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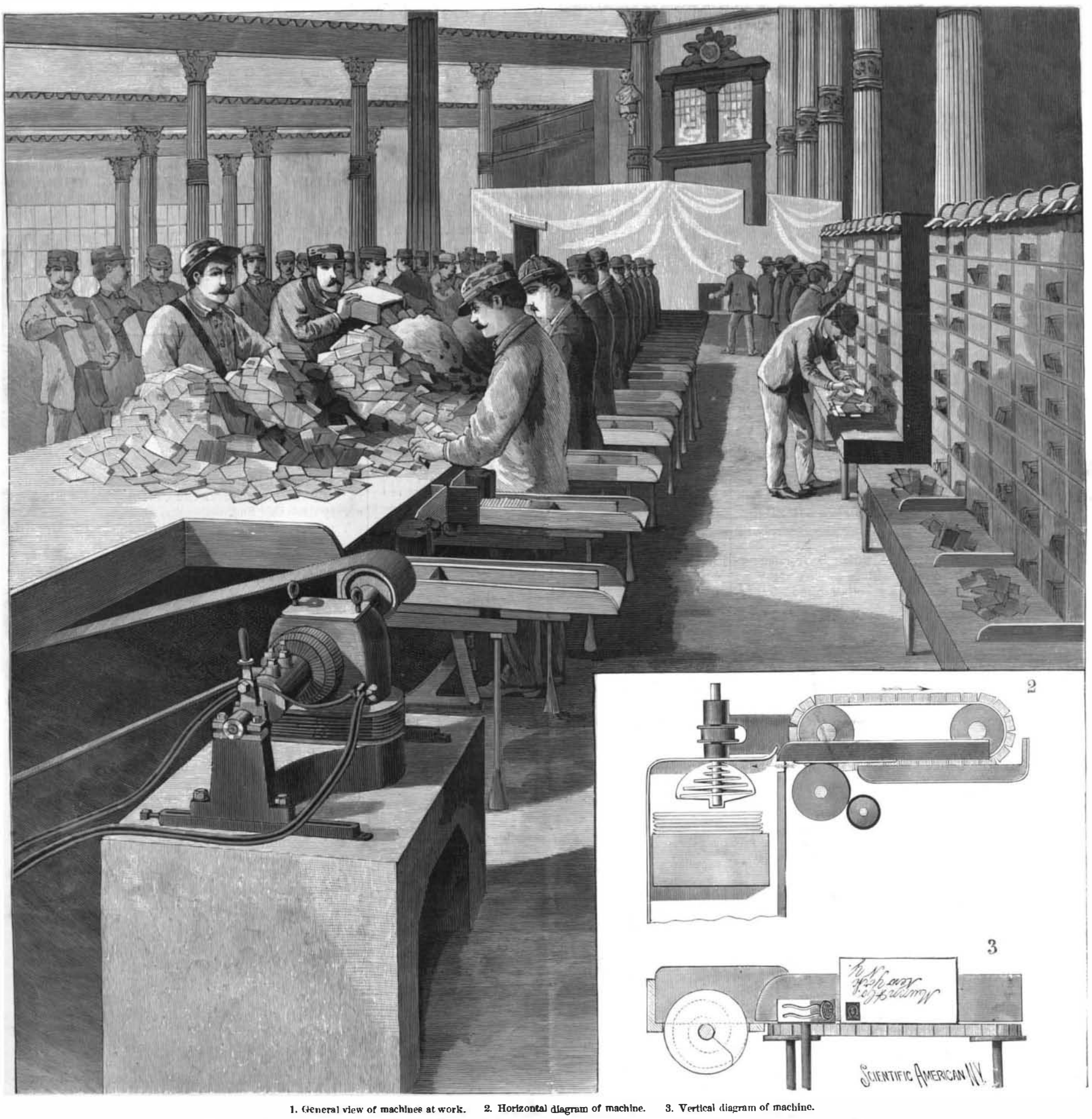
LETTER CANCELING MACHINES AT THE NEW YORK POST OFFICE.

The canceling of mail matter in such offices as the New York post office is a work bewildering in its immensity and the number of letters to be marked and stamped. Every letter that enters the office has to have impressed upon it a stamp giving the day, month, year and hour of its reception, and in addition thereto, if it is a New York letter, it has to have its stamp canceled or killed. Letters from the out-of-town post offices, as received in the New York office, already have their stamps killed and in addition thereto have stamped upon their faces the dating stamp of the country office from which they are received. These must receive the New York office dating stamp. Letters deposited in the post office or in the letter boxes are brought to the canceling table devoid of any cancelation mark to receive the imprint of the New York office. Those from the out-of-town offices have to have the stamp put upon their backs, and those deposited in the post office or in the letter boxes of the district have to have the stamp killed and the date put upon their faces. Formerly this was done by hand, and the clerks who did it acquired great skill, and it was interesting to watch the rapid motion of their arms and the disappearance of the accumulated letters under the automatonlike movements.

