Improvement in Woodworth's Surface Planer.

The accompanying engraving shows a very neat and compact machine for planing wood surfaces, being a modification of the well-known and justly popular Woodworth planer. It is, in fact, a consolidated Woodworth planer with four rolls above and two below, with a narrow table under the knife, and having the rolls all geared together. The compactness of this arrangement, and the economy of space and cost secured thereby, will be apparent upon inspection of the engraving.

N, in the engraving, represents the cylinder knives on the shaft with main-pulley and feed-pulley. E is one of the front feed rolls, four inches in diameter. The other front feed roll is three inches in diameter, but is hidden by the roll, E.

The position of the back rolls, which are precisely like those in front, except that they are not fluted, is indicated by the letter W. Caps, G, contain compression rubber springs which serve to hold the rolls in place, yet to allow them to accommodate themselves to varying thickness of stuff.

L is one of the under rolls four inches in diameter. A similar one is on the back side of the machine, not shown in the engraving.

A represents the feed shaft and pulleys, D is a clutch coupling with lever for running the working parts of the machine into gear with the shaft, A. The cone pulley next the clutch lever forms a part of the clutch coupling, and runs loose on the shaft when not clutched. The feed is regulated by the cone pulley, M.

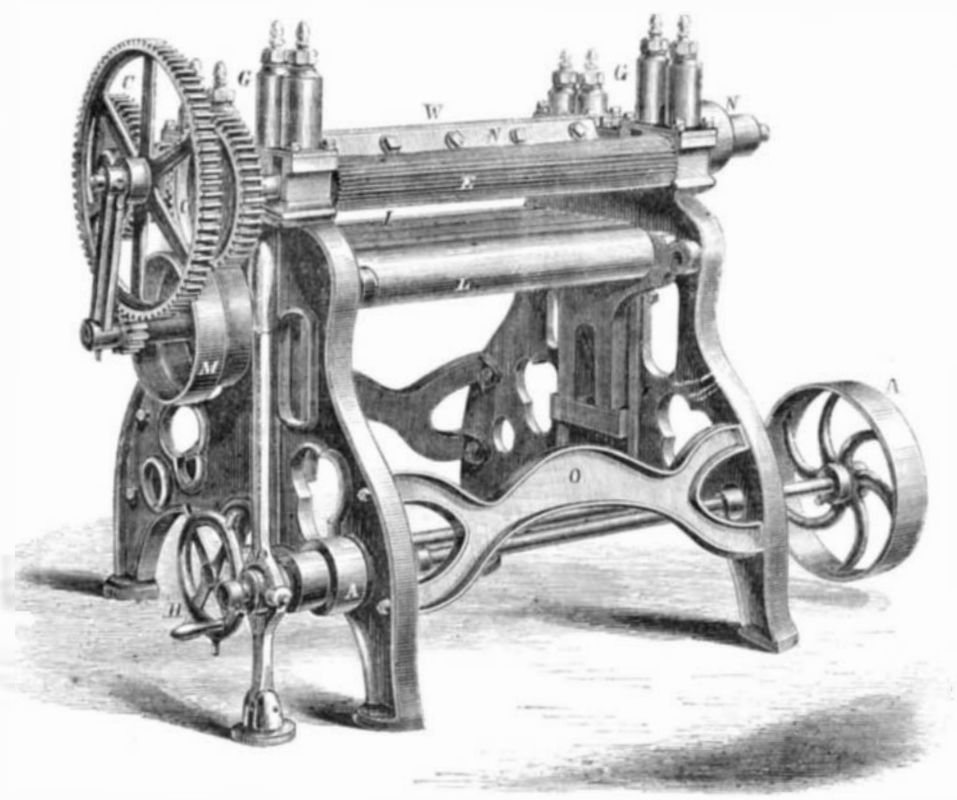
C is the gearing which drives the feed rolls.

The table, I, is raised or lowered by the hand wheel, H, which acts through bevel gearing, not shown, to turn vertical screws playing in nuts fastened to the bottom of the table.

The sides of the frame are massive and strong, and are firmly connected by the heavy brace pieces. O.

A hood, not shown in the engraving, serves to throw off shavings. It is so constructed as to rise and fall with the feed-rolls, and to completely cover the back smooth rolls, so that no shavings can get on either these rolls or on the board, to mar the latter after it has been planed. This attachment is regarded as a great improvement.

For further particulars, address the New England Machine Co., Fitchburg, Mass.



IMPROVED WOODWORTH SURFACE PLANER.

Pekin as It Is.

