

and circuits were planned for this number of bells and boxes and on that basis worked well.

But of late years the wire circuits have extended till they are from ten to fifteen miles in length; the boxes now number one hundred and fifteen; the tower bells are doubled in number; there are now fifteen station gongs, where they were at first only five; electro magnets have also been added, which throw open stable doors at the engine houses. The transmitting capacity of the apparatus is thus clearly over-taxed.

All these, "the signal boxes, gongs, alarm bells and stable magnets, in fact," says Mr. Dwight, "the whole apparatus, new and old, is crowded indiscriminately into the four circuits mentioned, these circuits being all connected at the Central Fire Station by an electro-magnetic automatic repeater, by means of which a signal sent from any box in either wire circuit is repeated through the whole system over all the circuits. The system, undoubtedly the most suitable when first adopted, has become antiquated, and with the additions and extensions which have since been made has become unsuited for present requirements and altogether unreliable. That it works no worse is," we are told, "simply owing to the unremitting care of the officials in charge, who are doing their utmost with a painful anxiety to prevent failures and consequent disasters."

The main defects of the present handicapped fire-alarm arrangement are thus stated in Mr. Dwight's report; The Automatic Repeater, which is supposed to do its work with no person to watch it, is insufficient.

The wire circuits are too few in number and clashing of signals arises because the boxes are not "non-interference" boxes.

The original Gamewell boxes, 50 in number, have done excellent work, though now out of date. But the boxes since added to the system are badly made, are not trustworthy, and in spite of careful watching are a constant source of danger.

A like condition exists with relation to the tower bells and the gongs first put in. These are reliable but those lately added are not.

Wire and poles are defective also; the wire is corroded and the poles decayed.

Another fatal defect is that "the whole apparatus (as at present arranged) requires to be adjusted to the slowest movement in the system, viz: that of the ponderous and cumbersome alarm-tower bells, the consequence being that signals are exceedingly slow in transmission." Money spent in repairing the present patched, spliced and overloaded system would be of little, if any use, and Mr. Dwight "does not hesitate to recommend an immediate and complete change in the whole system, utilizing any apparatus or material now in use which may be found or can be made serviceable." So important a matter is this, that the report concludes, that the city should secure the best and most reliable system known, regardless of cost, and the authorities would not be justified in adopting any other.

The change which the Telegraph Superin-

tendent recommends is the adoption of a system combining all the latest, most improved, and reliable form of automatic apparatus, with the added security and advantage of constant personal attention, by day and night, at the Central Station. He would replace the present repeater at the general office, by a new automatic non-interference repeater of the most improved style, with capacity for ten signal and four alarm circuits.

Instead of the present four, long wire circuits, there should be eight shorter circuits radiating from the central office, each working independently. By placing only the signal boxes on these circuits and getting rid of the incumbrance of the gongs, large strikers, stable magnets, &c., signals from the boxes may be sent in much more rapidly and reliably than has ever been possible under the present system.

A suggestion which is well worth considering is made in regard to the use of the large strikers on tower bells. Mr. Dwight recommends their discontinuance. "They are not necessary for the purpose of warning the fire department of a fire, as this is effectually done by the gongs at the fire halls. They have the effect to collect an idle crowd, who are simply in the way of the firemen, and to notify thieves of opportunities for plunder. The great majority of alarms signalled are, fortunately, in consequence of trifling fires, sometimes merely the burning out of a chimney or a heap of worthless rubbish, but under the present system the whole city is regularly alarmed, no matter how trifling the fire may be. If, however, it is determined to continue the use of the large bells, I would recommend that only two or three be retained. The use of these large strikers in nearly all large cities has, I understand, become obsolete. They are cumbersome both in construction, maintenance, and expensive in battery power." Inspection of the wires is urged. Defective poles should be replaced with cedar, and an independent telephone system is required.

The cost of the new system is placed at \$19,000. If it were twice the sum it should be promptly procured. The recommendations of this exhaustive report are those of a man who knows whereof he speaks, and are in the main both sensible and feasible.