Many attempts have been made to invent machines to do this work, and about six years ago some success was attained in this direction. We illustrated, in a former article, the letter stamping machine then in use in the New York post office, one which gave very remarkable and exceedingly satisfactory results. This machine was known as the Hey & Dolphin machine. The American Postal Machine Company's machine and the Barry machine are now used, and the canceling of the great majority of letters, circulars and postal cards is done by machinery, the old hand stamps being used only for special work.

We illustrate in our cut a scene in the New York post office, where the American Postal Machine Company's machines, called colloquially the Boston machines, are working. A long table runs down the room, and along its edge are arranged a number of the canceling machines. The letter carriers and other



1. General view of machines at work. 2. Horizontal diagram of machine. 3. Vertical diagram of machine.

LETTER CANCELING MACHINES IN THE UNITED STATES POST OFFICE, NEW YORK CITY.

employes carrying bundles and sacks of letters come to the table on the side opposite the machines and throw down the letters, without any order, in great quantities. The carriers here have to sort over the letters and pick out and separate from them the letters for New York city delivery. Those for outgoing domestic delivery are left upon the table. The New York city letters are taken elsewhere for cancelation.

The long row of operatives, one for each machine, attack the piles of letters, pull the letters over toward them one by one, face them, and note whether the stamp is in the right place and then feed them one by one into the machine. If the stamp is not in the right place or side, the letter would have to be reversed on its entrance into the machine. This work is done with great rapidity, the piles of letters disappearing as if by magic. Ordinarily during the day time a man works the machine only from five to twenty minutes at a time, but during the "rush hours" as they are termed, from 4:30 to 8 in the afternoon and evening, the work at the machines is incessant, and for three hours they are never idle. The capacity of each machine is 5,000 per hour, this capacity being limited purely and entirely by the capacity for feeding, as, if a man were able to work fast enough, between three and four hundred a minute could be disposed of. With the old hand service 3,000 per hour was a good rate of work for a man.

The construction of the machine is simplicity itself, and our two views, Figs. 2 and 3, illustrate it. Fig. 2 shows the horizontal projection of the machine as one looks down upon it. A belt is seen traveling around two rollers in the direction of the arrow. The lower portion of this belt is provided with a series of little blocks of leather so as to form a sort of shelf. The letters are fed in one by one at the narrow opening seen to the right of the lead of the belt nearest the reader. Their lower edges rest upon the blocks of leather as on a moving shelf, and the belt rapidly carries them along. As they move forward they are pressed by the belt pulley against a roller, the left hand one, on whose face is carried the canceling device for killing the stamps, and the dating die. In contact with this roller an inking roller operates, which is also shown. The left hand belt pulley is held to its place by a spring bearing, so that it can yield backward for letters of varying thickness, and constantly presses them against the canceling roller. Reference to Fig. 3, which represents the vertical aspect of the machine, in connection with what we have said, will render all clear. There we see the letter resting on the little shelf with the slide back of it. To the left, almost in line with the left hand belt roller, is seen a canceling roller with its waving lines and dating stamp.

It is evident that as the letter travels toward the left this will press against it, cancel the stamp and date the letter also. The letter now moves forward to a table, and through the table a sort of Archimedes' screw projects, which will be seen to be of conical contour. The screw catches the letter with its smallest thread and screws it forward, getting a better and better hold as the letter progresses, and finally pushes it forward out of engagement. Letter after letter is thus treated, placed, carried through, canceled, caught by the screw and carried along, the new letters constantly pressing forward those which have accumulated. The entire row of machines is driven by an electric motor, which runs at a speed of about 520 revolutions a minute and drives the canceling machine at a rate of 350 revolutions per minute; each revolution is capable of canceling a letter were it possible to pass the letter so rapidly through the machine.

The familliar device of the waving American flag is employed in this machine, the waving lines of the flag being employed to prevent the wearing out of the inking roller, as straight lines would inevitably depress it into grooves.

The dating stamp, without taking the machine apart, can be removed, have its type changed and then be replaced, the whole affair being the work of a few seconds only. There are now at work in the New York post office some twenty of these machines.

