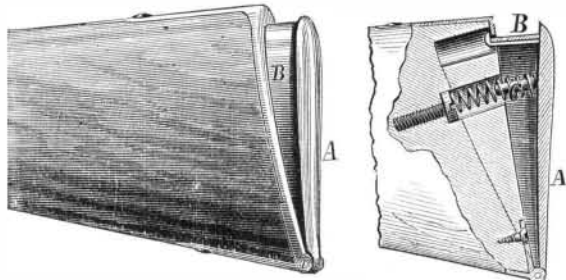


MILLER'S RECOIL CHECK FOR GUNS.

We illustrate a novel invention which is quite sure to be appreciated by soldiers, sportsmen, and all who handle firearms to any extent. Regulation rifles frequently kick with tremendous vigor, and there are few of our hunting readers who will not be able to recal lame shoulders and perhaps a few bad bruises, produced by the unexpectedly forcible recoils of their guns, especially in duck and pigeon shooting. The present device is intended to check this backward blow by neutralizing the same through the medium of a spring, and thus to admit of the use of much heavier charges in the piece and to insure steadiness of aim.

The exterior of the invention is shown in Fig. 1. From the section, Fig. 2, it will be seen that the hinged check plate, A, is applied to the lower part of the stationary butt



plate, and is guided by the portion, B, entering a suitable recess in the stock. Its outward movement is regulated by the flanged edge of said portion, B, which catches on the butt plate, as shown. C is a center pin on the check plate, which is surrounded by a coiled spring. The latter holds the device out from the butt, and also yields before the shock, thus breaking the force of the same, and rendering its effect upon the shoulder a mere push instead of a sharp blow. By means of the screw which holds the spring, the tension of the same may be regulated at will.

The invention is readily constructed, and may be applied to any gun. Patented through the Scientific American Patent Agency, November 2, 1875. For further information address the inventor, Mr. W. D. Miller, care of J. H. Johnston, Great Western Gunworks, Pittsburgh, Pa. A working model is on exhibition at the jewelry store at 843 Broadway, New York city.

IMPROVED UNIVERSAL WHEELWRIGHT'S MACHINE.

We illustrate herewith a new universal wheelwright's machine, which is designed for planing the rims of vehicle wheels on three sides after said rims are driven on the spokes.

When the rim consists of short sections, it is necessary that each section shall conform to a circle greater than the circle of the wheel, so as to give a rise at the joints, which the tire will bind down, thus strongly arching and bridging these weak points. In order to produce this rise, the felles are generally shaped out before they are driven on the spokes. They always, however, need redressing by hand, as the aforesaid work cannot be performed with sufficient accuracy to insure the meeting of the joints either on the periphery, the face, or the rear sides. It is also necessary to form the rim, when finished, thicker where it rests upon the spokes than under the tire. This labor, in common with the foregoing, has also heretofore been accomplished by hand. With the present machine the whole is quickly done in a single operation.

