iron pavement, and he says, "he thinks they are designed to supersede all others, in cheapness and unlimited durability." It is not possible for us to give a good idea of this plan without a drawing, but we have come to the conclusion that he is right, and as we have presented an abstract of Mr. Davies' plan, on page 108, we will state that we have examined, day by day, for about two weeks, the cast iron plates which have been laid down over the water mains in Broadway, and other streets, for ten years past, and they are nearly as perfect as the day when they were laid down. These plates have not had fair play either, for they are not bolted down, but simply laid upon the wood, and are loose. They are mostly lower than the pavement, thus being in the very worst position for wear, owing to the sudden downward shocks of cart and omnibus wheels. Nevertheless, for all this, they are an *enduring* testimony that cast-iron plates are "unlimited in durability." The surfaces of these plates are check-ridged, to allow the horses' feet to get a firm hold and not slip. We would have thought that these small ridges would have been ground down —abraded—by the action of the wheels. Cast iron, however, does not wear by a rolling motion over it, although it does—not very slowly either—by human feet shuffling and sliding on it. It is this nature of the metal that will make it answer so well for pavements.

Mr. Davies, by his plan, bolts down his plates, and his wood presents a slightly elastic foundation—the very thing required. But from what we have seen of its durability, we believe that the metal plates laid down in a good wood foundation would stand for twenty years, although they were not bolted down at all. This pavement will afford an easy plan to get down to gas pipes, sewers, and water mains, and the plates can be cast in any one place to make pavements a thousand miles distant. We believe it will be cheaper than the granite block pavement, and we hope that our city authorities will order a section of one of our public streets to be paved by this plan. We sincerely wish this, in order that we may see the plan fairly tested on a scale commensurate to the forming of a full and certain incontrovertible opinion of its practical qualities, for assuredly it is a very important and interesting question to every city and village, not only in our own country, but, we may say, to the whole world. Let this improvement be but fairly demonstrated (and a fair test will, we have no doubt, give affirmative results), and then who can estimate the great improvements and benefits that will be conferred upon our country, by having all the streets of our cities and villages paved with cast-iron; the expense will be less, by a vast deal, in the end, than the worst kind of cobble stone pavements.

Steamboat Boiler Bursting on the Western Waters.

How criminally reckless we are, as a people, of life. Not a week passes away without the occurrence of some terrible accident, whereby a number of human beings are suddenly ushered into eternity. If it is not an explosion it is a railroad collision or the falling of some buildings. We must say, however, that the destruction of life is far greater by steamboat boiler explosions than anything else, out of the natural course of events. More lives have been lost by such accidents than by all our wars. The Mississippi is the great and red theatre of such disasters, and no doubt the majority of explosions are the result of recklessness. On the 2nd of this month, the steamboat Oregon, from St. Louis, Ky., bound down the river, burst her boiler just after the passengers, about one hundred in number, had partaken of dinner. The loss of life was fearful; no less than twenty-five, it is stated, died after the accident, from the scalding they received. Eight firemen, all the waiters, and a great number of passengers were killed in an instant. Now it would appear that there was plenty of water in the boiler, and the only way to account for the accident is, that there was too great a steam pressure. It makes no matter whether the pressure is 50 or 100 lbs., it may be too great at the lowest pressure, if the boiler is not good, but we have information at hand which informs us that far more than 100 lbs. pressure is sometimes employed by the engineers. A correspondent writes us, saying, "the Western boats generally use Evan's Safety Guard, but when the water gets below the flues, as it sometimes does by the boat lying on one side, to prevent the guard whistle from giving an alarm the engineers stop it so as not to frighten the passengers. The safety-valve is generally weighted to carry about 100 lbs. of steam, but beside this they have a rope fastened to the lever of the valve which goes to the engine, over pulleys, for the engineer to blow off the steam by pulling a ring, but this rope is double, and has an opposite ring on which, if a counter weight be used, (and I have seen wrenches and pieces of iron, weighing at least 50 lbs., placed on this, with the rope passing over the pulley,) will exert at least from two to three hundred pounds on the safety-valve." This information explains to us the fruitful cause of many explosions. Engineers, however cautious naturally, become reckless by frequent exposure to danger. A Commission should be appointed by Congress to search *incog* into such matters.

