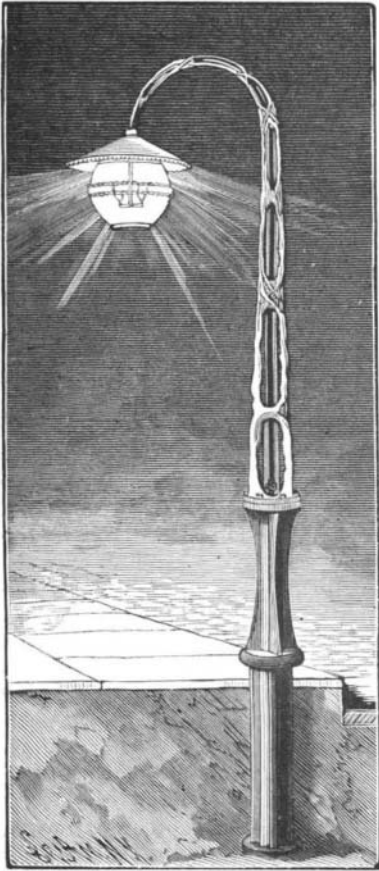


**IMPROVED LAMP POST.**

This lamp post is designed principally for street lighting purposes in cities and towns. It is composed of two sections, the upper end of the lower one of which is formed with a flange fitting in an inverted cup-shaped flange on the upper section, the two being held together by bolts passed through the flanges. The lower length extends partly into the ground, and is of cylindrical form, with ribs cast on its exterior to give strength and shape. The upper part is cylindrical, and formed with transverse openings, and is artistically ornamented. The upper end bends in the form of a half or part circle, in order that the attached gas lamp may hang over the center of the side walk, out of line or interference with telegraph or other poles, shade trees,



or other obstructions. The lower section forms a capacious gas chamber, connected with the top of which is a pipe leading through the upper section to the gas jet. The lower end of this pipe is provided with a stop cock. By this construction there will be no freezing or choking of the gas, on account of the large volume of gas contained in the chamber, and as the gas when not being used is turned off from the upper section of the post. When the gas is burning, the current established will keep the gas in the pipe from stopping or freezing. The gas is thus prevented from stopping or freezing, both when turned on and off. By the downward bend given to the post and pipe at the top, the pipe is extended to pass over the flame down through the lamp, thereby causing the gas to be highly heated and materially increasing its illuminating power. The position of the stop cock is such that a ladder is not necessary in order to light or extinguish the gas. The upper length of the post may be made more ornamental than usual and cheaper, as all expensive core work in its construction is avoided.

This invention has been patented by Mr. Martin N. Diall, of Terre Haute, Indiana.

**FOLDING AND PASTING MACHINES.**

After a long series of experiments, the Manly & Cooper Manufacturing Company, of Philadelphia, Pa., has perfected a practical and efficient paster and folder, an announcement which we are sure will be a most welcome one to all whose business it is to bind books and pamphlets. This machine is not offered as an experiment, but after practical use by manufacturers. It

not only folds the sheets, but does the pasting before the sheet leaves the table, and in such way that the operator sees that every sheet is thoroughly pasted before it is folded. The great value of this feature is readily understood by all who have been embarrassed by the negligence and carelessness of workpeople or by the poor performance of their machines, when the putting on of too much or too little paste, or its uneven distribution, have heretofore been frequent cause of complaint against machine folding in all first-class work. Only one paste cup is used, and the trouble of a fountain is saved, while the simplicity of the mechanism secures high speed and ready adjustment.

The machine can be used with or without the paster, and it can be furnished without the pasting attachment, to be used as a book or pamphlet folder only. It folds either to register or to margin, making one, two, three, or four folds, thus producing sections of four, eight, sixteen, or thirty-two pages, and with greater accuracy than if done by hand, and the cost is reduced about five-sixths. The floor space occupied by the machine is small, and its capacity is from 1,200 to 1,600 sheets an hour from a 16 page folder with one operator, or 1,000 to 1,500 sheets for a 32 page folder.

Simplicity of mechanism is a great desideratum, and it has been the aim of the manufacturers to simplify construction, so that any one can readily understand and adjust any part of the machine. The ease of adjustment and the attachment of a micrometer scale allow the machine to be changed without delay, and give an exactness of execution which is unequalled.

