

SCIENTIFIC AMERICAN

A WEEKLY JOURNAL OF PRACTICAL INFORMATION, ART, SCIENCE, MECHANICS, CHEMISTRY AND MANUFACTURES.

Vol. XXXII.—No. 1.
[NEW SERIES.]

NEW YORK, JANUARY 2, 1875.

\$3.20 per Annum,
Postage prepaid.

IMPROVED PLANING AND MATCHING MACHINE.

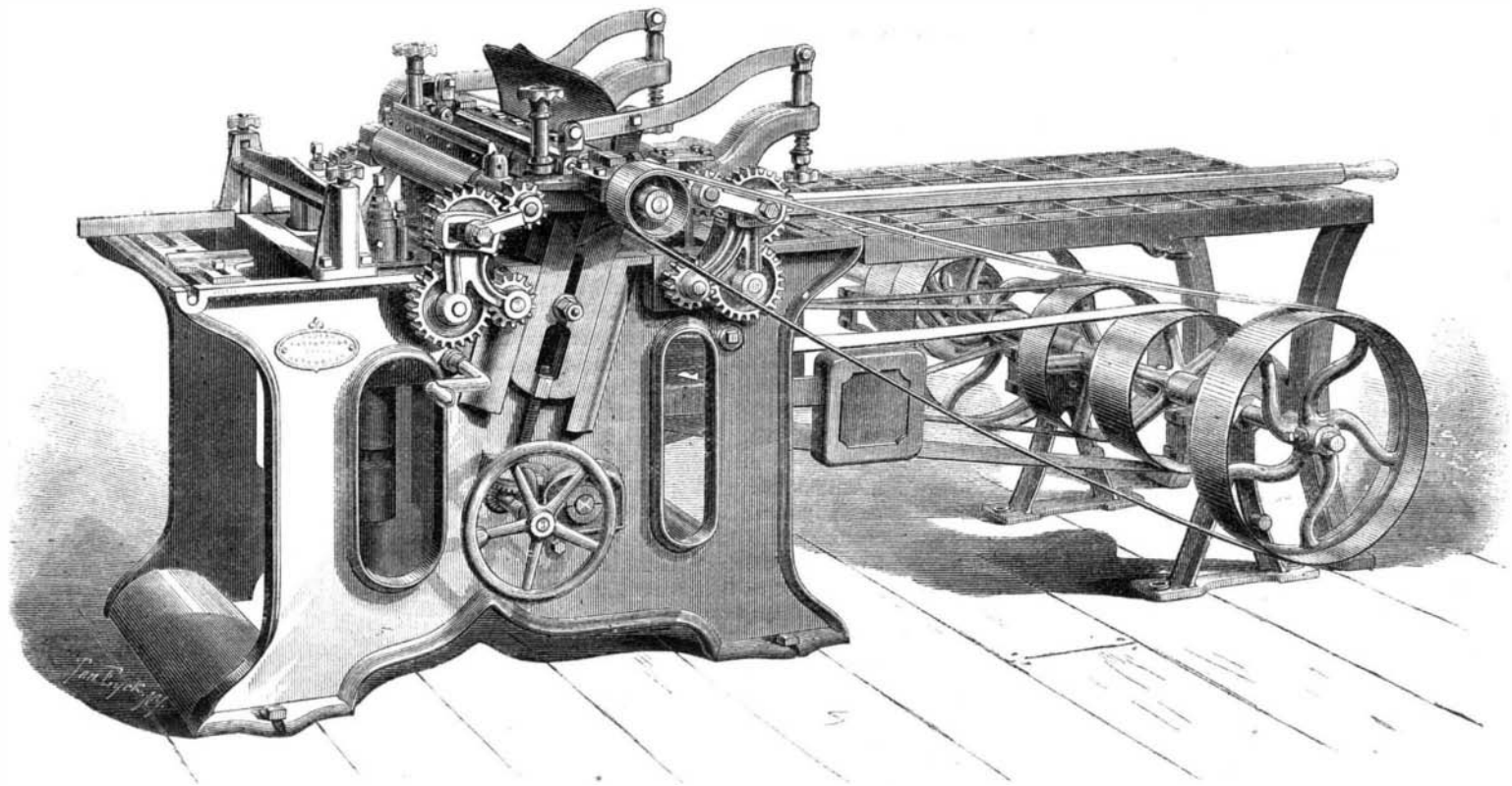
The invention herewith illustrated belongs to the large and varied class of planing and matching machines, of which almost every wood-working shop of medium and even of small size has a representative tool. It presents the advantages of strength, compactness in form and design, and economy in room, power, and cost. It is adapted to plane and match hard or soft lumber up to 14 inches in width, and will surface 24 inches wide and up to 5 inches in thickness, by dropping the matcher shafts below the bed. There is a strong, heavy, and substantial frame. The bearings are perfectly

culars, address the manufacturers, Bentel, Margedant & Co., Hamilton, Ohio.

Action of Magnets on Spectra.