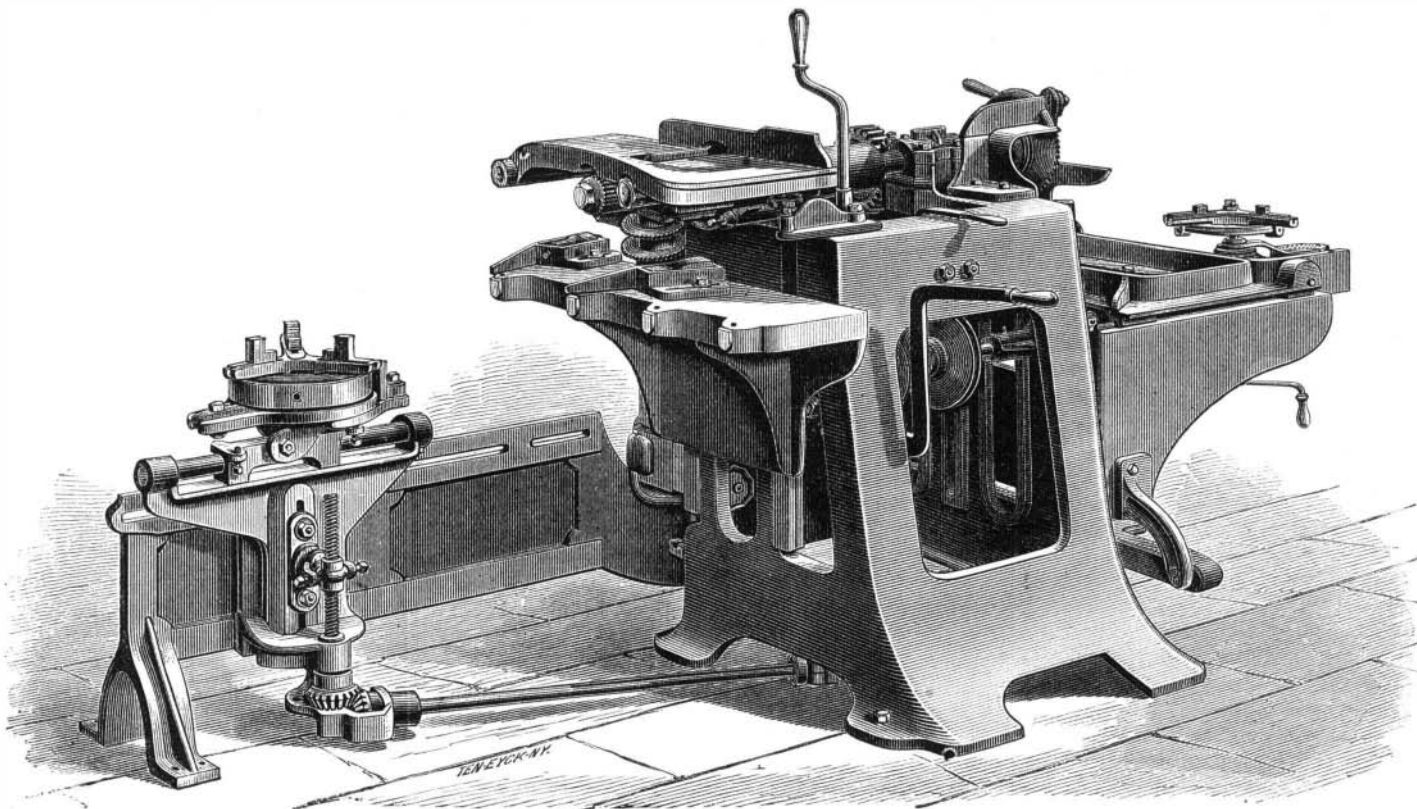
In construction the apparatus resembles a "two-sided sticker," having a horizontal and vertical mandrel with self-feeding arrangements. It has also a buzz planer table over the horizontal cutter head. Extending out from the front side of the machine is an arm, upon which suitable devices are mounted for carrying a self-centering chuck, in which the wheel is held by the point of the hub during the planing of the rim. To this chuck, a cam-shaped disk is attached, which has as many faces as there are joints or sections in the wheel rim. The wheel is fastened in the chuck, so that the joints in the rim correspond with the high points of the cam. The wheel now being elevated to the proper height by means of a screw, friction gears, and lever, it is

moved toward the machine, the chuck, to this end, being mounted on a collar, loosely fitted on a sleeve and having about ten inches to-and-fro play. The face of the wheel rim then resting over the horizontal cutter, the buzz planer table is lowered to give the required depth of cut, and the wheel is rotated and planed to a true face. The table is raised so as to taper out the cut gradually, leaving a true surface. The wheel and chuck are then moved back to allow the rim to clear the buzz planer, when they are both lowered until the rim rests on three stops. The operator now pushes the wheel toward the machine, the rim sliding under the horizontal cutter head and feed roller, and the periphery coming in contact with the vertical cutter, which is composed of bevel saws. The nut on which the chuck is mounted rests against a stop, preventing the movement of the wheel toward the machine. The feed roll then rotates the wheel, the horizontal cutter planes the rim to thickness and the required bevel, and the vertical head dresses the periphery.

The cam-shaped disk resting against a stop gives the wheel a vibrating motion to and from the vertical cutter head, by which the rise at the joints is produced. The wheel is so placed in relation to the line of the feed roll shaft that the latter is inclined to draw the wheel toward the machine, always keeping the cam against the stop, causing a uniform vibration. Bent rims are dressed to a true circle by removing the stop, so that no vibration whatever is imparted.

It is stated that with this machine the wheels are made with certain uniformity, that all ordinary material can be planed straight out of wind and square on the buzz planer table, and to thickness on the sticker table. A saw board or table, can be substituted for the buzz planer table, and a saw for the cutter head, when all kinds of straight sawing can be done. If it be desired to perform a still greater range of work, one of Messrs. Bentel, Margedant, & Co.'s universal wood-worker tables, with back top, bevel rest, gaining frame, etc., may be attached.

