

Scientific American

NEW YORK, AUGUST 10, 1850.

The Progress of Invention.

From the great number of patents issued every week, and the vast number of inventions in the shape of discoveries and improvements, which are continually pouring forth upon the world, many, otherwise very sensible people, have become quite skeptical on the subject—perfect unbelievers in the progress of invention. To them invention and humbug are synonymous terms, and the whole congeries of patents are just so many gilded cards to gull the public. This class are not generally composed of ignorant men, in the common acceptance of that term, (although many of them are), nor are they unskilled, but they appear to have a rooted disposition to jeer at all inventions, especially those in their own line of business, at least if the improvements are made by those out of such a business. There are many mitigating circumstances to pardon this skepticism. Every week brings out some new invention, which proves to be nothing more than some old abandoned one. The great fault with a number of men who have very ingenious minds, is, the want of extensive information—they are practical and constructive, have dispositions of making at once with their hands that which they have designed in their heads. Reading and study require greater powers of determination than severe physical labor, but all those who do labor in this field are amply repaid for it afterwards. There are a great number of useless things patented, some of which gain no small degree of favor for a time, while many good ones are neglected and despised by those who should know better about such things; and it often takes years of patient working before their merits are fully acknowledged. This was the case with steam navigation, submerged water wheels, and many other inventions which we might mention. The progress of invention is gradual, and blessed be God! who gave man the faculty, it is sure; and of late years the inventions and discoveries in science and art, exhibit a series of the most splendid triumphs of mind over matter, respecting which “the most immoderate flight that ever poet took when warm with wine, was moderate conjecturing.” The men of forty-five years of age, now living in our city, have seen the first successful steamboat which navigated our waters, and the young man of twenty-one, he who has just arrived at the age of manly responsibility, is a cotemporary of the first locomotive. What revolutions these two inventions have produced—steam navigation and railway locomotion—and what a gorgeous panorama passes before our vision as we trace the progress of other inventions. The subject is one which requires the long labor of some scientific philosophic historian to do it justice. In 1809 there was only one steamboat in the whole world, now, who could count their number? They navigate the Nile, the Red Sea, the Ganges, the Danube, the Rhine, the Thames, the Clyde, the Hudson, the Ohio, the St. Lawrence, the Mississippi, and the golden sanded Sacramento. America, Europe, Asia and Africa exhibit in every steamboat a monument to the progress of invention.

In 1830 there were only thirty miles of locomotive railway in the world, now there are no less than 18,000 miles. America has no less than 7,000 miles, and will soon have 10,000 in operation. Massachusetts alone has more than 1,000, and Pennsylvania 1,200. In 1836 there were only 15 miles of railroad in the State of New York, now there are nearly 1600. Then the slow canal boat and stage coach wound lazily up the Mohawk Valley, and we remember well how it required more time to whip an old bolter into a canter, than it now requires the iron horse to whistle itself from the crags of Cohoes to the rocky pass of the Little Falls. What, with the Steamboat, the Railroad and the Telegraph, as inventions for distancing distance, the ends of the earth are brought together, and civilization is now fast finding its way into the most darkened corners of the earth.

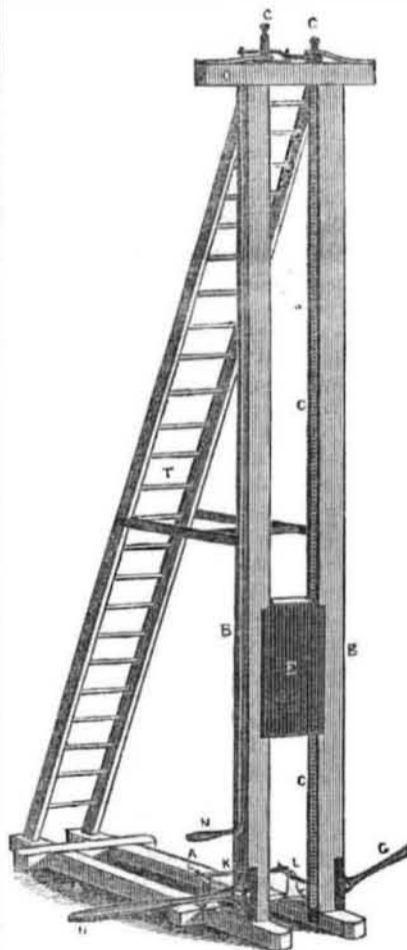
The progress of invention is one of those grand means, in a general scheme, which the most unobserving cannot fail to notice, of bringing about the fulfilment of that remarkable prophecy of Burns, “when man to man, the world around, shall brothers be.” There were men who looked upon Fitch and Fulton as mad, and some of the Members of Parliament thought Stephenson a demented foreigner; and when the first line of telegraph was erected in our country, we heard a wealthy and well educated merchant pronounce it “a humbug!” We feel the necessity of frequently calling attention to inventions in the aggregate; for in some arts, the progress is slow, almost infinite in additatives, to bring them to perfection, but not the less sure in progress for all that, though unheeded and unobserved by the majority.