Steam versus Stame as a Propelling Power

Mr. James Frost, of Brooklyn, engineer, has published a letter giving some history of his discovery of "*stame*," which consists in heating steam apart from the water in the boiler, and converting it into *stame*, whereby, according to our former publication (Vol. 5), 4 degrees of heat doubles the volume. He states that Mr. Allen, of the Novelty Works, took out an English patent for the discovery, for half of the profits, after Mr. Frost had shown him the practicability of the discovery. He says that Dr. Alex. Stevens, at the head of the New York University, took an interest on the same terms in Scotland and France. He also states that E. K. Collins, Esq., took the precaution to investigate the matter by sending an engineer in whom he had confidence, to scrutinize the experiments, and personally witnessed five experiments with an eight horse-power condensing engine, working alternately by steam and *stame*, and that he was accompanied by Profs. Renwick, of New York, and Cooper, of Georgia, who expressed themselves satisfied, and then Mr. Collins purchased Mr. Allen's interest in the English patent. Mr. Frost says that a long list of eminent persons might be named who witnessed and were satisfied with the details of the discovery, and that it can be applied to all kinds of engines. He says that marine engines may be propelled with one-fourth of the fuel, fewer boilers, and at greater speed.

Mr. Frost has informed us that he applied for an American patent but was refused, because the Patent Office Examiner did not believe in the discovery. This property, *stame*, is also the one which the Rumford Society, of Cambridge College, in the name of Prof. Horsford, reported against, which report was published on page 24, Vol. 5, Scientific American. The *stame* is produced by heating it apart from the water in the boiler, by making it pass through hollow grate bars in the furnace or else through a coiled pipe, and taking it thence to the cylinder. Will not some of our readers try the experiment and give us the results,—collateral testimony to Mr. Frost, or otherwise. What is the reason that Mr. Collin's does not employ this discovery, when he owns the patent? And what is the reason that the eminent men spoken of have been perfectly silent about this discovery? If it is true, if they are satisfied of this, it is the greatest discovery of the age. Is it not wrong, then, to keep silent. Some of our readers, we believe, will soon set the matter right with the public.

Business in the Patent Office.

We have received a great number of letters lately enquiring "how far behind is the Patent Office with examinations?" We have to say that it is behind at least five months with some classes of cases. The business is not so far foward as it was this time last year. There are other classes which are not over one or two months behind. We regret exceedingly that the Patent Office should be so far behind. It should never be over one month at the farthest. When applications for patents are made, the minds of the applicants are always unsettled until they hear what has been done with their cases. There are many who, in a pecuniary point of view, suffer great loss by delay in the office. For example: there are some things which at once would command a sale, and the buyer is as much interested as the seller, but owing to no patent having been issued, the goods, articles, or whatever they may be, will not and cannot be put into the market on the fair and candid terms of being new and useful improvements. We would like, and so would all inventors, and the Patent Office Bureau also, if there was a proper force in the office to keep the business written up to within a few weeks of the date of applications. A great many cannot account for the backwardness of examinations now, when so much of the old business was exterminated before the Commissioner made his first Report.

There have been some very curious and singular movements in Washington and in this city, lately, about the Commissioner and other parties. Many of our readers will have read accounts of the same in the daily papers. As we keep ourselves free from all entangling alliances, we do not know what has been done behind the scenes. Our policy is open, because we believe that private party cliques and coteries do great mischief. Honesty is the best policy.

Back Numbers and Volumes.

Notwithstanding the vast quantity of each number of the Scientific American which it has been our yearly custom to reserve for binding, we have not a single number left of either Vol. 1, 2, or 3, and but about 20 different numbers of Vol. 4.

Of volume 5, we have yet about 50 complete sets bound, which may be had at the office, for $2,75 each, and about 100 sets in sheets, which can be forwarded by mail, price $2 per set.

New subscribers can be furnished with the first half of the present, if they desire it, which will render their volume complete at the end of the year, and worthy a good binding.

The first three volumes of the Scientific American cannot be purchased of those who are fortunate enough to possess them, for less than $5 per copy, while the contents does not compare favorable with what the last volume is, or what the present volume will be. The paper upon which the Scientific American is printed this year, is made expressly for this journal, and the increased difference in expense for the same quantity over the quality used on all previous volumes, amounts to over $1200 per annum.

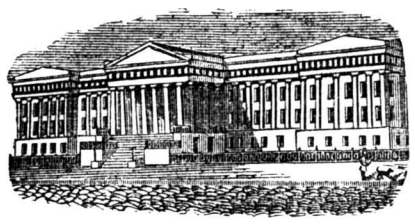
For the information of new subscribers, we would say that every Volume of the Scientific American is accompanied with an index of contents, besides a complete index of all the patents which have been issued during the volume, thereby rendering the work a complete repertory of American inventions.

Depilatory Powders.