A correspondent of the Sacramento *Union*, writing from China, thus describes Pekin:

No long description, be assured—only this: From the observatory one sees a large portion of the town. Built of mud-brick, and gray stone, dotted with sparse foliage, of magnificent distances, curious architecture glimmering in the light, serpentine lanes and by-ways, the scene is not enchanting. In the streets, the scenes to be encountered are revolting. Sand, filth, pools of fetid water, miserable mud huts, and occasional tawdry temples; innumerable braying donkeys; such carts; dromedaries; occasional chairs; long lines of mules; dense throngs of coolies, of whom not one in twenty—aye, fifty—is half-clad in dirty rags; crawling beggars festering with disease; among the people scenes of gross indecency on the very sidewalks—a perfect disregard for what even a "Digger's" modest would revolt at; women, Tartars, small merchants, peregrinating restaurants, naked children eight or ten years of age; shops filled with earthenware of coarse manufacture; tea houses about every mile; the habitation of some high Chinese officials—one-storied, and that would make a second-rate stable in America; half-a-dozen temples, once massive and costly, but with no trace of beauty; the principal street, paved with rough blocks of granite that is worn in deep ruts and almost impassable; the emperor's palace and grounds—a dingy, barren walled inclosure, guarded by slaves; streets almost impassable with rubbish, ruts, and rocks; in brief, the most wretched, decayed, crumbling, repulsive spot we ever saw, with a semi-civilized, conceited, inhospitable, lazy, lousy populace, with no trace of anything that tells of content or happiness equal to their associates and superiors—the dogs and pigs of the Imperial capital.

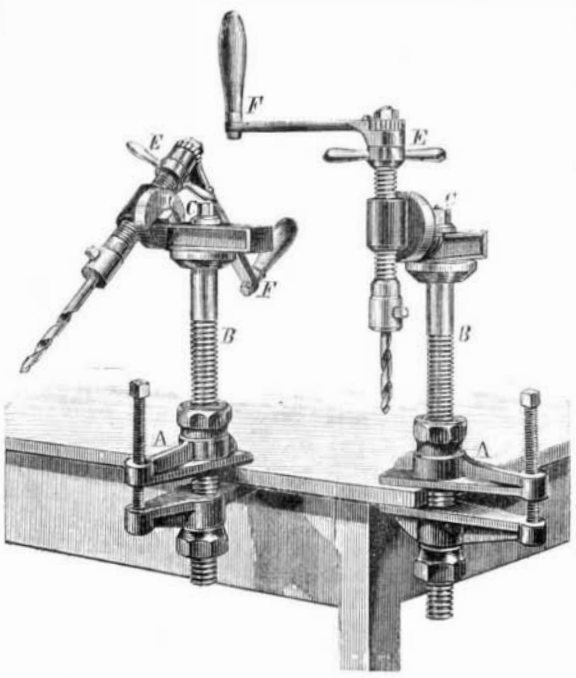
This is Pekin, with its millions of wretched inhabitants. I contess to unmitigated disgust. I abhor those enthusiastic chroniclers who have shed untruthful ink in praise of this horrible place. If proof is required to substantiate my views, I would refer to an esteemed resident of Sacramento, now a thoroughly disgusted resident of Pekin.

The Love of the Beautiful.

What are half the crimes in the world committed for? What brings into action the best virtues? The desire of possessing. Of possessing what?—not mere money, but every species of the beautiful which money can purchase. A man lies hid in a little, dirty, smoky room for twenty years of his life, and sums up as many columns of figures as would reach half round the earth, if they were laid at length; he gets rich; what does he do with his riches? He buys a large, well-proportioned house; in the arrangement of his furniture he gratifies himself with all the beauties which splendid colors, regular figures, and smooth surfaces can convey; he has the beauties of variety of association in his grounds; the cup out of which he drinks his tea is adorned with beautiful figures; the chair in which he sits is covered with smooth, shining leather; his table-cloth is of the most beautiful damask; mirrors reflect the light from every quarter of the room; pictures of the best masters feed his eyes with all the beauties of imitation. A million of human creatures are employed in this country in ministering to this feeling of the beautiful. It is only a barbarous, ignorant people that can ever be occupied by the necessities of life alone. If to eat, and to drink, and to be warm, were the only passions of our minds, we should all be what the lowest of us all are at this day. The love of the beautiful calls man to fresh exertions, and awakens him to a more noble life; and the glory of it is, that as painters imitate, and poets sing, and statuaries carve, and architects rear up the gorgeous trophies of their skill—as everything becomes beautiful, and orderly, and magnificent—the activity of the mind rises to still greater and to better objects.

Improved Hand-Drilling Machine.

The convenience of a hand-drilling machine that can be easily and quickly set to drill at any desired angle, and which combines with this attainment the conveniences of the ratchet drill will be appreciated by every machinist. The hand-drilling machine herewith illustrated combines the advantages named, and is a very neat, light, and useful machine,



extremely simple, yet capable of a great many applications in practical use, which we need not specify, as they will at once suggest themselves to all practical men.

