Scientific American.

THE ADVOCATE OF INDUSTRY, AND JOURNAL OF SCIENTIFIC, MECHANICAL, AND OTHER IMPROVEMENTS.

VOLUME XI. NEW-YORK, APRIL 26, 1856. NUMBER 33.

THE
Scientific American,
PUBLISHED WEEKLY
At 128 Fulton Street N. Y. (Sun Buildings.)
BY MUNN & COMPANY.

O D MUNN S. H. WALES A. E. BEACH.

Agents.

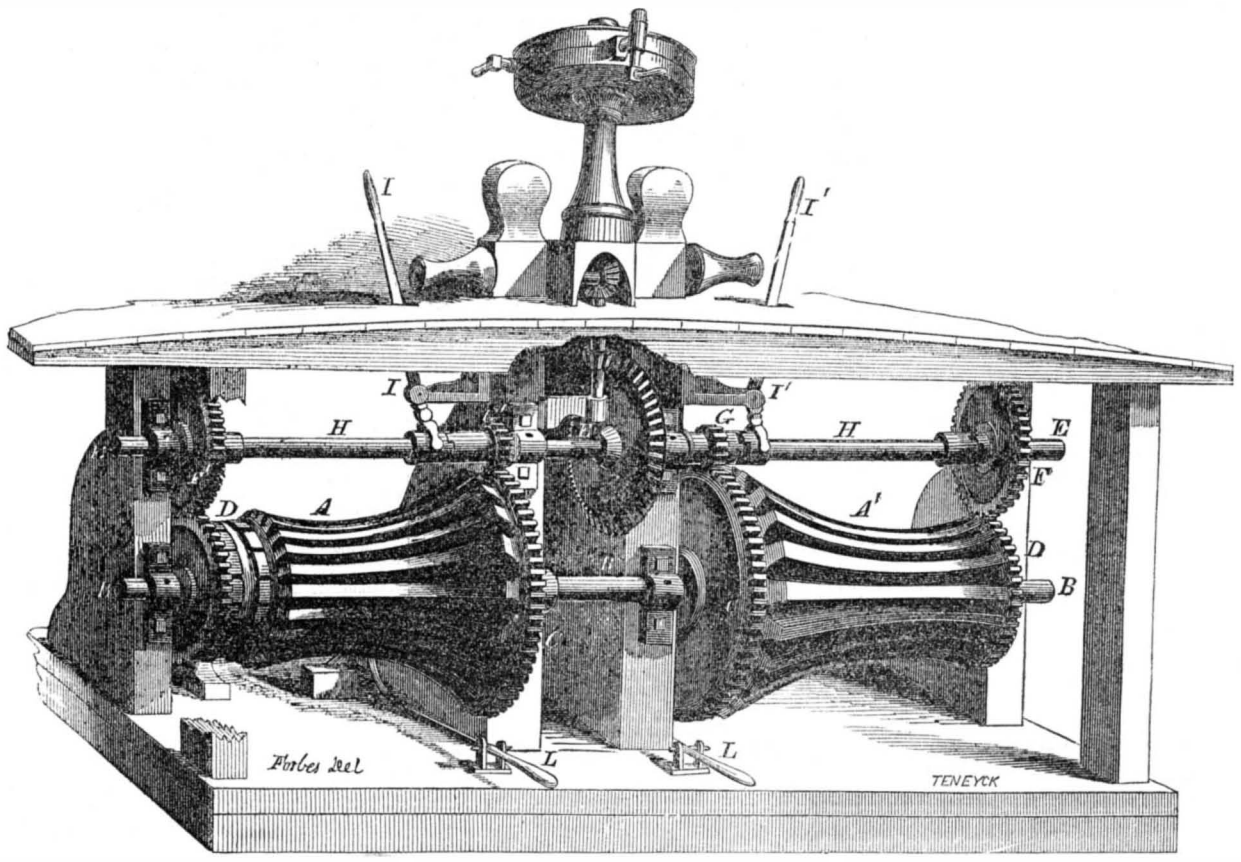
Federhen & Co., Boston.	Dexter & Bro., New York
A. Winch, Philadelphia.	E.E. Fuller, Halifax, N S
A. G. Courtenay, Charleston.	S.W.Pease, Cincinnati,O.
Avery, Bellford & Co., London	MM.Gardissal & Co.,Paris

Responsible Agents may also be found in all the principal cities and towns in the United States.

