(No Model.)

G. B. N. DOW.

SCREW.

No. 366,158. Patented July 5, 1887.

Fig. 1.

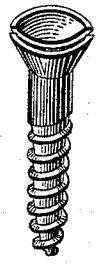


Fig. 2.

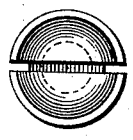


Fig. 3.

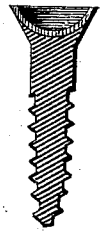
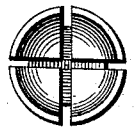


Fig. 4.



Witnesses

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UNITED STATES PATENT OFFICE.

GEORGE B. N. DOW, OF MANCHESTER, NEW HAMPSHIRE, ASSIGNOR TO CHARLES H. HUTCHINSON AND BRADBURY P. CILLEY, BOTH OF SAME PLACE.

SCREW.

SPECIFICATION forming part of Letters Patent No. 366,158, dated July 5, 1887.

Application filed March 18, 1886. Serial No. 195,632. (No model.)

To all whom it may concern:

Be it known that I, GEORGE B. N. DOW, a citizen of the United States, residing at Manchester, in the county of Hillsborough and State of New Hampshire, have invented certain new and useful Improvements in Screws; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to an improvement in screws; and it consists in constructing the head of a screw with a countersunk depression, which is provided with a longitudinally-curved slot for the reception of the bit of the driver; and it further consists in certain peculiarities of the construction, as will be hereinafter set forth.

In the annexed drawings, illustrating my invention, Figure 1 is a perspective of my improved screw. Fig. 2 is a top plan view. Fig. 3 is a section showing the curvature of the slot for the driver; and Fig. 4 is a top plan of the head, showing two slots at right angles.

Like letters of reference indicate like parts in all the figures.

In a screw patterned after my improved form the concaved depression in the head starts from near the outer periphery and slopes down to near the bottom of the head, stopping at a sufficient distance from the bottom of the head to prevent a weakening of the screw-head, which might take place through the removal of the metal when too deeply hollowed out. However, this countersunk depression may be deeper or shallower, as desired, for in constructing the screw-head said head may be made larger than that of the ordinary screw, and thus an opportunity for a deeper concave be afforded. Diametrically across the head, through the countersunk depression and extending below the same, as shown in Fig. 3, is cut a slot for the reception of the driver, said slot being generally curved longitudinally or along its lower surface from end to end, thus making it of approximately an equal depth throughout. The slot is preferably so proportioned to the depression that a chord drawn from end to end of the bottom arc of the slot will pass through the lowermost point in the countersunk depression. When this is the case, it is obvious that the terminal portions of the slot will have no bottom if the head is conical externally.

Some of the advantages to be derived from the use of my improved screw are as follows: When the bit of the driver is inserted into the slot, it works toward the center, and is not liable to slip out, whether the driver is held in an upright or an oblique position—*i. e.*, whether the driver is held in line with the screw-shaft or at an angle with said line. Further, it is possible to turn the screw with the driver held down at nearly a right angle with the axial line of the screw, the bit having the same purchase and firmness as when held in an upright position—a result which is unattainable with the common screw and its driver; hence the screw may in this manner be driven in places where otherwise it could not.

It will also be observed that the weight of the driver will keep it in place in the slot, for it cannot slip out by moving laterally, the middle portion of the slot being lower than the rest, and therefore in order to get out it must ride up an inclined or curved surface, and this will not likely occur if the driver is properly handled; whereas if the slot were straight across the bottom the driver might easily pass out of it without any negligence on the part of the operator. It is not then necessary to press upon the driver in order to keep it in place in the slot, and injury to the thread of the screw or to the substance into which it is inserted is obviated.

In the case of ordinary screws there is a great liability of their being turned or deflected from the true course that the operator designs them to pursue by the uneven pressure of the driver, which at one time will be pressing with greatest force on one side of the center of the screw-head and at another time on the other. By my improvement this difficulty is avoided, as the pressure is kept always upon the center

of the head directly in line with the center of the screw-shaft, and consequently directly over the point of the screw, and this constant central pressure will be maintained, although the driver is turned to the right or left. This renders the screw as well as the driver more secure from breakage. Perhaps, however, the greatest benefit arising from the use of my improved screw is the facility with which the bit of the driver will find the slot in the head, for if it is not inserted therein at the first movement of the driver a turn in one direction or the other will surely bring it into the slot, ready for work. Thus time will be saved, for more screws can be driven in a given time, and consequently more work done.

The concave-headed screw will in many cases obviate the necessity of plugging, for the putty or other substance used can be inserted and held within the cavity and its slot, thus leaving the outer surface smooth, or capable of being made so. In plugging the heads of common screws in very nice work it has been found that more or less glue is left unavoidably between the plug and the screw-head, and this glue, acted on by the weather or by other influences, will swell and force out the plug, thereby marring and defacing the surface of the work. The countersunk head avoids this difficulty, for an air-space is left between the plug and the bottom of the cavity in the head, into which space this glue is received, and consequently room is afforded for it to swell without disturbing the plug.

Thus far I have spoken of the screw-head as being provided with a single slot. It is obvious, however, that it may have more than one slot. A second similarly-formed slot may be located at right angles to the first, and in certain cases it may be desirable to have even more than two, in which cases they will be situated radially upon the head. The advantage of having more than one slot will be found to be greatest when it is desired to drive the screws in spots where there is but a short distance between the screw-head and some object directly above it. The screw-driver with a circular-ended bit is found to be serviceable in such a case, since it can be used at an angle to the axis of the screw; but there are many situations where, in addition to the disadvantage of having the screw-head close to an object above, there is the additional disadvantage of having but a limited range of movement for the handle of the driver, said movement being insufficient to give a complete revolution to the screw. In this case more than one slot is necessary, for when the screw has been partially rotated as far as the movement of the driver will allow the latter can be taken out and put into the slot, the rotation of the screw continued, and so on.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. As a new article of manufacture, a screw having a countersunk head and a transverse parallel-sided slot for the reception of the driver, as described.

2. As a new article of manufacture, a screw provided with a concaved head and a longitudinally-curved slot situated diametrically across said concaved head, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

GEORGE B. N. DOW.

Witnesses:

JOHN C. BICKFORD,

JOHN A. RIDDLE.