A correspondent informs us that Fontaine's depilatory powder was used by him and found to be most effectual in removing the hair very soon, and it did not grow again for four months —but what was singular in this application, no after application of it had any effect upon the roots of the hair. He says he "has used various powders for this purpose, but none are as effectual as represented by the dealers in them." We must say that we deprecate the use of such things entirely. There may be a few who would, no doubt, be the better of the use of such materials, such as those who are related to the "woolly horse," but the great majority have no earthly necessity for such things.

The Largest Edition Yet.

The present number of the Scientific American commences the last half of the 6th volume. It is 5½ years since the Scientific American was first commenced, the subscription list for the first volume not exceeding 12 or 1,400. The edition for this week exceeds 20,000 copies, being a larger edition than we have ever before published at a single issue.



☞Reported expressly for the Scientific American, from the Patent Office Records. Patentees will find it for their interest to have their inventions illustrated in the Scientific American, as it has by far a larger circulation than any other journal of its class in America, and is the only source to which the public are accustomed to refer for the latest improvements. No charge is made except for the execution of the engravings, which belong to the patentee after publication.

LIST OF PATENT CLAIMS
Issued from the United States Patent Office.

FOR THE WEEK ENDING MARCH 11, 1851.

To Luther Briggs, Jr., of Braintree, Mass., for methodof adjusting the stroke of Trip-Hammers.

I claim the combination of a trip-hammer in which the hammer is raised by cams, not acting directly upon the hammer or the helve, or a projection from the same, commonly called the lifting leg, but by the intervention of a movable joint, so constructed as to grasp or clutch the lifting leg at any required height, the position of the same being governed by the regulator, which may be constructed in the form of an inclined plane, or any equivalent contrivance, for raising and depressing the joint, at the will of the operator; the whole being constructed to perform the peculiar services substantially in the manner herein set forth.

To H. D. Chapman, of Baltimore, Md, for improvement in machines for climbing poles.

I claim the combination of the grapling levers, with the sandals and handles, for the purpose of climbing telegraph poles, masts, &c., and holding the climber at any desired height, so as to give him use of his hands when at rest, as described.

To P. G. Gardiner, of New York, N. Y., for improvements in cast-iron Car Wheels.

I do not make any claim to the combination, self-considered, of wrought-iron tire, with a cast-iron body; or yet, full plate sides or for internal arms, in section, when cast solid with the side plates of a railroad car wheel, for such have all been known and used before, but I claim the precise manner in which I have constructed and put together the parts of my wheel, by which, thus formed, they are free of strain from shrinkage in cooling, and have semi-internal flanges, as described, to protect the wheel when in use against lateral strain, and are bolted together and combined with a wrought-iron tire, in the manner set forth.

To P. G. Gardiner, of New York, N. Y., for improvement in machinery for making tyres by continuous rolling.

I claim stopping the advancing movement of the movable towards the stationary roller, when the tyre shall have attained its proper section, by means of self-acting mechanism, acting and constructed substantially as herein described.

I claim the combination of belts, pulleys, cluthes, screws, and screw-wheels with the sway-bar and triggers, by which a self-acting, advancing and retrograding motion is given to the movable roller, each motion changing to the other, when caused so to do by the hand of the operator, but self-arrested and stopped by the set of the triggers, substantially as described.

To T. P. How, of Buffalo, N. Y., for improvement in connecting trucks with car-bodies.

I claim connecting the bodies of cars to the trucks by two bolts to each truck, working in the holes or mortises above described and represented, the whole being constructed and operating substantially as herein set forth.

To Nathaniel Potter, of Buffalo, N. Y., for improved use of slides in Bee Hives.

I claim the manner of arranging the moth apartment with glass, paper, or other thin material overlaying the vent holes in the top of the box, said glass or paper having placed upon it old comb, or other suitable material, so as to be warmed by the bees in the boxes below, and ventilated as described, thus attracting the moths into said apartment, while at night they are entirely excluded from the bee boxes by means of the ventilating buttons, as described.

I also claim the arrangement by which the upper box or boxes are held in their places, while the one below is removed and another inserted in its place.

Also the arrangement at the rear and bottom of each box, by which the tin slide is removed; thus allowing a convenient opportunity for clearing the bottom of the bee box, as described.

To Hugh Guyer, of Albany, N. Y., for improved Window Curtain Fastening.