M. Choquet, of the French Academy of Sciences, states that the effect of magnetic influence on the spectra of the flames of sulphur and selenium is to cause them to pale and finally to become quite extinguished. On the other hand, the same influence multiplies the rays and renders more brilliant the spectra of chlorine and bromine. The effect, says the investigator, is so rapid as to seem magical. The result of these

The annexed engraving shows its arrangement. The strap which passes over the shoulders is made in two parts, buckled together so as to admit of adjusting. To the end is attached a ring strap of a size to fit around the smaller part of the pouch; and above, a larger ring strap is attached to encircle the corresponding portion of the flask. There are two straps more, one of which is secured to both ring straps at one side, terminating in a buckle at the upper strap; and the other is similarly attached, but passes up over the top of the pouch. The end is then fastened by the buckle just mentioned. The pouch thus held is prevented from being lost by the tearing



BENTEL, MARGEDANT & CO'S PLANING AND MATCHING MACHINE.

fitted by scraping, and made of the best anti-friction metal, the latter compounded for the purpose by the manufacturers. The bearings also have self-oiling boxes, and the steps of the spindles are also self-lubricating.

The cylinder cutter head is made triangular, of a peculiar form, and carries three knives. The last though straight, similar to those generally used, make a drawing cut, thereby insuring a very smooth surface even if the material be cross-grained or knotty. The cylinder has long steel journals, and on each end a driving pulley, and can be raised or lowered while in operation. Both cylinder and top rolls are raised and lowered together by one hand wheel, in planed ways at an angle, in order to keep the belt at the proper tension for any desired thickness of lumber.

The machine is furnished with a newly patented sectional chip breaker, and an adjustable pressure bar, which holds the lumber down so that, as nearly as possible, a uniform surface is presented to the revolving knives of the cutter. The one piece pressure bar, held by springs or weights, presses the material only along the whole line of cut or width, and rests upon salient points or elevations, without allowing for the warp or sinuosities of the timber. If it is required to press the material which is in wind in its whole width to the table, the driven roller in front of the chip breaker is brought down, but the chip breaker itself only sufficient to bring its parts in a perfect contact with the whole width of the material. Heretofore the pressure bar had to press very heavily on the work, which made it necessary to use much feeding power to overcome the resistance. The feed rolls are weighted and strongly geared.

The arrangement for changing from a matcher to a surfacer is very complete, and the adjustment can be made with facility. For surfacing wide lumber, the matcher spindle can be lowered out of the way by loosening the adjustable step and letting the top of the spindle slide below the table. One of the matcher spindles is adjustable by a crank wrench, while the other may be placed to suit the width and nature of the work.

A matcher clip is furnished for preventing splitting and tearing cross-grained lumber when matching, also a lever to hold the lumber to the guide when feeding the lumber in. The matcher heads are made of gun metal and provided with a full set of cutters. The feed of the machine can, on either side, be instantly started or stopped.

The invention is covered by several patents secured through the Scientific American Patent Agency. For further parti-

discoveries is to render the deductions from the spectra of the heavenly bodies only to be accepted with great caution, as they virtually introduce a new element to be considered in drawing conclusions from the aspect of the same.

IMPROVED SHOT POUCH SLING.

Mr. William W. Kollock, of Augusta, Ga., has patented, through the Scientific American Patent Agency (November



17, 1874), a novel and simple shot pouch sling, by means of which the pouch may be conveniently carried in such a manner that it cannot become detached and lost, and so that it will always be in handy position for loading the gun.

The Stevens Battery.

A contemporary publishes the following list of offers for the Stevens battery, or for portions thereof, which was recently offered for sale on terms which we have already published:

T. F. Rowland, Brooklyn, N. Y. For the 15 lots, \$80,000.
The Chief of Bureau of Construction and Repairs of United States Navy Department. For all the lots, \$145,000. This bid was accompanied with a proviso that, if any foreign government offered more, with the intention of removing the ship from the United States, then the United States Navy Department would increase their bid so as to exceed any such offer, subject, however, to the approval of Congress, which would have to make an appropriation for that purpose.

John Roach, New York. For total lots, \$105,000.
John Stewart, New York. For lots 14 and 15, \$3,000.
H. McKay, No. 52 Broadway, New York. For total lots, \$50,000.

J. H. Wiggins, New York. For total lots, \$60,000.
John F. Feffenly, No. 533 Water street, New York. For lots 14 and 15, \$4,500.

N. Lassar & Sons, Hoboken. For lots 14 and 15, \$5,274, and for lot 1, which consists of the hull, \$20 per ton for the scrap iron, and \$2,600 for another lot.

A. Pervis & Son, Philadelphia. For lots 1 to 14, \$52,000, and for lots 14 and 15, \$52,000.

We have often read of the value of workmanship, and how raw material worth a few cents a pound may be, by skillful manipulation, changed into watch hair springs worth their weight in gold or microscope objectives more precious than diamonds; but here we see that, in the estimation of would-be purchasers, the value of a vessel that cost millions of dollars, expended with a vast amount of the highest engineering talent, is not over \$145,000 in any case, unless some other government than our own wants it; and then the importance of the vast structure to our navy will be allowed to magnify the price indefinitely. Solomon said, ages ago: "It is nought, it is nought, saith the buyer; but when he hath gone his way, then he boasteth."

I. C. SAYS: "A one-line advertisement in the SCIENTIFIC AMERICAN paid me fifty-three dollars and fifty cents."