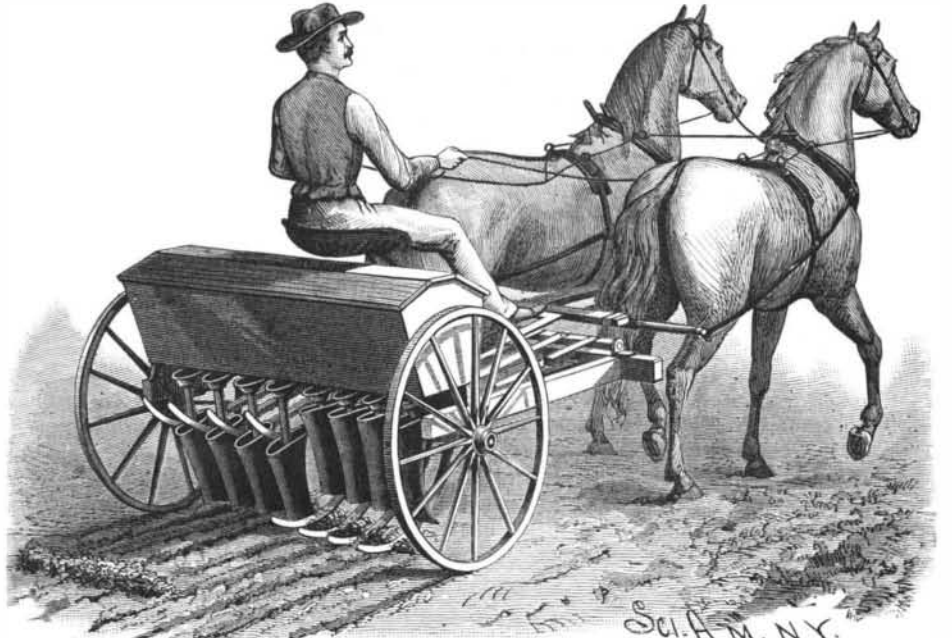
In addition to a paster, the folding machine is fitted with a coverer when desired, by which the covers are put on pamphlets before they leave the machine, and another handling is thus saved.

A reference to the cut shows the action. The sheet, laid flat on the table and held in place by the points or margin guides, is struck by a knife on the curved arm and carried through the slit to be taken by tapes along to a knife at right angles to the first knife. Here the second blow is given, and the sheet, folded in two pages by the first knife, is now folded in four pages by the second knife, and caught by the tapes and carried back on a lower level, each cutting doubling the number of pages until the required fold is made, when the folded sheet is placed with its fellows in the trough and is ready to bind, or if the pasting and covering attachment has been used, it is ready for distribution to the book stalls.

**CLEARING ATTACHMENT FOR GRAIN DRILLS.**

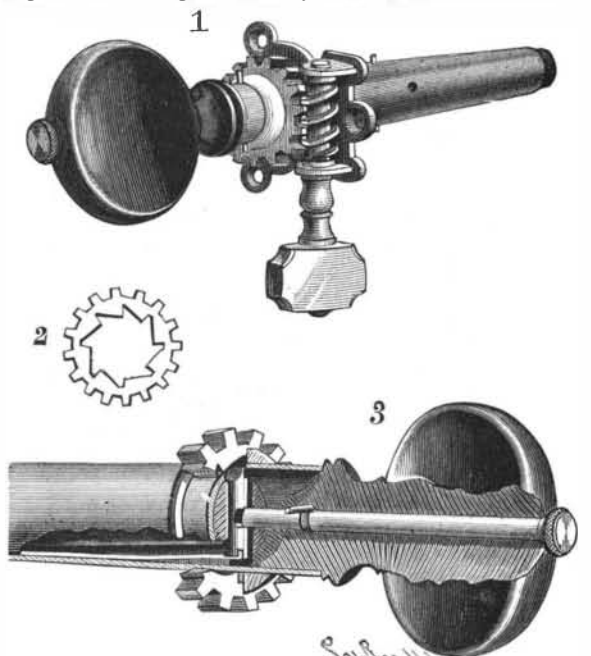
The object of this attachment is to free the shoes of

drills from trash and grass, which greatly impede the progress of the drill when it is used for sowing grain upon land abounding in stalks, or what is known as "crab grass." In ordinary drills four or more hinged carrying arms and attached shoes are arranged at equal distances upon each side of the pole. In this improvement each shoe is provided with a clearing attachment. Upon the upper face of the forward beam of the frame of the drill are secured standards that form bearings for two longitudinal levers having central angular arms projecting outward, and by means of which the levers may be conveniently operated by



MITCHELL'S CLEARING ATTACHMENT FOR GRAIN DRILLS.