There is another kind of canceling machine used in the same office, the Barry machine, built by the Barry Postal Supply Company, of Oswego, N. Y., of which there are six at work. If it has the letters fed to it in bulk and faced, it can dispose of 30,000 to 40,000 letters per hour. For regular sized mail, such as circulars, which are often delivered to the New York post office in great quantities already faced and with the stamps in the same position on all the envelopes, this machine is highly advantageous. The two kinds in one office form a combination of high efficiency.

Our thanks are due to Mr. Thomas J. Clarke, Superintendent of Mails, New York post office, for courtesies extended in connection with this article.

IT is said that one-tenth of the population of England suffer from gout. Dr. Fehlauer, a Berlin physician, attributes this to the excessive consumption of meat, and recommends a more restricted or vegetarian diet.

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SCIENTIFIC AMERICAN SUPPLEMENT

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PROPOSED PATENT LEGISLATION.

A very important bill, important in its list of authors as well as in its import, has been brought before Congress. It is the House of Representatives bill No. 3014, and provides for amendment of the existing patent statutes. In at least one of its provisions it makes a more radical change than has been seriously proposed for many years. The genesis of the bill is found in the meeting of the American Bar Association at Detroit, last autumn, where a committee of lawyers, including some of the most eminent counsel in patent cases, reported five general amendments. The abstract of their report, or text of the amendments which they proposed, may be found in the SCIENTIFIC AMERICAN of November 2, 1895, and the principal object of the bill we are considering is to put these amendments into force. It was introduced by Gen. William F. Draper, of Massachusetts. We will note seriatim the changes proposed.

Sections 4886 and 4920 of the patent statutes are amended so as to make one point a little more specific—namely, that knowledge or use by others in this country of the matter of his invention, before the date of invention thereof by the applicant, shall be a bar to the issuing to him of a patent. The same sections of the present law hold that patenting or publication in printed form abroad prior to the date of invention shall be a bar to patentability of the thing so patented or published. This is amended by introducing the additional restriction that patenting or publication abroad two years before the date of application, without reference to the date of invention, shall be a bar also. This is a restriction upon the inventor, and acts to inspire greater diligence.

Section 4894 is amended so that applicants for patents must prosecute their cases within six months of their date of application, thus doing away with the old two year period which has so often been abused rather than used by those who wished to obtain the quasi protection of a "patent applied for" before they were prepared to take out their final papers. By this amendment only six months are allowed to intervene between any action of the examiner and corresponding prosecution of the case by the applicant. It is also an amendment in the direction of inspiring diligence on the part of the inventor.

Section 4898 is amended to provide for proper acknowledgment of an assignment, grant, or conveyance of patent rights, so as to make them constitute a prima facie evidence of the execution of the instrument. This amendment is rather of the technical order and is valuable.

Section 4921 is amended to fix the limit of time to be covered by an accounting in infringement suits to six years, and harmonizes the practice in the different States. This is in sequence of the decision by the United States Supreme Court in the case of Campbell vs. City of Hartford, rendered January 7, 1895, and commented on in our issue of January 26, 1895. In that decision it was held that State statutes of limitation apply to accountings in patent suits. The amendment is designed to unify the law all over the United States, and seems a very desirable one.

The most important amendment in the whole bill is found in section 4887, which is very far reaching in its consequences. We give herewith the amended section in full:

"Section 4887. No person otherwise entitled thereto shall be debarred from receiving a patent for his invention or discovery, nor shall any patent be declared invalid, by reason of its having been first patented or caused to be patented by the inventor or his legal representatives or assigns in a foreign country, unless the application for said foreign patent was filed more than seven months prior to the filing of the application in this country, in which case, no patent shall be granted in this country. This section, as hereby amended, shall not apply to any patent in this country granted prior to the passage of this act, nor to any applications for a patent in this country then pending, nor to any patent granted on such a pending application."

The object of this amendment is to do away with the present practice, which makes the United States patent expire at the same time as a foreign patent for the same invention, bearing an earlier date. This feature of our practice is very objectionable, and followed the decision in the case of Bate Refrigerating Company vs. Sulzberger et al., Edison Electric Light Co. vs. U. S. Electric Light Co., and other recent decisions, which declared the United States patents involved to have expired prematurely, owing to the expiration of a foreign patent of prior date. These decisions have sometimes cut off several years from the natural term of the United States patent.

The United States patent is dated from the day of *issue*, while the foreign patents are generally dated from the date of *filing*, and the American inventor according to the present practice is compelled to postpone the filing of his foreign patents until his United States patent is allowed and ready to issue. The proposed amendment is intended to enable him to file his foreign patents without awaiting the result of the pro-