Inventors have much to do yet, and some grand discovery has yet to be made to economise fuel in propulsion; for the expense in that particular, especially for ocean navigation, is yet a great barrier to general intercommunication between distant nations. And shall it ever be, that we shall see the atmosphere as safely navigated as we now see the ocean? The day may not be far distant; inventors, when your courage flags, look back and feel your strength renewed by surveying THE PROGRESS OF INVENTION.

“Come, bright Improvement! on the car of Time,
And rule the spacious world, from clime to clime;
Thy handmaid arts shall every wild explore,
Trace every wave, and culture every shore.”

Improved Pile Driver.

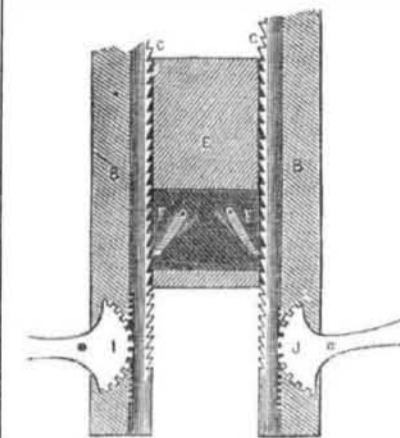
FIG. 1.



The accompanying engravings illustrate an improvement in the operative parts of Pile Drivers, invented by Mr. William T. Foster, of Jersey City, one of the inventors of the Rock Drilling Machine, illustrated and described in No. 20, Vol. 3, Sci. Am. Figure 1 is a perspective view; figure 2 is a vertical section, and figure 3 is an enlarged top view, to show the shifters, which allow the ram, or weight to be raised and fall down on the pile. The common pile driver has the outline of its frame constructed like figure 1, but the ram or weight is raised by a rope wound round a barrel, and when the weight is raised to the top of the frame, a pair of prongs throw the nippers on the rope out of catch with a staple on the weight, and the weight then suddenly falls. This improvement is to raise the weight with rack and pall, by working the weight with reciprocating ratchet levers, whereby two men can work the ram with the greatest ease—allowing them a little more time than four men with a windlass. A A is the bed framing; B

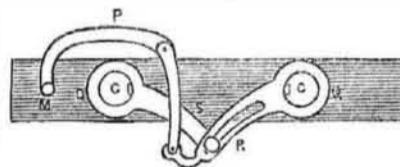
B are the upright posts forming the cheeks of the machine, C C are metal rack rods on the inside of the posts, B. E is the ram or weight for driving the pile. It is raised to the top of the posts, B B, and then allowed to fall freely by its own gravity on the head of the pile. This is the way the pile is driven down. The

FIG. 2.



improvement consists in the manner of elevating the weight, and the way of setting it free, consequently, is different from other plans.—The principal part is having the racks cut on round shafts or rods,—C C, in figure 1 representing the tops of them. This is to allow the shafts to be turned round, and also be moved freely up and down in their recesses in the posts, B B. G H are levers with arc racks, I J. (fig. 2) cut on their interior ends. These levers are connected together by a walking-beam arm, K, connected to the axis, L L, of the levers; therefore, when one lever is moved up the other moves down. The racks of the levers mesh into short racks on the back of the ratchet rods, C C. When the levers are worked, the rack rods, C C, are moved up and down alternately, and by having two spring palls, F F (fig. 2) on the inside of the weight, it will easily be perceived how the said weight is raised up and down. The weight cannot come down while the palls, F F, mesh into the racks. Whenever the weight gets to the cross head of the posts, the racks are turned round, inside, in their recesses in the posts, and the weight then comes thundering down on the pile. To turn the rack rods, there is a long handle, N, fig. 1, which, by drawing it to the one side, turns the rack rods out of gear, or into gear with the palls on the weight. Fig. 3 shows the levers attached to the handle, N, and the rack rods. S R are the two levers, with rings, Q Q, around the rods, C C. They are connected by a link to the oscillating arm, P, which is secured at M to the handle, N. One of the levers has a slot in it, and the other has a stud pin, which works in the slot, therefore, when the handle, N, is pushed to the one side, the rack rods are turned and disengaged from the weight, when the weight reaches the top. When the weight has performed its work, the rack rods are turned by the handle to engage the palls, F F, to elevate the weight again by working the levers. Except for shifting the machine, one man can elevate the weight, as the motion of the rack rods is arbitrary—alternately up and down every stroke. T is a ladder, also answering the purpose of a brace.