A clamping vise, A, serves to sustain the screw post, B, in any required position on the bench, or upon the framework or other portion of machines where it may be requisite to use the drill for special service. Strong nuts receive the screw-post, B, and acting against each other, hold the screw-post firmly after it is adjusted to the proper hight from the bench.

A horizontal arm is pivoted to the top of the screw-post, and may be turned radially about the axis of B to any desired position, and then secured by turning down the nut, C.

To the end of the horizontal arm is pivoted a plate which carries the drill and feed screw. The latter may be turned radially about the axis of the horizontal arm to any required position and secured there by turning home the nut, D. The feed-screw is actuated by the lever nut, F, in the usual manner.

A winch, F, operates a ratchet and pawl on the arbor of the drill, so that it may be revolved entirely around or through any arc of its revolution in cramped positions where entire revolutions are not practicable.

It will be seen that within certain limits, depending upon the size of the machine, there is not a point to which the drill cannot be set and made to operate with ease and facility

Patented, through the Scientific American Patent Agency, April 5, 1870, by James E. Hunter. Address, for rights, machines, or other information, James Hunter & Son, North Adams, Mass., or Kelly, Howell & Ludwig, agents, 917 Market street, Philadelphia, Pa.

A Chicago Street Locomotive.

Mr. D. J. Lake, who was the contractor for constructing the lake tunnel, has invented and constructed a peculiar road engine, which has been tried of late in our streets. It has the apparatus of a steam fire-engine attached. The following description we copy from the Chica. *Times*:

"In an ordinary locomotive, the steam from the cylinder acts upon the piston and is communicated directly to the crank of the driving wheels. In Mr. Lake's machine, when desirable, the motion can first be communicated to balance wheels. When these wheels have reached a very high rate of speed, the power can be communicated by a 'clutch' to the driving wheels. The communication can be made gradually, or as rapidly as may be thought desirable.

Any one can see the benefit of this style of communication. Suppose the vehicle in a place where it requires extra force to start it. By applying the power at once no movement is effected; but by storing it up in the balance wheels, and then communicating it to the drivers, one gets almost precisely the same benefit that he would by getting, say, a heavy wagon under rapid motion just before running it up an incline.

"He has another novelty. The machine has two sets of driving-wheels, one of which is considerably smaller than the other. By a simple use of the screw, either set can be raised, leaving the other on the ground. The power can be applied at will to either. The object of these two sets is, of course, to obtain either greater power or speed, as may be desired. In hauling heavy loads, the small wheels will be used, and in excursions, where there is no great weight to be hauled, rapidity is secured by the employment of the large drivers.

"A pump and air-chamber furnish a complete apparatus for throwing water; while a hand wheel allows the transfer of power to a thrashing machine, or any other article of the kind.

"The engine itself is a very handsome one. It weighs about three tuns, and moves without difficulty, and guides as easily as a well-trained horse."

Patented through the Scientific American Agency.

History of Chloroform.

The story of the discovery of the properties of chloroform in England is this: A Mr. Waldie, a chemist and bookseller at Linlithgow, had one day some of the liquid in a saucer, when a gentleman entered the shop with a little dog. The chloroform was placed on the ground to be out of the way, and presently the dog was discovered lying by the side of the saucer, unconscious, and apparently dead. After a time, however, while the stranger was mourning over the loss of his pet, the dog moved his limbs and gradually regained consciousness. Mr. Waldie began to think that he had made a discovery, and, after having administered chloroform to a number of cats with the same result, was confirmed in his belief. He went to Edinburgh to relate his story to some medical men, and at the suggestion of a friend, called upon Professor James Y. Simpson. After that interview Simpson tried a number of experiments, and proved beyond all question the virtues of chloroform as an anæsthetic. Professor Simpson published the results of his experiments in 1847, and gave full credit to Mr. Waldie for his share in the matter; but, as the learned physician had previously tried ether, protoxide of nitrogen, and everything in fact that was suspected to have anæsthetic properties, it is more than probable that he would soon have hit upon chloroform.

It was Dr. Simpson who first applied chloroform in childbirth, and for this he is justly celebrated. Although chloroform was discovered by an American, Guthrie, in 1831, and the editor of the *Pharmaceutical Journal* of Philadelphia, in publishing an account of it, even at that early date, anticipated for it an extensive application in medicine, it was not until the news of Dr. Simpson's experiments reached this country in the winter of 1847, that this valuable compound was introduced as an anæsthetic. The scientific properties of chloroform were first investigated by Liebig and Dumas, and they gave it its present name from its supposed chemical constitution—terchloride of formyle, which was abbreviated to chloroform.

Linen can be glazed by adding a teaspoonful of salt and one of finely scraped white soap into a pint of starch.