On the reverse side of the machine, a spoke-sawing wheel and a tenoning and boring apparatus is arranged, the whole of simple construction. The hollow auger is secured to the mandrel and carries a dished saw which, at one rotation of the wheel, saws off the spokes and bores the tenons. Wheels from 30 inches to 6 feet in height may, we are informed, thus be tenoned as desired. The change from a wheel tenoner to a boring or routing machine may be quickly made without the use of a wrench, and all kinds of boring may then be done. Two men may operate, on opposite sides of the machine, on different work at the same time. A horizontal shaper may be made of the rim planer which will shape, round, and corner all ordinary work. The capacity of the rim planer is 35 to 50 sets of wheels in ten hours; that of the wheel tenoner is much greater. The wheel tenoner

**BUFFINGTON AND FORNEY'S WHEELWRIGHT'S MACHINE.**

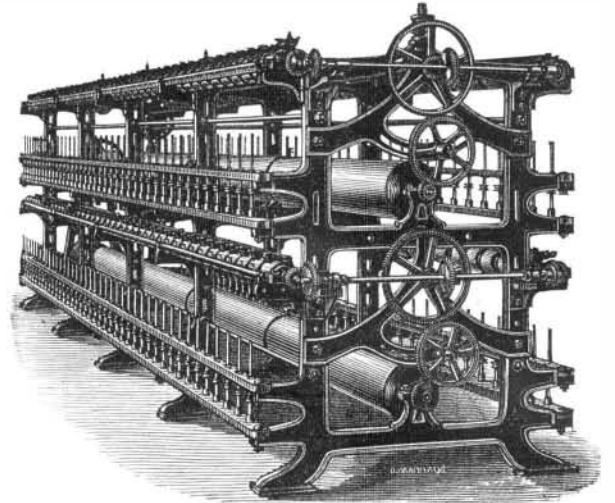
is, if desired, made separate, and with or without the boring attachment. The varied capabilities of the machine apparently fully justify its title of universal. In point of economizing room and in combining the functions of several usually distinct machines, the invention will prove one of much utility to wheelwrights and wood workers generally. Manufactured by Messrs. Bentel, Margedant, & Co., Hamilton, Ohio. For further information, address the patentees, Messrs. Buffington & Forney, Burlington, Iowa.

An article called fish flour has been brought forward in the last few years. The flour is prepared from dried fish, thoroughly desiccated, and then ground in a mill.

VON BULOW, the pianist, says beer drinking is the great fault of his countrymen. They do not get drunk, but drink till their blood becomes sluggish and their brains stupid.

AMERICAN SILK-SPINNING MACHINERY.

It is estimated that 6,000 persons are employed and over \$10,000,000 capital invested in the extensive silk factories of Paterson, N. J. The process of silk making begins with the assortment of the skeins of raw silk, which are imported from Japan, Italy, China, and France; then follows washing in soap and water to get rid of the gummy material left by the worm, and then drying in an ingenious apparatus which throws out the water by centrifugal force. Winding next follows, when the silk is wound off from the skeins upon



bobbins, after which the bobbins are taken to the doubling rooms, and there the silk from two, three, or four spools is wound together upon one. Finally the silk is spun, and this is done upon spinning frames of two or three stories and containing hundreds of spindles which revolve at a very high velocity.

The manufacture of these frames has recently been begun by the Danforth Locomotive and Machine Company, of Paterson, N. J., and numerous improvements have been added. We give herewith an engraving of the two-story frame, which is adapted to either tram or organzine, and is made of any desired length and to contain any required number of spindles. The latter are adjusted with nicety, and are capable we are informed, of running at a speed of from 7,000 to 8,000 revolutions per minute without perceptible wear. The machine also has a longer drag than is usual, which gives the thread a better opportunity to become properly twisted, and thus free from the kinks or curls so annoying to silk manufacturers.

Silk making in Paterson, in Hartford, Conn., and in some localities in this city is an industry of which the growth has been more rapid than is generally realized throughout the country.

The exhibition of silk machinery of American production, which, it is promised, will be made at the Centennial, will, we believe, attract the attention of manufacturers the world over, and perhaps serve to emphasize the fact that already excellent silks of American make are found on the counters of the dry goods warehouses, in close and in some cases successful competition with those from celebrated foreign looms. It is very much to be regretted that a recent conflagration in Paterson has destroyed a large amount of very fine silk machinery, including two large looms especially constructed for exhibition at the Centennial.

New Mode of Illumination for Lighthouses.

Professor Batestrieri, of Naples, proposes for this purpose an apparatus composed of several disks of polished silver or copper, so arranged as to transmit successively the light received, so that all the rays falling upon the disks are concentrated into one powerful beam. The invention resembles the system of Fresnel, but the latter utilizes only about one third the light received, while M. Batestrieri's device, it is said, utilizes the greater portion. With an oil lamp having a burner 2.7 inches in diameter, at a test of the above described apparatus, a beam of light was transmitted which enabled a newspaper printed in ordinary type to be read at the distance of 0.6 of a mile.