FIG. 3.



Application has been made for a patent for this invention, and it has already been sold. Peter Kiyler, 333 Ninth st., this city, is the assignee, who will answer communications (p.p.) which may be addressed to him.

To Make Tracing Paper.

Mix six parts by weight of the spirits of turpentine, one of rosin and one of boiled nut oil, and lay this on the paper with a brush or sponge. If the balsam of copavia, or Canada balsam is employed as a substitute for the rosin, a finer quality of tracing paper is the result. The paper should be well dried before it is used.

To Our Cotemporaries.

A copy of the present number of the Scientific American is forwarded to every newspaper publisher in the United States, for their perusal, antecedent to the commencement of Volume 6. Our cotemporaries have hitherto spoken in high and courteous terms of our efforts, and we shall rejoice to know that we have not forfeited their kind wishes for the future.

The field occupied by us, is one that in no way interferes with any other publication in the country—and while aiming to extend the benefits of mechanical ingenuity—we feel encouraged to still further exertions from the continued smiles of the community and our brethren of the press. We have never pursued an indiscriminate system of exchange, it being impossible for us to do so without experiencing a heavy draft upon our pecuniary condition. This is readily perceived from the fact that in the peculiar field to which our efforts are mainly directed, we are continually culling from the great book of nature the mysteries of science and philosophy—thus rendering the Scientific American a valuable acquisition to every publisher's exchange list. We can only say, that to those who choose to insert the prospectus found in an extra enclosed in the number sent, they will be entitled to the “Sci. Am.” through the volume without an exchange.

We find by actual count, that 563 papers published our prospectus to Volume 5.

We shall esteem it a favor to be informed of any omission on our part in sending the paper, and we request all publishers, who insert the prospectus, to send a copy, marked, to this office.

Water Wheels.

We have received a communication from Mr. George Westinghouse, of Central Bridge, N. Y., stating that Mr. Levi Totten, an old millwright, had told him that he put up four wheels on a horizontal shaft, for a saw mill, on the Oswego river, in 1829, and that several reaction water wheels, on one shaft, had been put up on the Oneida river in the years 1825 and 1826.

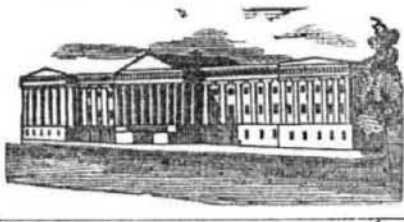
We have received a great number of communications within the past five months, about Parker's Water Wheel, some in favor and some against his claims—but by far the greatest number against them. It is not our purpose to allow much controversy on any one subject—for it generally becomes an old story, of no profit to any body. When short, crisp and racy, it does good, but not otherwise. The principal complaint has been against Parker's agents for collecting rent on wheels they did not construct or put up. Well, it is aggravating to any man who has paid a millwright for a water wheel, in the full faith of its free use, to be called upon to pay rent or stop the mill. If Parker is not the first inventor of what he claims, the thing is to prove it at law, and then his claims are made void. On the other hand, if he is the first inventor (and many suits have been decided in his favor) surely in the eye of the law his claims should be upheld.

“Brains.”

A worthy cotemporary has worked himself up into fermenting heat, because we alluded to some of his ginger-pop extracts, giving him credit for the full value of them under the cognomen of “Brains.” He thinks we are in dudgeon about them, but we assure him that we are not; on the contrary we are cool and calm as a whale brushing away a blue bottle. In allusion to our article last week our cotemporary says, “as we have no mulish propensities, will the editor be so good as to keep his offspring from breaking over into our premises, to the great annoyance of the quiet and unobtrusive “Farmer.” The editor can only answer, “I am Saul, the son of Kish, sent out to seek my father's long-eared ‘hanimals,’ and having wandered into the quiet premises of the Farmer, lo! I found one of them.”