the driver with his feet. The outer ends of horizontal twisted arms, one for each shoe, are fastened to the levers and their inner ends are pivotally attached to a connecting bar, consisting of one or two bars, made to extend at an inclination forward to a point near the front beam of the frame, and to a pivotal connection with a clearing bar. The clearing bars are fulcrumed upon pins of adjustable plates bolted to the carrying bars, which are preferably formed of two thin bars. The free end of each clearing bar is bent downward and formed with an upward curve, in order to permit it to pass readily over obstructions and



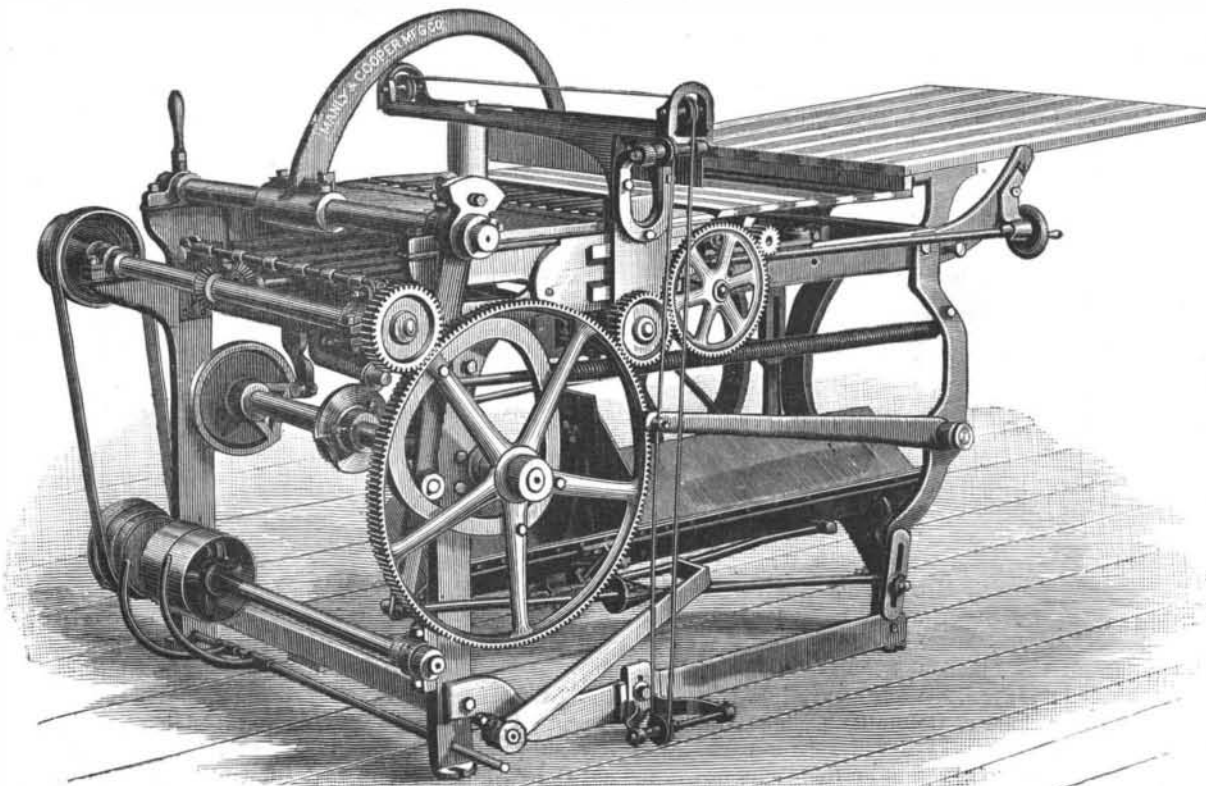
GARDNER'S VIOLIN TUNING PEG.

[FOR DESCRIPTION SEE PAGE 309.]

prevent entanglement with the grass. When, in the use of a drill provided with this attachment, the shoes become clogged by grass or other refuse, the driver presses upon either or both of the angular arms or treadles of the levers with his feet, and thereby causes the shoes to rise from the ground, the clearing bars being simultaneously pressed upon the obstruction and clearing the shoes. When the levers are released, the shoes will drop to the ground of their own weight, and the clearing bars will be returned to their normal position, a little above the ground. A spring may, if thought desirable, be arranged to assist in the return of the clearing bars.

This improvement, which is the invention of Mr. William H. Mitchell, of Horse Cave, Ky., may be attached to any hoe drill.

**A GIGANTIC GAS WELL.**—The largest gas well in the world has just been discovered at Fairmount, Indiana. The test of Professor Orton, State Geologist of Ohio, shows that it is flowing nearly twelve million cubic feet per day.



FOLDING AND PASTING MACHINE.