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Contents:

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THE LAST NUMBER OF VOLUME XVII.

We give in this number a full index of the volume of which this is the last issue. No doubt this will be more satisfactory to our readers—those at least who preserve their numbers for binding, and probably most do—than publishing the index in a separate sheet.

COMMENCEMENT OF A NEW VOLUME.

With the next number the SCIENTIFIC AMERICAN enters upon its twenty-third year. Probably no publication extant will furnish a more complete and exhaustive exhibit of the progress of science and the arts in this country for the past twenty-two years than a complete file of the SCIENTIFIC AMERICAN.

But the SCIENTIFIC AMERICAN has aimed not only to gratify a laudable curiosity by collecting and presenting such information, but to give practical knowledge which could be applied to valuable uses.

We labor for the producers—the mechanics, farmers, laborers—those who build up a country and make the wilderness to blossom like the rose. We believe that the workers are the power, especially in this country; and while we do not wish to detract from the value of the products of merely intellectual speculators, we still think that the world needs specially the laborer.

The improvement exhibited in our past volumes will be no less noticeable hereafter. Keeping pace with the "march of mind" we shall endeavor always to lead rather than to follow. The different departments of our paper are managed by those who are practically acquainted with the subjects they profess to elucidate.

A CHANGE AT THE PATENT OFFICE.

T. C. Theaker has resigned as Commissioner of Patents. A number of gentlemen are mentioned as candidates for the succession, prominent among whom are B. T. James and Charles Mason. Mr. James has acted in the capacity of primary Examiner in the Engineering Class for a number of years, and has filled his position acceptably.

tion and he will have no drones about him. The work of the office under his administration would be brought up and kept up.

A good day for inventors and all persons having business with the Patent Office will dawn when Judge Mason takes the Commissioner's chair again, and we hope the proper influences may be brought to bear to secure his acceptance.

OBITUARY.

EBENEZER WINSHIP, died at his home in this city Dec. 6, 1867, at the age of 67. A long and eminently useful although unobtrusive life entitles his memory to respect. He commenced his career as a mechanic in the steam engine establishment of James P. Allaire, soon after the application of steam for the propulsion of boats and long before its application to ships for the purposes of commerce or war.

James P. Allaire, the founder of the Allaire Works, died May 20, 1858, at the age of 73. He was an intimate acquaintance of Fulton and from the engine of Fulton's first boat, the Clermont, took drawings which he used in the construction of his first marine engines. He built the engines for the Chancellor Livingston which ran between New York and Albany.

Under such tutelage and with such advantages Mr. Winship rose successively through the grades of apprentice, journeyman, boss, and foreman, to the position of master mechanic and superintendent. Connected intimately with the progress of marine engineering for over half a century, he was the teacher of a large number of our engineers who now reflect credit upon their instructor. Mr. Winship's professional skill was unsurpassed; his ability in directing and managing others and thorough acquaintance with the minutest details made him invaluable in the position he so long honorably filled.

How to Make Intelligent Workmen--Go and Do Likewise.

Mr. H. O. Osborn, of Castleton, Vt., in a letter covering an order for a club of subscribers, says:—"It may not be uninteresting to you to learn that the last six names are those of young men in my employ. I have myself been your subscriber for the past four years, and knowing as I did the value of your paper, I felt it a duty I owed to my men to recommend the paper to their notice, and the result is as above.

We believe that employers who wish to improve the condition of their employes can render them no better service than to make each of them a Christmas present of a year's subscription to this paper. Send in the names early, so that we may know how large an edition to print to supply the demand. We close this Volume with over 30,000—nearly 35,000—subscribers, and we wish to commence the new with at least 50,000. Send in your names.

The Iron-Clads at Sea.

In his last annual report to Congress, the Secretary of the Navy thus refers to the cruise of the *Miantonomah* to Europe and her return and of the *Monadnock* to San Francisco, voyages the most remarkable ever undertaken by turreted iron-clad vessels. These vessels encountered every variety of weather, and under all circumstances proved themselves to be staunch, reliable sea-going ships.

Steam, turreted iron-clads and fifteen-inch guns have revolutionized naval warfare, and foreign governments, becoming sensible of this great change, are slowly but surely coming

to the conclusion that turreted vessels and heavy ordnance are essential parts of an efficient fighting navy.

THE SCIENTIFIC AMERICAN AS A MEDIUM OF BUSINESS.