The Gillard Light.

We have received some very interesting information from a Manchester (Eng.) correspondent about the actual operation of this light which we will publish next week.



Our weekly List of Patents and Designs contains every new Patent, Re-issue and Design emanating from the Department, and is prepared officially, expressly for the Scientific American, and for no other paper in the city, consequently other journals are obliged to wait the issue of the "Sci. Am." in order to profit by the expense to which we are subject, and of course must be one week behind. Those publishers who copy from this department in our columns, will, in justice to us, give proper credit for the same.

LIST OF PATENT CLAIMS
ISSUED FROM THE UNITED STATES PATENT OFFICE.

For the week ending July 30, 1850.

To M. B. Ashley, of Watertown, N. Y., for improvement in directing water upon water wheels.

I claim the adjustable, vertical, water mouths or openings, arranged in combination with the outer or longest edge of the buckets, as described, whereby the greatest effect is obtained.

To A. Everett, of Middlefield, Mass., for improvement in machinery for turning out wooden bowls.

I claim the combination of the movable frames, with the reciprocating frame carrying the curved cutter arm, connected and operating as described; also the combination of the curved cutter arms, with the reciprocating frame, for the purpose described, and also the cutters, the spurs, the guards, constructed as described, and connected and fastened to the curved cutter arms, in the manner and for the purpose substantially as herein described.

To G. W. Hatch, of Parkman, Ohio, for improvement in stanchions for cattle.

I claim the arranging of the stanchions in a vibrating frame to accommodate the position of the animal when lying down.

I also claim the stanchion, or fall piece, in connection with the stay cords, by which means it is brought to an upright position when closing the stanchion, thereby preventing an animal taking the place which is occupied by the stanchion, when open.

I further claim the catch and spring, to hold the stanchion in an upright position in combination with the rope, for releasing the cattle from confinement, as herein specified.

To E. Kershaw, of Boston, Mass., for improvement in the attachment of pinion locks.

I claim the combination of the stud, and its recess or hole, or their equivalents with the side of the cell door opening, and the double hinged arm, and lock, substantially in the manner and for the purpose of preventing strain on the lock by pressure against the cell door by a prisoner or person within the cell, as above specified.

To P. Kirkham, of Waterbury, Conn., for improvement in attaching hooks and eyes to paper cards.

I claim the indenting or impressing the cards or sheets of paper in such a manner as to retain the hooks and eyes in their proper places upon the card until they can be fastened; in whatever manner they may be finally secured.

I claim nothing in regard to machinery for forming the indentations nor for the string, or whatever may be used in fastening, nor for the manner of applying it by gum or paste.

To J. Marsh, of Petersburg, Ill., for improvement in Churn-dashers.

I claim the double concave, perforated, discoid churn dasher as herein described and represented, and for the purpose set forth.

To C. J. Meinicke, of New York, N. Y., for improvement in distilling spirits of turpentine.

I claim the process as described for distilling turpentine so that the spirits of turpentine are distilled and the rosin saponified ready for soap making at one operation.

To G. B. Milner, of Houston, Texas, for improved valve gear for steam engines.

I claim the combination of the fixed cam, with its frame and rods, and the adjustable cam, with its frame and rod, to which latter are attached the traversing and oscillating bar, having secured to one end of it a rod and at or near its centre another rod, which actuate respectively the eduction and induction valves,

substantially in the manner herein described, forming together a simple valve motion and one which enables the engineer to regulate the degree of cut off at will.

[This invention was noticed by us about a year ago; it has been highly spoken of by all who have examined it.

To A. Olcott, of Millstone, N. J., for improvement in rubbing and polishing stone.

I claim attaching the stone, to be faced to a chain, one end of which is attached to a windlass, by which it may be lengthened or shortened; the stone being left free so as to be continually changing its position on the bed, during the operation of rubbing, by which an uniform and even wear is produced on the bed and a true face given to the stone in the manner substantially as described.

To J. O'Neil, of Xenia, Ohio, for improvement in Atmospheric Churns.

I claim the construction of the air tube, in combination with the plungers and partition as set forth, whereby the cream is thoroughly agitated and intimately mixed with atmospheric air by forcing it alternately to the opposite sides of the partition, through branches of the air tube, as herein set forth.

To C. Perley, of New York, N. Y., for Jigger Windlass.