I claim the construction of rock pulleys for window shades, by fixing the pulley over which the cord of the shade roller runs upon a stem, having a plate sliding on the front outer face of the rack-box, attached to a thin plate or fin, passing threugh a slot in said face, extending the length of the box, the said pin projecting upwards, and terminating in a point, which acts as a pall against ratchet teeth made in the bottom of said box, or else the said pin projecting downward, and having a cross pin through it, acting against ratchet teeth in the upper and inner side of said box, the said stem and plate, in addition to the sliding motion along the box, having an oscillating motion on the upper or lower edge of the plate, by means of which the upward pressure of the cord on the pulley holds the pall or pin against the ratchet teeth, the downward pressure of the hand carries the pall or pin out of the line of the teeth, and permits the pulley to be moved upwards when required, substantially as set porth.

To J. W. Fowle, of Boston, Mass. for improvements in Steam Drilling Machines.

I claim the combination of a direct action steam drill, in which both engine and drill are mounted on a frame, which slides in a swinging frame, capable of being adjusted in any required position with the apparatus, substantially as described, which is connected with and actuated by the cross-head of the engine for causing the sliding frame to move along the swinging frame towards the rock.

To R. D. Granger, of Albany, N. Y., for improvement in Air-tight Franklin Stoves.

I claim making the fire-box with closed plate in front and behind, with a grate surface at bottom, occupying about one-third of the space between the front and back stove plates, to constitute hot-air chambers, front and back, when such fire-box is combined with a sliding damper at bottom, substantially as and for the purpose specified.

I also claim, in combination with a fire chamber, constructed as above specified, and governed at bottom with a sliding damper, as specified, the open front with vertically sliding doors as described.

To Solon Jenkins, of West Cambridge, Mass., for improvement in securing daguerreotypes in monumental stones.

I claim the mode herein described of securing the portrait plate against injury, from moisture or otherwise, by means of the two glass plates, and the plate I and the back plate —the whole being arranged and combined substantially as herein set forth.

To James Greer & R. J. King, of Dayton, O., for improvement in Cooking Stoves.

We claim the combination of the diving flue, as described, with two other diving flues, the said flues occupying the whole breadth of the stove, with the exception of the space occupied by the fire doors, and the central reverting flue in the back.

We also claim the gravitating damper, operated as described, that is to say by the rod with its curved eye, and the pendant lever with its band and catch, the said damper being located upon the division plate, between the back diving flues and the central back reverting flue.

To John Ruck, of New York, N. Y., for improvement in pianoforte action.

I claim, first, hanging the hammer shank on a hinge or joint, at a distance from its end, and effecting its communication with the fly-lever or jack, by means of a lever which is hung on a fulcrum at a distance from either end, and is connected at one end by a hinged or jointed link with the end of the hammer shank, in such a manner that when the fly-lever is raised by the key, the end of the hammer shank is drawn down, and the hammer thrown up to the string, or by any other means substantially the same.

Second, the universal repeating spring attached to the lever or butt, upon which is formed the projection or its equivalent, through which the fly lever communicates with the hammer, for the purpose of raising it and working it upon the end of the fly lever, in the manner substantially as and for the purpose set forth. This I claim without reference to the precise form of the projection or of the spring herein shown, as various modifications may be made for producing the same effect.

Third, attaching the check wire to a hanging or hinged butt, operated upon by the key, in the manner substantially as described, so as to produce the same effect as if attached to the key, for the purpose of allowing the key to be easily taken out.

Fourth, securing or placing the regulating screw for controlling or regulating the escapement of the fly lever in an arm or its equivalent, upon the lever on which the fly lever acts, by which the action of the said screw upon the fly lever is more gradual and easy, and the jarring or concussion produced, when the screw is stationary, is avoided.

To Martin & Thos. R. Way, of Paintersville, Ohio, for improvement in machines for turning, boring, &c.

We claim the tool and block holder herein described, consisting of two upright frames, capable of movement towards each other, and of being clamped at a greater or less distance apart, as may be required, to adapt them to holding blocks of different sizes and tools of different lengths or forms, each frame being provided with upright parallel guides carrying adjustable jaws for holding boring or turning tools at different heights and angles, and to aid in holding blocks of irregular forms, these frames being mounted upon a carriage capable of being turned or moved, right or left, so as to hold the tool, or present the substance to be bored, in the required positions, substantially as set forth.

To A. A. Wilder, of Detroit, Mich., for improvement in Copying Presses.

I claim the use of a lever handle, having its fulcrum on the pressing plate attached to the opposite plate, by links working in the manner describee in combination with the adjusting arrangements, for the purposes expressed, and operating together as shown, or in any other substantially similar manner.

[See engraving in No. 9, Vol. 6, Sci. Am.]

To G. F. Woolston, of Orangeburg, S. C., for improvement in the teeth of Saws.

