

of the extra warehouse on Sixteenth street—the Empire—declared regular by the directors four years' ago, is an illustration of the risks of making 'regular' any of the storehouses not built as first-class elevators. Then, too, grain put into vessels cannot be gotten out without extra trouble and expense. But these are less difficult matters than to find out what are the causes and the probable consequences of this glut. That there have been shortages in the world's crops of wheat and corn in Europe as well as in this country and Canada is indisputable, and yet we see grain piling up in Liverpool, and New York, and Chicago, and no spur given to the demand by the lower prices that are being made.

Is there too much wheat as there is too much iron, wool, leather? Have the energy and the high prices of the last few years produced a glut of wheat as of manufactures? It is not in the United States alone that railroads are covering vast tracts of new land with men and money. Australia and the Argentine Confederation and India are being supplied with new lines of transportation, and are developing a capability of raising millions of bushels of surplus wheat. Is their competition destined to compel our farmers to readjust their prices? Our agriculturists have been making money out of the harvests of their new soil, as if the prairies were oceans of gratuitous milk from which they could take the cream for the trouble of skimming. If it is possible to have too many transportation factories and too many shoe factories, may it not be possible to have too many wheat factories? Are not the hard times now so prevalent over the industrial world greatly lessening the ability of the poor, who are the vast majority, to consume food with the appetite of their prosperous years?

It is very easy to ask these questions; it is hard to answer them. We have no cut-and-dried responses. Certain it is, however, that if the competition of other wheat-raising countries is going to compel a permanent change in the terms on which we have been able to sell our surplus in the world's markets, the social and industrial changes which will come with that readjustment will amount to nothing less than an economic revolution. Meanwhile, until the glut at Chicago is broken by foreign markets coming up to our figure or Chicago going down to theirs, the accumulation means less business for the railroads in hauling grain to this market, less demand at the country stations for the farmers' stuff, less trade at the country stores and less of a market for the products of manufacture. These wheels are all cogged together, and if one slows up the other must slow up.—*Chicago Tribune*, Jan. 17th.

Paper-Making in China.

There can be no question as to the success of paper manufacture in Shanghai. All requisites are to be obtained without the least difficulty—a plentiful supply of water, an abundance of raw material to work with, cheap manual labor, cheap motive power, and a more than sufficient market. Nine years ago Mr. Doyle introduced the enterprise into Japan, and we believe there are nearly a dozen in full operation there. Those mills that were properly constructed at

the outset, and were placed under efficient and skilled management, have been exceptionally successful, and, if we remember rightly, the mill at Osaka cleared itself in three years, while the one at Oji paid a dividend last year of seventeen per cent, on stock amounting to \$365,000. The other mills were less successful, but none have proved failures; and we believe we are right in making the statement that the entire enterprise of paper manufacture in the land of the rising sun is now in the hands of the Japanese, who have so advanced in the art as to think themselves justified in dispensing with foreign supervision. Another interesting feature in connection with the paper trade of Japan is that while nine or ten mills have been working successfully, the importations of foreign-made paper have considerably increased—more than doubled during the last few years.—*Overland China Mail*.

Canadian Reciprocity.

As the question of reciprocity is attracting considerable attention at present; it may be interesting to know just what articles were allowed to pass free of duty between these countries under the old treaty which was abrogated in 1865. The following is a list of articles: Grain, flour, and breadstuffs of all kinds; animals of all kinds; fresh, smoked and salted meats, cotton-wool, seeds, and vegetables; undried fruits, dried fruits; fish of all kinds; products of fish and all other creatures living in the water; poultry, eggs, hides, furs, skins, or tails, undressed; stone or marble in its crude or unwrought state; slate; butter, cheese, tallow; lard, horns, manures; ores of all kinds; coal; pitch, tar, turpentine, ashes, timber and lumber of all kinds, round, hewed, and sawed, unmanufactured in whole or in part; firewood; plants, shrubs and trees; pelts; wool; fish oil; rice, broom-corn and bark; gypsum, ground or unground; hewn, or wrought or unwrought burr or grindstones; dye-stuff; flax, hemp and tow, unmanufactured; unmanufactured tobacco; rags.

Flax Belting.

A foreign exchange reports that the latest patent in hands used for machinery is one for an invention by which, it is claimed, the only good belt made of textile fabric can be produced; it is not affected by change of temperature, stretches very little, is thoroughly waterproof, is as durable as leather, and being without the objectionable joints and splittings of a leather belt, it runs straighter and truer. The belt is made solely of the best Russian flax, and in price is from 25 to 60 per cent. cheaper than leather belting. The unusual strength of the belting results from its being folded somewhat peculiarly, which also accounts for its stretching so little. It is rendered waterproof by an entirely new process known only to the Russian government, the peculiarity of which process gives it a marvelous grip of the pulley, and, no matter how long the belt is used, this never it. The flax belt has been in use in Russia for more than two years and a half, and it has given the greatest satisfaction.

Gas from Sawdust.

The *Minneapolis Tribune* is in receipt of a letter from George Walker, manager of the sawdust-gas works at Desoronto, Ont., which gives us some interesting information in respect of the manufacture of the new gas, although he does not go into the details of the manufacture for stated reason that certain patents which have been applied for in the United States and Canada are still pending. Mr. Walker states that he is making illuminating gas from dry sawdust and is producing from 20,000 to 30,000 cubic feet of gas from each net ton of sawdust. The gas, when purified and ready for use, is stated to be fully equal to ordinary coal gas, and as wood contains no sulphur and very little ammonia, the sawdust gas is more easily purified than coal gas, and the purifying process is by no means as expensive as in the case of gas made from coal. It is apparently an easy matter to change a coal-gas plant to a sawdust arrangement, as the storage and distribution of the sawdust gas, and in fact most of the apparatus, are precisely the same for sawdust gas as for coal gas, and the same burners are used for both.

The sawdust from which Mr. Walker makes gas at Desoronto is from white pine, but, he states, the gas can be made from wood of any variety, although resinous wood is preferable to non-resinous by reason of its larger yield of gas. Mr. Walker's process for generating gas from sawdust is carried on almost entirely by machinery, the sawdust being dried and fed into the apparatus and the product discharged almost without labor. In localities where there exists a market for the other products of the carbonization of sawdust—for gun-powder material, wood tar, acetic acid, wood alcohol, etc.,—the cost of the gas is reduced to an extremely low figure.

The experiment at Desoronto seems to be quite successful, and it is probable that the new gas will be introduced elsewhere where the raw material is plentiful.

British Playing-Card Manufacture.

Playing-card making is an industry that in England is in comparatively few hands; and the manufacture is, moreover, almost exclusively confined to England, there being only one maker in Ireland, and none in Scotland, in which latter kingdom, indeed, the trade seems never to have taken root. *The Printing Times* states: "The number of makers and individual partners in England, which stood in 1881-82 at fifteen, had increased in 1882-83 to nineteen. Happily there has been a considerable increase in the number of packs manufactured, last year's total being 1,216,960 as compared with 1,150,560 in 1881-82. The stamp duty paid thereon was £15,272 last year, and £14,382 in the preceding twelvemonth. Hitherto the official playing-card wrappers have been supplied by a private firm, but the Commissioners of Inland Revenue have now made arrangements to produce these wrappers in the Stamping Department at Somerset House, where certain confidential revenue printing is already carried on. In order to ensure greater security, the stamps are now printed on water-marked paper.