I claim first, the application of the double acting pawls, ratchet, disk, socket, and hand-spike, with or without the winch-head, whereby the power is applied to the horns, to rotate them in either direction as required, said application and arrangement being a combination of the double acting winch described in my patent of March 1848, heretofore referred to, whereby this combination of these two previously patented inventions effects new and useful purposes not contemplated and not attainable by either of the inventions separately, substantially as described and shown.

To E. P. Rider, of New York, N. Y. for improvement in apparatus for sizing and drying cotton batting.

I claim first, doubling or turning the ragged and uneven edges of the bat of cotton as it comes from the carding engine and pressing them down to join a smooth selvage, as set forth, by means of the curved plates, in combination, with the cylinders, (two) as described; or other equivalent means.

Second, I claim heating and ironing the surface of the bat of cotton previous to being glazed for the purpose set forth, whether performed by the means herein described, or other equivalent means.

I likewise claim, making the floating cylinder with check rings, or their equivalent, in the manner and for the purpose described.

I claim passing the bat through a space between the floating cylinder and compressive cylinder, and imparting the sizing to the bat of cotton without pressure, as described.

I claim making the drying chamber a double inclined plane, in combination with the chimney constructed as aforesaid for the purpose of increasing the circulation. I also claim the peculiar combination of the heating, selvaging, ironing, glazing, and drying apparatus; by which the bat of cotton, as it comes from the carding engine, is selvaged, ironed, glazed, and steam dried by a continuous process, as herein fully set forth, the sizing vat being placed directly beneath the compressive cylinder so that the sizing can be introduced fresh from the vat to the bat as it comes from the ironing cylinder, as described.

To J. A. Sabbaton, of Albany, N. Y., for improvement in purifying coal.

I claim the mixture with the lime of coke dust or "breeze," charcoal dust, or other carbonaceous substance, for the purpose of acting mechanically in the separation of the particles of lime and at the same time acting chemically in removing various impurities from the gas (which cannot be separated by the ordinary methods of purifying gas,) substantially as above set forth.

To E. S. Scripture, of Green Point, N. Y., for improvements in connecting hubs with axles.

I claim the application of the half boxes, with the semicircular lip, and rib, constructed to enter the grooves near the end of the axle box, said boxes being secured together and connected to the axle bar by any competent

means and said ribs, grooves, and boxes operating as a substitute for a collar on the axle and to hold the axle box and wheel on the axle, and also to keep dust out of the parts, substantially as described and shewn.

To C. A. Spring & P. Boon, of Kensington, Pa., for improvement in the arrangement of pressure and feed rollers in Planing Machines.

We claim connecting the movable weighted pressure rollers with the stationary ones by oblique links, in combination with the additional rollers, the whole arranged substantially in the manner and for the purpose set forth.

To J. Stout & J. T. Stanton, of Waynesville, Ohio, for improvements in machines for forming tubes of sheet metal.

We claim supporting the forming roller, upon the short ends of the bent levers, (two) in combination with the upper roller, supported by springs, substantially in the manner and for the purposes herein described.

To W. F. Ward, of Portchester, N. Y., for improved bolt and rivet machine.

I claim first, gauging the length of the shank after a head has been formed on the end by pushing the head against a gauge beyond the header, which has a lateral motion to allow it to pass by, substantially as described, in combination with the operation of cutting off the shank at such distance from the gripping dies as by the same operation to determine or gauge the length of rod, or wire, which shall be left projecting beyond the gripping dies for forming the next head substantially as described.

And lastly I claim cutting off the rod or wire, after the head has been formed, by the return lateral motion of the header, in combination with the rest, substantially as described, the edges of the rest and heading die being formed to answer the purpose of shears, as herein described.

To T. E. Warren, of Troy, N. Y., for improvement in car-seat backs.

I claim the forming of the backs of car seats of double curved plates of metal attached by the end to the arms of the seat, made to embrace both of the end pieces to which they are pivoted and on which the car seats are reversed, formed stayed and braced, substantially in the manner and for the purpose here specified.

To Jesse Whitehead, of Manchester, Va., for improvement in the counter-twist speeder.

I claim making the shaft with a serrated groove, in combination with the reduced portions of the shaft adjacent to said groove, wherein the roving runs from the twisting band to the bobbin in the manner and for the purpose herein fully set forth.