Toronto cannot afford not to have an adequate fire-alarm. "Am all the more of this opinion," says Mr. Dwight, "from the fact that the best system can be provided at a cost which seems a trifling matter, taking into consideration the importance and value of the service. To run any risk in this respect, would, in my opinion, be false economy. A single failure in the fire-alarm service, owing to defective apparatus or inferior arrangements, may be the occasion of a loss of property amounting to many times the cost of the most complete and reliable system of fire alarm that can be adopted, to say nothing of possible loss of life as well."

NEW YORK INSURANCE REPORT.

Following the example of promptitude set by his predecessor, the New York State Superintendent of Insurance, Mr. R. A.

Maxwell, has issued his report upon the fire and marine business of that State. The fire risks written in New York last year amounted to \$2,827,992,000, and those of inland and ocean marine \$469,818,000 as compared with \$2,831,265,000 and \$397,248,000 in 1884. The fire premiums taken by all companies reached \$18,068,400, the losses \$10,348,800, the expenses \$5,420,500. Net profit apparent, \$2,473,000.

The ratio of loss to premium was smallest in the case of the New York companies, being in their case 49.59 per cent., while other States' companies suffered a loss of 62.03 and foreign companies 57.05. The ratio of fire loss to fire risk remains, in the case of the New York State companies, at .26, where in the case of other State companies it was .55 and foreign companies only 33.

We copy below, tables showing the standing and transactions in fire and marine of all companies:

JOINT STOCK FIRE INSURANCE COMPANIES OF NEW YORK.

	1884.	1885.
No. of Companies.	61	59
Assets	\$ 57,911,385	\$ 59,012,292
Liabilities(except capital)	21,718,818	22,640,538
Capital	21,087,020	20,287,020
Surplus	15,105,547	15,415,410
Prem. received...	27,472,612	28,121,355
Total income...	29,895,294	30,487,345
Losses paid	15,803,781	16,384,664
Dividends paid..	2,160,809	2,039,135
Total expenditure	28,569,384	29,362,996
Risks in force ..	3,820,148,290	4,020,680,852

JOINT STOCK COMPANIES OF OTHER STATES.

	1884.	1885.
No. of Companies	60	67
Assets	\$ 80,895,094	\$ 87,306,508
Liabilities(except capital)	28,506,648	30,492,775
Capital	32,928,000	34,628,000
Surplus	19,460,446	22,185,753
Premiums	30,479,163	32,672,383
Total income....	34,441,591	36,639,350
Losses paid	19,203,976	19,393,942
Dividends	3,922,167	3,990,806
Total expended..	33,407,528	34,568,255
Risks in force ..	2,950,915,346	3,395,119,676

FOREIGN COMPANIES UNITED STATES BRANCHES.

	1884.	1885.
No. of Companies.	24	23
Assets	\$ 38,075,713	\$ 39,096,532
Liabilities.....	20,387,193	20,453,873
Deposit capital..	4,800,000	4,600,009
Surplus	12,888,520	14,042,659
Premiums.....	24,926,161	25,391,003
Income	26,218,535	26,732,450
Losses paid	17,047,885	15,860,549
Expenditure....	25,149,771	24,235,399
Risks in force...	3,031,050,502	3,170,374,874

The foreign companies, though lessened in number by two as compared with 1883, have increased their assets by \$600,000, and their surplus by half a million. With premiums very slightly increased, their losses were \$488,000 less. Still the ratio of premium to risk, which, in 1883, was 84.1 had fallen in 1884 to 82.2, and in 1885 still further fallen to 80.1 Their deposit capital, which two years ago was five million dollars, was at the close of last year four millions six hundred thousand.

MILLINERY AND MANTLES.

Year by year the variety of materials, the number of new features, the multitude of shades in millinery seem to increase; wire, buckram, straw, velvet, silk, lace, feathers, flowers, beads, buckles, steel ornaments. A clever milliner down on Wellington street will take these seemingly discordant materials and from them will fashion a hat which is a