I claim the invention of teeth in circular saw blades, of the form and for the purposes above set forth.

RE-ISSUES.

To Wm. W. Hubbell, of Philadelphia, Pa., for improvement in Fire-Arms. Originally patented July 18, 1844.

I claim, first, the combination of the two independently adjustable braces extending one on each side of the breech chamber containing the charge that is being fired, to regulate and accurately determine the joint between the breech and barrel, substantially as described.

Second, I claim the breech opening and closing on an axis which is parallel to the main barrel and secured and regulated by the parts, substantially as described. [See engraving on page 108 Vol. 4, Sci. Am.]

To Edward Lynch, of Brooklyn, N. Y,, for improvement in Evaporators and Condensers. Originally patented July 1848.

I claim the partition within the tank, for the purpose of dividing the water of the evaporator from that of the condenser, in the manner and for the purposes substantially as herein set forth.

DISCLAIMER.

To A. J. Williams, of Utica, N. Y., for improvement in machines for making wire heddles.

The subscriber further represents that he is the sole and exclusive owner of the said letters patent, and of the right, interest, and property therein and thereby secured, and although he did not intend in or by the specifications and drawings upon and in reference to which said letters patent were issued (and of which copies are annexed to, and form a part of said letters patent) to represent or claim that he was the original or first inventor of the wheel, collar, or flange, with a sliding tooth and pulley and treddle, or other device, and he insists that said specifications and drawings do not, when rightly understood, represent or claim that he was such inventor; and he also insists that said letters patent do not, when rightly understood, assume to confer on him, any right as the supposed, assumed, or alleged inventor thereof, or of any part thereof; yet, in order to guard against any mistake or misconstruction in these respects the subscriber states, first, that he did not mean to assert, claim, or represent in and by said specifications and drawings, that he was the original or first inventor of the wheel mentioned as wheel figure 8, in said specification and drawings.

Second, nor did he mean to assert, claim, or represent in and by said specifications and drawings, that he was the inventor of the collar or flange, with a sliding tooth, which are partially represented on the drawing, figure 1, near Q, and also partially represented on the drawing, figure 2, at that end of the cylinder where the receiving and discharging hook rod shows the hook, and near B.

Third, nor did he mean to assert, claim, or represent, in and by said specifications or drawings, that he was the inventor of the cord, pulley, or treddle, partially represented on the drawing, figure 1, which cord, as shown, extends from said pulley near letter C to said treddle.

Fourth, nor did he design or intend, by said specifications or drawing, to claim, assert, or represent that his invention would make a heddle with a slack twist, in the half or part thereof which is towards the end where the wire is doubled.

And the subscriber says, that if said specifications and drawings import or mean, that any or either of the aforesaid things was or were invented by him, or that his invention, as claimed by him, would make a heddle with any such slack twist, as aforesaid, the same was and were, by and through inadvertence, accident, and mistake, not being so designed or intended by him, and he hereby fully disclaims the several matters and things aforesaid, numbered above, and each and every part thereof, under and pursuant to the seventh section of the Act of Congress, entitled "an Act in addition to the Act to promote the progress of science and useful arts," approved March 3, 1837, and pursuant to the law in such cases made and provided; insisting, however, as he does, that the same are not, nor is any part thereof claimed in and by said specifications and drawings, or either of them, or embraced in said letters patent; this disclaimer being made for greater caution and to guard against misconstruction and mistake in regard to said matters.

[This is one of the most extensive disclaimers that has come within our notice. The papers originally were surely made out with a great disregard to correctness. No papers should be more carefully drawn up than those belonging to patents. and none require greater discrimination.

Errata---Patent Claims.

To J. W. Nystrom, of Philadelphia, Pa., for improvement in Calculating Machines.

Second claim,—I claim the trigonometric curves of the inner scale, in combination with the graduated arms and logarithmic curves of the outer scale, the curves being laid out substantially in the manner herein described.

To Enoch Burt, of Manchester, Conn., for improvement in Fancy Check Power Looms.

To J. M. C. Armsby, of Worcester, Mass., for improvement in Corn Shellers.

U. S. Patent Office, March 14, 1851.

Messrs. Munn & Co.—Enclosed you will receive the second claim of J. W. Nystrom, for his Calculating Machine; also title of Burt's patent, and Armsby's patent. Very respectfully, Thos. Ewbank, Com.

[The above is on official correction of patent claims published, which have appeared recently in our columns. See Burt's claims in full on page 196, No. 25, with engraving, also Armsby's on page 142, read Corn Sheller instead of Candlesticks.