I also claim the combination of the spring, and pendent tapered arm, with the vibrating bobbin-arm, arranged and operated in the manner and for the purpose herein set forth, or in any other way which may be considered substantially the same and by which analogous results shall be produced, that is to say, any arrangement wherein a rubbing pressure is imparted to the arms, or their equivalents, containing the journals of the bobbin for producing the effect herein stated, said arrangement preventing the sudden rebounding of the bobbin on the shaft when it becomes uneven from any cause which the mere spring and weight applied to the bobbin axle or its arms will not prevent, as I have fully tested by experiment; the spring when used alone being too elastic and the weight too dead, whereas the combination of the two causes the bobbin to rise and fall gradually, as herein fully set forth, obviates the evil.

To G. Wode, of Elizabethport, N. J., for improvement in fastenings for bureau drawers.

I claim first, the metallic strip or its equivalent constructed with the notch for receiving the fastening bolt as set forth.

Second, the locking bolt operated by the opening or closing of any one of the drawers for the purposes herein named the whole being constructed, substantially in the manner herein set forth.

New Flour—Quick Work.

The Rochester Democrat acknowledges the receipt of a half barrel of extra Genesee flour, made from wheat which the day previous was swaying gracefully upon the stalk as it stood in the field. It was made by Mr. L. P. Beers.

Patent Case.—Woodworth Planing Machine.

Nathan Mason vs. William Talman and others, before Justices Woodbury and Pitman, in the U. S. Circuit Court, R. I. District, July Term, 1850. The action was brought by the plaintiff to restrain the defendant from using the Woodworth Planing Machine in Providence, R. I.

The defendants were assignees of the exclusive use of the Woodworth Patent, issued Dec. 27th, 1828, re-issued July 8th, 1845, in certain parts of Rhode Island and Massachusetts, during the original term of the Patent and also for a nominal consideration of the same extent of right and territory during the term of extension granted by the Board of Commissioners under the 18th section of the Act of 1836, which term of extension expired December 27, 1849.

The plaintiff brought his action under an assignment, from the Administrator of the Patentee, for the exclusive use of the said Patent during the second or Congressional extension commencing on the 27th Dec., 1849, in a portion of the territory formerly owned by the defendants, and where they still continued the use of their original machines.

Judge Woodbury, delivered the opinion of the Court in favor of the plaintiff, and ordered an injunction to restrain the defendants according to the petition of the complainant.

For the want of space we are obliged to omit the charge of the Judge in the above case; but, as it is quite important just now to all concerned, we shall make room for it in our next.

The Rapids of the Jordan.

It had been ascertained that the Dead Sea was more than 1,000 feet below the level of the lake of Tiberias—as the distance between the two was but 60 miles. This would give a fall of about 20 feet per mile—greater, it was then thought, than any river in the world exhibited. The Mohawk river in America was held to be one of greatest fall, and that it averages not more than four or five feet to the mile; but it is now known that the Sacramento in California has a fall of 2,000 feet in 20 miles, or an average of 100 feet to a mile. It was then, however, thought that such a fall as it seemed necessary to suppose in the case of the Jordan, from the difference of level between the two lakes which it connected, was without example; and as its course was presumed to be tolerably straight, and as it was not known to contain any rapids, an error in the calculation of the difference of level between the two lakes was more than suspected. This problem it was left for Lieut. Lynch to set at rest. In the first place, the river is full of rapids. The boats plunged down no less than twenty-seven very threatening ones, besides a great number of lesser magnitude, and then, although the direct distance does, as stated, not exceed sixty miles, the course of the river is made at least two hundred miles by the exceedingly tortuous course of its stream. This reduces the fall to not more than six feet in the mile, for which the numerous rapids in the river sufficiently account.

"The descent by the river occupied no less than a week. So great were the difficulties caused by the rapids that in two days not more than twelve miles were accomplished; and on the third day, the wooden boat brought down from the Sea of Galilee was abandoned, on account of her shattered condition. None but metal boats could have stood the severe work of this passage. It was, nevertheless, made at the time of flood—at the season that the Israelites passed the river—and which, although the most unfavourable without boats, should be the most favourable with them. In fact, it is stated, that a few weeks earlier or later, the passage down the river in boats, would, as in the case of Lieut. Molyneux, have been impracticable, from the want of sufficient water to carry them over the rapids.

The wide and deeply depressed plain or valley (Ghor) through which the river flows is generally barren, treeless; and verdureless; and the mountains, or rather cliffs and slopes, of the river uplands, present, for the most part, a wild and cheerless aspect."