Single copies of the paper are on sale at all the periodical stores in this city, Brooklyn, and Jersey City.

TERMS--$2 a-year,—$1 in advance and the remainder in six months.

IMPROVEMENT IN CAPSTAN WINDLASSES FOR SHIPS.



New Capstan Windlass.

All ships are so arranged that two anchors can be dropped from the bows, one on each side of the bowsprit. The windlass for lifting the anchors extends across the front part of the vessel, so that both anchors can be wound up at once; and although it is comparatively seldom that both anchors are required to be used together, still the chains of both should be passed around the windlass, ready for emergency. To shift the heavy chains and permit the windlass to be operated with one chain only upon one anchor, and vice versa, is no easy job; it requires time and labor. In more than one instance have vessels been lost for want of some quick means of handling the chains and windlass.

In the improvement illustrated by our engraving the windlass barrel is divided into two parts, one for each anchor chain; these barrels are so arranged that they may be connected or disconnected so as to work in conjunction or separately, as circumstances require. The change from one to the other mode of operation is effected instantaneously by the mere throw of a clutch lever.

Beferring to the cut, A A′ are the windlass barrels mounted on strong iron shafts, B. The ends of the barrels are furnished respectively with cog wheels, C D, which gear with the pinions, F F′ G G′, on shaft E. H is a clutch sleeve, which slides on shaft E, and revolves with it having a feather inside. The wheels, F F′ G G′, are loose upon shaft E, being thrown in or out of operation according as sleeve clutch, H, is moved. Power is applied through the capstan above the windlass, which communicates with the latter by means of suitable gearing.

The sleeve clutches, H, are moved by means of the levers, I I′. As shown in the cut the windlass barrel, A, is in operation, in gear with shaft E, in consequence of the lever, I, being thrown outwardly, so as to bring sleeve clutch, H, in gear with pinion G′. The greatest power of the capstan is thus applied to the windlass, A, but the latter moves slow. If it were desired to increase the speed but diminish the power of A, it would only be necessary to throw lever I inward, so as to connect sleeve clutch, H, with cog wheel, F′.

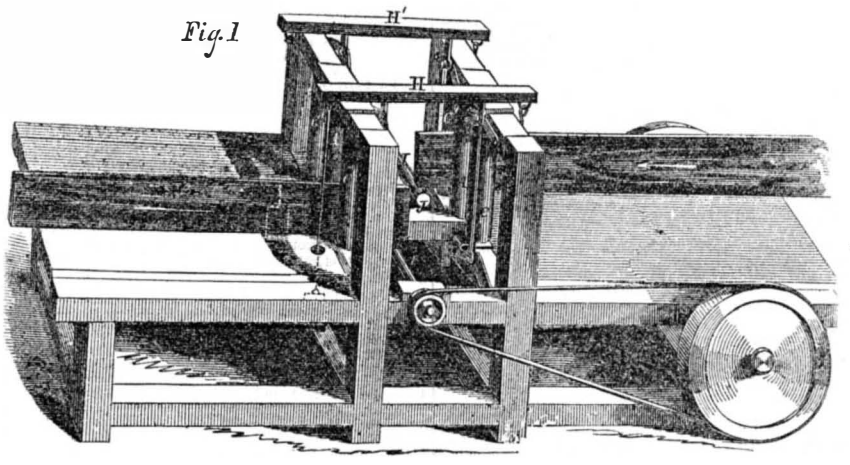
If the clutch lever is placed in an upright or intermediate position, as indicated by I′, so that sleeve clutch, H, makes no connection with either F or G, the windlass barrel will not move at all, the cog wheels upon shaft E being all loose, as before stated. Both barrels of the windlass, A A′ are thus perfectly controlled by the levers, I I′, and are capable of being used either separately or simultaneously, at the same speed, or at different speeds, as desired. One windlass may be disconnected and stopped at any moment while the other proceeds, and again put in motion; each is independent of the other, yet always ready for instantaneous combination, if required.