We seldom publish the favorable opinions expressed by our correspondents when in their letters they allude to this journal. If we chose we could fill columns with notices similar to those which follow.

R. S. Miller of Logansport, Ind., under date of Dec. 2d, says:—

I have a club of 10 or 12 engaged, and will send names and money about the 20th inst. I have been reading the SCIENTIFIC AMERICAN for several years and frequently I find items in it of more value than the year's subscription. In No. 9, present volume, you illustrated a plan for setting steam boilers. I was much pleased with it and showed it to a friend of mine who was about re-setting a 60-horse power boiler in his machine shop. He adopted the plan. Four weeks' use of the improved furnace proves all you claimed for it.

The Lamb Knitting Machine Manufacturing Co., Chicopee Falls, Mass., say:—

In payment of your bill please find inclosed draft, etc. Please insert our advertisement every other week hereafter. We are compelled to this being overrun with orders. Unless they hold up we shall be obliged to withdraw it entirely. So much for the advantages of your medium for advertising.

C. W. Le Count, Manufacturer of lathe dogs and steam engine governors, South Norwalk, Conn., writes concerning his advertisement in these columns:

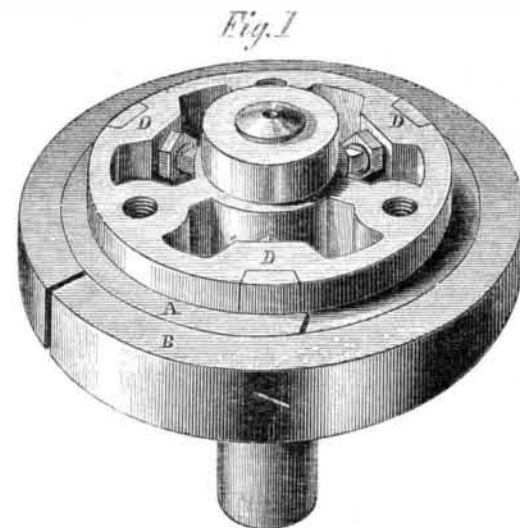
What business I have I can trace three-quarters of it directly to your journal.

An agent of the Hinkley Knitting Machine Co., whose invention was illustrated in these columns some weeks ago, writes:

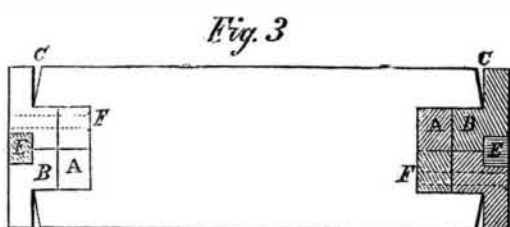
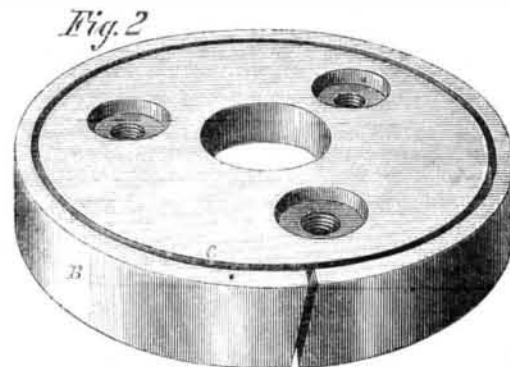
It is now but ten days since its publication, yet without a single advertisement in any paper I have been obliged to engage extra assistance to simply inclose my circulars to parties, who are writing and even telegraphing for agencies and machines, while many have traveled long distances to personally engage agencies. The Superintendent of the Company makes similar complaints.

HUNT'S IMPROVED STEAM PACKING PISTON.

Engineers are aware that there are more or less objections to the use of the ordinary spring pistons, owing to the changing tension of the springs, the necessity of frequent adjustment, and the impossibility of the packing rings adapting



themselves to the varying pressures of the steam on the piston. A number of attempts have been made to produce a self packing or steam expanding piston, which will act always with the pressure of the steam and the velocity of the engine. The advantages of such a piston will be readily ap-



preciated by practical engineers, especially drivers of locomotives, working, as they nearly all do, at a very high pressure of steam. The general complaint against the several packings in use on our railroads is, that they "pack too tight," and rapidly wear out the rings, while the only remedy has