L L are spring pawls, which hold the purchase of the windlasses. The pawls are so arranged that, by hanging weights upon their ends they will serve as springs for the cables, and thus render the use of spring chain stoppers unnecessary. When the vessel is riding at anchor during a gale of wind the pawls may be so weighted as to slip, if any sudden strain is given the cables, permitting the windlass to turn and let out the chains. The pawls also act as brakes for the windlasses, so that by pressing the foot upon the levers, L L, the speed of the windlasses, when the chain is being run out, may be regulated at option. The peculiar arrangement of the parts is not shown in our engraving.

There is nothing complicated or weak about this improvement, neither is it expensive.—We are informed that its cost will be about the same as the best windlasses of the ordinary construction. Its advantages are self-evident, and require no further comment. We consider it a very valuable invention. Mr. John B. Holmes, of this city, is the inventor. Address J. R. Pratt, No. 62 Attorney st., New York, for further information. Patented Sept. 25th, 1855. Patents have also been secured in Europe through the Scientific American Patent Agency.

TONGUEING AND GROOVING MACHINE.

Fig. 1

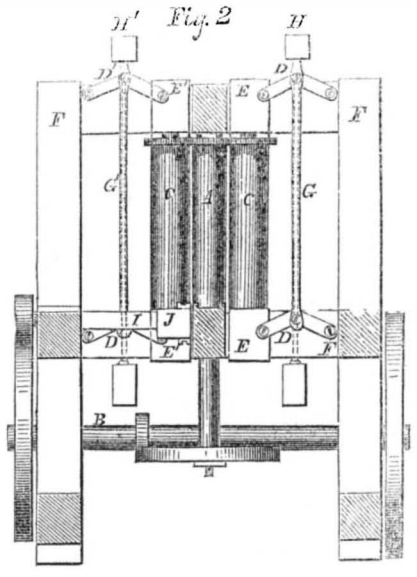


Tongueing and Grooving Machine.

In ordinary machines for tongueing and grooving, the boards require to be of equal widths throughout. If they are larger at one end than the other, they must be sawn down so as to be of even dimensions. This involves a waste of lumber, which, for many uses, is not required; also a loss of time and labor. The present improvement is intended to obviate these objections, the machine being so arranged that boards of all kinds and dimensions may be matched with the utmost rapidity and convenience.

Fig. 1 is a perspective and fig. 2 an end sectional elevation. A A′ are central upright rollers, put in motion by means of gearing from shaft B. C C′ are feed rollers, gearing at their tops with A, from which they receive motion. The boards are fed in between the rollers, and by them carried through the machine in alternate directions, as shown in fig. 1. The bearings of rollers, C C′ have a lateral movement, so as to accommodate themselv s to different thicknesses of boards. The toggle joints, D D′, are attached on one side to the bearing blocks, E E′, of the rollers, C C′, and on the other side to the frame of the machine, F. Each set of toggles is connected together by rods, G G′. Weighted cross bars, H H′, rest upon the peaks of the toggle joints, the tendency of the weights being always to spread the joints and press the rollers, C C′, up against the central rollers, A. If different thicknesses of boards are introduced, the rollers, C C′, will yield accordingly; therefore they are self-adjusting. I I′ are the cutter shafts, the ends of which are furnished with small cutter heads, J J′, one for tongueing and the other for grooving. When the board has been grooved on one edge, it is turned over, the other edge down, and passed through on the other side of the machine, to be tongued. Thus there are two boards constantly passing through the machine, in different directions. The edges of the boards being laid upon the table of the machine, parallel with it, they will pass through in the same manner; so that it matters not whether the boards be longer at one end than the other; they will be worked with the same certainty as if they were of equal dimensions throughout. The cutter shafts are put in motion by bands and pulleys in the usual manner.

Fig. 2



The inventor tells us that this machine will do about three times as much work as most of the machines in use. It is certainly simple in its parts and easily operated. It is highly spoken of by those who have had it in use.

Address Mr. Hiram C. Wight, the inventor, 93 Summer street, Worcester, Mass., for further information. Patented Jan. 1st, 1856.

An amendment has been proposed to our Patent Laws in the Senate, to allow persons in Canada to take our U. S. patents on the same conditions as our own citizens.